**IMPORTANT NOTICE**

THIS PRELIMINARY OFFERING MEMORANDUM IS AVAILABLE ONLY TO INVESTORS WHO ARE EITHER (1) QUALIFIED INSTITUTIONAL BUYERS ("**QIBs**") WITHIN THE MEANING OF RULE 144A ("**RULE 144A**") UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "**U.S. SECURITIES ACT**") THAT ARE ALSO QUALIFIED PURCHASERS WITHIN THE MEANING OF SECTION 2(A)(51) OF, AND THE RULES AND REGULATIONS THEREUNDER, THE U.S. INVESTMENT COMPANY ACT OF 1940, AS AMENDED (THE "**INVESTMENT COMPANY ACT**") ("**QUALIFIED PURCHASERS**"), OR (2) NOT U.S. PERSONS NOR PERSONS ACQUIRING FOR THE ACCOUNT OR BENEFIT OR U.S. PERSONS PURCHASING THE SECURITIES OUTSIDE THE UNITED STATES IN ACCORDANCE WITH REGULATION S ("**REGULATION S**") UNDER THE U.S. SECURITIES ACT.

**IMPORTANT: You must read the following before continuing**. The following applies to the offering memorandum following this notice (the "**Offering Memorandum**"), and you are therefore advised to read this carefully before reading, accessing or making any other use of the Offering Memorandum. In accessing the Offering Memorandum, you agree to be bound by the following terms and conditions, including any modifications to them any time you receive any information from us as a result of such access.

The Offering Memorandum has been prepared in connection with the proposed offer and sale of the securities described therein (the "**securities**"). The Offering Memorandum and its contents are confidential and should not be distributed, published or reproduced (in whole or in part) or disclosed by recipients to any other person.

NOTHING IN THIS ELECTRONIC TRANSMISSION CONSTITUTES AN OFFER OF SECURITIES FOR SALE IN ANY JURISDICTION WHERE IT IS UNLAWFUL TO DO SO. THE SECURITIES HAVE NOT BEEN, AND WILL NOT BE, REGISTERED UNDER THE U.S. SECURITIES ACT OR THE SECURITIES LAWS OF ANY STATE OF THE UNITED STATES OR OTHER JURISDICTION, AND THE SECURITIES MAY NOT BE OFFERED OR SOLD WITHIN THE UNITED STATES EXCEPT PURSUANT TO AN EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE U.S. SECURITIES ACT AND APPLICABLE STATE OR LOCAL SECURITIES LAWS.

THE OFFERING MEMORANDUM MAY NOT BE FORWARDED OR DISTRIBUTED TO ANY OTHER PERSON AND MAY NOT BE REPRODUCED IN ANY MANNER WHATSOEVER. ANY FORWARDING, DISTRIBUTION OR REPRODUCTION OF THE OFFERING MEMORANDUM IN WHOLE OR IN PART IS UNAUTHORIZED. FAILURE TO COMPLY WITH THIS DIRECTIVE MAY RESULT IN A VIOLATION OF THE U.S. SECURITIES ACT OR THE APPLICABLE LAWS OF OTHER JURISDICTIONS. IF YOU HAVE GAINED ACCESS TO THIS TRANSMISSION CONTRARY TO ANY OF THE FOREGOING RESTRICTIONS, YOU ARE NOT AUTHORIZED AND WILL NOT BE ABLE TO PURCHASE ANY OF THE SECURITIES.

**Confirmation of your representation:** In order to be eligible to view the Offering Memorandum or make an investment decision with respect to the securities, investors must be either (a) QIBs that are also Qualified Purchasers or (b) not U.S. persons nor persons acquiring for the account or benefit of U.S. persons who are outside the United States that would invest in the securities in an offshore transaction in accordance with Regulation S; *provided that* investors resident in a member state of the European Economic Area ("**EEA**") or the United Kingdom (the "**UK**") are qualified investors (within the meaning of Article 2(e) of Regulation (EU) 2017/1129, as amended (the "**Prospectus Regulation**") and Article 2 of the UK Prospectus Regulation (as defined below)). The Offering Memorandum is being sent at your request. By accepting the email and accessing the Offering Memorandum, you shall be deemed to have represented to the Issuer (as defined in the Offering Memorandum), being the sender or senders of the Offering Memorandum, that:

(a) you consent to delivery of the Offering Memorandum by electronic transmission; and

(b) either:

  (i) you and any clients you represent are QIBs that are also Qualified Purchasers; or

  (ii) you are not a U.S. person or a person acquiring for the account or benefit of U.S. person and the email address that you gave us and to which the email has been delivered is not located in the United States, its territories and possessions (including Puerto Rico, the U.S. Virgin Islands, Guam, American Samoa, Wake Island and the Northern Mariana Islands), any state of the United States or the District of Columbia; and

(c) if you are a resident in a member state of the EEA or the UK, you are not a retail investor (as defined below).

Prospective purchasers of the securities that are QIBs that are also Qualified Purchasers are hereby notified that the seller of the securities will be relying on the exemption from the provisions of Section 5 of the U.S. Securities Act pursuant to Rule 144A and Section 3(c)(7) of the Investment Company Act.

You are reminded that the Offering Memorandum has been delivered to you on the basis that you are a person into whose possession the Offering Memorandum may be lawfully delivered in accordance with the laws of the jurisdiction in which you are located and you may not, nor are you authorized to, deliver the Offering Memorandum to any other person.

The materials relating to the offering of the securities do not constitute, and may not be used in connection with, an offer or solicitation in any place where offers or solicitations are not permitted by law. If a jurisdiction requires that the offering be made by a licensed broker or dealer and the Initial Purchasers (as defined in the Offering Memorandum) or any affiliates of the Initial Purchasers are a licensed broker or dealer in that jurisdiction, the offering shall be deemed to be made by the Initial Purchasers or such affiliates on behalf of the Issuer in such jurisdiction. Under no circumstances shall the Offering Memorandum constitute an offer to sell or the solicitation of an offer to buy nor shall there be any sale of these securities in any jurisdiction in which such offer, solicitation or sale would be unlawful.

The Offering Memorandum has been prepared on the basis that any offer of the securities referred to herein in any member state of the EEA will be made pursuant to an exemption under the Prospectus Regulation from the requirement to publish a prospectus for offers of the securities. Accordingly, any person making or intending to make an offer in a member state of the EEA of securities which are the subject of the offering contemplated in the Offering Memorandum may only do so in circumstances in which no obligation arises for the Issuer or any of the Initial Purchasers to publish a prospectus pursuant to Article 3 of the Prospectus Regulation, in each case, in relation to such offer. Neither the Issuer nor the Initial Purchasers have authorized, nor do they authorize, the making of any offer of securities in circumstances in which an obligation arises for the Issuer or the Initial Purchasers to publish a prospectus for such offer.

The Offering Memorandum has been prepared on the basis that any offer of the securities referred to herein in the UK will be made pursuant to an exemption under Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018 (as amended by the European Union (Withdrawal Agreement) Act 2020) (the "**EUWA**") (the "**UK Prospectus Regulation**") from a requirement to publish a prospectus for offers of the securities. This Offering Memorandum is not a prospectus for the purpose of the UK Prospectus Regulation.

The Offering Memorandum is for distribution only to persons (i) who have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended (the "**Financial Promotion Order**"), (ii) who fall within Article 49(2)(a) to (d) ("high net worth companies, unincorporated associations etc.") of the Financial Promotion Order, (iii) that are outside the United Kingdom, or (iv) to whom an invitation or inducement to engage in investment activity (within the meaning of section 21 of the Financial Services and Markets Act 2000, as amended) in connection with the issue or sale of any securities may otherwise lawfully be communicated or caused to be communicated (all such persons together being referred to as "relevant persons"). The Offering Memorandum is directed only at relevant persons and must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which the Offering Memorandum relates is available only to relevant persons and will be engaged in only with relevant persons.

**Prohibition of Sales to EEA Retail Investors**: The securities are not intended to be offered, sold, distributed or otherwise made available to and should not be offered, sold, distributed or otherwise made available to any retail investor in the EEA. For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, "**MiFID II**"); or (ii) a customer within the meaning of Directive (EU) 2016/97, as amended, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II. Consequently no key information document required by Regulation (EU) No 1286/2014 (as amended, the "**PRIIPs Regulation**") for offering, selling or distributing the securities or otherwise making them available to retail investors in the EEA has been prepared and therefore offering, selling or distributing the securities or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

**Prohibition of Sales to UK Retail Investors**: The securities are not intended to be offered, sold, distributed or otherwise made available to and should not be offered, sold, distributed or otherwise made available to any retail investor in the UK. For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client, as defined in point (8) of Article 2 of Regulation (EU) No 2017/565 as it forms part of domestic law by virtue of the EUWA; (ii) a customer within the meaning of the provisions of the Financial Services and Markets Act 2000 (the "**FSMA**") and any rules or regulations made under the FSMA to implement Directive (EU) 2016/97, where that customer would not qualify as a professional client, as defined in point (8) of Article 2(1) of Regulation (EU) No 600/2014 as it forms part of domestic law by virtue of the EUWA; or (iii) not a qualified investor as defined in Article 2 of Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the EUWA. Consequently, no key information document required by Regulation (EU) No 1286/2014 as it forms part of domestic law by virtue of the EUWA (the "**UK PRIIPs Regulation**") for offering or selling the securities or otherwise making them available to retail investors in the UK has been prepared and, therefore, offering or selling the securities or otherwise making them available to any retail investor in the UK may be unlawful under the UK PRIIPs Regulation.

**MiFID II product governance / Professional Investors and ECPs Only Target Market**: Solely for the purposes of the product approval process of the manufacturers, the target market assessment in respect of the securities has led to the conclusion that: (i) the target market for the securities is eligible counterparties and professional clients only, each as defined in MiFID II; and (ii) all channels for distribution of the Bonds to eligible counterparties and professional clients are appropriate. Any person subsequently offering, selling or recommending the securities (a "**distributor**") should take into consideration the manufacturers' target market assessment; however, a distributor subject to MiFID II is responsible for undertaking its own target market assessment in respect of the securities (by either adopting or refining the manufacturers' target market assessment) and determining appropriate distribution channels.

**UK MIFIR product governance / Professional investors and ECPs only target market**: Solely for the purposes of each manufacturer's product approval process, the target market assessment in respect of the securities has led to the conclusion that: (i) the target market for the securities is eligible counterparties, as defined in the FCA Handbook Conduct of Business Sourcebook ("**COBS**"), and professional clients, as defined in Regulation (EU) No 600/2014 as it forms part of domestic law by virtue of the EUWA ("**UK MiFIR**"); and (ii) all channels for distribution of the securities to eligible counterparties and professional clients are appropriate. Any person subsequently offering, selling or recommending the securities (a "**distributor**") should take into consideration the manufacturers' target market assessment; however, a distributor subject to the FCA Handbook Intervention and Product Governance Sourcebook (the "**UK MiFIR Product Governance Rules**") is responsible for undertaking its own target market assessment in respect of the securities (by either adopting or refining the manufacturers' target market assessment) and determining appropriate distribution channels.

The Offering Memorandum has been sent to you in an electronic form. You are reminded that documents transmitted via this medium may be altered or changed during the process of electronic transmission and consequently none of the Initial Purchasers, any person who controls an Initial Purchaser, the Issuer, ADNOC (as defined in the Offering Memorandum) nor any of its or their subsidiaries (except the Issuer), nor any director, officer, employee or agent of theirs, or affiliate of any such person, accepts any liability or responsibility whatsoever in respect of any difference between the Offering Memorandum distributed to you in electronic format and the hard copy version available to you on request from the Initial Purchasers. The information in the Offering Memorandum is not complete and may be changed.

**Singapore SFA product classification**: In connection with Section 309B of the Securities and Futures Act (Chapter 289) of Singapore (the "**SFA**") and the Securities and Futures (Capital Markets Products) Regulations 2018 of Singapore (the "**CMP Regulations 2018**") unless otherwise specified before an offer of securities, the Issuer has determined, and hereby notifies all relevant persons (as defined in Section 309A(1) of the SFA), that the securities are capital markets products other than prescribed capital markets products (as defined in the CMP Regulations 2018).

**NOT FOR GENERAL DISTRIBUTION
IN THE UNITED STATES**

# Galaxy Pipeline Assets Bidco Limited

## U.S.$ 1,750,000,000 2.16% Senior Secured Bonds due 2034 (the "Series D Bonds")

## U.S.$ 2,170,000,000 2.94% Senior Secured Bonds due 2040 (the "Series E Bonds")

***Series D Bonds Offering Price: 100% plus accrued interest, if any, from the date of issuance.***

***Series E Bonds Offering Price: 100% plus accrued interest, if any, from the date of issuance.***

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This is an offering by Galaxy Pipeline Assets Bidco Limited ("**we**," "**us**", "**our**" or the "**Issuer**") of U.S.$1,750,000,000 in aggregate principal amount of its 2.16% Senior Secured Bonds due 2034 (the "**Series D Bonds**") and U.S.$2,170,000,000 in aggregate principal amount of its 2.94% Senior Secured Bonds due 2040 (the "**Series E Bonds**" and together with the Series D Bonds, the "**Bonds**"). The Series D Bonds will bear interest from the date of issuance at a rate of 2.16% per annum, payable semi-annually in arrear on or around March 31 and September 30 of each year, beginning on March 31, 2021. Principal on the Series D Bonds will be payable in semi-annual installments, pursuant to an amortization schedule set forth herein, on March 31 and September 30 of each year, beginning on March 31, 2022. The Series D Bonds will mature on March 31, 2034. The Series E Bonds will bear interest from the date of issuance at a rate of 2.94% per annum, payable semi-annually in arrear on or around March 31 and September 30 of each year, beginning on March 31, 2021. Principal on the Series E Bonds will be payable in semi-annual installments, pursuant to an amortization schedule set forth herein, on March 31 and September 30 of each year, beginning on March 31, 2022. The Series E Bonds will mature on September 30, 2040.

The Bonds will constitute our direct, unsubordinated and unconditional obligations, and will be secured in the manner described herein, and will, save for such exceptions as may be provided by applicable legislation, the Conditions (as defined herein) or the Transaction Documents (as defined herein), at all times rank *pari passu* and without any preference among themselves and with all of our outstanding unsubordinated obligations, present and future. The Bonds will not be guaranteed by AssetCo (as defined herein), ADNOC (as defined herein) or by any other person.

The Debt Service Reserve Facility (as defined herein) is secured by first-priority security interests over the Transaction Security (as defined herein). Under the terms of the Security Trust and Intercreditor Deed (as defined herein), in the event of enforcement of the security interests, holders of Bonds will receive proceeds from the Transaction Security (as defined herein) only after the Debt Service Reserve Facility has been repaid in full. See ''*Risk Factors—Risks Relating to the Bonds—The Bondholders will be secured only to the extent of the value of the collateral that has been granted as security for the Bonds, and such collateral may not be sufficient to satisfy our obligations under the Bonds.*"

We may redeem all or part of the Bonds at any time at a redemption price equal to the greater of: (a) 100% of the principal amount of the Bonds being redeemed plus accrued interest up to but excluding the date of redemption; and (b) an amount equal to the sum of the net present values of the then remaining scheduled payments of principal and interest on the Bonds to be redeemed, discounted to such redemption date at a discount rate, as more fully described in "*Terms and Conditions of the Bonds*". We are required to redeem the Bonds upon the occurrence of certain events as more fully described herein.

***Investing in the Bonds involves certain risks. See "Risk Factors" beginning on page 29 for a discussion of certain risks you should consider in connection with an investment in the Bonds.***

**The Bonds have not been, and will not be, registered under the U.S. Securities Act of 1933, as amended (the "Securities Act"), or any U.S. state securities laws. The Initial Purchasers (as defined below) are offering the Bonds only to persons who are (A) (x) qualified institutional buyers ("QIBs") in reliance on Rule 144A under the Securities Act ("Rule 144A") and also (y) Qualified Purchasers, as defined in Section 2(a)(51)(A) of the U.S. Investment Company Act of 1940, as amended (the "Investment Company Act"), and the rules and regulations thereunder, and (B) to investors that are not U.S. Persons nor persons acquiring for the account or benefit of U.S. persons outside the United States in accordance with Regulation S under the Securities Act ("Regulation S"). For a description of eligible offerees and restrictions on transfers of the Bonds, see "*Transfer Restrictions*."**

The Bonds will be in registered form and will be issued in minimum denominations of U.S.$200,000 and integral multiples of U.S.$1,000 in excess thereof.

Application has been made to the Irish Stock Exchange plc, trading as Euronext Dublin ("**Euronext Dublin**") for the Bonds to be admitted to the Official List of Euronext Dublin (the "**Official List**") and to trading on the Global Exchange Market of Euronext Dublin (the "**Global Exchange Market**"), which is the exchange regulated market of Euronext Dublin. The Global Exchange Market is not a regulated market for purposes of the Markets in Financial Instruments Directive 2014/65/EU, as amended ("**MiFID II**").

The Bonds will be issued on February 18, 2021. The Bonds offered and sold in reliance on Rule 144A (the "**Rule 144A Bonds**") will be initially represented by one or more restricted global certificates, in registered form without interest coupons attached, which will be deposited with a custodian for, and registered in the name of Cede & Co. as nominee for The Depository Trust Company ("**DTC**"). The Bonds offered and sold in reliance on Regulation S to non-U.S. persons (the "**Regulation S Bonds**") will be initially represented by an unrestricted global certificate, in registered form without interest coupons attached, which will be registered in the name of a nominee for the common depositary for Euroclear Bank SA/NV ("**Euroclear**") and Clearstream Banking S.A. ("**Clearstream, Luxembourg**").

**You should rely only on the information contained in this offering memorandum (this "Offering Memorandum"). We have not, and the Initial Purchasers have not, authorized anyone to provide you with information that is different from the information contained herein. We are not, and the Initial Purchasers are not, making an offer of the Bonds in any jurisdiction where such offer is not permitted. You should not assume that the information contained in this Offering Memorandum is accurate as of any date other than the date on the front of this Offering Memorandum.**

*Global Coordinators and Joint Bookrunners*

**CITIGROUP** **HSBC** **Mizuho Securities**

*Joint Bookrunners*

**First Abu Dhabi Bank** **Santander**

**SMBC Nikko** **Société Générale Corporate & Investment Banking**

*Joint Lead Managers*

**Abu Dhabi Commercial Bank** **BNP Paribas** **Crédit Agricole CIB**

**Emirates NBD Capital** **MUFG** **Natixis**

**Samba Financial Group** **Standard Chartered Bank**

*Co-Lead Managers*

**CaixaBank** **DBS Bank Ltd.**

The date of this Offering Memorandum is February 16, 2021

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## NOTICE TO INVESTORS

This offering memorandum (the "**Offering Memorandum**") constitutes the listing particulars in respect of the admission of the Bonds to the Official List and to trading on the Global Exchange Market, which have been approved by Euronext Dublin. This Offering Memorandum may be used only for the purposes for which it has been published. You should rely only upon the information contained in this Offering Memorandum. We have not, and Citigroup Global Markets Limited of Citigroup Centre, Canada Square, Canary Wharf, London E14 5LB; HSBC Bank plc of 8 Canada Square, London E14 5HQ, United Kingdom; Mizuho International plc of Mizuho House, 30 Old Bailey, London EC4M 7AU, United Kingdom; First Abu Dhabi Bank PJSC of FAB Building, Khalifa Business Park – Al Qurm District, P.O. Box 6316, Abu Dhabi, United Arab Emirates; Santander Investment Securities Inc. of 45 E 53rd Street, 5th Floor, New York, NY 10022; SMBC Nikko Capital Markets Limited of One New Change, London, EC4M 9AF, United Kingdom; Société Générale of 29, boulevard Haussmann, 75009 Paris, France; Abu Dhabi Commercial Bank PJSC of PO Box 939, Abu Dhabi, United Arab Emirates; BNP Paribas of 16, boulevard des Italiens, 75009 Paris, France; Crédit Agricole Corporate and Investment Bank of 12, place des Etats-Unis, CS 70052, 92547 Montrouge Cedex, France; Emirates NBD Bank PJSC of PO Box 777, Dubai, United Arab Emirates; MUFG Securities EMEA plc of Ropemaker Place, 25 Ropemaker Street, London EC2Y 9AJ, United Kingdom; Natixis Securities Americas LLC of 1251 Avenue of the Americas, 4th Floor, New York, NY, USA 10020; Samba Financial Group of Umm Suqeim 2, Jumeriah Beach Road, P.O.Box 6038, Dubai, United Arab Emirates; Standard Chartered Bank of 7th Floor Building One, Gate Precinct, Dubai International Financial Centre, P.O. Box 999, Dubai, United Arab Emirates; CaixaBank S.A. of Calle Pintor Sorolla 2-4, Valencia 46002, Spain; and DBS Bank Ltd. of 12 Marina Boulevard, Level 42, DBS Asia Central, Marina Bay Financial Centre Tower 3, Singapore 018982 (together, the "**Initial Purchasers**") have not, authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. We are not, and the Initial Purchasers are not, making an offer to sell the Bonds in any jurisdiction where such offer or sale is not permitted. You should assume the information appearing in this Offering Memorandum is accurate only as of the date on the front cover of this Offering Memorandum (unless stated to be accurate as of an earlier date). Our business, results of operations, financial condition and prospects may have changed since that date. Neither the delivery of this Offering Memorandum nor any sale made hereunder shall under any circumstances imply that there has been no change in our affairs or those of our affiliates or that the information set forth in this Offering Memorandum is correct as of any date subsequent to the date of this Offering Memorandum.

We are relying on an exemption from registration under the Securities Act for offers and sales of securities that do not involve a public offering. By purchasing the Bonds, you will be deemed to have made the acknowledgements, representations, warranties and agreements set forth in "*Transfer Restrictions*." You should understand that you will be required to bear the financial risks of your investment for an indefinite period of time. The Initial Purchasers are relying on exemptions from the provisions of Section 5 of the Securities Act provided by Rule 144A and Regulation S and Section 3(c)(7) of the Investment Company Act in connection with the initial resale of the Bonds. The Bonds are subject to restrictions on transferability and resale and may not be transferred or resold in the United States except as permitted under applicable U.S. federal and state securities laws pursuant to a registration statement or an exemption from registration.

This Offering Memorandum has been prepared by us solely for use in connection with the offering of the Bonds. We accept responsibility for the information contained in this Offering Memorandum. To the best of our knowledge, having taken all reasonable care to ensure that such is the case, the information contained in this Offering Memorandum is to the best of our knowledge in accordance with the facts and contains no omission likely to affect its import.

To the fullest extent permitted by law, none of the Initial Purchasers or ADNOC Gas Pipeline Assets LLC ("**AssetCo**") accepts any responsibility for the contents of this Offering Memorandum or for any other statement made or purported to be made by any Initial Purchaser or AssetCo or on its behalf in connection with Galaxy Pipeline Assets Bidco Limited (the "**Issuer**") or the issue and offering of the Bonds. Each of the Initial Purchasers and AssetCo accordingly disclaims all and any liability, whether arising in tort or contract or otherwise (save as referred to above), which it might otherwise have in respect of this Offering Memorandum or any such statement.

The Bonds have not been and will not be registered under the Securities Act and may not be offered or sold in the United States or to, for the account or benefit of, U.S. Persons, as defined in Regulation S under the Securities Act, except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act and the Investment Company Act. The Bonds are not transferable except in accordance with the restrictions described herein. See "*Plan of Distribution*" and "*Transfer Restrictions*."

Neither this Offering Memorandum nor any other information supplied in connection with the offering of the Bonds is intended to provide the basis of any credit or other evaluation or should be considered as a recommendation by us or the Initial Purchasers that any recipient of this Offering Memorandum or any other information supplied in connection with the offering of the Bonds should purchase any Bonds. None of the Initial Purchasers accepts any liability in relation to the information contained in this Offering Memorandum or any other information provided by us in connection with the offering of the Bonds.

In making an investment decision regarding the Bonds offered by this Offering Memorandum, you must rely on your own examination of us and the terms of the offering, including, without limitation, the merits and risks involved. The offering is being made on the basis of this Offering Memorandum. Any decision to purchase the Bonds in the offering must be based only on the information contained in this Offering Memorandum. We have not, and the Initial Purchasers have not, authorized any other person to provide you with different information. If anyone provides you with different or inconsistent information, you should not rely on it. You should assume that the information appearing in this Offering Memorandum is accurate as of the date on the front cover of this Offering Memorandum only (unless stated to be accurate as of an earlier date). Our business, financial condition, results of operations and the information set forth in this Offering Memorandum may have changed since that date.

The Bonds may not be a suitable investment for all investors. Each potential investor in the Bonds must determine the suitability of that investment in light of their own circumstances. In particular, each potential investor should:

(a) have sufficient knowledge and experience to make a meaningful evaluation of the Bonds, the merits and risks of investing in the Bonds and the information contained or incorporated by reference in this Offering Memorandum;

(b) have access to, and knowledge of, appropriate analytical tools to evaluate, in the context of its particular financial situation, an investment in the Bonds and the impact the Bonds will have on its overall investment portfolio;

(c) have sufficient financial resources and liquidity to bear all of the risks of an investment in the Bonds, including where the currency for principal or interest payments is different from the potential investor's currency;

(d) understand thoroughly the terms of the Bonds and be familiar with the behavior of financial markets; and

(e) be able to evaluate (either alone or with the help of a financial adviser) possible scenarios for economic, interest rate and other factors that may affect its investment and its ability to bear the applicable risks.

The Bonds are complex financial instruments. Sophisticated institutional investors generally do not purchase complex financial instruments as stand-alone investments. They purchase complex financial instruments as a way to reduce risk or enhance yield with an understood, measured, appropriate addition of risk to their overall portfolios. Potential investors should not invest in the Bonds unless they have the expertise (either alone or with a financial adviser) to evaluate how the Bonds will perform under changing conditions and the impact this investment will have on the potential investor's overall investment portfolio.

You are not to construe the contents of this Offering Memorandum as investment, legal or tax advice. You should consult your own counsel, accountant and other advisers as to legal, tax, business, financial and related aspects of a purchase of the Bonds. You are responsible for making your own examination of us and your own assessment of the merits and risks of investing in the Bonds. You must comply with all laws applicable in any jurisdiction in which you buy, offer or sell the Bonds or possess or distribute this Offering Memorandum, and you must obtain all applicable consents and approvals. We, AssetCo and the Initial Purchasers do not have any responsibility for compliance with any of the foregoing legal requirements. We are not, and the Initial Purchasers are not, making any representation to you regarding the legality of an investment in the Bonds by you under appropriate legal investment or similar laws.

This Offering Memorandum is personal to you and each prospective purchaser of the Bonds and does not constitute an offer to any other person or to the public generally to subscribe for or otherwise acquire the Bonds. Distribution of this Offering Memorandum to any person other than the prospective purchaser of the Bonds and any person retained to advise such prospective purchaser of the Bonds with respect to the purchase of the Bonds is unauthorized, and any disclosure of any of the contents of this Offering Memorandum, without our prior written consent, is prohibited. You and each prospective purchaser, by accepting delivery of this Offering Memorandum, agree to the foregoing and to make no photocopies of this Offering Memorandum or any documents referred to in this Offering Memorandum. You may not use any information herein for any purpose other than considering an investment in the Bonds.

The information contained in this Offering Memorandum has been furnished by us and other sources we believe to be reliable. No representation or warranty, express or implied, is made by the Initial Purchasers as to the accuracy or completeness of any of the information set forth in this Offering Memorandum, and nothing contained in this Offering Memorandum is or shall be relied upon as a promise or representation, whether as to the past or the future by the Initial Purchasers. This Offering Memorandum contains summaries, believed to be accurate, of some of the terms of specific documents, but reference is made to the actual documents for the complete information contained in those documents. See "*Available Information*." All summaries are qualified in their entirety by this reference.

We obtained the market data used in this Offering Memorandum from internal surveys, industry sources and currently available information. Although we believe that our sources are reliable, you should keep in mind that we have not independently verified information we have obtained from industry and governmental sources and that information from our internal surveys has not been verified by any independent sources.

The information set out in those sections of this Offering Memorandum describing clearing and settlement is subject to any change or reinterpretation of the rules, regulations and procedures of DTC, Euroclear and Clearstream, Luxembourg currently in effect. Investors wishing to use these clearing systems are advised to confirm the continued applicability of their rules, regulations and procedures. We will not have any responsibility or liability for any aspect of the records relating to, or payments made on account of, book-entry interests held through the facilities of any clearing system or for maintaining, supervising or reviewing any records relating to such book-entry interest.

No person is authorized in connection with any offering made by this Offering Memorandum to give any information or to make any representation not contained in this Offering Memorandum, and, if given or made, any other information or representation must not be relied upon as having been authorized by us or the Initial Purchasers. The information contained in this Offering Memorandum is as of the date hereof and is subject to change, completion or amendment without notice. Neither the delivery of this Offering Memorandum at any time nor any subsequent commitment to enter into any financing shall, under any circumstances, create any implication that there has been no change in the information set forth in this Offering Memorandum or in our affairs since the date of this Offering Memorandum.

Neither the delivery of this Offering Memorandum nor the offering, sale or delivery of any Bonds shall in any circumstances imply that the information contained herein concerning us is correct at any time subsequent to the date hereof or that any other information supplied in connection with the Bonds is correct as of any time subsequent to the date indicated in the document containing the same. The Initial Purchasers expressly do not undertake to review our financial condition or affairs during the term of the Bonds or to advise any investor in the Bonds of any information coming to their attention. By receiving this Offering Memorandum, you acknowledge that you have had an opportunity to request from us for review, and that you have received, all additional information you deem necessary to verify the accuracy and completeness of the information contained in this Offering Memorandum. You also acknowledge that you have not relied on the Initial Purchasers in connection with your investigation of the accuracy of this information or your decision whether to invest in the Bonds.

We reserve the right to withdraw the offering of the Bonds at any time, and the Initial Purchasers reserve the right to reject any commitment to subscribe for the Bonds in whole or in part and to allot to you less than the full amount of the Bonds subscribed for by you.

The Bonds are expected to be assigned ratings of "AA/stable" by Fitch and "Aa2/stable" by Moody's. As at the date of this Offering Memorandum, each of Fitch and Moody's is registered with the Financial Conduct Authority as a credit rating agency under the Credit Rating Agencies (Amendment etc.) (EU Exit) Regulations 2019. A rating is not a recommendation to buy, sell or hold the Bonds, does not address the likelihood or timing of repayment and may be subject to revision, suspension or withdrawal at any time by the assigning rating organizations. See "*Risk Factors - Risks relating to the Bonds*". The credit ratings of the Bonds may be suspended, downgraded or withdrawn, which could have an adverse effect on the value of an investment in the Bonds.

**In connection with the offering, HSBC Bank plc (or persons acting on its behalf) (the "Stabilizing Manager") may over-allot the Bonds or effect transactions with a view to supporting the market price of the Bonds at a level higher than that which might otherwise prevail. However, there is no assurance that the Stabilizing Manager will undertake stabilization action. Any stabilization action may begin on or after the date on which adequate public disclosure of the terms of the offering is made and, if begun, may be ended at any time, but it must end no later than 30 days after the date on which the Issuer received the proceeds of the issue, or no later than 60 days after the date of the allotment of the Bonds, whichever is earlier. Any stabilization action over-allotment will be conducted by the Stabilizing Manager in accordance with all applicable laws, regulations and rules.**

You should be aware that you may be required to bear the financial risks of this investment for an indefinite period of time. The Bonds are not transferable except in compliance with the restrictions described in "*Transfer Restrictions*."

**THE SECURITIES OFFERED HEREBY HAVE NOT BEEN RECOMMENDED BY ANY UNITED STATES FEDERAL OR STATE SECURITIES COMMISSION OR REGULATORY AUTHORITY INCLUDING THE U.S. SECURITIES AND EXCHANGE COMMISSION. FURTHERMORE, THE FOREGOING AUTHORITIES HAVE NOT CONFIRMED THE ACCURACY OR DETERMINED THE ADEQUACY OF THIS OFFERING MEMORANDUM. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.**

This Offering Memorandum does not constitute an offer to sell or the solicitation of an offer to buy any Bonds in any jurisdiction to any person to whom it is unlawful to make the offer or solicitation in such jurisdiction. The distribution of this Offering Memorandum and the offer or sale of the Bonds may be restricted by law in certain jurisdictions. We and the Initial Purchasers are not making any representation that this Offering Memorandum may be lawfully distributed, or that any Bonds may be lawfully offered, in compliance with any applicable registration or other requirements in any such jurisdiction, or pursuant to an exemption available thereunder, or assume any responsibility for facilitating any such distribution or offering. In particular, no action has been taken by us or the Initial Purchasers which is intended to permit a public offering of any Bonds or distribution of this Offering Memorandum in any jurisdiction where action for that purpose is required. Accordingly, no Bonds may be offered or sold, directly or indirectly, and neither this Offering Memorandum nor any advertisement or other offering material may be distributed or published in any jurisdiction, except under circumstances that will result in compliance with any applicable laws and regulations. Persons into whose possession this Offering Memorandum or any Bonds may come must inform themselves about, and observe, any such restrictions on the distribution of this Offering Memorandum and the offering and sale of Bonds. In particular, there are restrictions on the distribution of this Offering Memorandum and the offer or sale of Bonds in the Abu Dhabi Global Market, Canada, the Dubai International Financial Centre, the European Economic Area (the "**EEA**"), Hong Kong, Israel, Italy, Kingdom of Bahrain, Kingdom of Saudi Arabia, Kuwait, Malaysia, Singapore, South Korea, Switzerland, Taiwan, the United Arab Emirates (excluding the Dubai International Financial Centre and the Abu Dhabi Global Market), the United Kingdom and the United States. See "*Plan of Distribution—Selling Restrictions*."

Legal investment considerations may restrict certain investments. The investment activities of certain investors are subject to legal investment laws and regulations, or review or regulation by certain authorities. Each potential investor should consult its legal advisers to determine whether and to what extent: (a) the Bonds are legal investments for it; (b) the Bonds can be used as collateral for various types of borrowing; and (c) other restrictions apply to its purchase or pledge of any Bonds. Financial institutions should consult their legal advisers or the appropriate regulators to determine the appropriate treatment of the Bonds under any applicable risk-based capital or similar rules. We and the Initial Purchasers do not make any representation to any investor in the Bonds regarding the legality of its investment under any applicable laws. Any investor in the Bonds should be able to bear the economic risk of an investment in the Bonds for an indefinite period of time.

Each purchaser of a Bond will be deemed to have represented and agreed that the purchaser is acquiring the Bond for its own account or for one or more accounts as to each of which the purchaser exercises sole investment discretion and in a minimum denomination, in each case, for the purchaser and each such account. See "*Transfer Restrictions*."

## NOTICE TO U.S. INVESTORS

In making your purchase, you will be deemed to have made certain acknowledgments, representations and agreements that are described in this Offering Memorandum. See "*Transfer Restrictions*." This Offering

Memorandum is being provided to a limited number of investors in the United States that the Issuer reasonably believes to be QIBs under Rule 144A that are also Qualified Purchasers for use solely in connection with their consideration of the purchase of the Bonds. Its use for any other purpose in the United States is not authorized. It may not be copied or reproduced in whole or in part nor may it be distributed or any of its contents disclosed to anyone other than the prospective investors to whom it is originally submitted.

For this Offering, the Issuer and the Initial Purchasers are relying upon exemptions from registration under the Securities Act for offers and sales of securities which do not involve a public offering, including Rule 144A under the Securities Act. Prospective investors are hereby notified that sellers of the Bonds may be relying on the exemption from the provision of Section 5 of the Securities Act provided by Rule 144A and Section 3(c)(7) of the Investment Company Act. The Bonds are subject to restrictions on transferability and resale. Purchasers of the Bonds may not transfer or resell the Bonds except as permitted under the Securities Act and applicable U.S. state securities laws. The Bonds described in this Offering Memorandum have not been registered with, recommended by or approved by the SEC, any state securities commission in the United States or any other securities commission or regulatory authority, nor has the SEC, any state securities commission in the United States or any such securities commission or authority passed upon the accuracy or adequacy of this Offering Memorandum. Any representation to the contrary is a criminal offense. See "*Transfer Restrictions*."

**The Bonds may not be offered to the public in any jurisdiction. By accepting delivery of this Offering Memorandum, you agree not to offer, sell, resell, transfer or deliver, directly or indirectly, any Bonds to the public.**

## NOTICE TO CERTAIN EUROPEAN INVESTORS AND INVESTORS RESIDENT IN THE UNITED KINGDOM

### European Economic Area

This Offering Memorandum has been prepared on the basis that all offers of the Bonds in any member states of the European Economic Area (the "**EEA**") (each a "**Relevant State**") will be made pursuant to an exemption under the Prospectus Regulation from the requirement to produce a prospectus for offers of the Bonds. Accordingly, any person making or intending to make any offer within the EEA of the Bonds should only do so in circumstances in which no obligation arises for us or the Initial Purchasers to produce a prospectus for such offer. Neither we nor the Initial Purchasers have authorized, nor do authorize, the making of any offer of Bonds through any financial intermediary, other than offers made by the Initial Purchasers, which constitute the final placement of the Bonds contemplated in this Offering Memorandum. The expression "**Prospectus Regulation**" means Regulation (EU) 2017/1129.

**Prohibition of Offers to EEA Retail Investors:** The Bonds are not intended to be offered, sold or otherwise made available to and should not be offered, sold or otherwise made available to any retail investor in the EEA. For these purposes, a "retail investor" means a person who is one (or more) of: (i) a retail client as defined in point (11) of Article 4(1) of MiFID II; (ii) a customer within the meaning of Directive 2016/97/EU (as amended, the "**Insurance Distribution Directive**"), where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or (iii) not a "qualified investor" as defined in the Prospectus Regulation. Consequently no key information document required by Regulation (EU) No 1286/2014 (as amended, the "**PRIIPs Regulation**") for offering or selling the Bonds or otherwise making them available to retail investors in the EEA has been prepared and therefore offering or selling the Bonds or otherwise making them available to any retail investor in the EEA may be unlawful under the PRIIPs Regulation.

**Professional Investors and ECPs Only Target Market:** Professional investors and ECPs (as defined below) only target market: solely for the purposes of the product approval process of each manufacturer, the target market assessment in respect of the Bonds has led to the conclusion that: (i) the target market for the Bonds is eligible counterparties ("**ECPs**") and professional clients only, each as defined in MiFID II; and (ii) all channels for distribution of the Bonds to ECPs and professional clients are appropriate. Any person subsequently offering, selling or recommending the Bonds (as used in this paragraph, a "**distributor**") should take into consideration the manufacturers' target market assessment; however, and without prejudice to our obligations in accordance with MiFID II, a distributor subject to MiFID II is responsible for undertaking its own target market assessment in respect of the Bonds (by either adopting or refining the manufacturers' target market assessment) and determining appropriate distribution channels.

**Italy**

The offering of the Bonds has not been registered with the *Commissione Nazionale per le Società e la Borsa* ("**CONSOB**") pursuant to Italian securities legislation. Each Initial Purchaser has represented and agreed that any offer, sale or delivery of the Bonds or distribution of copies of this Offering Memorandum or any other document relating to the Bonds in the Republic of Italy will be effected in accordance with all Italian securities, tax and exchange control and other applicable laws and regulation.

Any such offer, sale or delivery of the Bonds or distribution of copies of this Offering Memorandum or any other document relating to the Bonds in the Republic of Italy must be:

(a) in the Republic of Italy in accordance with Legislative Decree No. 58 of 24 February 1998, CONSOB Regulation No. 20307 of 15 February 2018 and Legislative Decree No. 385 of 1 September 1993 (in each case as amended from time to time) and any other applicable laws and regulations; and

(b) in compliance with Article 129 of Legislative Decree No. 385 of 1 September 1993, as amended, pursuant to which the Bank of Italy may request information on the issue or the offer of securities in the Republic of Italy and the relevant implementing guidelines of the Bank of Italy issued on 25 August 2015 (as amended on 10 August 2016); and

(c) in compliance with any other applicable laws and regulations or requirement imposed by CONSOB or any other Italian authority.

**Switzerland**

The offering of the Bonds in Switzerland is exempt from the requirement to prepare and publish a prospectus under the Swiss Financial Services Act ("**FinSA**") because the Bonds have a minimum denomination of CHF 100,000 (or equivalent in another currency) or more and no application has been or will be made to admit the Bonds to trading on any trading venue (exchange or multilateral trading facility in Switzerland. This Offering Memorandum does not constitute a prospectus pursuant to the FinSA, and no such prospectus has been or will be prepared for or in connection with the offering of the Bonds.

**United Kingdom**

This Offering Memorandum is for distribution only to, and is only directed at, persons who (i) have professional experience in matters relating to investments falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended, (the "**Financial Promotion Order**"), (ii) are persons falling within Article 49(2)(a) to (d) ("high net worth companies, unincorporated associations, etc.") of the Financial Promotion Order, (iii) are outside the United Kingdom or (iv) are persons to whom an invitation or inducement to engage in investment activity (within the meaning of section 21 of the Financial Services and Markets Act 2000 (the "**FSMA**")) in connection with the issue or sale of any Bonds may otherwise lawfully be communicated or cause to be communicated (all such persons together being referred to as "**relevant persons**"). This Offering Memorandum is directed only at relevant persons and must not be acted on or relied on by persons who are not relevant persons. Any investment or investment activity to which this document relates is available only to relevant persons and will be engaged in only with relevant persons. The Bonds are not being offered to the public in the United Kingdom.

**Prohibition of Sales to UK Retail Investors**: The Bonds are not intended to be offered, sold, distributed or otherwise made available to and should not be offered, sold, distributed or otherwise made available to any retail investor in the UK. For these purposes, a retail investor means a person who is one (or more) of: (i) a retail client, as defined in point (8) of Article 2 of Regulation (EU) No 2017/565 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018 (as amended by the European Union (Withdrawal Agreement) Act 2020) (the "**EUWA**"); (ii) a customer within the meaning of the provisions of the FSMA and any rules or regulations made under the FSMA to implement Directive (EU) 2016/97, where that customer would not qualify as a professional client, as defined in point (8) of Article 2(1) of Regulation (EU) No 600/2014 as it forms part of domestic law by virtue of the EUWA; or (iii) not a qualified investor as defined in Article 2 of Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the EUWA. Consequently, no key information document required by Regulation (EU) No 1286/2014 as it forms part of domestic law by virtue of the EUWA (the "**UK PRIIPs Regulation**") for offering or selling the Bonds or otherwise making them available to retail investors in the UK has been prepared and, therefore, offering or selling the securities or otherwise making them available to any retail investor in the UK may be unlawful under the UK PRIIPs Regulation.

**UK MIFIR product governance / Professional investors and ECPs only target market**: Solely for the purposes of each manufacturer's product approval process, the target market assessment in respect of the Bonds has led to the conclusion that: (i) the target market for the securities is eligible counterparties, as defined in the FCA Handbook Conduct of Business Sourcebook ("**COBS**"), and professional clients, as defined in Regulation (EU) No 600/2014 as it forms part of domestic law by virtue of the EUWA ("**UK MiFIR**"); and (ii) all channels for distribution of the securities to eligible counterparties and professional clients are appropriate. Any person subsequently offering, selling or recommending the Bonds (as used in this paragraph, a "**distributor**") should take into consideration the manufacturers' target market assessment; however, a distributor subject to the FCA Handbook Intervention and Product Governance Sourcebook (the "**UK MiFIR Product Governance Rules**") is responsible for undertaking its own target market assessment in respect of the securities (by either adopting or refining the manufacturers' target market assessment) and determining appropriate distribution channels.

This Offering Memorandum has been prepared on the basis that any offer of the Bonds in the UK will be made pursuant to an exemption under Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the EUWA (the "**UK Prospectus Regulation**") from a requirement to publish a prospectus for offers of the securities. This Offering Memorandum is not a prospectus for the purpose of the UK Prospectus Regulation.

**NOTICE TO THE RESIDENTS OF THE KINGDOM OF BAHRAIN**

In relation to investors in the Kingdom of Bahrain, Bonds issued in connection with this Offering Memorandum and related offering documents may only be offered in registered form to existing accountholders and accredited investors as defined by the Central Bank of Bahrain (the "**CBB**") in the Kingdom of Bahrain where such investors make a minimum investment of at least U.S.$100,000 or any equivalent amount in another currency or such other amount as the CBB may determine.

This Offering Memorandum does not constitute an offer of securities in the Kingdom of Bahrain in terms of Article (81) of the Central Bank and Financial Institutions Law 2006 (decree Law No. 64 of 2006). This Offering Memorandum and related offering documents have not been and will not be registered as a prospectus with the CBB. Accordingly, no securities may be offered, sold or made the subject of an invitation for subscription or purchase nor will this Offering Memorandum or any other related document or material be used in connection with any offer, sale or invitation to subscribe or purchase securities, whether directly or indirectly, to persons in the Kingdom of Bahrain, other than to accredited investors for an offer outside the Kingdom of Bahrain.

The CBB has not reviewed, approved or registered this Offering Memorandum or related offering documents and it has not in any way considered the merits of the Bonds to be offered for investment, whether in or outside the Kingdom of Bahrain. Therefore the CBB assumes no responsibility for the accuracy and completeness of the statements and information contained in this Offering Memorandum and expressly disclaims any liability whatsoever for any loss howsoever arising from reliance upon the whole or any part of the contents of this Offering Memorandum. No offer of the Bonds will be made to the public in the Kingdom of Bahrain and this Offering Memorandum must be read by the addressee only and must not be issued, passed to, or made available to the public generally.

**NOTICE TO PROSPECTIVE INVESTORS IN THE KINGDOM OF SAUDI ARABIA**

This Offering Memorandum may not be distributed in the Kingdom of Saudi Arabia except to such persons as are permitted under the Rules on the Offer of Securities and Continuing Obligations issued by the Capital Market Authority of the Kingdom of Saudi Arabia (the "**Capital Market Authority**"). The Capital Market Authority does not make any representation as to the accuracy or completeness of this Offering Memorandum, and expressly disclaims any liability whatsoever for any loss arising from, or incurred in reliance upon, any part of this Offering Memorandum. Prospective purchasers of the Bonds offered hereby should conduct their own due diligence on the accuracy of the information relating to the Bonds. If you do not understand the contents of this Offering Memorandum you should consult an authorized financial adviser.

**NOTICE TO RESIDENTS OF THE DUBAI INTERNATIONAL FINANCIAL CENTRE**

This Offering Memorandum relates to an "Exempt Offer" in the Dubai International Financial Centre in accordance with the Market Rules of the Dubai Financial Services Authority (the "**DFSA**"). It is intended for distribution only to persons of a type specified in those rules. It must not be delivered to, or relied on by, any other person. The DFSA has not approved this Offering Memorandum nor taken steps to verify the information set out in it, and has no responsibility for it. The Bonds may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the Bonds should conduct their own due diligence on the Bonds. If you do not understand the contents of this Offering Memorandum, you should consult an authorized financial advisor.

**NOTICE TO RESIDENTS OF THE ABU DHABI GLOBAL MARKET**

This Offering Memorandum relates to an Exempt Offer in the Abu Dhabi Global Market in accordance with the Market Rules of the Financial Services Regulatory Authority (the "**FSRA**"). It is intended for distribution only to persons of a type specified in those rules. It must not be delivered to, or relied on by, any other person. The FSRA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The FSRA has not approved this Offering Memorandum nor taken steps to verify the information set out in it, and has no responsibility for it. The Bonds may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the Bonds should conduct their own due diligence on the Bonds. If you do not understand the contents of this Offering Memorandum, you should consult an authorized financial advisor.

**NOTICE TO RESIDENTS OF THE UNITED ARAB EMIRATES (EXCLUDING THE DUBAI INTERNATIONAL FINANCIAL CENTRE AND THE ABU DHABI GLOBAL MARKET)**

The Bonds have not been and will not be offered, sold or publicly promoted or advertised in the United Arab Emirates (excluding the Dubai International Financial Centre and the Abu Dhabi Global Market) other than in compliance with any laws applicable in the United Arab Emirates governing the issue, offering and sale of securities. This Offering Memorandum has not been reviewed, disapproved or approved by or registered with the Central Bank of the United Arab Emirates or the Securities and Commodities Authority (the "**SCA**") or any other relevant United Arab Emirates governmental body or securities exchange, nor has the Issuer or any of the Initial Purchasers received authorization or licensing from the SCA or any other governmental authority in the United Arab Emirates to market or sell the Bonds within the United Arab Emirates.

**NOTICE TO PROSPECTIVE INVESTORS IN SINGAPORE**

In connection with Section 309B of the Securities and Futures Act (Chapter 289) of Singapore and the Securities and Futures (Capital Markets Products) Regulations 2018 (the "**CMP Regulations 2018**"), the Issuer has determined the classification of the Bonds capital markets products other than prescribed capital markets products (as defined in the CMP Regulations 2018).

**JERSEY REQUIREMENTS**

The Jersey Financial Services Commission (the "**JFSC**") has given, and has not withdrawn, its consent under Article 4 of the Control of Borrowing (Jersey) Order 1958 to the issue of the Bonds.

A copy of this Offering Memorandum has been delivered to the Jersey Registrar of Companies (the "**Jersey Registrar**") in accordance with Article 5 of the Companies (General Provisions) (Jersey) Order 2002 and the Jersey Registrar has given, and has not withdrawn, his consent to its circulation.

It must be directly understood that, in giving these consents, neither the Jersey Registrar nor the JFSC takes any responsibility for the financial soundness of the Issuer or for the correctness of any statements made, or opinions expressed, with regard to it.

The JFSC is protected by the Control of Borrowing (Jersey) Law 1947, as amended, against liability arising from the discharge of its functions under that law.

The directors of the Issuer have taken all reasonable care to ensure that the facts stated in this document are true and accurate in all material respects, and that there are no other facts the omission of which would make misleading any statement in the document, whether facts or of opinion. The directors accept responsibility accordingly.

If you are in any doubt about the contents of this Offering Memorandum, you should consult your stockbroker, bank manager, solicitor, accountant or financial adviser.

The price of securities and the income from them can go down as well as up. Nothing in this Offering Memorandum or anything communicated to holders or potential holders of any Bonds (or interests in them) by or on behalf of the Issuer is intended to constitute or should be construed as advice on the merits of the purchase of or subscription for any Bonds (or interests in them) for the purposes of the Financial Services (Jersey) Law 1998, as amended.

It should be remembered that the price of securities and the income from them can go down as well as up and that holders of any Bonds (or interests in them) may not receive, on sale of such Bonds, the amount that they invested.

Prospective purchasers of the Bonds are strongly recommended to read and consider this Offering Memorandum before completing an application.

## PRESENTATION OF FINANCIAL AND OTHER INFORMATION

This Offering Memorandum includes the financial statements prepared for the Issuer and ADNOC Gas Pipeline Assets LLC ("**AssetCo**") in which the Issuer holds 47.7% of the issued share capital.

In particular, this Offering Memorandum includes:

(a) the audited financial statements of the Issuer (i) for the period from May 26, 2020 to July 31, 2020 and (ii) for the period from August 1, 2020 to December 31, 2020, both of which were prepared and presented in accordance with the International Financial Reporting Standards ("**IFRS**") as issued by the International Accounting Standards Board ("**IASB**"), and have been audited by Ernst & Young, Chartered Accountants, Ireland as stated in their reports (in the case of (i), incorporated by reference in this Offering Memorandum and filed with Euronext Dublin and, in the case of (ii), included elsewhere in this Offering Memorandum) (the "**Issuer Financial Statements**"); and

(b) the audited financial statements of AssetCo for the period from May 4, 2020 to December 31, 2020, which were prepared and presented in accordance with IFRS as issued by the IASB, and have been audited by Deloitte & Touche (M.E.) as stated in their report included elsewhere in this Offering Memorandum (the "**AssetCo Financial Statements**").

With respect to the Issuer Financial Statements, two sets of statements were prepared, the first covering the period from May 26, 2020 (i.e. the date of incorporation of the Issuer) to July 31, 2020 and the second covering the period from August 1, 2020 to December 31, 2020. The first set of financial statements were prepared to comply with the listing requirements of the Global Exchange Market of Euronext Dublin in connection with the issue of the Original Bonds. Going forward, the Issuer will report on an annual basis in respect of each financial year ending December 31. Due to the difference in the 2020 accounting periods, the amounts presented are not comparable.

Unless otherwise indicated, the financial information included in this Offering Memorandum was derived from the Issuer Financial Statements and the AssetCo Financial Statements and set forth herein. Each of the Issuer and AssetCo has had limited corporate activity since its formation, including, in the case of the Issuer, the acquisition of 47.7% of the issued share capital of AssetCo, the initial bank financing of such acquisition and the interest rate hedging related thereto, and the issuance of the Original Bonds (as defined herein), and, in the case of AssetCo, the entry into the Pipelines Lease Agreement, the U&O Agreement and the General Services Agreement (the "**Project Documents**").

This Offering Memorandum also sets out on a pro forma basis the tariff that would have been payable to AssetCo based on mmbtu throughput in respect of the Pipelines for each of the fiscal years 2018, 2019 and 2020, as if the Project Documents had been in effect throughout those periods (the "**Pro Forma AssetCo Tariff Sales**"). The Pro Forma AssetCo Tariff Sales have not been audited or reviewed and are presented for illustrative purposes only, and by their nature only present a hypothetical situation, do not constitute a forecast of the financial condition or performance of AssetCo, and may not be an accurate indication of AssetCo's financial position or results of operations for any period. This data has been prepared solely for the purpose of this Offering Memorandum, is not prepared in the ordinary course of Abu Dhabi National Oil Company's, AssetCo's or our financial reporting, has not been audited and is not representative of the Pipelines', AssetCo's or our results of operations for the periods presented or for any future period. Accordingly, investors should not place undue reliance on the Pro Forma AssetCo Tariff Sales. See "*Risk Factors – Risks Relating to Our Investment in AssetCo, AssetCo's Business, ADNOC and the Government of Abu Dhabi – AssetCo is a special purpose vehicle with limited corporate and operating history, and the AssetCo Financial Statements, the Pro Forma AssetCo Tariff Sales and the Issuer Financial Statements are not indicative of future cashflows or results of operations*".

Each of the Issuer Financial Statements, the AssetCo Financial Statements and the Pro Forma AssetCo Tariff Sales have been published in U.S. dollars rounded to the nearest thousand (unless otherwise stated).

Some financial information and dates in this Offering Memorandum has been rounded and, as a result, the totals of the data presented in this Offering Memorandum may vary slightly from the actual arithmetic totals of such information.

The Lease (as defined herein) should not be construed as a lease as defined under IFRS which states "*A contract is, or contains, a <u>lease</u> if it conveys the right to control the use of an identified asset for a period of time in exchange for consideration*". [IFRS 16:9]

## INFORMATION REGARDING THE UNITED ARAB EMIRATES AND ABU DHABI AND THE MARKET AND INDUSTRY IN WHICH ASSETCO OPERATES

Statistical data and other information presented herein related to the United Arab Emirates and Abu Dhabi, in particular information presented in "*Industry*," "*Regulation*" and "*Overview of the United Arab Emirates and Abu Dhabi*" are based on data and information made publicly available by government agencies of the United Arab Emirates and Abu Dhabi, including the Federal Competitiveness and Statistics Authority (the "**FCSA**") and the Statistics Centre – Abu Dhabi (the "**SCAD**"). We believe that the information referred to above has been accurately reproduced and, as far as we are aware and able to ascertain from this information, no facts have been omitted which would render the information provided inaccurate or misleading. However, neither we, AssetCo, ADNOC, any of their respective affiliates nor any Initial Purchaser can guarantee the accuracy or completeness of the information and none of us or them has independently verified it.

Some of the market and competitive position data appearing in "*Industry*," "*Business*" and "*Overview of the United Arab Emirates and Abu Dhabi*" has been obtained from:

(a) information provided by the Organization of the Petroleum Exporting Countries ("**OPEC**");

(b) publications of the Government of the United Arab Emirates and the Government of Abu Dhabi and their ministries and departments, including the FCSA, the SCAD and the Telecommunications Regulatory Authority;

(c) company information provided by AssetCo;

(d) information published by the International Monetary Fund ("**IMF**");

(e) information published by the International Energy Agency ("**IEA**");

(f) the Independent Technical Due Diligence Report (as defined herein);

(g) the Wood Mackenzie Industry Report (as defined herein); and

(h) third-party industry expert reports.

For certain statistical information, similar statistics may be obtainable from other sources and the underlying assumptions and methodology, and consequently the resulting data, may vary from source to source.

Prospective purchasers of the Bonds should review the description of the economy of the United Arab Emirates set forth in this Offering Memorandum in light of the following observations. Statistics contained in this Offering Memorandum, including those in relation to nominal gross domestic product ("**GDP**"), revenues and expenditures of the United Arab Emirates and indebtedness of the United Arab Emirates have been obtained from a number of different identified sources. Similar statistics may be obtainable from other sources and the underlying assumptions, methodology and consequently the resulting data may vary from source to source. There may also be material variances between preliminary or estimated data set forth in this Offering Memorandum and actual results, and between the data set forth in this Offering Memorandum and corresponding data previously published by or on behalf of the United Arab Emirates. The data regarding Abu Dhabi's nominal GDP for 2019 is preliminary and subject to change and certain other historical GDP data set out in that section may also be subject to future adjustment. Consequently, the statistical data contained in this Offering Memorandum should be treated with caution by prospective purchasers of the Bonds.

## PRESENTATION OF KEY OPERATING DATA

For the purposes of this Offering Memorandum:

"**bcf/d**" means billion cubic feet of gas production per day.

"**bcm**" means billion cubic meters.

"**ktpa**" means kilo tonnes per annum.

"**mmbtu**" means one million British thermal units.

"**SCF**" means standard cubic feet.

"**Tcf**" means trillion cubic feet of gas.

"**tpd**" means tonnes per day.

## DISCLOSURE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements in this Offering Memorandum are not historical facts and are "forward-looking" within the meaning of Section 27A of the Securities Act and Section 21E of the U.S. Exchange Act of 1934, as amended. These statements include, but are not limited to, statements related to our expectations regarding the performance of our business, our financial results, our liquidity and capital resources, the impact of COVID-19 and other non-historical statements.

These forward-looking statements can be identified by the use of forward-looking terminology, including the terms "believes," "estimates," "anticipates," "expects," "intends," "may," "will" or "should" or, in each case, their negative, or other variations or comparable terminology. These forward-looking statements include all matters that are not historical facts. They appear in a number of places throughout this Offering Memorandum and include statements regarding our intentions, beliefs or current expectations concerning, among other things, our results of operations, financial condition, cashflows, liquidity, financial projections, prospects, growth, strategies and the industry in which we operate.

By their nature, forward-looking statements involve risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. We caution each prospective purchaser of the Bonds that forward-looking statements are not guarantees of future performance and that our actual financial condition, results of operations and cashflows and the development of the industry in which we operate may differ materially from those made in or suggested by the forward-looking statements contained in this Offering Memorandum. In addition, even if our financial condition, results of operations and cashflows and the development of the industry in which we operate are consistent with the forward-looking statements contained in this Offering Memorandum, those results or developments may not be indicative of results or developments in subsequent periods. Important factors that could cause those differences include, but are not limited to:

(a) the coronavirus ("**COVID-19**") pandemic could potentially have a material adverse impact on the business, liquidity, financial condition, and results of operations of AssetCo which in turn could potentially have a material adverse impact on AssetCo's ability to make timely dividend distributions to us of our proportionate share of free cash in respect of our 47.7% shareholding which could have a material adverse effect on our ability to make payments on our debt (including the Bonds);

(b) AssetCo's dependence on a single source of revenue and user of the pipeline capacity;

(c) our limited corporate history and AssetCo's limited corporate history;

(d) our limited remedies in case of a default by Abu Dhabi National Oil Company ("**ADNOC**") under the U&O Agreement;

(e) the potential conflicts of interest among ADNOC and its affiliates;

(f) our reliance on services of third parties;

(g) our dependence on ADNOC for procuring insurance and access to adequate insurance to cover all potential losses;

(h) potential environmental liability of AssetCo and capital costs of compliance with applicable laws and regulations;

(i) the accuracy of our projections and their underlying assumptions including our Financial Model;

(j) changes in technology;

(k) operational and maintenance and other risks that impact our business;

(l) diverse political, legal, economic and other conditions in the United Arab Emirates and the Middle East;

(m) existing or future regulations and standards in the market in which we operate;

(n) availability of skilled personnel and ADNOC's ability to retain key employees;

(o) limitations on our operations under the Bond Trust Deed;

(p) lack of recourse to ADNOC and AssetCo for repayment of our debt;

(q) limitations of collateral to satisfy our obligations under the Bonds;

(r) sabotage or terrorism events or armed conflict or war;

(s) material third party claims and potential litigation;

(t) compliance with government regulation and licenses;

(u) our liquidity, capital resources, working capital, cashflows and capital commitments;

(v) unplanned events or accidents affecting AssetCo's operations (including but not limited to engineering complications, equipment failures and natural disasters);

(w) changes to tax laws;

(x) exchange rate risks;

(y) our dependence on the Government of Abu Dhabi;

(z) our ability to meet our significant debt service obligations;

(aa) our ability, Abu Dhabi's and ADNOC's ability to maintain respective credit ratings;

(bb) we are a special purpose vehicle with limited corporate, financial and operating history and limited management resources;

(cc) judicial uncertainty with respect to certain aspects of United Arab Emirates law; and

(dd) other factors discussed in "*Risk Factors*."

This list is not exhaustive and we urge each prospective purchaser of the Bonds to read this Offering Memorandum, including "*Risk Factors*," "*Operating and Financial Review*," "*Industry*," "*Business*" and "*Regulation*" for a more complete discussion of the factors that could affect our future performance and the industry in which we operate. There are other factors that may cause our actual results to differ materially from the forward-looking statements contained in this Offering Memorandum. Moreover, new risk factors emerge from time to time and it is not possible for us to predict all such risk factors. We cannot assess the impact of all risk factors on our business or that of AssetCo or ADNOC or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

Any forward-looking statement herein speaks only as of the date on which it is made, and is based on plans, estimates and projections as they are currently available to us. Except as required by law, we undertake no obligation to publicly update or publicly revise any forward-looking statement, whether as a result of new information, future events or otherwise. All subsequent written and oral forward-looking statements attributable to us or to persons acting on our behalf are expressly qualified in their entirety by the cautionary statements referred to above and contained elsewhere in this Offering Memorandum.

## SUMMARY

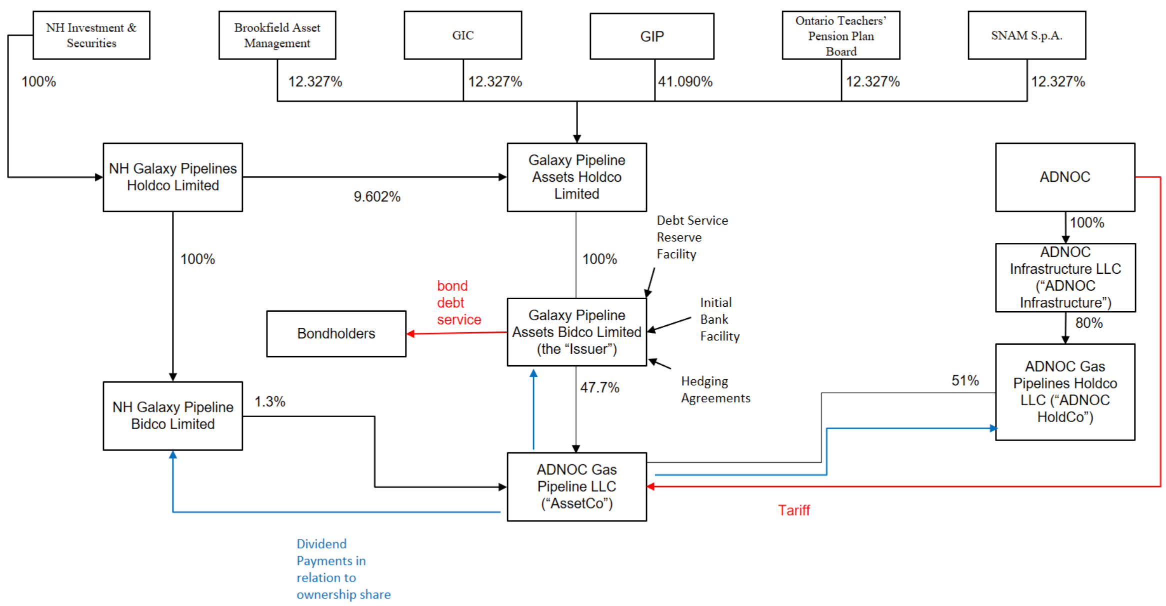
*This summary highlights information contained elsewhere in this Offering Memorandum. It does not contain all the information that you should consider before investing in the Bonds. You should read the entire Offering Memorandum carefully, including the Issuer Financial Statements (and related notes), the AssetCo Financial Statements (and related notes), the Pro Forma AssetCo Tariff Sales, the Independent Technical Due Diligence Report and the Wood Mackenzie Industry Report included elsewhere in this Offering Memorandum. You should read "Risk Factors" beginning on page 29 for more information about important factors that you should consider before purchasing the Bonds. All capitalized terms used but not otherwise defined in this Offering Memorandum have the meanings given to such terms in the Glossary of Certain General Terms, attached as Annex A except for terms which are derived from certain Finance Documents, which have the meanings given to such terms in the Glossary of Certain Defined Terms Used in the "Summary of Certain Finance Documents" or in the "Terms and Conditions of the Bonds."*

*In this Offering Memorandum, references to "we," "us" or "our" are to Galaxy Pipeline Assets Bidco Limited. We refer to ADNOC Gas Pipeline Assets LLC as "AssetCo" and the leased onshore pipelines from ADNOC by AssetCo as the "Pipelines".*

### Overview

We own a 47.7% shareholding in ADNOC Gas Pipeline Assets LLC ("**AssetCo**") which leases 38 onshore natural gas and natural gas liquids ("**NGLs**") pipelines (the "**Pipelines**") from ADNOC, the Abu Dhabi state-owned oil company, under a lease until June 30, 2040 (the "**Lease**"). See "*Presentation of Financial and Other Information*". The Pipelines are 982.3 kilometers (610.4 miles) in aggregate length and are comprised of four distinct groups, Pipelines transporting Sales Gas ("**Sales Gas Pipelines**"), Pipelines used for injection Gas ("**Injection Pipelines**"), Natural Gas Liquids Pipelines ("**NGL Pipelines**"), and Liquefied Natural Gas ("**LNG**") Flows, which represent a diverse portfolio of assets. The Pipelines have an aggregate gross nameplate capacity of 10.5 billion standard cubic feet per day of sales and injection gas and 161,314 tonnes per day of NGL as of the date of this Offering Memorandum. ADNOC controls 51% of the shares in AssetCo through its 80% owned subsidiary ADNOC Gas Pipelines HoldCo LLC. AssetCo has a long-term pipelines Use and Operation Agreement (the "**U&O Agreement**") with ADNOC until June 30, 2040, see, "*Summary—Shareholders and Sponsors*". The U&O Agreement is the main agreement setting out the terms of the relationship between AssetCo and ADNOC. Under the U&O Agreement, AssetCo provides ADNOC the exclusive right to use and operate the Pipelines in exchange for the Tariff Amount (as defined below) that ADNOC pays on a quarterly basis to AssetCo. ADNOC is required to maintain the Pipelines under the U&O Agreement. The Tariff Amount provided under the U&O Agreement is AssetCo's only source of cash inflow.

The diagram below summarizes the structure and the cash inflows:



**Key Agreements**

The below table lists the key agreements with relation to ADNOC, AssetCo and the Issuer.

| Project Documents | Parties | Effective Date | Term | Expiration Date |
|---|---|---|---|---|
| U&O Agreement | ADNOC and AssetCo | July 16, 2020 | 20 years | June 30, 2040 |
| Pipelines Lease Agreement | ADNOC and AssetCo | July 16, 2020 | 20 years | June 30, 2040 |
| General Services Agreement | ADNOC and AssetCo | July 16, 2020 | 20 years | June 30, 2040 |

***The Issuer and AssetCo's Cash Inflows***

AssetCo generates its cash inflows and profits solely by providing ADNOC the right to use, operate and maintain the Pipelines in exchange for which ADNOC pays AssetCo the Tariff Amount ("**Tariff Amount**"). The Tariff Amount is calculated as U.S.$0.57 multiplied by the calorific value (in mmbtu) of the gas, NGL and LNG flowing through the perimeter. The exact conversion rate of gas, NGL or LNG volumes into mmbtu is pre-defined in the U&O Agreement. The sales and injection gas, NGL and LNG (the "**Chargeable Throughput**") are subject to an annual cashflow cap at the volume projected in the Baseline Supply Forecast. The Baseline Supply Forecast is set at a level which is lower than ADNOC's Gas Master Plan, which provides ADNOC's outlook for future gas supply, over the next 20 years. In addition, AssetCo will earn cash inflows from any carried forward supply (i.e., any adjustments to take into account the amount (in mmbtu) of any excess supply or supply shortfall in any quarter, including any metering adjustment, required under the terms of the U&O Agreement) and export volume credit in limited circumstances, see "*Summary of Principal Project Documents Pipelines—Use and Operation Agreement*," at the same rate as the Chargeable Throughput. Under the U&O Agreement, ADNOC has also agreed to a Minimum Volume Commitment (the "**MVC**"), which is fixed at 75% of the Baseline Supply Forecast, providing a minimum level of cash inflows per quarter to AssetCo. See "*Summary of Principal Project Documents—Pipeline Use and Operation Agreement*."

The MVC represents a robust ship-or-pay obligation, payable regardless of the availability of the Pipelines, emergency or force majeure events, or the actual amount of natural gas, NGL and LNG that is transported in any period. The associated market price of natural gas, NGL and LNG that is actually transported does not impact the Tariff Amount in any way.

ADNOC's MVC obligation under the U&O Agreement effectively effectively insulates our ownership interest against the risk of any gas supply or market demand being less than the MVC. The payment obligations on amounts outstanding under the Bonds and the Original Bonds (the "**Senior Debt**") have been sized and timed such that debt service and repayment of the Senior Debt is achieved in the event that only MVC is received and distributed to us pro rata for our ownership interest in AssetCo. Pursuant to the U&O Agreement, there is no event that would result in a suspension, reduction or abatement of ADNOC's obligations to pay the MVC Amount save in the case of expiry of the U&O Agreement or termination pursuant to certain events, in which case AssetCo is entitled to receive a termination amount, which is expected to be sufficient to repay amounts outstanding under our Senior Debt, including the Bonds.

The Pro Forma AssetCo Tariff Sales were prepared to illustrate cash inflows of the Pipelines as if the arrangements under the Lease and the Tariff had been in place between ADNOC and AssetCo since January 1, 2018. According to the Pro Forma AssetCo Tariff Sales, in 2020, AssetCo's cash inflows would have been U.S.$1,810 million, and in 2019, AssetCo's cash inflows would have been U.S.$1,804 million compared to U.S.$1,833 million in 2018. Although the lock-downs imposed in response to the COVID-19 pandemic may have resulted and may further result in reduced consumer and industrial consumption which could result in reduced energy consumption levels which could potentially impact the cash inflows of the Pipelines, the risk of reduced demand from ADNOC for any or all of the Chargeable Throughput through the Pipelines does not affect its payment obligations pursuant to the MVC under the U&O Agreement. See "*Risk Factors—The recent COVID-19 pandemic and its operational and economic effects remain highly uncertain and may have a material adverse effect on AssetCo's business, financial condition, results of operations, and ability to repay our debt (including the Bonds).*"

***The Pipelines Overview***

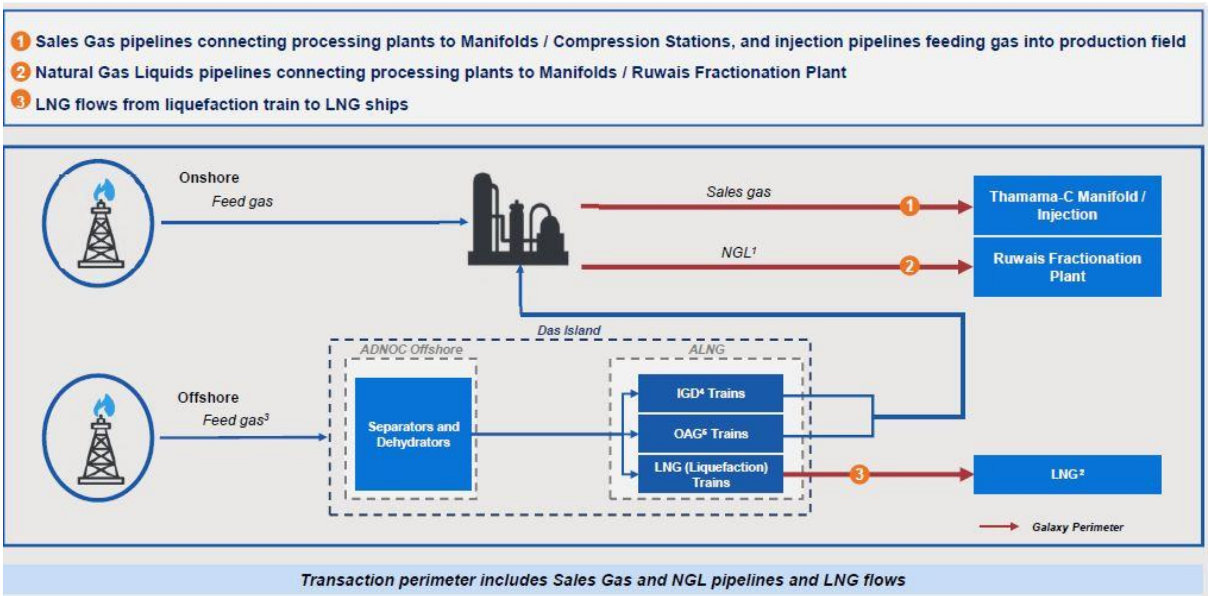
The Pipelines are critical to the infrastructure of Abu Dhabi and the United Arab Emirates and are also of strategic importance for ADNOC. All of Abu Dhabi's current sales gas and NGL production flows through the Pipelines which are the sole transport route of gas from upstream to end users. The Pipelines supplied a large part of the UAE's estimated gas demand of 7.7 Bcf/d in 2020, which was essential for the UAE's industrial output, for Abu Dhabi's power and utilities sector, for the optimization of ADNOC's condensate and crude oil production via gas injection. As of December 31, 2019, Abu Dhabi had the seventh largest known natural gas reserves globally with approximately 260 trillion cubic feet of reported proven raw gas reserves. According to OPEC Annual Statistical Bulletin 2020, as of December 31, 2019, ADNOC is the seventh largest reserve holder in the world, managing approximately 95% of the UAE's proven gas reserves and currently has reported a production capacity of approximately 11 billion cubic feet per day of raw gas. ADNOC also supplies NGLs for other ADNOC group companies.

The Pipelines have been historically owned and operated by ADNOC and ADNOC joint venture companies. Commission of the first segments of the Pipelines commenced in 1984 and since then ADNOC has continuously replaced and added new segments to the Pipelines in response to ageing lines and new expansions.

***Operation of the Pipelines***

ADNOC is responsible for operating and maintaining the Pipelines pursuant to the U&O Agreement. Except for certain limited AssetCo Corporate Costs (as defined below), all of the material operating and maintenance costs, replacement costs and any decommissioning costs relating to the Pipelines are directly paid by ADNOC. ADNOC's responsibility for the operating and maintenance costs, decommissioning costs and costs of certain services provides protection against any future increased costs. Additionally, the criticality of the Pipelines to both the producing reservoirs and to the downstream industries, together with ADNOC's payment obligations under the U&O Agreement, provides an incentive for ADNOC to maintain the assets at a high standard for the long term.

The Pipelines transport Sales Gas and NGL volumes from all of ADNOC's currently producing reservoirs. Flows from the new gas discoveries located elsewhere in the UAE (to the extent not classified as Excluded Supply, see "*Summary of Principal Project Documents—Pipeline Use and Operation Agreement – Modification Works*") will also be included within Chargeable Throughput if the UAE downstream market connected to the Pipelines is serviced by such flows in the future. The reservoirs themselves, the transmission network, assets downstream of the transmission network and upstream up to and including the gas processing plants and the LNG facility, located on Das Island, are not included in the Lease. The diagram below illustrates the Pipelines.



The following table sets out the number, length and capacity of the Pipelines.

| | Sales Gas Pipelines | Injection Pipelines | NGL Pipelines | LNG (1) |
|---|---|---|---|---|
| **Number of Pipelines** | 12 | 15 | 11 | N/A |
| **Length (km)** | 280.1 | 194.8 | 507.4 | N/A |
| **Capacity (mmscf/d)** | 6,847 | 3,605 | 161,314 (tpd) | 755 (tph) (2) |

(1) LNG infrastructure is not included as part of the Pipelines.

(2) This refers to LNG train capacity.

***The Issuer, AssetCo and ADNOC***

We were incorporated as a limited liability company on May 26, 2020. We are duly organized and existing under the laws of Jersey. Our shares are held directly by Galaxy Pipeline Assets Holdco Limited (the "**Parent**") which is held by a group of funds managed by Global Infrastructure Partners ("**GIP**"), Brookfield Asset Management ("**Brookfield**"), GIC Pte Ltd ("**GIC**"), Ontario Teachers' Pension Plan Board ("**OTPPB**"), SNAM S.p.A. ("**SNAM**") and NH Investment & Securities Co., Ltd ("**NH I&S**").

On July 15, 2020, we purchased 47.7% of the shares in AssetCo financed by U.S.$1.91 billion of equity provided by our shareholders, and the balance consisting of a drawing under the Initial Bank Facility.

On November 5, 2020, we issued U.S.$1,100,000,000 in aggregate principal amount of 1.750% Senior Secured Bonds due 2027 (the "**Series A Bonds**"), U.S.$1,550,000,000 in aggregate principal amount of 2.625% Senior Secured Bonds due 2036 (the "**Series B Bonds**") and U.S.$1,350,000,000 in aggregate principal amount of 3.250% Senior Secured Bonds due 2040 (the "**Series C Bonds**" and together with the Series A Bonds and the Series B Bonds, the "**Original Bonds**"). The proceeds of the Original Bonds were used to prepay, in part, the original principal balance outstanding under the U.S.$7,960,000,000 term facility (the "**Initial Bank Facility**") in an aggregate principal amount of U.S.$3,953,567,077, together with accrued interest and certain transaction fees, costs and expenses. The proceeds of the Bonds will be used in and towards the full prepayment of the outstanding principal balance of the Initial Bank Facility, together with accrued and unpaid interest and any termination costs associated with the partial early termination of interest rate hedges entered into under the Hedging Agreements (as defined below) and certain transaction fees, costs and expenses.

AssetCo was incorporated as a limited liability company on May 4, 2020. AssetCo is duly organized and existing in Abu Dhabi under the laws of the United Arab Emirates and is registered with the Department of Economic Development, holding trade license no. CN-3640938. ADNOC Gas Pipelines HoldCo LLC ("**ADNOC HoldCo**"), in which ADNOC Infrastructure LLC ("**ADNOC Infrastructure**") holds a 80.0% interest, owns 51.0% of the shares in AssetCo. ADNOC Infrastructure is, in turn, wholly owned by ADNOC, which is ultimately owned by the Government of Abu Dhabi, see, "*Summary—Shareholders and Sponsors*".

## Our Strengths

We believe our key strengths are as follows:

### *Key Critical Infrastructure for Abu Dhabi, the United Arab Emirates and ADNOC*

The Pipelines are of critical importance to Abu Dhabi and the United Arab Emirates and of strategic importance to ADNOC, as all of Abu Dhabi's current sales gas and NGL production flows through them and they supply a large part of Abu Dhabi's gas demand. The Pipelines play an integral role in the Abu Dhabi energy sector by connecting upstream assets with key demand centers for natural gas, including industries which are critical contributors to the Abu Dhabi economy. These demand centers include the power and utilities sector as well as the aluminum, cement and steel industrial sectors. The Pipelines also transport (i) Sales Gas ("**Sales Gas**"). to be used in ADNOC joint ventures and (ii) NGL to be used in ADNOC's fractionation plant in Ruwais, see, "*Industry – Gas Demand in ADNOC-owned Ventures"* and *"Description of ADNOC"*.

According to the SPC's Gas Master Plan, ADNOC plans to increase its gas production to allow the UAE to achieve its goal of gas self-sufficiency by 2030. In order to achieve this goal, ADNOC continues to invest in gas exploration and development as well as gas infrastructure, processing plants and LNG operations which will reinforce high throughput levels in the Pipelines. Furthermore, continued development of gas production is central to Abu Dhabi's decarbonization plan, with gas acting as a key transition fuel.

In addition to the assurance provided by the robust ship-or-pay obligation, due to the critical importance of the Pipelines, ADNOC is focused on maintaining high throughput levels, which in turn would procure higher cash inflows for AssetCo. Throughput is backed by highly certain demand from ADNOC and by existing strategic low-risk offtakers such as power generators, utilities, and industrial consumers, many of whom are also government-linked. As all of Abu Dhabi's current gas production flows through the Pipelines and the Pipelines supply a large part of the UAE's and Abu Dhabi's gas demand, ADNOC is highly incentivized to maintain the Pipelines and associated facilities in good operating condition.

### *Robust Volume Certainty*

Under the U&O Agreement, and subject to the adjustment mechanisms under the U&O Agreement, all throughputs originating from ADNOC-owned or operated gas fields identified in the U&O Agreement, including LNG originating from such fields produced at the Das Island LNG export facility, the only LNG export facility in the UAE, will be subject to the Tariff. 100% of the cash inflows received by AssetCo is paid directly by ADNOC under the U&O Agreement. Additionally, cash inflows will not be lower than the MVC as even if volumes are below 75% of the Baseline Supply Forecast, AssetCo will still receive the MVC from ADNOC.

In addition to the assurance that the MVC provides, ADNOC is focused on maintaining high throughput levels. The Pipelines play a critical role in the Abu Dhabi energy sector as they cover all of ADNOC's gas producing reserves. Abu Dhabi's associated fields have more than 40 years of production history and we expect them to sustain high production rates until at least September 2040, the latest date of maturity of the Bonds.

Given the SPC's Gas Master Plan, ADNOC plans to increase its gas production to allow the UAE to achieve its goal of gas self-sufficiency by 2030. Our expectation that the throughput levels will be materially above the MVC levels is supported by past performance, ADNOC's gas self-sufficiency strategy, highly certain demand from ADNOC and existing strategic low-risk offtakers and also the significant equity investment by our shareholders, which is based on this expectation.

### *Strength of ADNOC as Cashflow Counterparty and Operator*

AssetCo benefits, and we indirectly benefit, from the extensive experience of ADNOC in developing and operating oil and gas networks. ADNOC is the Abu Dhabi state-owned oil company and one of the largest oil producers in the world. ADNOC manages, produces and preserves Abu Dhabi's hydrocarbon reserves on behalf of the Government of Abu Dhabi. ADNOC manages approximately 95% of the United Arab Emirates' proven gas reserves and currently has the capacity to produce approximately 11 billion cubic feet of raw gas per day. Since its incorporation in 1971, ADNOC has played an integral role in Abu Dhabi's and the United Arab Emirates' economic development. For a description of ADNOC, see "*Description of ADNOC*."

ADNOC also wholly owns or has shareholdings in a number of operating companies and subsidiaries that specialize in upstream and downstream oil and gas operations, as well as distribution, shipping and all other aspects of the hydrocarbon industry. AssetCo benefits, and we indirectly benefit, from ADNOC's diversified resource base and competitive positioning on the global cost curve.

The Abu Dhabi government, which is the sole owner of ADNOC, a long-term foreign currency issuer default rating of "AA" with a stable outlook from Fitch and a long-term foreign currency issuer default rating of "Aa2" with a stable outlook from Moody's. ADNOC has a long-term issuer default rating of "AA" with a stable outlook from Fitch.

Within the past twenty years, ADNOC has not failed to pay a dividend within a financial quarter and has a strong interest in the continued success of AssetCo and the Pipelines, through both their indirect ownership stake and through the critical importance of the Pipelines to transporting their gas reserves.

***Simple and Strong Contractual Structure and Highly Favorable Operational Risk Allocation***

AssetCo benefits from a robust ship-or-pay framework, which results in predictable and stable minimum level of cash inflows that are unaffected by the availability of the Pipelines, emergency or force majeure events, the amount of gas, NGL and LNG transported or the associated market price of gas, NGL and LNG.

In addition, under the U&O Agreement, AssetCo is entitled to be paid for all volumes of gas transported, up to the Baseline Supply Forecast subject to an annual cashflow cap which is linked to the volume projected in the Baseline Supply Forecast.

ADNOC uses, operates and maintains the Pipelines, for twenty years, until June 30, 2040, and pays AssetCo the Tariff Amount, which is paid on a quarterly basis. This ship-or-pay tariff is payable notwithstanding any event of force majeure (except due to a force majeure event for which AssetCo may trigger termination under the U&O Agreement) or unavailability of the Pipelines due to scheduled or unscheduled maintenance. In the event of termination of the U&O Agreement for any reason or if ADNOC is in default under the U&O Agreement, ADNOC will be required to pay to AssetCo the greater of (i) an amount equal to 100% (or 105% in the case of non-payment of undisputed amounts and assignment defaults) of fair value of AssetCo, or (ii) the net present value of the MVC which is calculated using the discount rate as defined by the U&O Agreement. See "*Summary of Principal Project Documents—Pipeline Use and Operation Agreement*." If the U&O Agreement is terminated, the Lease will also be terminated. The U&O Agreement further provides that if any new tax laws are implemented under Abu Dhabi or UAE law resulting in new or additional taxes payable by AssetCo (other than corporate income tax and withholding tax), the ship-or-pay tariff will be adjusted to compensate AssetCo. See "*Summary of Principal Project Documents—Pipeline Use and Operation Agreement*."

ADNOC is the sole user and the operator of the Pipelines. Under the Project Documents (as defined below), ADNOC has sole responsibility for any modification works, operational and capital expenses and decommissioning costs. ADNOC's responsibility for all these expenses provides protection for AssetCo against these costs increasing in the future.

The Pipelines have been in stable operation for more than 36 years. ADNOC management estimates the residual life of the Pipelines to range from 5 to 25 years, and they are covered by asset integrity and asset life extension management systems. The Pipelines have gross nameplate capacity of 10.5 billion standard cubic feet per day of sales and injection gas and 161,314 tons per day of NGL. The Pipelines had an average throughput of approximately 8,676 bnbtu/d in 2020. Advanced control rooms allow ADNOC to centrally monitor all operations of the Pipelines through the value chain and immediately identify any problems.

The Pipelines are considered world class and are connected to hydrocarbon reserves of high reservoir quality. According to the Technical Adviser, the Pipelines were designed in accordance with internationally recognized design codes, standards and good practices to ensure that the facilities provided can achieve their design capacity in a safe, robust and reliable manner. ADNOC has covenanted to maintain the Pipelines in accordance with its internationally recognized design codes and standards under the U&O Agreement. Additionally, the Pipelines are maintained and operated by ADNOC in accordance with industry norms and good operating practices. As such, we expect the Pipelines to continue to operate in line with or higher than historical throughput levels.

***Highly Robust Cashflow Supports a Conservative Debt Structure***

As per the U&O Agreement, AssetCo is entitled to quarterly tariff payments subject to a floor equal to the MVC (fixed at 75% of the Baseline Supply Forecast) and a cap equal to the Baseline Supply Forecast multiplied by a fixed tariff of U.S.$0.57 per mmbtu (subject to carry forward and carry back mechanism to offset supply shortfalls). See "*Summary of Principal Project Documents—Pipeline Use and Operation Agreement*."

The Financial Model illustrates that cash inflows from the MVC, provided under the robust ship-or-pay framework only, are sufficient to service and repay all of our Senior Debt (including the Bonds). The ship-or-pay obligation continues until the maturity of our Senior Debt and is anticipated to be sufficient to meet debt service in all periods, with no reliance on our potentially significant but non-guaranteed non-MVC cash inflows. See "*Summary of Financial Model*".

AssetCo pays quarterly dividends to the Issuer, providing timely cashflow to meet the Senior Debt payments. We entered into a debt service reserve facility on October 27, 2020 (the "**Debt Service Reserve Facility**"), which provides backstop financing to meet at least six months of debt service, including both interest and scheduled amortization, to ensure that we have sufficient liquidity should we be impacted by any unforeseen events. See *"Summary of Certain Finance Documents – Debt Service Reserve Facility Agreement."* Accordingly, any cashflow issue caused by a timing delay in receiving payments from ADNOC, should be covered by the Debt Service Reserve Facility up to the limit provided by the Debt Service Reserve Facility. See "*Risk Factors—Risks Relating to the Issuer Documents—Our only asset other than cash is our shareholding in AssetCo, and we are dependent on payments from AssetCo which is dependent on ADNOC as its only source of cashflow.*"

As ADNOC has sole responsibility for any modification works, operational and capital expenses and decommissioning costs for the Pipelines, AssetCo does not bear, and the cash flowing from AssetCo to us is not impacted by any future increase in operational or capital expenses. Except in the event of the occurrence of a Non-Dividend Event (as defined below), 100% of the free cashflow generated by AssetCo will be distributed every quarter to the shareholders see "*—Strong Governance Package*".

***Strong Governance Package***

We, as a shareholder of AssetCo, benefit from our rights under the Shareholders' Agreement (as defined below). Certain key decisions are designated as reserved matters under the Shareholders' Agreement and cannot be changed without our consent. This includes a fixed dividend policy, stating that, except in the case of the occurrence of a Non-Dividend Event (as defined below), 100% of the free cashflow that AssetCo generates will be distributed every quarter to the shareholders, pro rata to their respective ownership interest.

A Non-Dividend Event may occur if the board of directors of ADNOC adopts a decision to suspend payments, either by way of dividend, loan or similar payment (excluding, for the avoidance of doubt, royalties and taxes), to the Government of Abu Dhabi in respect of any financial quarter, and no such payments are made during such financial quarter. In the case of a Non-Dividend Event, of which there is no occurrence within a financial quarter over the past twenty years, ADNOC HoldCo will have the right, at its sole discretion, to amend the dividend policy at the AssetCo level in respect of that financial quarter and each subsequent financial quarter during which such ADNOC decision remains in place and no such payments are made (including by electing not to pay a dividend). Notwithstanding a Non-Dividend Event, ADNOC is required to continue to make Tariff payments to AssetCo, which are then deposited into a separate segregated account designated for the Issuer. Any principal amounts standing to the credit of a shareholder reserve account will be distributed to such shareholder (and any interest accrued on the amounts held in the shareholder reserve accounts will be distributed pro rata to each shareholder) not later than five business days after ADNOC HoldCo gives notice to the shareholders and AssetCo of its decision to recommence payments either by way of dividend, loan or similar payment (excluding, for the avoidance of doubt, royalties and taxes), to the Government of Abu Dhabi.

Any change to AssetCo's dividend policy is a reserved matter under AssetCo's Shareholders' Agreement which cannot be changed without our consent. Furthermore, AssetCo shall not be permitted to incur any debt without our consent. This corporate governance structure ensures that, except in the circumstance where a Non-Dividend Event has occurred and is continuing, we receive regular dividend payments from AssetCo to service our indebtedness.

***Experienced Board of Directors and Senior Management Team***

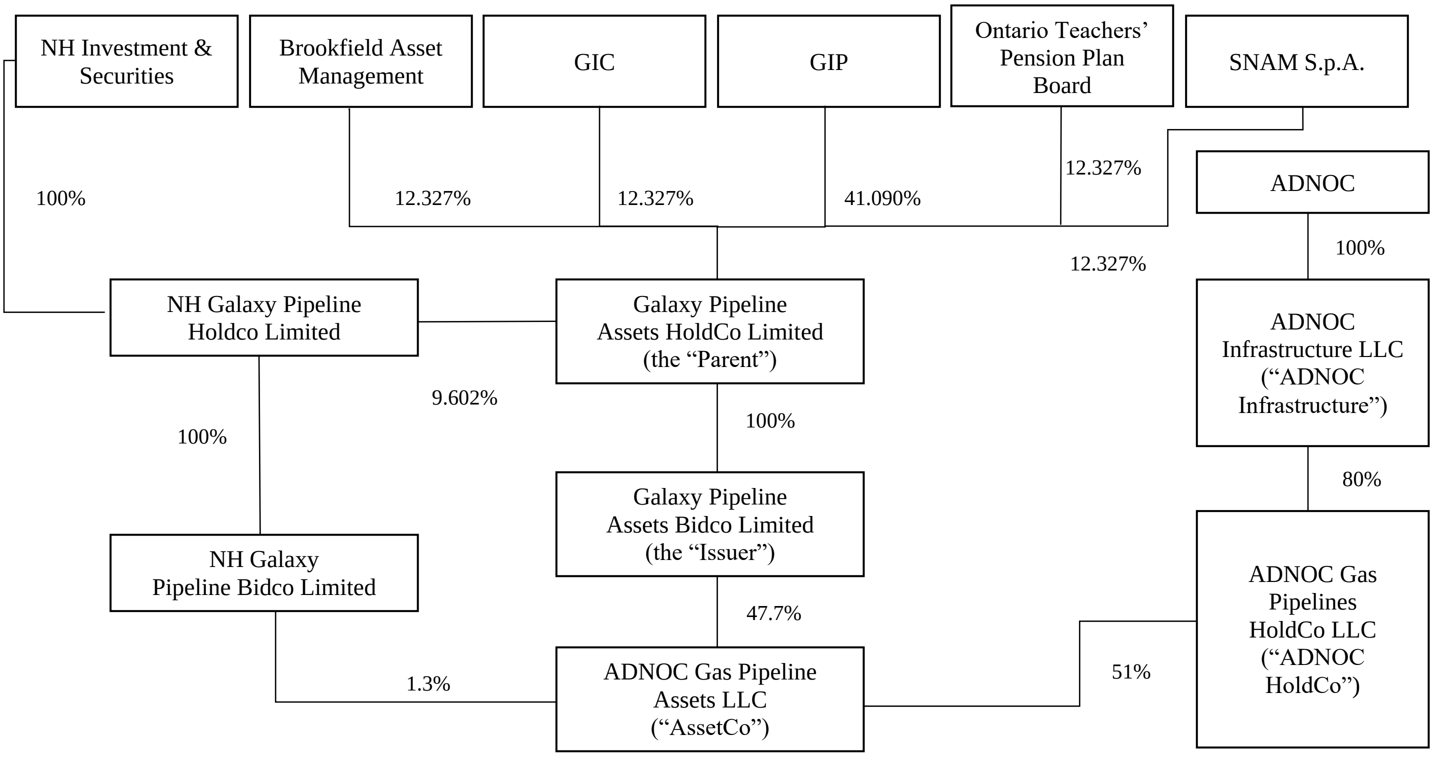
Members of our Board of Directors and AssetCo's senior management team have years of experience in the Abu Dhabi and Middle Eastern crude oil and gas industry in their respective areas of expertise, with a strong focus on financial performance and operational efficiency. They are committed to attaining solid and sustainable financial results in a socially and environmentally responsible manner. Our and AssetCo's management practices are also focused on our relationships with stakeholders so as to leverage our competitive position. We believe that the specialized experience of our, AssetCo's and ADNOC's professionals and their in-depth knowledge of the Pipelines, our company and our stakeholders contribute significantly to our cost-effective and efficient operations.

**Acquisition**

On June 23, 2020, ADNOC Gas Pipelines Holdco LLC as the seller entered into a share purchase agreement with GIP III Galaxy Holdco II, Limited, Infracore Investment Holdings, Raffles Infra Holdings Limited, NH Galaxy Pipeline Holdco Limited, Galaxy Pipeline Assets Topco Limited, SNAM S.p.A., Galaxy Pipeline Assets Holdco Limited, Galaxy Pipeline Assets Bidco Limited and NH Galaxy Pipeline Bidco Limited as the buyer parties for the sale and purchase of 49% of the entire issued share capital of AssetCo. The completion of the sale and purchase occurred on July 15, 2020.

**Shareholders and Sponsors**

Our shares are held by a consortium managed by Global Infrastructure Partners, Brookfield Asset Management, GIC, Ontario Teachers' Pension Plan Board, NH I&S and SNAM. Below is an organizational chart and short summary describing our direct and indirect shareholders:




*Global Infrastructure Partners*

Global Infrastructure Partners ("**GIP**") is a leading independent infrastructure investor with a global mandate. Founded in 2006, GIP aims to deliver superior returns for its investors by combining deep industry and operating expertise. The GIP flagship funds are closed-ended private equity funds, which invest in core and core-plus infrastructure assets in the energy, transportation, water and waste sectors.

*Brookfield Asset Management Inc.*

Brookfield Asset Management Inc. (together with its affiliates and their managed entities, "**Brookfield**") is one of the world's leading alternative asset managers, with over U.S.$540 billion in assets under management and a 120-year heritage as owners and operators of long-life, high-quality assets and businesses across real estate, infrastructure, renewable power, private equity and credit. Brookfield is publicly listed on the New York, Toronto and Euronext stock exchanges, and has a market capitalization of over U.S.$50 billion.

*GIC Pte Ltd*

GIC Pte Ltd ("**GIC**") is a leading global investment firm with well over U.S.$100 billion invested in multiple asset classes in more than 40 countries worldwide. Established in 1981 as a private company, GIC manages Singapore's foreign reserves. A disciplined long-term value investor, GIC is uniquely positioned to invest in both the public and private markets, including equities, fixed income, real estate, private equity and infrastructure.

*NH Investment & Securities Co., Ltd*

NH Investment & Securities Co., Ltd ("**NH I&S**") is the second largest investment bank in Korea, offering a broad range of financial services, encompassing wealth management, investment banking, brokerage and merchant banking through 79 domestic branches. Since its founding in 1969, NH I&S has been a trusted partner of Korea’s capital markets. As of September 2019, NH I&S has total assets of U.S.$46 billion and shareholders’ equity of U.S.$4.5 billion. NH I&S became a part of NongHyup Financial Group in 2014 through the merger between Woori Investment & Securities and NH Nonghyup Securities. NH I&S, together with NongHyup Financial Group and its affiliates, forms NH Financial Group.

*Ontario Teachers' Pension Plan Board*

Ontario Teachers’ Pension Plan Board (“**OTPPB**”) is the largest single-profession pension plan in Canada. An independent organization since 1990, OTPPB invests and administers the pensions of more than 329,000 active and retired teachers in the Province of Ontario, Canada. As of December 31, 2019, OTPPB had net assets of C$207 billion (U.S.$159 billion), invested across a mix of equities (public and private), bonds, commodities, real assets (real estate, infrastructure and natural resources) and absolute return strategies.

*SNAM S.p.A*

SNAM S.p.A. (“**SNAM**”), organized under the laws of Italy, is a joint stock company listed on the Milan Stock Exchange with €14.2 billion market capitalization and an enterprise value of €27.2 billion as of the end of September 2020.

SNAM is a holding company of a group whose core business is the ownership and management of natural gas infrastructures. With its 41,000 km of owned transmission network including international activities, approximately 20 billion cubic meters (“**bcm**”) of owned storage capacity including international activities and 8.5 bcm/y of total pro-rata regasification capacity, SNAM is a leader in Europe in the development, operation and management of natural gas infrastructures: SNAM transports, dispatches and stores natural gas and unloads, stores and regasifies LNG.

**Summary of Cash Flow Waterfall**

Pursuant to the Security Trust and Intercreditor Deed, we are required to ensure that (amongst other amounts) all distributions of free cash received from AssetCo, the proceeds of any drawing under the Debt Service Reserve Facility Agreement and any payments received from the Hedge Counterparties under the Hedging Agreement are paid into an account with an Acceptable Bank (as defined under the section "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Priority of Payments*") designated as the "Debt Service Payment Account". We are required to apply all amounts standing to the credit of the Debt Service Payment Account shall, prior to the delivery of an Enforcement Notice and/or an Acceleration Notice by the Security Agent, be applied (to the extent that it is lawfully able to do so) by the Issuer, in accordance with the Pre-Enforcement Priority of Payments (including in each case any amount of or in respect of VAT).

Following the delivery of an Enforcement Notice and/or an Acceleration Notice by the Security Agent, all Available Enforcement Proceeds shall be applied (to the extent that it is lawfully able to do so) by or on behalf of the Security Agent (or, as the case may be, any Receiver), in accordance with the Post-Enforcement Priority of Payments (including in each case any amount of or in respect of VAT).

See "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Priority of Payments*".

**Summary of Historical Financial Data**

*The tables below present summary financial and operating data from the Issuer Financial Statements and the AssetCo Financial Statements as of and for the periods indicated. We have not presented further historical financial information for the Issuer in this section because the Issuer has had limited corporate activity since its formation other than (i) the issuance of shares in connection with its initial capitalization; (ii) activities in connection with the U&O Agreement and the General Services Agreement; (iii) borrowing under the Initial Bank Facility and the issuance of the Original Bonds; and (iv) in preparation for this offering, and because we believe that a presentation of the results of the Issuer would not be meaningful. However, we have provided the Issuer Financial Statements and the AssetCo Financial Statements appearing elsewhere in this Offering Memorandum. You should read the information below in conjunction with the AssetCo Financial Statements (and related notes) and the Issuer Financial Statements (and related notes), appearing elsewhere in this Offering Memorandum, as well as the sections entitled "Presentation of Financial and Other Information" and "Operating and Financial Review" in this Offering Memorandum.*

*With respect to the Issuer Financial Statements, two sets of statements were prepared, the first covering the period from May 26, 2020 (i.e. the date of incorporation of the Issuer) to July 31, 2020 and the second covering the period from August 1, 2020 to December 31, 2020. The first set of financial statements were prepared to comply with the listing requirements of the Global Exchange Market of Euronext Dublin in connection with the issue of the Original Bonds. Going forward, the Issuer will report on an annual basis in respect of each financial year ending December 31. Due to the difference in the 2020 accounting periods, the amounts presented are not comparable.*

Our audited financial data presented below should be read in conjunction with the information set forth in "*Operating and Financial Review*" and the AssetCo Financial Statements, including the notes thereto, appearing elsewhere in this Offering Memorandum.

***The Issuer***

The financial information included in the table below has been derived from the Issuer Financial Statements for the periods from May 26, 2020 to July 31, 2020 and August 1, 2020 to December 31, 2020.

*Statement of Comprehensive Income*

| | **Period from August 1, 2020 to December 31, 2020** | **Period from May 26, 2020 to July 31, 2020** |
|---|---|---|
| | **(U.S. Dollars in thousands)** | |
| **Income** | | |
| Share of net profit of associate accounted for using the equity method | 209,959 | 46,404 |
| Net gain on derivatives | 248,132 | - |
| Other income | - | 253 |
| **Total income** | **458,091** | **46,658** |
| **Expenses** | | |
| Interest expense | (85,775) | (8,424) |
| Net loss on derivatives | - | (209,007) |
| Administrative expenses | (1,511) | (756) |
| **Total Expenses** | **(87,285)** | **(218,188)** |
| **Profit/(Loss) before taxation** | **370,806** | **(171,530)** |
| Tax expense | - | - |
| **Profit/(Loss) after taxation** | **370,806** | **(171,530)** |
| Other comprehensive income | - | - |
| **Total comprehensive profit/loss for the period** | **370,806** | **(171,530)** |

*Statement of Financial Position*

| | As at December 31, 2020 | As at July 31, 2020 |
|---|---|---|
| | (U.S. Dollars in thousands) | |
| **Non-current assets** | | |
| Investment in an associate | 9,926,869 | 9,924,691 |
| Derivative financial instruments | 42,988 | - |
| **Total non-current assets** | **9,969,857** | **9,924,691** |
| **Current assets** | | |
| Other assets | 614 | 120 |
| Cash and cash equivalents | 186,822 | 4,122 |
| **Total current assets** | **187,436** | **4,242** |
| **Total assets** | **10,157,294** | **9,928,933** |
| **Non-current liabilities** | | |
| Financial liabilities held at amortized cost | (7,962,018) | (7,903,775) |
| Derivative financial liabilities | - | (209,007) |
| **Total non-current liabilities** | **(7,962,018)** | **(8,112,782)** |
| **Current liabilities** | | |
| Interest payable | (16,725) | (4,827) |
| Other payables | (53) | (3,632) |
| **Total current liabilities** | **(16,778)** | **(8,460)** |
| **Total liabilities** | **(7,978,797)** | **(8,121,242)** |
| **Equity** | | |
| Called up share capital | (1,979,221) | (1,979,221) |
| Accumulated (profits)/losses | (199,276) | 171,530 |
| **Total equity** | **(2,178,497)** | **(1,807,691)** |
| **Total liabilities and equity** | **(10,157,294)** | **(9,928,933)** |

*Statement of Cash Flows*

| | Period from August 1, 2020 to December 31, 2020 | Period from May 26, 2020 to July 31, 2020 |
|---|---|---|
| | (U.S. Dollars in thousands) | |
| **Cash flows from operating activities:** | | |
| Profit/(loss) before taxation | 370,806 | (171,530) |
| Adjustments for: | | |
| Share of net profit of associate accounted for using the equity method | (209,959) | (46,404) |
| Interest expense | 51,420 | 4,827 |
| Amortization of transaction cost on financial liabilities at amortized cost | 34,354 | 3,597 |
| Net (gain)/loss on derivatives | (248,132) | 209,007 |
| Increase in other assets | (494) | (120) |
| (Decrease)/Increase in other payables | (3,580) | 3,632 |
| **Net cash (used in)/from operating activities** | **(5,584)** | **3,009** |
| **Cash flow used in investment activities** | | |
| Investment in an associate | - | (9,878,287) |
| Proceeds from derivative settlement | 6,035 | - |
| Dividends received | 207,781 | - |
| **Net cash from/(used in) investment activities** | **213,816** | **(9,878,287)** |
| **Cash flows from financing activities** | | |
| Issue of ordinary shares | - | 1,979,221 |
| Proceeds from issuance of loans | - | 7,960,000 |
| Repayment of loans | (3,953,567) | - |
| Proceeds from issuance of bonds | 4,000,000 | - |
| Transaction cost related to issuance of loans and bonds | (22,543) | (59,882) |
| Interest paid on loans | (39,523) | - |
| Swap payments | (9,898) | - |

| | | |
|---|---|---|
| **Net cash (used in)/from financing activities** | **(25,531)** | **9,879,399** |
| **Net increase in cash and cash equivalents** | **182,700** | **4,122** |
| Cash and cash equivalents at beginning of the period | 4,122 | - |
| **Cash and cash equivalents at end of the period** | **186,822** | **4,122** |

***AssetCo***

The financial information included in the table below has been derived from AssetCo's Statement of Financial Position.

*Statement of Financial Position*

| | **As at December 31, 2020** |
|---|---|
| | **(U.S. Dollars in thousands)** |
| **Non-current asset** | |
| Financial asset | 20,809,786 |
| **Current asset** | |
| Other receivable | 3 |
| Cash and cash equivalents | 140 |
| **Total current assets** | **143** |
| **Total assets** | **20,809,929** |
| Share capital | 20,707,965 |
| Retained earnings | 101,849 |
| **Total equity** | **20,809,814** |
| Current liabilities | 115 |
| Total equity and liabilities | 20,809,929 |

The financial information included in the table below has been derived from AssetCo's Statement of Profit or Loss and other Comprehensive Income.

*Statement of Profit or Loss*

| | **Period ended December 31, 2020** |
|---|---|
| | **(U.S. Dollars in thousands)** |
| Financial income | 537,563 |
| General and administrative expenses | (115) |
| **Profit and total comprehensive income for the period** | **537,448** |

The financial information included in the table below has been derived from AssetCo's Statement of Cash Flows.

*Statement of Cash Flows*[1]

| | **Period ended December 31, 2020** |
|---|---|
| **Operating Activities** | **(U.S. Dollars in thousands)** |
| Profit for the period | 537,448 |
| Adjustments for: | |
| Finance income | (537,563) |
| **Net cash used in operating activities before movements in working capital** | **(115)** |
| Increase in accrued expense | 115 |
| Settlement of financial asset-tariff collections | 435,739 |
| **Net cash generated from operating activities** | **435,739** |
| **Financing activities** | |

| | |
|---|---|
| Dividend paid | (435,599) |
| **Net increase in cash and cash equivalents** | **140** |
| Cash and cash equivalents at beginning of the period | - |
| **Cash and cash equivalents at end of the period** | **140** |

(1) The issuance of $20,708 million of additional share capital has been excluded from the statement of cash flows because the issuance was a non-cash transaction.

*Volumes*

The tables below set forth the unaudited volume of Sales Gas, NGL and LNG transported through the Pipelines for the periods as derived from ADNOC's operations meters and as indicated in both the respective categories' original units and mmbtu:

| | Year ended December 31, | | |
|---|---|---|---|
| | **2020** | **2019** | **2018** |
| Sales Gas transported (MMSCF/day) | 5,715 | 5,658 | 5,835 |
| NGL transported (Tons/day) | 47,693 | 48,689 | 48,641 |
| LNG transported (Tons) | 5,845,366 | 5,865,470 | 5,639,152 |

| | Year ended December 31, | | |
|---|---|---|---|
| | **2020** | **2019** | **2018** |
| Sales Gas transported (bnbtu/day) | 5,603 | 5,547 | 5,721 |
| NGL transported (bnbtu/day) | 2,249 | 2,295 | 2,293 |
| LNG transported (bnbtu/day) | 824 | 829 | 797 |
| **Total (bnbtu/day)** | **8,676** | **8,672** | **8,811** |

Conversion factors from original units to mmbtu: 1.02 for Sales Gas, 47.146 for NGL and 51.6 for LNG
1 Bnbtu = 1,000 mmbtu

*Pro Forma AssetCo Tariff Sales*

The financial information included in the below table has been derived from the Pro Forma AssetCo Tariff Sales.

| | Year ended December 31, | | |
|---|---|---|---|
| | **2020** | **2019** | **2018** |
| | (U.S. dollars in millions) | | |
| Sales Gas | 1,169 | 1,154 | 1,190 |
| NGL | 469 | 478 | 477 |
| LNG | 172 | 173 | 166 |
| **Total tariff sales** | **1,810** | **1,804** | **1,833** |

**Sources and Uses**

The estimated sources and uses of funds to be raised by us from this offering of the Bonds are set out in the following table.

| **Sources of Funds** | **(U.S. dollars in millions)** | **Uses of Funds** | **(U.S. dollars in millions)** |
|---|---|---|---|
| Series D Bonds | 1,750 | Repayment in full of the Initial Bank Facility[(2)] | 4,015 |
| Series E Bonds | 2,170 | Transaction Costs[(3)] | 20 |
| Termination amounts owed by the Hedge Counterparties under the Hedging Agreements (both as defined herein) | 122[(1)] | General Corporate Purposes | 7 |
| **Total Sources** | **4,042** | **Total Uses** | **4,042** |

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(1) The receipt of the hedge termination payments from the Hedge Counterparties is an estimated amount and may be subject to change.
(2) The Initial Bank Facility was provided to us for the shares we acquired in AssetCo. See "*Summary of Certain Finance Documents—Initial Bank Facility Agreement*." The amount includes U.S.$8.2 million of interest and estimated transaction costs relating to the Initial Bank Facility.
(3) The payment of certain transaction costs is an estimated amount and may be subject to change.

**Summary of the Independent Technical Due Diligence Report**

In connection with the offering of the Original Bonds, Ryder Scott Company Petroleum Consultants (the "**Technical Adviser**") prepared an independent technical due diligence report dated March 15, 2020 (the "**Original Independent Technical Due Diligence Report**"). The Technical Adviser has supplemented and updated the Original Independent Technical Due Diligence Report by way of an addendum dated February 5, 2021 (the "**Independent Technical Due Diligence Report Addendum**" and together with the Original Independent Technical Due Diligence Report the "**Independent Technical Due Diligence Report**"). The Independent Technical Due Diligence Report is attached as "*Annex B1: Original Independent Technical Due Diligence Report*" and "*Annex B2: Independent Technical Due Diligence Report Addendum*". The Technical Adviser is an international consulting firm that provides due diligence and consulting services to the oil and gas industries. In the Independent Technical Due Diligence Report, based upon available information and certain assumptions, the Technical Adviser presents the findings of the technical assessment of selected ADNOC operated sales gas, injection, and NGL pipelines in the UAE and includes the following:

- an independent technical due diligence review of the Pipelines and the Gas Processing Plants (the "**GPPs**"), an operations review of the Pipelines to assess the operating and maintenance track record including compliance with safe operating practices as well as an opinion on the operator's experience and capabilities;

- an assessment comment on the ability of the Pipelines and the GPPs to meet all technical and environmental requirements under applicable permits, licenses and applicable law; and

- a due diligence review of all available Health, Safety, and Environmental (HSE), documentation and information that describes the potential environmental and social risks and impacts of the Pipelines and the GPPs.

The Technical Adviser's conclusions, and the summary thereof set out below, are subject to the assumptions and qualifications set forth in the Independent Technical Due Diligence Report and should be read in conjunction with the full text of the Independent Technical Due Diligence Report.

*Summary of Main Points and Issues*

In the Independent Technical Due Diligence Report, the Technical Adviser has made the following conclusions:

- *Technical*: The Technical Adviser has confirmed that the Pipelines were designed in accordance with internationally recognized design codes and standards plus good practices to ensure that the facilities provided can achieve their design capacity in a safe, robust and reliable manner, and the Pipelines were available throughout 2020.

- *Operations*: ADNOC has developed industry-standard programs and systems for the maintenance and operation of the Pipelines. ADNOC follows standard industry practice in operating, maintaining, abandoning and replacing their pipelines. The pipeline designs reviewed conformed to industry standards at the time of installation. Operating procedures and effective communication with the technical and operating team ensures that pipeline operating parameters remain within the specified safety margins.

- *Capability to Deliver Planned Production*: The Sales Gas Pipeline assessment indicates that the Sales Gas Pipelines can deliver forecasted production and transportation of the gas as required. The scope of work included twelve sales gas pipelines of varying design parameters. Some Sales Gas Pipelines are currently forecast to experience capacity constraints during the term of the U&O Agreement, and ADNOC has detailed debottlenecking plans to address forecast capacity constraints before they are realized. Sales Gas Pipeline #11 has a medium to high risk classification in the ADNOC system and ADNOC has firm project plans to replace this line by December 2022.

  The Injection Pipeline assessment indicates that the gas injection lines can deliver forecasted injection gas volumes as required. The scope of work included fifteen Injection Pipelines with three distinct gas injection pipeline networks. The Injection Pipelines are generally in good condition except for Injection Pipeline #9, which is currently planned for replacement in 2023.

The NGL Pipeline assessment indicates that the NGL Pipelines can deliver forecasted production volumes. The scope of work included eleven NGL Pipelines of varying ages, diameters, and lengths. These pipelines were found to fall within industry norms with regard to risk and mitigation plans, operational procedures, and maintenance.

- *COVID-19*: The Technical Adviser found that ADNOC's response to the COVID-19 pandemic was well planned at its site operations and for the support staff at the head offices. The guidelines and standard operating procedures issued by ADNOC were in line with Government policies to ensure business continuity. Accordingly there were no disruptions to the flow through the pipelines. Although ADNOC deferred many inline inspections for low risk pipelines scheduled for 2020 to 2021 due to HSE logistic constraints, the Technical Adviser concluded that such a delay was prudent for the safety of the personnel and does not affect the long-term performance of these pipeline assets.

- *Health, Safety and Environmental*: The Technical Adviser stated that, based on its review of ADNOC's documentation, ADNOC is in and intends to maintain compliance with the relevant portions of the International Finance Corporation Performance Standards and World Bank Performance Standards on Environmental and Social Sustainability.

**Summary of the Wood Mackenzie Industry Report**

In connection with the offering of the Original Bonds, Wood Mackenzie Limited ("**Wood Mackenzie**") prepared an industry report dated October 14, 2020 (the "**Original Wood Mackenzie Industry Report**") at the request of the Issuer. Wood Mackenzie has supplemented and updated the Original Wood Mackenzie Industry Report by way of an addendum dated February 5, 2021 (the "**Wood Mackenzie Industry Report Addendum**" and together with the Original Wood Mackenzie Industry Report, the "**Wood Mackenzie Industry Report**"). The Wood Mackenzie Industry Report has been attached as "*Annex C1: Original Wood Mackenzie Industry Report*" and "*Annex C2: Wood Mackenzie Industry Report Addendum*" and has been used as support for the "*Industry*" section herein.

The data and information provided by Wood Mackenzie should not be interpreted as advice and you should not rely on it for any purpose. You may not copy or use this data and information except as expressly permitted by Wood Mackenzie in writing. To the fullest extent permitted by law, Wood Mackenzie accepts no responsibility for your use of this data and information.

## Summary of the Offering

*You will find the definitions of capitalized terms used and not defined in this description in "Annex A: Glossary of Certain Terms", in the "Terms and Conditions of the Bonds" and as provided elsewhere in this Offering Memorandum.*

**Bonds Offered** .................................... U.S.$1,750,000,000 aggregate principal amount of 2.16% Series D Bonds due 2034; and

U.S.$2,170,000,000 aggregate principal amount of 2.94% Series E Bonds due 2040.

**Issuer**..................................................... Galaxy Pipeline Assets Bidco Limited.

**Issue Date** ........................................... February 18, 2021.

**Series D Issue Price** ............................ 100%.

**Series E Issue Price**............................. 100%.

**Series D Bonds Maturity Date** ........... March 31, 2034.

**Series E Bonds Maturity Date** . .......... September 30, 2040.

**Interest Payment Dates** ...................... Semi-annually in arrear on or around March 31 and September 30 of each year, commencing on March 31, 2021.

**Record Date**.......................................... While the Bonds are in global form, the Clearing System Business Day immediately preceding the corresponding payment date; and while the Bonds are in definitive form, the fifteenth calendar day preceding the corresponding payment date. Clearing System Business Day means Monday to Friday inclusive except December 25 and January 1.

**Weighted Average Life of Series D Bonds** ..................................... 7.3 years.

**Weighted Average Life of Series E Bonds**..................................... 12.5 years.

**Scheduled Principal Repayments** ......

Unless redeemed early as described herein, principal on the Series D Bonds will be repayable in semi-annual installments on the Interest Payment Dates as follows in accordance with the Pre-Enforcement Priority of Payments:

| Scheduled Payment Date | Per U.S.$1,000 of Original Principal Amount Payable<br>(in U.S.$) |
|---|---|
| March 31, 2021 | - |
| September 30, 2021 | - |
| March 31, 2022 | 39.14 |
| September 30, 2022 | 36.20 |
| March 31, 2023 | 37.56 |
| September 30, 2023 | 37.66 |
| March 31, 2024 | 39.04 |
| September 30, 2024 | 36.11 |
| March 31, 2025 | 37.14 |
| September 30, 2025 | 37.96 |
| March 31, 2026 | 39.32 |
| September 30, 2026 | 35.53 |
| March 31, 2027 | 36.82 |

| Scheduled Payment Date | Per U.S.$1,000 of Original Principal Amount Payable |
|---|---|
| September 30, 2027 | 36.87 |
| March 31, 2028 | 39.90 |
| September 30, 2028 | 39.81 |
| March 31, 2029 | 40.91 |
| September 30, 2029 | 40.14 |
| March 31, 2030 | 41.53 |
| September 30, 2030 | 41.44 |
| March 31, 2031 | 42.86 |
| September 30, 2031 | 43.76 |
| March 31, 2032 | 45.24 |
| September 30, 2032 | 45.36 |
| March 31, 2033 | 46.55 |
| September 30, 2033 | 40.89 |
| March 31, 2034 | 42.26 |

Unless redeemed early as described herein, principal on the Series E Bonds will be repayable in semi-annual installments on the Interest Payment Dates as follows in accordance with the Pre-Enforcement Priority of Payments:

| Scheduled Payment Date | Per U.S.$1,000 of Original Principal Amount Payable |
|---|---|
| | **(in U.S.$)** |
| March 31, 2021 | - |
| September 30, 2021 | - |
| March 31, 2022 | 17.39 |
| September 30, 2022 | 16.08 |
| March 31, 2023 | 16.68 |
| September 30, 2023 | 16.73 |
| March 31, 2024 | 17.34 |
| September 30, 2024 | 16.04 |
| March 31, 2025 | 16.50 |
| September 30, 2025 | 16.86 |
| March 31, 2026 | 17.47 |
| September 30, 2026 | 15.78 |
| March 31, 2027 | 16.35 |
| September 30, 2027 | 16.38 |
| March 31, 2028 | 17.72 |
| September 30, 2028 | 17.68 |
| March 31, 2029 | 18.17 |
| September 30, 2029 | 17.83 |
| March 31, 2030 | 18.45 |
| September 30, 2030 | 18.40 |
| March 31, 2031 | 19.04 |
| September 30, 2031 | 19.44 |
| March 31, 2032 | 20.09 |
| September 30, 2032 | 20.15 |
| March 31, 2033 | 20.68 |
| September 30, 2033 | 18.16 |
| March 31, 2034 | 18.77 |
| September 30, 2034 | 45.78 |
| March 31, 2035 | 47.32 |
| September 30, 2035 | 48.28 |
| March 31, 2036 | 49.87 |
| September 30, 2036 | 37.30 |
| March 31, 2037 | 38.32 |
| September 30, 2037 | 38.43 |
| March 31, 2038 | 39.71 |
| September 30, 2038 | 40.12 |

| Scheduled Payment Date | Per U.S.$1,000 of Original Principal Amount Payable |
|---|---|
| March 31, 2039 | 41.43 |
| September 30, 2039 | 42.02 |
| March 31, 2040 | 43.38 |
| September 30, 2040 | 43.86 |

**Finance Documents** ............................ We are party to a facility agreement dated June 23, 2020 (as amended and restated on October 21, 2020 and as may be further amended and/or restated from time to time) which was made between, amongst others, ourselves, Galaxy Pipeline Assets Holdco Limited (the "**Parent**"), First Abu Dhabi Bank PJSC as agent (the "**Facility Agent**"), Citibank, N.A., London Branch as offshore security agent (the "**Offshore Security Agent**") and the financial institutions listed therein as lenders (the "**Lenders**") (the "**Initial Bank Facility Agreement**") and a security trust and intercreditor deed also dated June 23, 2020 (as amended and restated on October 21, 2020 and as may be further amended and/or restated from time to time) which was made between, amongst others, ourselves, the Parent, the Offshore Security Agent, the Facility Agent, the Lenders and Citibank, N.A., U.A.E. Branch as onshore security agent (the "**Onshore Security Agent**" and together with the Offshore Security Agent, the "**Security Agent**") (the "**Security Trust and Intercreditor Deed**" or the "**STID**"). We have entered into certain ISDA Master Agreements and swap confirmations with certain financial institutions the "**Hedge Counterparties**") to hedge our exposure to interest rate risk under the Initial Bank Facility Agreement (the "**Hedging Agreements**") (see "*Summary of Certain Finance Documents – Initial Bank Facility Agreement" and "Summary of Certain Finance Documents – Hedging Agreements*"). The remaining outstanding principal balance of the Intial Bank Facility will be fully prepaid using the proceeds of the Bonds, and the associated interest rate hedging transactions under the Hedging Agreements will be terminated in full, concurrent with such prepayment.

The Bonds will be constituted by a supplemental trust deed to be entered into on or about the Issue Date among us and Citicorp Trustee Company Limited as Bond Trustee (the "**First Supplemental Bond Trust Deed**") and which will be supplemental to the bond trust deed dated November 5, 2020 among us and Citicorp Trustee Company Limited in connection with the issuance of the Original Bonds (the "**Principal Bond Trust Deed**" and, together with the First Supplemental Bond Trust Deed, the "**Bond Trust Deed**"). On or about the Issue Date, we will also enter into an amendment and restatement agreement in relation to the agency agreement we have entered into with Citibank, N.A, London Branch as principal paying agent (the "**Principal Paying Agent**"), Citibank, N.A, London Branch as transfer agent (the "**Transfer Agent**") and Citigroup Global Markets Europe AG as registrar (the "**Registrar**") on November 5, 2020 (such agreement as amended and restated and in relation to the issuance of the Original Bonds and the Bonds, the "**Agency Agreement**").

We entered into a debt service reserve facility agreement with First Abu Dhabi Bank PJSC as agent (the "**DSR Facility Agent**") and the financial institutions listed therein as lenders "(the **DSR Facility Providers**") on October 27, 2020 (the "**Debt Service Reserve Facility Agreement**") in respect of a debt service reserve facility in the aggregate principal amount of U.S.$320,000,000. We are permitted to drawdown under the Debt Service Reserve Facility Agreement if we have insufficient monies to pay our scheduled debt service up the limit provided under the Debt Service Reserve Facility Agreement. We entered into an Accession

Memorandum to the STID with the Security Agent and the DSR Facility Agent on November 4, 2020, pursuant to which the DSR Facility Agent has become party to the STID as the Secured Representative of the DSR Facility Providers. See *"Summary of Certain Finance Documents – Debt Service Reserve Facility Agreement"*.

**Senior Debt**.......................................... As of the Issue Date, our Senior Debt will comprise amounts outstanding under the Bonds and the Original Bonds.

**Shareholders' Agreement** .................. We are currently party to a shareholders' agreement dated June 23, 2020 to which AssetCo, ADNOC HoldCo and NH Galaxy Pipeline Bidco Limited are also a party which regulates the exercise of our respective rights as shareholders in AssetCo (the "**Shareholders' Agreement**"). *See "Summary of Shareholders' Agreement".*

**Additional Senior Debt**........................ The Bond Trust Deed permits us to incur additional indebtedness that will constitute Senior Debt if certain conditions are satisfied at the time of the incurrence of such additional indebtedness, including that the minimum projected DSCR, on a pro forma basis for each period of 12 months commencing from the Quarter Date immediately preceding the date on which such additional indebtedness is to be incurred and ending on September 30, 2040 is not less than 1.02:1. See "*Terms and Conditions of the Bonds—Covenants—Limitation on incurrence of Financial Indebtedness*".

**Limited Recourse Obligations** ............ The payment of principal, premium, if any, and interest (as defined in the "*Terms and Conditions of the Bonds*") in respect of the Bonds will be solely our obligations and is not guaranteed, either jointly or severally, by AssetCo, ADNOC, their respective affiliates or any other person. See "*Terms and Conditions of the Bonds—Status and Priority of the Bonds*".

**Ranking** ............................................... The Bonds will constitute our senior, secured, direct and unconditional obligations and will rank *pari passu* without any preference among them.

Our payment obligations under the Bonds will rank *pari passu* in right of payment with all of our other Senior Debt from time to time outstanding (excluding the Debt Service Reserve Facility Agreement, the claims in respect of commitment commissions, interest and principal will rank senior to the Bonds) and will rank senior in right of payment to all of our present and future subordinated indebtedness. See "*Terms and Conditions of the Bonds—Status and Priority of the Bonds*".

**Onshore Collateral** ............................. We have granted to the Onshore Security Agent, as security for the payment and discharge of all our Secured Obligations, a security interest over our rights under the Acquisition Agreement and our shareholding in AssetCo governed by United Arab Emirates law. See "*Summary of Certain Finance Documents – Security Documents*".

**Offshore Collateral**.............................. We have granted to the Offshore Security Agent, as security for the payment and discharge of all our Secured Obligations, a security interest over (a) our offshore bank accounts by Jersey law and (b) our rights under the Hedging Agreements governed by English law. In addition, the Parent has granted to the Offshore Security Agent, as security for the payment and discharge of all our Secured Obligations, a security over its shareholding in us and any receivables under any subordinated indebtedness owing by us to the Parent. See "*Summary of Certain Finance Documents—Security Documents*".

**Security Trust and Intercreditor Deed** ...................................................... We have entered into the STID to, amongst other things, (a) appoint the respective Security Agents, (b) govern the mechanism for decision making and sharing of enforcement proceeds between the Secured Creditors and (c) certain other decision making with the respect to the STID and the Security Documents. See "*Summary of Certain Finance Documents—Security Trust and Intercreditor Deed*".

**Use of Proceeds** .................................... We intend to use the proceeds from this offering of the Bonds for (a) in and towards prepayment of our indebtedness under the Initial Bank Facility Agreement together with accrued and unpaid interest; (b) in payment of fees, costs and expenses incurred in connection with the issue of the Bonds; and (c) to the extent of any surplus after (a) and (b) above, general corporate purposes. See "*Use of Proceeds*".

**Pre-funding Requirements**.................. On each Quarter Date (which is not an Interest Payment Date), we are required, in accordance with the Pre-Enforcement Priority of Payments, to credit to the Pre-Funding Ledger in respect of:

(a) the Series D Bonds on account of (i) accrued and unpaid interest on the Series D Bonds as at such Quarter Date and (ii) a proportion of the scheduled amortization payment falling due on the next following Interest Payment Date with respect to the Series D Bonds the amounts specified for such Quarter Date in Condition 6.2; and

(b) the Series E Bonds on account of (i) accrued and unpaid interest on the Series E Bonds as at such Quarter Date and (ii) a proportion of the scheduled amortization payment falling due on the next following Interest Payment Date with respect to the Series E Bonds the amounts specified for such Quarter Date in Condition 6.2.

See "*Terms and Conditions of the Bonds—Pre-funding Requirements on the Bonds*".

**Redemption at Our Option**................. We may redeem all or part of the Bonds at any time at a redemption price equal to (a) 100% of the principal amount of the Bonds being redeemed plus (b) accrued interest up to but excluding the date of redemption plus (c) the Applicable Premium (as defined in the Conditions) as of such redemption date. See "*Terms and Conditions of the Bonds—Redemption of the Bonds—Optional Redemption*".

**Optional Tax Redemption** .................. If, on any Interest Payment Date, we are or will become obliged to make any withholding or deduction for, or on account of, any taxes, duties or charges of whatsoever nature from payments in respect of any Bonds (a "**Tax Event**"), we may redeem the Bonds in whole, but not in part, at any time, upon not less than 30 days' nor more than 60 days' prior notice, at a redemption price equal to 100% of the principal amount of such Bonds, plus accrued and unpaid interest up to but excluding the date of redemption. Prior to giving such notice, the Issuer shall provide to the Bond Trustee, among other things, a legal opinion (addressed to the Bond Trustee) from a firm of lawyers in the applicable jurisdiction, opining that the consequence of (x) any change in, or amendment to, the laws or regulations of Jersey and/or any other taxing jurisdiction that we are, or would at the time of the relevant payment be, subject to and/or, in each case, any political or governmental subdivision or any authority thereof or therein having power to tax, or (y) any change in the application or official interpretation of such laws or regulations, which change or amendment becomes effective on or after the Issue Date, is a Tax Event. See "*Terms and Conditions of the Bonds— Redemption of the Bonds—Redemption for Taxation Reasons*".

**Mandatory Redemption for Termination of a Project Document or the Shareholders' Agreement** ........ If a Project Document or the Shareholders' Agreement is terminated and, in respect the Shareholders' Agreement or the General Services Agreement, such termination has or would reasonably be expected to have a Material Adverse Effect, we will be required to redeem all or a portion of the Bonds (and any other Secured Obligations) without a "make-whole" premium at a redemption price in cash equal to 100% of the principal amount of such Bonds, plus accrued and unpaid interest upon receipt of amounts due to us from AssetCo in accordance with the Shareholders' Agreement following such termination (and in any event within 30 Business Days (as defined in the Shareholders' Agreement (in its original form)) following such termination). See "*Terms and Conditions of the Bonds—Redemption of the Bonds—Mandatory Redemption for Termination of a Project Document or the Shareholders' Agreement*".

**Mandatory Redemption for a compulsory transfer event** ................. Subject to the Pro Rata Allocation Mechanic, we are required to apply the Allocated Amount of Transfer Event Proceeds in redeeming the Bonds in whole or in part at a redemption price equal to 100 per cent. of the principal amount of the Bonds being redeemed plus any accrued and unpaid interest up to the but excluding the date of redemption. See "*Terms and Conditions of the Bonds—Redemption of the Bonds—Mandatory Redemption for a Compulsory Transfer Event*".

**Restricted Payments** ........................... The Bond Trust Deed will permit us to make Restricted Payments subject to satisfaction of certain conditions, including the following:

(a) no Bond Event of Default has occurred and is continuing or would result from the making of the Restricted Payment;

(b) no Non-Dividend Event has occurred and is continuing;

(c) unless the Restricted Payment is being made within 90 days of an Interest Payment Date, the amount standing to the credit of each Pre-Funding Ledger maintained by the Issuer in respect of the Debt Service Payment Account is not less than the Pre-Funding Required Amount for the Quarter Date immediately preceding such Restricted Payment;

(d) the DSCR set out in the most recently delivered Compliance Certificate under the Bond Trust Deed was greater than or equal to 1.02:1; and

(e) the aggregate amount available under the Debt Service Reserve Facility, any equivalent debt service reserve facility available to us and the amount (if any) credited to the Debt Service Reserve Account is in aggregate at least equal to the DSRF Required Amount and no drawing is outstanding (other than a Standby Drawing) under the Debt Service Reserve Facility or any such equivalent debt service reserve facility.

**Covenants** ............................................ The Bond Trust Deed contains certain covenants granted by us for the benefit of the Bondholders, with respect to, among other things: payment of the Bonds (including interest, principal and make-whole premium (if applicable)), corporate existence, compliance with law, governmental approvals and third party consents, taxes, further assurances, treasury transactions, the mandatory exercise of certain rights under the Shareholders' Agreement, reporting covenants, indebtedness, negative pledge, loans and advances, guarantees, bank accounts, maintenance of ratings, maintenance of listing, restricted payments and holding company covenants. See "*Terms and Conditions of the Bonds—Covenants*".

**Operation of Accounts** ........................ All amounts standing to the credit of the Debt Service Payment Account will be applied by us on each Interest Payment Date in accordance with the Pre-Enforcement Priority of Payments or following the delivery of an Enforcement Notice and/or Acceleration Notice in accordance with the Post-Enforcement Priority of Payments. See "*Summary* of *Certain Finance Documents—Security Trust and Intercreditor Deed*".

**Expected Ratings** ................................ Prior to the issuance of the Bonds, it is expected that, subject to final documentation:

(a) the Series D Bonds will be rated "AA/stable" by Fitch and "Aa2/stable" by Moody's; and

(b) the Series E Bonds will be rated "AA/stable" by Fitch and "Aa2/stable" by Moody's.

These ratings reflect only the view of the applicable rating agency at the time the rating is issued, and any explanation of the significance of the rating may only be obtained from the relevant rating agency. There is no assurance that any credit rating will remain in effect for any given period of time or that it will not be lowered, suspended or withdrawn entirely by the applicable rating agency, if, in that rating agency's judgment, circumstances warrant the lowering, suspension or withdrawal of the rating. Any such lowering, suspension or withdrawal of any rating may have an adverse effect on the market price or marketability of the Bonds.

**LEI number of the Issuer....................** 549300L82YB0C6JQIC26

**CUSIP, Common Code, ISIN CFI and FISN** ...................................... *Series D Regulation S Bonds*

Common Code: 2300185613
ISIN: XS2300185613
CFI: DBFNFR
FISN: GALAXY PIPELINE/2.16BD 20340331

*Series D Rule 144A Bonds*

CUSIP Number: 36321P AD2
Common Code: 230032629
ISIN: US36321PAD24
CFI: DAFSGR
FISN: GALAXY PIPELINE/SR SECD BD CL D 144

*Series E Regulation S Bonds*

Common Code: 2300197030
ISIN: XS2300197030
CFI: DBFNFR
FISN: GALAXY PIPELINE/2.94BD 20400930

*Series E Rule 144A Bonds*

CUSIP Number: 36321P AE0
Common Code: 230032556
ISIN: US36321PAE07
CFI: DAFSGR
FISN: GALAXY PIPELINE/SR SECD BD CL E 144

**Governing Law and Dispute Resolution** ............................................ The First Supplemental Bond Trust Deed and the Bonds will be governed by English law. The Debt Service Reserve Facility Agreement, the Principal Bond Trust Deed and the Original Bonds are governed by English Law. The Security Documents granted in favor of the Onshore Security Agent are governed by Abu Dhabi law and the Security Documents granted in favor of the Offshore Security Agent are governed by Jersey law.

*See "Terms and Conditions of the Bonds—Governing Law and Jurisdiction".*

**Bond Trustee** ....................................... Citicorp Trustee Company Limited.

**Registrar**............................................... Citigroup Global Markets Europe AG.

**Principal Paying Agent** ....................... Citibank, N.A, London Branch.

**Transfer Agent**.................................... Citibank, N.A, London Branch.

**Onshore Security Agent** ...................... Citibank, N.A, UAE Branch.

**Offshore Security Agent**...................... Citibank, N.A, London Branch.

**Facility Agent** ...................................... First Abu Dhabi Bank PJSC.

**DSR Facility Agent** .............................. First Abu Dhabi Bank PJSC.

**Eligible Purchasers** ............................. The Initial Purchasers are offering the Bonds only to: (a) in the United States to persons who are "qualified institutional buyers" in reliance on Rule 144A under the Securities Act that are also Qualified Purchasers as defined in the Investment Company Act; and (b) outside the United States to persons who are not U.S. Persons or persons acquiring for the account or benefit of U.S. persons in offshore transactions in accordance with Regulation S.

**Form and Denomination** .................... The Bonds will be in registered form and will be issued in minimum denominations of U.S.$200,000 and integral multiples of U.S.$1,000 in excess thereof.

The Rule 144A Bonds will be represented by one or more global bonds registered in the name of a nominee of DTC. Beneficial interests in the Rule 144A Bonds will be held through DTC. We will not issue certificated Rule 144A Bonds except in the limited circumstances described in the Bond Trust Deed. Settlement of the Rule 144A Bonds will occur through DTC in same-day funds.

The Regulation S Bonds will be represented by one or more global bonds registered in the name of a nominee for the common depositary for Euroclear and Clearstream, Luxembourg. Beneficial interests in the Rule Regulation S Bonds will be held through the common depositary for Euroclear and Clearstream, Luxembourg. We will not issue uncertificated Regulation S Bonds except in the limited circumstances described in the Bond Trust Deed. Settlement of the Regulation S Bonds will occur through Euroclear and Clearstream, Luxembourg in same-day funds.

For information on depositary book-entry systems, see "*Book-Entry; Delivery and Form*".

**Transfer Restrictions**.......................…. We have not registered and will not register the Bonds under the Securities Act. The Bonds are subject to restrictions on transferability, and may only be offered or sold in transactions that are exempt from or not subject to the registration requirements of the Securities Act. See "*Transfer Restrictions*".

| | |
|---|---|
| **Absence of a Public Market for the Bonds** .................................................. | The Bonds will be new securities for which there is currently no market. Although the Initial Purchasers have informed us that they intend to make a market for the Bonds, they are not obligated to do so and they may discontinue market-making at any time without notice. Accordingly, we cannot assure that a liquid market for the Bonds will develop or be maintained. |
| **Listing** .................................................. | Application has been made to Euronext Dublin for the Bonds to be admitted to the Official List and to trading on the Global Exchange Market. |
| **Risk Factors** ........................................ | Investing in the Bonds involves a number of material risks. For a discussion of certain risks that should be considered in connection with an investment in the Bonds, see "*Risk Factors*". |

## RISK FACTORS

*Prospective purchasers of the Bonds should consider carefully the matters set forth below, as well as the other information contained in this Offering Memorandum, in evaluating an investment in the Bonds. Certain statements in this Offering Memorandum that are not historical facts constitute "forward-looking statements." Such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results to differ materially from results expressed or implied by such forward-looking statements. Such risks, uncertainties and other factors include, but are not limited to, the matters described below. You will find the definitions of capitalized terms used and not defined in this description in "Annex A: Glossary of Certain Terms", in the "Terms and Conditions of the Bonds" and as provided elsewhere in this Offering Memorandum.*

### Risk Relating to the Issuer

***Our only substantial asset other than cash is our shareholding in AssetCo, and we are dependent on payments from AssetCo, which is dependent on ADNOC as its only source of cashflow.***

Our only asset other than cash is our 47.7% shareholding in AssetCo. We rely entirely on AssetCo's ability to generate free cashflow and to distribute our pro rata share of free cashflow on a timely basis by way of dividend distribution. AssetCo has leased 38 onshore pipelines from ADNOC under a twenty-year lease agreement until June 30, 2040. AssetCo generates its cashflow and profits solely by providing ADNOC the right to use, operate and maintain the Pipelines in exchange for which ADNOC pays AssetCo the Tariff Amount, which is a quarterly tariff of U.S.$0.57 per mmbtu, multiplied by the calorific value (converted into mmbtu) of (i) the greater of: (a) the lesser of (*x*) the total throughput or deemed throughput (as applicable) of sales and injection gas, NGL and LNG, and (*y*) the Baseline Supply Forecast (the "**Chargeable Throughput**"); and (b) a minimum volume commitment ("**MVC**") which is fixed at 75% of volume projected in the Baseline Supply Forecast, (ii) the carried forward supply (if any), and (iii) the export volumes credit (if any). The Baseline Supply Forecast sets a cap on the Chargeable Throughput and the MVC sets the minimum Tariff Amount. See "*Summary of Principal Project Documents—Pipeline Use and Operation Agreement*." We do not have the ability to generate revenue from any source other than from dividend distributions paid out of free cashflow generated by AssetCo. AssetCo does not have the ability to generate cashflow from any source other than pursuant to the U&O Agreement. The risk of reduced demand from ADNOC for any or all of the Chargeable Throughput through the Pipelines does not affect payment obligations pursuant to the MVC under the U&O Agreement but we are dependent on ADNOC to pay the Tariff Amount to AssetCo.

Payment of dividends by AssetCo is subject to approval by the shareholders and Board of Directors of AssetCo. ADNOC HoldCo, as holder of 51% of the issued share capital of AssetCo, has such control. See "*—We are a minority shareholder in, and do not control, AssetCo.*" We are party to a shareholders' agreement (the "**Shareholders' Agreement**") with, amongst others, ADNOC HoldCo and AssetCo. See "*Summary of Shareholders' Agreement.*" Under the Shareholders' Agreement, 100% of AssetCo's free cash (net of reserves for liabilities that may reasonably be expected to result in cash payments) is to be distributed quarterly to its shareholders. These distributions can only be withheld at the request of ADNOC HoldCo, if, and for so long as, ADNOC has suspended the payment of dividends by it to the Government of Abu Dhabi (a "**Non-Dividend Event**"). In the event of such a suspension, we would not have the funds available to make payments on our debt (including the Bonds), even if AssetCo has the funds as the investors in the Bonds will not have a direct claim against AssetCo. In this circumstance we would need to utilize the Debt Service Reserve Facility to fund any shortfall required to make payments on our debt (including the Bonds). We provide no assurance that the banks providing the Debt Service Reserve Facility will be able to, or will, comply with their obligations under the Debt Service Reserve Facility Agreement or that the amount available to be utilized under the Debt Service Reserve Facility will be sufficient to meet any shortfall in funds that may arise following the occurrence of a Non-Dividend Event and for so long as such event is continuing. Additionally, the amount under the Debt Service Reserve Facility is sized to cover at least 6 months of scheduled debt service on our Senior Debt (including semi-annual payments on the Bonds), consequently, even if the banks meet their obligations under the Debt Service Reserve Facility, all subsequent payments may still be at risk.

A failure by ADNOC to make payments to AssetCo under the U&O Agreement will have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us, which, in turn, will have a material adverse effect on our ability to make payments on our debt (including the Bonds).

***We are a special purpose vehicle with limited corporate, financial and operating history and limited management resources.***

The Issuer is a special purpose vehicle incorporated on May 26, 2020 and has had limited corporate activity since its incorporation other than the issuance of shares in connection with its initial capitalization and activities in connection with the Acquisition Agreement, the Initial Bank Facility Agreement, the Hedging Agreements, the Original Bonds and the Shareholders' Agreement. The Issuer Financial Statements only set forth our financial position as of December 31, 2020 and for the period from May 26, 2020 to December 31, 2020, and are not indicative of our future financial statements. Our Issuer Financial Statements therefore have limited information with which to evaluate the performance of our investment in AssetCo, its current or future prospects or its financial results and performance.

As a special purpose vehicle, while we benefit from the experience of the members of our Board of Directors, we do not have and do not expect to have any other members of the management team and the Issuer will not have any employees. While in light of the nature of our business, we do not believe that we need any full-time management, there can be no assurance that our business would not require more management resources than it currently has or that, in such an instance, that we would be able to find individuals with appropriate or requisite experience to provide such resources. Similarly, AssetCo will not have its own employees and will be dependent on ADNOC to supply certain services and engage third parties to supply such services, see "*—Risks Relating to Our Investment in AssetCo, AssetCo's Business and ADNOC—AssetCo is and will remain potentially vulnerable to changes in technology and the general perception of hydrocarbon energy resources.*" If the performance of AssetCo is materially impacted by its lack of resource or if we experience challenges managing our business due to lack of track record or resources, it could have a material adverse effect on the Bonds or our ability to make payments on our debt (including the Bonds).

***We are a minority shareholder in, and do not control, AssetCo.***

We only hold 47.7% of the issued share capital of AssetCo, which does not give us control in terms of votes to be cast at a shareholders' meeting of AssetCo nor in terms of votes to be cast by directors of AssetCo at a meeting of the board of directors of AssetCo (including with respect to our ability to appoint or remove a majority of the directors at AssetCo). ADNOC HoldCo, as holder of 51% of the issued share capital of AssetCo, has such control. Furthermore, AssetCo is not bound by the undertaking, including negative pledge and restrictions on incurring financial indebtedness set out in the Conditions of the Bonds. Our rights as a shareholder are therefore substantially limited to the rights and protections granted to us in the Shareholders' Agreement. These rights and protections include:

- our entitlement to control certain decisions and actions of AssetCo under the U&O Agreement, the Lease Agreement and the General Services Agreement, including in respect of ADNOC's material breach, indemnities, billing adjustments and termination;

- the need for our prior approval for any shareholders' unanimous matters which includes amending constitutional documents or issuing, reducing, consolidating, sub-dividing, converting, purchasing or redeeming or varying the rights of any shares in AssetCo;

- the need for our prior approval as a shareholder holding at least 5.8% of the shares in AssetCo for any shareholders' super majority matters which includes matters such as: making a material change to the business, creating encumbrances, incurring indebtedness or making loans, non-ordinary course or non-arms' length related party transactions, commencing or settling litigation, winding up AssetCo, material asset or share acquisitions or material disposals, listing of securities, incurring capex or opex or making any other capital commitment, amending accounting policies or changing auditors;

- the right to appoint one director for each 5.8% of shares that we own. Directors will have a number of votes that is proportionate to the percentage ownership of the appointing shareholder, and the total number of directors shall initially consist of 12 but may be increased to 16 in the future; and

- the right to require ADNOC HoldCo to compulsorily acquire all of our shares (i) at the greater of 105% of Fair Value and the MVC NPV in the event ADNOC HoldCo materially breaches certain of its obligations under the Shareholders' Agreement (subject to a cure right); or (ii) at the greater of 100% of Fair Value and the MVC NPV on an ADNOC HoldCo Change of Control (as defined below).

Under the Shareholders' Agreement, it is ADNOC HoldCo which is entitled to appoint a director to be the chairperson of the board of directors and to be chief executive officer of AssetCo so long as ADNOC HoldCo holds 50% plus 1 in nominal value of the shares. We can provide no assurance that ADNOC HoldCo will, or will be able to, comply with its obligations under the Shareholders' Agreement and any failure to do so could have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us, which in turn, could have a material adverse effect on our ability to make payments on our debt (including the Bonds).

***Our underlying assumptions regarding the Financial Model may not be accurate or may be subject to changed circumstances.***

The information contained in the Financial Model reflects certain assumptions with respect to ADNOC's performance, the baseline production forecast, certain limited corporate and administrative costs of AssetCo ("**AssetCo Corporate Costs**") and the timing of dividend distributions by AssetCo of its free cashflow to its Shareholders. See "Summary of the Financial Model". Investors should carefully review the summary of the Financial Model. We do not intend to provide to the Bondholders any revisions of the illustrations included in the summary of the Financial Model or any analyses of the differences between the illustrations included in the summary of the Financial Model and actual results later achieved. The Financial Model has made certain assumptions as to the volumes, AssetCo Corporate Costs and inflation rates and the timing of dividend distributions by AssetCo of its free cashflow. These assumptions and the other assumptions used in the Financial Model are inherently subject to significant uncertainties. The forward-looking information contained in the Financial Model is not a projection, profit forecast or prediction. The Financial Model is designed to illustrate hypothetical results that are mathematically derived from certain assumptions.

Actual results may differ materially from those illustrated, including with respect to future capacity and demand. Accordingly, the financial analysis does not necessarily reflect current or future costs or illustrated cash inflows, and neither we nor any other person assumes any responsibility for their accuracy. Any disruptions in the Pipelines' flows due to reduced demand or due to some Pipelines reaching their capacity from time to time could impact cashflow and could result in actual performance significantly differing from the Financial Model.

Therefore, no representation by us or the Initial Purchasers is made, none is intended, nor should any be inferred, with respect to the likely occurrence of any particular future set of facts or circumstances. If actual results are less favorable than those shown in the Financial Model, or if the assumptions used in formulating, the Financial Model prove to be incorrect, this could have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us of our proportionate share of free cashflow in respect of our 47.7% shareholding, which, in turn, could have a material adverse effect on our ability to make payments on our debt (including the Bonds).

***The insolvency laws of Jersey and other jurisdictions may not be as favorable as the bankruptcy laws in the United States and other jurisdictions, and may preclude Bondholders from recovering payments due on the Bonds. Furthermore, security interest will be subject to certain limitations on enforcement and may be limited by applicable law or subject to certain defenses that may limit its validity and enforceability.***

The Issuer is incorporated under the laws of Jersey. In the event of a bankruptcy, insolvency or similar event, proceedings could be initiated in Jersey or other relevant jurisdictions, for example where the plaintiff is located. Such multi-jurisdictional proceedings may be complex and more costly for creditors and otherwise may result in greater uncertainty and delay regarding the enforcement of your rights. Your rights under the Bonds and the collateral will be subject to the insolvency and administrative laws of several jurisdictions and there can be no assurance that you will be able to effectively enforce your rights in such complex, multiple bankruptcy, insolvency or similar proceedings.

In addition, the bankruptcy, insolvency, administrative and other laws of the Issuer's jurisdictions of organization or incorporation may be materially different from, or in conflict with, each other and those of the United States, including in the areas of rights of creditors, priority of governmental and other creditors, ability to obtain post-petition interest and duration of the proceeding. The application of these laws, or any conflict among them, could call into question whether any particular jurisdiction's law should apply, adversely affect your ability to enforce your rights under the Bonds in those jurisdictions or limit any amounts that you may receive. See "*Creation and Enforcement of Security and Security in Insolvency Limitations on the Validity and Enforceability of the Security Interests*" with respect to certain of the jurisdictions mentioned above.

In addition, the Issuer will secure the payment of the Bonds by granting security under the relevant security documents. However, each security interest granted under a security document will be limited in scope to the value of the relevant assets expressed to be subject to that security interest, and the Bond Trust Deed will provide that each security interest will be limited to the maximum amount that can be secured, without rendering the relevant security interest voidable or otherwise ineffective under English, Jersey or other applicable law, and enforcement of each security document would be subject to certain generally available defenses. These laws and defenses include those that relate to corporate benefit, fraudulent conveyance or transfer, voidable preference, financial assistance, corporate purpose, capital maintenance or similar laws, regulations or defenses affecting the rights of creditors generally. See "*Creation and Enforcement of Security and Security in Insolvency Limitations on the Validity and Enforceability of the Security Interests.*"

***We will not pay additional amounts for any taxes imposed on the Bonds.***

We are a special purpose vehicle incorporated in Jersey, and Jersey currently imposes no withholding taxes on payments on the Bonds. However, we cannot provide any assurance that Jersey will not change its tax rules to impose any withholding taxes on payments on the Bonds. If any withholding taxes are imposed on any payments on the Bonds in the future, we will not pay any additional amounts in respect of such taxes, and the amounts received by the holders on the payments on the Bonds will be net of any such applicable withholding tax. In addition, any such withholding tax imposed on payments on the Bonds could give rise to a Tax Event.

**Risks Relating to Our Investment in AssetCo, AssetCo's Business and ADNOC**

***Our investment in AssetCo depends on ADNOC as the sole user of the Pipelines and its payments.***

ADNOC is the sole user of the Pipelines. Payments by ADNOC under the U&O Agreement are AssetCo's sole source of cashflow from which free income can be distributed to us by way of dividend. Under the U&O Agreement, AssetCo is entitled to receive at least the Tariff Amount corresponding to the MVC from ADNOC. Except in the event of termination or expiry of the U&O Agreement for any reason, the MVC is payable by ADNOC regardless of the availability of the Pipelines, emergency or force majeure events and the amount of gas, NGL and LNG or the associated market price of gas, NGL and LNG that is actually transported. ADNOC's payment obligations under the U&O Agreement in respect of the Tariff Amount are not guaranteed by the Government of Abu Dhabi or any other entity. AssetCo has limited remedies against ADNOC under each of the U&O Agreement and Lease Agreement for ADNOC's default under the U&O Agreement.

In the event that ADNOC is in default under the U&O Agreement (other than for non-payment of amounts due under the U&O Agreement or breach of the assignment provisions under the U&O Agreement), our only recourse will be to terminate the U&O Agreement pursuant to our rights under the Shareholders' Agreement and require ADNOC to pay to AssetCo the greater of (i) an amount equal to 100% of fair value (as calculated under the Lease Agreement) and (ii) the net present value of MVC (the "**Refund Amount 1**").

In the event that ADNOC is in default under the U&O Agreement for non-payment of amounts due under the U&O Agreement or breach of the assignment provisions under the U&O Agreement, our only recourse will be to terminate the U&O Agreement pursuant to our rights under the Shareholders' Agreement and require ADNOC to pay to AssetCo the greater of (i) an amount equal to 105% of fair value and (ii) the net present value of MVC (the "**Refund Amount 2**", together with the Refund Amount 1, the "**Refund Amount**")).

ADNOC is required to pay the applicable Refund Amount to AssetCo's designated account within two business days of calculation or determination of the applicable Refund Amount. If the calculation of the applicable Refund Amount has not been settled within twenty business days following termination of the Lease Agreement, ADNOC is required to pay an amount equal to the net present value of MVC within such twenty business day period. See "*Summary of Principal Project Documents—Pipeline Lease Agreement*" for further details. If the calculation of the Refund Amount, for any reason, has not been settled within twenty business days from the date of termination of the Lease Agreement default interest would start to accrue from the date of termination until the date of payment and, if the dispute (i) relates to the Current Supply Forecast then either party may commence arbitration proceedings against the other under the Lease Agreement in London and regulated by the Rules of Arbitration of the International Chamber of Commerce, for an arbitral determination of the applicable Refund Amount, or (ii) does not relate to the Current Supply Forecast then either party may refer the dispute for expert determination. There can be no assurance that ADNOC will agree to the applicable Refund Amount (including default interest) in accordance with the terms of the Lease Agreement in an amount sufficient to make payments on our debt (including the Bonds), the Refund Amount will be sufficient to cover our outstanding debt or, if ADNOC agrees to the Refund Amount in accordance with the terms of the Lease Agreement in an amount sufficient to make payments on our debt (including the Bonds), that ADNOC will make payment of the agreed Refund Amount in time to make payments on our debt (including the Bonds).

We can provide no assurance that ADNOC will be able to, or will, comply with its obligations under the U&O Agreement. A failure by ADNOC to comply with its obligations under the U&O Agreement, could have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us of our proportionate share of free cash in respect of our 47.7% shareholding, which in turn could have a material adverse effect on our ability to make payments on our debt (including the Bonds).

***Our investment in AssetCo depends on ADNOC paying AssetCo's operating and maintenance costs and decommissioning costs under the U&O Agreement.***

All of AssetCo's operating (other than the AssetCo Corporate Costs) and maintenance costs and decommissioning costs are borne by ADNOC as per the terms of the U&O Agreement. In the event that ADNOC is in default under the U&O Agreement, including for example due to non-payment of the operating and maintenance costs or decommissioning costs for any reason (including the insolvency of ADNOC), our only recourse will be to require AssetCo to terminate the U&O Agreement pursuant to our rights under the Shareholders' Agreement. We can provide no assurance that ADNOC will, or will be able to, comply with its obligations under the U&O Agreement. A failure of ADNOC to comply with its obligations under the U&O Agreement, could have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us of our proportionate share of free cashflow in respect of our 47.7% shareholding, which, in turn, may have a material adverse effect on our ability to make payments on our debt (including the Bonds).

***AssetCo is a special purpose vehicle with limited corporate and operating history, and the AssetCo Financial Statements or the Pro Forma AssetCo Tariff Sales are not indicative of future cash inflows or results of operations.***

AssetCo is a special purpose vehicle incorporated on May 4, 2020 and has had limited corporate activity since its incorporation other than the issuance of shares in connection with its initial capitalization and activities in connection with the Acquisition Agreement, the Shareholders' Agreement, the Lease, the U&O Agreement and the General Services Agreement.

The Pro Forma AssetCo Tariff Sales cover a period as of and for the years ended December 31, 2018, 2019 and 2020 and are not audited or reviewed. The Pro Forma AssetCo Tariff Sales are based on the financial performance of the Pipelines as if the arrangements under the Project Documents in respect of the Lease and the Tariff had been in place between ADNOC and AssetCo since January 1, 2018.

The Pro Forma AssetCo Tariff Sales contained in this Offering Memorandum are presented for illustrative purposes only, and by their nature only present a hypothetical situation, do not constitute a forecast of the financial condition or performance of AssetCo, and may not be an accurate indication of AssetCo's financial position or results of operations for any period. This data has been prepared solely for the purpose of this Offering Memorandum, is not prepared in the ordinary course of ADNOC's or AssetCo's financial reporting, has not been audited or reviewed, and it is not representative of the Pipelines' or AssetCo's results of operations for the periods presented or for any future period. Accordingly, investors should not place undue reliance on the Pro Forma AssetCo Tariff Sales.

The value of our investment in AssetCo and the business prospects and financial performance of AssetCo must be considered in light of the risks, uncertainties, expenses and difficulties frequently encountered by assets with a limited operating history including challenges in planning and forecasting accurately due to limited historical data, which means AssetCo's past results (as adjusted on a pro forma basis to take into account the arrangements under the Project Documents in respect of the Lease and the Tariff as if they had been in effect since January 1, 2018) cannot be relied on as an indication of future performance. Accordingly, our inability to successfully identify and address all risks and difficulties and to successfully implement our business plan could have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions in respect of our 47.7% shareholding, which, in turn, could have a material adverse effect on our ability to make payments on our debt (including the Bonds).

***The demand for natural gas, NGLs and LNG and surrounding market forces are subject to change.***

Non-MVC cash inflows generated by the Pipelines are closely linked both to demand in the long term for natural gas in the UAE and to peak demand of the system, which depend on a series of factors beyond the control of AssetCo. These factors include, among others, changes to the energy mix of the electricity generation capacity the development of alternative sources of energy, the price of natural gas, NGLs and LNG in comparison with other energies, the general economic situation, climate change, environmental legislation, uninterrupted imports of natural gas and NGLs from foreign countries and the demand from other countries for the LNG that we export. Demand for NGLs and condensate, which is an indirect demand driver for injection volumes, are also linked to global prices for NGLs, petrochemicals and refined products.

The natural gas and NGLs transported in the Pipelines is ultimately used by the UAE's domestic power sector, the UAE's domestic industrial sector, ADNOC's upstream division for injection to reservoirs, and ADNOC's downstream projects. The demand for electricity and natural gas is closely related to the domestic industrial demand in the UAE and climate. The demand for natural gas and electricity in the UAE may decline due to general economic factors that are not in our, AssetCo's or ADNOC's control. For example, if there are any delays in ADNOC's other industrial and petrochemical projects, or if there is a general decline of electricity demand in the UAE's domestic power sector due to economic slowdown, the demand for gas may decline. Furthermore, demand for gas may be affected by the increased use of alternative energy sources. See "*—AssetCo is and will remain potentially vulnerable to changes in technology and the general perception of hydrocarbon energy resources.*"

If demand for natural gas, NGLs and LNG does not increase at the forecasted pace, the strategic plan of AssetCo could be affected, which could have a material adverse effect on the business, financial condition and results of AssetCo. Although the risk of reduced demand from ADNOC for any or all of the Chargeable Throughput through the Pipelines does not affect payment obligations pursuant to the MVC under the U&O Agreement, it could impact AssetCo's cash inflows above the MVC amount. Additionally, this could negatively affect ADNOC's ability to make payments under the U&O Agreement and, accordingly, have a material adverse effect on AssetCo's business, results of operations or financial condition, which, in turn, may have an adverse effect on the amount of the quarterly distributions we receive from AssetCo.

***The interests of ADNOC and ADNOC HoldCo may conflict with the interests of the Bondholders.***

We cannot assure the purchasers of the Bonds that the interests of ADNOC and ADNOC HoldCo will not conflict with the interests of the Bondholders. ADNOC and ADNOC HoldCo have the power to, among other things, influence AssetCo's legal and capital structure and its day-to-day operations, as well as the ability to appoint and change AssetCo's chief executive officer and chairperson of the board of directors and to make any other changes in its operations, as applicable, subject to, in the case of unanimous or super-majority matters set out in the Shareholders' Agreement, our prior approval. We provide no assurance that the list of unanimous and super-majority matters set out in the Shareholders' Agreement are sufficient to address the potential conflicts of interests that may arise or the changes that ADNOC and ADNOC HoldCo wish to make or that our approval will be sought in all circumstances. Furthermore, ADNOC HoldCo is permitted to transfer its shares in AssetCo to a third-party purchaser upon expiry of the lock-in period, which is three years from the issuance of the commercial license for the operation of the Pipelines, subject to right of first offer and tag along rights of the other shareholders of AssetCo including us. If we do not use our right of first offer to purchase any shares that ADNOC HoldCo sells in AssetCo, third-party shareholders may, by themselves or together with ADNOC, control AssetCo. Any insufficiency or failure to seek our approval might have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us of our proportionate share of free cash in respect of our 47.7% shareholding which, in turn, might have a material adverse effect on our ability to make payments on our debt (including the Bonds).

There is also no guarantee that ADNOC may not choose to sell all or part of its current 80.0% ownership stake in ADNOC HoldCo by either selling down its shareholding in ADNOC Infrastructure or by ADNOC Infrastructure selling down its shareholding in ADNOC HoldCo, and in either instance the indirect ownership of ADNOC in AssetCo would be reduced, see, "*Summary—Shareholders and Sponsors*". Any sale directly or indirectly of ADNOC's interest in AssetCo could affect AssetCo's business. On October 19, 2020, ADNOC Infrastructure sold 20% of its shareholding in ADNOC HoldCo bringing its total ownership interest from 100.0% to 80.0%.

***Some Pipelines may reach their capacity from time to time, and are subject to risks that may affect future capacity.***

Forecast throughput is dependent on the Pipelines being uprated or replaced in order to meet capacity requirements. Each Pipeline has its own risks that could affect future capacity. For example, Sales Gas Pipelines #1, #6 and #7 are all used for sour gas service, which may increase the risk of pipeline corrosion according to the Independent Technical Due Diligence Report. All of the Injection Pipelines and almost all of the NGL Pipelines have no leak detection system and instead are monitored by pressure, right-of-way patrolling and a mass balance procedure. This arrangement does not allow for accurate determination of which lines are leaking or whether gas is lost in the process and only allows for gross leakage determination. For LNG, a single jetty is available for the export of LNG (and other products) which means that the outload is inherently susceptible to downtime from equipment failures and metocean constraints. In addition, the carrier of the gas must be berthed every six days to avoid stopping LNG plant production. This is dependent upon a number of factors outside of ADNOC's control such as adverse weather conditions and cumulative delays in shipping schedules.

Some of the Pipelines and GPPs are currently forecast to experience capacity constraints during the term of the U&O Agreement. ADNOC may reduce throughput during this time, instead of investing in plant de-bottlenecking, which could negatively impact the cash inflows generated by the Pipelines. Additionally, some GPPs may represent infrastructure capacity constraints both upstream and downstream to the network as noted in the Independent Technical Due Diligence Report.

Although the risk of reduced demand from ADNOC for any or all of the Chargeable Throughput through the Pipelines does not affect payment obligations pursuant to the MVC under the U&O Agreement, it could impact the AssetCo's cash inflows above the MVC amount as well as ADNOC's ability to make payments under the U&O Agreement and, accordingly, have a material adverse effect on AssetCo's business, results of operations or financial condition, which, in turn, may have an adverse effect on the amount of the quarterly distributions we receive from AssetCo.

***Our investment in AssetCo depends on ADNOC and its affiliates, and we are involved in certain related party transactions that could create conflicts of interest.***

We are, either directly or indirectly through our investment in AssetCo, involved in and are dependent on certain related party contractual arrangements with ADNOC and with other companies affiliated with ADNOC. ADNOC and other companies affiliated with ADNOC are independent third parties whom we do not control and over whom we have no influence. These arrangements include, but are not limited to:

- the Shareholders' Agreement (which neither party can assign without the prior written consent of the other party);

- the U&O Agreement (which neither party can assign, except that AssetCo can assign any of its rights and benefits under the Lease Agreement by way of security to any provider of debt finance to AssetCo (or a security agent or security trustee on its behalf));

- the Lease Agreement (which neither party can assign without the prior written consent of the other party, except that AssetCo can assign any of its rights and benefits by way of security to any provider of debt finance to AssetCo (or a security agent or security trustee on its behalf)); and

- the General Services Agreement (which neither party can assign without the prior written consent of the other party, except that AssetCo can assign any of its rights and benefits by way of security to any provider of debt finance to AssetCo (or a security agent or security trustee on its behalf)).

There can be no assurance that these arrangements provide, or will provide, terms to us and AssetCo that are substantially similar to those that might have been obtained from unaffiliated third parties or that we and AssetCo may be able to replace these arrangements with unaffiliated third parties on similar terms. In addition, there can be no assurance that we or AssetCo will pursue any claims under these arrangements as vigorously as we might if such arrangements were with unaffiliated third parties.

These related party transactions could result in conflicts of interest and could have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us of our proportionate share of free cash in respect of our 47.7% shareholding, which, in turn, could have a material adverse effect on our ability to make payments on our debt (including the Bonds).

***Our investment in AssetCo relies entirely on the services of ADNOC and other third parties.***

ADNOC, as the operator of and procurer of certain services for AssetCo, relies on external contractors to use, operate and maintain the Pipelines, including to perform various works such as, without limitation, repairs and maintenance of equipment, maintaining and replacing pipes and other general building and structure maintenance in connection with the pipeline project. Notwithstanding that ADNOC is responsible for operating and maintaining the Pipelines pursuant to the U&O Agreement, AssetCo, and accordingly our investment in AssetCo, are largely dependent on ADNOC's selection of these external contractors as well as the satisfactory performance by these external contractors and the fulfilment of their obligations. An external contractor who fails to perform its obligations satisfactorily, or at all, may have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us of our proportionate share of free cash in respect of our 47.7% shareholding, which, in turn, may have a material adverse effect on our ability to make payments on our debt (including the Bonds).

In addition, AssetCo relies on ADNOC, who may engage third parties in order to procure certain general business function services, such as corporate administration, maintenance of the corporate treasury, IT, insurance, record-keeping and reporting, under the General Services Agreement. AssetCo also relies on ADNOC for management services as it has a limited management team. While AssetCo is contractually obligated to pay ADNOC for certain limited AssetCo Corporate Costs, subject to a cap, we can provide no assurance that ADNOC will be able to, or will, continue to procure services for AssetCo, or that it is possible to replace these arrangements with another provider on similar terms. If ADNOC does not provide or procure certain services to AssetCo or if those services will no longer be available on terms similar to those presently available, on commercially reasonable terms or at all, this may have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us of our proportionate share of free cash in respect of our 47.7% shareholding, which, in turn, may have a material adverse effect on our ability to make payments on our debt (including the Bonds).

***The Pipelines' operation and ADNOC's and AssetCo's ability to respond to unexpected events are dependent on the availability of skilled personnel employed by ADNOC.***

Our investment in AssetCo depends, to a certain degree, on the continued services of personnel employed by ADNOC, which is responsible for using, managing and operating the Pipelines. Qualified personnel are in great demand throughout the oil and gas industries. Although knowledge is not confined to certain key personnel whose absence would impact ADNOC's operation of the Pipelines, ADNOC's inability to attract, retain and motivate additional qualified management and other personnel could impact ADNOC's operation of the Pipelines which, in turn, could have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us of our proportionate share of free cash in respect of our 47.7% shareholding. This may have an adverse effect on the amount of the quarterly distributions we receive from AssetCo.

***Our investment in AssetCo is subject to certain operational risks that, if materialized, may result in the disruption or shutdown of ADNOC's operation activities, as well as in damages to the environment and to third party property.***

ADNOC's operations involve the transportation of natural gas and associated by-products. Transporting natural gas involves specific operating risks, some of which are beyond our control and that of AssetCo. The processed wellhead fluid and the resulting products are, by their nature, hazardous materials that are highly combustible. The nature of the midstream operations exposes AssetCo to heightened risks from accidents involving explosions and fire. In addition, any future upgrades or works on the Pipelines will expose AssetCo to additional operational risks and hazards. ADNOC's operations may be curtailed, delayed or cancelled due to common operational risks such as adverse or abnormal weather conditions, natural disasters, equipment failures or accidents, leaks, shortages or delays in the availability or in the delivery of equipment, delays in issuing or cancellation of environmental licenses or other government authorizations, fires, explosions, blow-outs, surface cratering, pipeline failures, pandemics and lockdowns which might impact the requisite maintenance and servicing activities, theft and damage to our transportation infrastructure, sabotage, terrorist attacks and criminal activities. ADNOC's operations could also be affected by any operational risks and hazards in the upstream operations feeding the Pipelines or in the GPPs. Furthermore, the upstream gas reservoirs may fail to produce gas at the expected rate, which could also have a negative impact on AssetCo's business.

The occurrence of any of these operating risks could result in substantial losses, including slowdowns to, or suspension or shutdown of, the operations of the Pipelines, including injuries to ADNOC's employees, destruction of property, equipment and infrastructure damages, clean-up responsibilities, third party liability claims, government investigations and imposition of fines or withdrawal of environmental licenses and other government permits.

Except for certain limited AssetCo Corporate Costs, all of AssetCo's operating and maintenance costs and decommissioning costs are borne by ADNOC as per the terms of the U&O Agreement. The occurrence of any of these operating risks may increase operating and maintenance costs or decommissioning costs, which could impact AssetCo's cash inflows above the MVC amount as well as ADNOC's ability to make payments under the U&O Agreement and, accordingly, have a material adverse effect on AssetCo's business, results of operations or financial condition, which, in turn, may have an adverse effect on the amount of the quarterly distributions we receive from AssetCo.

***Adequate insurance may not be in place to cover all potential losses.***

AssetCo benefits from certain insurance arrangements, including property damage and marine/non-marine liability insurance. AssetCo's insurance arrangements are arranged and managed by ADNOC under an insurance program. Pursuant to the U&O Agreement, ADNOC is obligated to obtain and maintain insurance policies in respect of the Pipelines in conformance with the ADNOC Group Insurance Program. See *"Business—Insurance."* However, as a result of operating risks and other potential hazards associated with midstream activities, the Pipelines may from time to time become exposed to significant liabilities for which there may not be adequate insurance coverage. In addition to natural risks such as earthquakes, floods, lightning, hurricanes and wind and extraordinary events like pandemics, as well as hazards such as fire, explosion, collapse and machinery failure, there are inherent risks with being the lessee of the Pipelines that may occur as a result of inadequate internal processes, technological flaws, human error, terrorism or unknown external events such as lockdowns which might impact the requisite maintenance and servicing activities. The control and management of these risks depend on adequate development and training of personnel and on the existence of operational procedures, preventative maintenance plans and specific programs supported by quality control systems which reduce, but do not eliminate, the possibility of the occurrence and impact of these risks. There can be no assurance that the insurance coverage in place will be sufficient or effective under all circumstances and against all hazards or liabilities to which the Pipelines or AssetCo may be subject. A claim for which the Pipelines and ADNOC are not fully insured or for which a substantial deductible is required to be paid could have a material adverse effect on ADNOC's ability to make payments under the U&O Agreement and therefore AssetCo's business, results of operations or financial condition and the value of our investment in AssetCo. For example, the property insurance deductible is currently U.S.$1 million and this could increase as a consequence of an adverse loss record or desire to decrease risk appetite in order to optimize premium costs.

We can provide no assurance that ADNOC will be able to, or will, continue to procure and maintain insurance arrangements for the Pipelines or that it is possible to replace these arrangements with another provider on similar terms. Also, if there are changes in the insurance markets, or increases in insurance costs, we cannot provide assurance that insurance coverage will continue to be available on terms similar to those presently available, on commercially reasonable terms or at all.

Additionally, in the event there is a total or partial loss of our assets, there can be no assurance that our proportionate share of the free cash derived from the insurance proceeds will be sufficient to satisfy all of our debt (including the Bonds). ADNOC would be liable to reinstate or remedy the assets should insurance fail in this regard and we can provide no assurance that ADNOC will be able to, or will, perform this function.

***The recent COVID-19 pandemic and its operational and economic effects remain highly uncertain and may have a material adverse effect on AssetCo's business, financial condition, results of operations, and ability to repay our debt (including the Bonds).***

Since early 2020, the macro-economic environment (both globally and within the UAE) has been materially affected by the novel coronavirus which causes the disease known as COVID-19, which was first identified in December 2019 and declared a pandemic by the World Health Organization on March 11, 2020. New strains of the COVID-19 virus have been discovered in late 2020 and early 2021, which are characterized by higher transmission rates. In response to the highly contagious and sometimes fatal COVID-19 virus, the United

States, certain EU countries and countries in the Middle East, including the UAE, began imposing quarantine and travel restrictions, as well as other restrictions, which aim to reduce in-person interactions. These measures, while aimed to slow the spread of the COVID-19 virus, have significantly reduced economic activity in many countries around the world (in particular, for those businesses connected to the travel and hospitality sectors). The lock-downs imposed in response to the COVID-19 pandemic may result in reduced consumer consumption and industrial production which would result in reduced energy consumption levels which could potentially impact the cash inflows of the Pipelines. Although the risk of reduced demand from ADNOC for any or all of the Chargeable Throughput through the Pipelines does not affect payment obligations pursuant to the MVC under the U&O Agreement, it could impact AssetCo's cash inflows above the MVC amount as well as ADNOC's ability to make payments under the U&O Agreement and, accordingly, have a material adverse effect on AssetCo's business, results of operations or financial condition, which, in turn, may have an adverse effect on the amount of the quarterly distributions we receive from AssetCo. The extent to which the COVID-19 pandemic may impact AssetCo's business will depend on future developments, including the availability, distribution and effectiveness of any COVID-19 vaccine, which are highly uncertain and cannot be predicted.

It is currently unclear how long these restrictions will be in place and what their ultimate impact will be on global and local economies, as well as oil and gas prices. According to the IMF, all advanced economies, emerging markets and developing economies are in recession for the first time since the Great Depression and the current recession is the biggest since then. The economic impact of the COVID-19 virus has already included significant volatility in financial markets, reduced global liquidity and investment, and may lead to lower economic growth in the GCC and globally. Similar future outbreaks could also adversely affect AssetCo's business, financial condition and results of operations as well as having a material adverse effect on our ability to make payments on our debt (including the Bonds).

***Macro-economic and financial market conditions could materially and adversely affect the Pipelines' business, results of operations, financial condition and prospects.***

Our only asset other than cash is our 47.7% shareholding in AssetCo. AssetCo generates its cash inflows solely by providing ADNOC the right to use, operate and maintain the Pipelines and relies on ADNOC as the sole user of the Pipelines, its operator and provider of maintenance and other services and procuring insurance of the Pipelines. ADNOC is susceptible to changes in the macro-economic environment and the performance of financial markets generally. The performance of global debt, equity and commodity markets has been volatile, reflecting the ongoing volatility in the macro-economic climate which has had, and which continues to have, a material adverse effect on the world's economies, including the economies of the UAE and other GCC states.

Revenue from sales of crude oil and gas is the principal source of revenue in Abu Dhabi. A decline in the price of crude oil and gas on global markets adversely affects economic conditions in the UAE. Since the start of 2020, global benchmark oil prices have seen a continued deterioration in global oil prices which may further adversely impact the UAE economy as a whole and may indirectly adversely impact ADNOC as a result of a deterioration in other sectors of the UAE economy. See "*Risk Factors—Risks Relating to the United Arab Emirates and the Middle East — Abu Dhabi's economy is highly dependent on its oil revenue which is significantly affected by volatility in international crude oil prices*."

Furthermore, the impact of political events can cause volatility in international financial markets and investor sentiment generally across the EU and the United States including, for example, periodic under and over performance of debt and equity markets. These market conditions may result in reduced liquidity, widening of credit spreads and a decrease in price transparency in credit and capital markets. The adverse market conditions may impact investment markets both globally and in the UAE, with increased volatility in interest rates and exchange rates.

The business, results of operations, financial condition and prospects of ADNOC may be materially adversely affected by these trends and may be further materially adversely affected by a continuation of the general unfavorable economic conditions in the other countries of the GCC and emerging markets generally as well as by United States, European and international trading market conditions and/or related factors. As a result, these trends could impact ADNOC's ability to make payments under the U&O Agreement, which, in turn, could have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us of our proportionate share of free cash in respect of our 47.7% shareholding, which, in turn, could have a material adverse effect on our ability to make payments on our debt (including the Bonds).

***ADNOC's operations are subject to government laws, regulations, licenses and permits and its inability to comply with existing or future laws, regulations (including environmental regulations), licenses or permits or changes in applicable law, regulations, licenses or permits may have a negative impact on its business, results of operations or financial condition and our investment in AssetCo. We could be adversely affected if the Government of Abu Dhabi changes the laws that regulate or impact the oil and gas sector in Abu Dhabi.***

ADNOC is wholly owned by the Government of Abu Dhabi. ADNOC and AssetCo benefit from certain exemptions due to this ownership. For example, AssetCo, by virtue of ADNOC's shareholding (provided such shareholding is maintained at 25% or more), relies on an exemption from the United Arab Emirates Commercial Companies Law which permits it to distribute free cash and exempts it from the requirement to build up a statutory reserve before distributing dividends. If the Government of Abu Dhabi changes its ownership interest in ADNOC or indirectly in AssetCo through its shareholding in ADNOC Infrastructure or ADNOC HoldCo or the laws that regulate or impact the oil and gas industry in Abu Dhabi in a manner that affects the status or the operations of ADNOC, ADNOC's ability to make payments under the U&O Agreement may be impaired and, accordingly, the cash inflows of AssetCo may be adversely affected which, in turn, may adversely affect the amount of free cash available for distribution by way of dividend to us such that we may not be able to make payments on our debt (including the Bonds).

Furthermore, pursuant to the U&O Agreement, ADNOC is responsible for obtaining, maintaining, renewing and paying for all registrations, licenses, consents and permissions required from any governmental authority in respect of the Pipelines. Operations of the Pipelines remain subject to a varied and complex body of laws, regulations, licenses and permits that both public officials and private parties, may seek to enforce. The licenses and permits currently held may be suspended, terminated or revoked if ADNOC does not comply with the license requirements, does not comply with any applicable emissions and other environmental requirements, systematically fails to provide required information, becomes insolvent, fails to fulfill any capital expenditure or production obligations or does not comply with any other applicable license conditions. In addition, the laws and regulations to which AssetCo and the Pipelines are subject impose numerous requirements on the modification, ownership and operation of the Pipelines. If ADNOC fails to comply with these requirements, this may prevent ADNOC from modifying or operating the Pipelines, and ADNOC could be subject to civil or criminal liability, fines and the imposition of clean-up obligations, including liens, to meet these requirements. Under the U&O Agreement, AssetCo pays, and the Tariff Amount is deemed to include, for any amounts payable by AssetCo to any governmental authority in relation to any applicable rates, taxes and charges pursuant to applicable law. However, the Tariff Amount may not be paid or may be insufficient and ADNOC could be materially and adversely affected by changes in existing law, the interpretation of existing laws or the adoption of new laws applicable to AssetCo and the Pipelines.

The imposition of fines or penalties, including fines or penalties for not obtaining licenses and permits of the Pipelines, or the revocation or suspension of licenses or permits, could impact ADNOC's ability to make payments under the U&O Agreement, which, in turn, could have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us of our proportionate share of free cash in respect of our 47.7% shareholding. This, in turn, could have a material adverse effect on our ability to make payments on our debt (including the Bonds).

***The Pipelines are exposed to significant environmental, health and safety risks as a result of its operations and the hazardous materials it handles and it is exposed to risks associated with climate change.***

The Pipelines are subject to various environmental, health and safety laws and regulations that impose operational compliance and remediation obligations. Operational compliance obligations, which are ADNOC's responsibility under the U&O Agreement, can result in significant costs to install and maintain pollution controls, fines and penalties resulting from any failure to comply with such obligations and potential limitations on AssetCo's ability to operate.

Environmental remediation obligations can result in significant costs associated with the investigation and clean-up of contaminated properties or water bodies, as well as claims for damage to property. In addition, AssetCo may face claims of injury to persons resulting from exposure to hazardous materials from the Pipelines' operations or of adverse impacts on natural resources resulting from these operations.

If a spill, leak, fire, explosion, blow-out, surface cratering, equipment failure, pipeline failure or other contamination or damage to nearby archaeological sites results from the production, processing, transport, export or storage of gas, NGL and LNG or another hazardous material, AssetCo could be exposed to significant environmental liabilities. Claims could be brought against AssetCo even if such event was caused by or attributable to a third party or party acting on our behalf as its agent. Accordingly, if any pipeline leaks should occur and the pipeline leak detection system is not operating correctly, any such leak may not be detected quickly enough to avoid significant environmental damage.

It is not possible for us to estimate exactly the amount and timing of all future expenditures related to environmental matters because of:

- the discovery of new environmental conditions or additional information about existing conditions;
- the uncertainties in estimating pollution control and clean-up costs (for example, the costs of remediation in respect of the historic groundwater contamination referred to above);
- the uncertainty in quantifying liability under environmental laws and regulations that impose liability without fault on potentially responsible parties; and
- the evolving nature of environmental laws and regulations and their interpretation and enforcement.

In addition, there is increasing concern that a gradual increase in global average temperatures will cause significant changes in weather patterns around the globe, and an increase in the frequency and severity of natural disasters or other effects that are impossible to predict. Increased frequency or duration of extreme weather conditions could damage AssetCo's assets, impair production capabilities and disrupt ADNOC's operations.

Any or all of these hazards, as well as possible legal liability to us or governmental or regulatory action against us arising from them, could impact ADNOC's ability to pay AssetCo under the U&O Agreement. Though ADNOC would still be obligated to make these payments to AssetCo under the U&O Agreement, these hazards could affect ADNOC's ability to meet those obligations, which, in turn, could have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us of our proportionate share of free cash in respect of our 47.7% shareholding. This may have an adverse effect on the amount of the quarterly distributions we receive from AssetCo.

***AssetCo is and will remain potentially vulnerable to changes in technology and the general perception of hydrocarbon energy resources.***

AssetCo's business is in the natural gas industry, a conventional source of energy. Concerns around gradual increase in global average temperatures could result in disfavoring of hydrocarbon energy sources. A major development in the alternative energy industry, such as technological advancements making existing alternative energy sources such as nuclear power more cost-effective, preference for alternative energy sources over conventional sources due to concerns around gradual increase in global average temperatures or the discovery of a new source of energy, could lead to a significant reduction in demand for natural gas.

While under the U&O Agreement, ADNOC pays AssetCo the Tariff Amount for the duration of the U&O Agreement subject to the cap and floor arrangements described in "*Summary of Principal Project Documents—Payments*", and at least the minimum Tariff Amount corresponding to the MVC regardless of the amount of natural gas or the associated market price of natural gas that is actually transported, such technological developments could make the U&O Agreement unprofitable and burdensome for ADNOC. As a result, this could impact ADNOC's ability to make payments under the U&O Agreement, which, in turn, could have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us of our proportionate share of free cash in respect of our 47.7% shareholding, which, in turn, could have a material adverse effect on our ability to make payments on our debt (including the Bonds).

Laws, regulations, policies, obligations, social attitudes and customer preferences relating to climate change and the transition to a lower carbon economy could also have an adverse impact on AssetCo's business (including increased costs from compliance, litigation and regulatory or litigation outcomes) and could lead to a decline in demand for the capacity on the Pipelines and, in turn, negatively impact AssetCo. Technological improvements or innovations that support the transition to a lower carbon economy, and customer preferences or regulatory incentives that alter fuel or power choices could impact demand for natural gas. Depending on the nature and speed of any such changes, this could adversely affect the demand for AssetCo's business, investor sentiment, AssetCo's access to capital markets and AssetCo's financial performance and its competitiveness.

Policy, legal regulatory, technological and market developments related to climate change could also affect future price assumptions used in the assessment of recoverability of asset carrying values including goodwill and appraisal of intangible assets, the timing of decommissioning of assets and the useful economic lives of assets used for the calculation of depreciation and amortization. This could have a material adverse effect on our ability to make payments on our debt (including the Bonds).

***Cybersecurity breaches and other disruptions could compromise AssetCo's information technology infrastructure and operations, and expose it to liability, which would cause AssetCo's business and reputation and our investment in AssetCo to suffer.***

The Pipelines' information technology infrastructure is critical to the efficient operation of AssetCo's business and essential to AssetCo's ability to perform day-to-day operations. ADNOC's and AssetCo's information technology infrastructure manages critical data relating to exploration and production, drilling, engineering and project information, employee personal information and financial information. Presently, all data is stored within ADNOC's production facilities.

ADNOC has implemented a comprehensive security management program. However, breaches in ADNOC's information technology infrastructure or physical facilities, or other disruptions or service interruptions, could result in financial, legal, reputational and operational consequences, such as damage to ADNOC's assets, production loss, safety incidents, damage to the environment, loss of blueprints or contracts, website defacement or potential liability. This could impact AssetCo's cash inflows above the MVC amount as well as ADNOC's ability to make payments under the U&O Agreement and, accordingly, have a material adverse effect on AssetCo's business, results of operations or financial condition, which, in turn, may have an adverse effect on the amount of the quarterly distributions we receive from AssetCo.

***Complications with engineering, design and implementation or technology or equipment failure could result in higher than anticipated costs and/or reduced production.***

Certain issues related to engineering, design and implementation of technology or equipment failure may adversely affect the operation of the Pipelines. There is a risk that similar problems could reduce production or throughput in the future and may require further remediation. Current forecasts for throughput for a number of the Pipelines exceeds their current design capacity, which indicates that debottlenecking will be required. In order for the Pipelines to achieve forecast throughput, uprating or replacement of certain of the Pipelines is expected to be required according to the Independent Technical Due Diligence Report. There can be no guarantee, however, that any such work will be completed.

There is also a risk that the metering equipment ADNOC used to monitor the flows entering the Pipelines fail to accurately perform their function, in which case, AssetCo's business could again be negatively affected. A failure of such metering equipment to accurately record the flows through the Pipelines would result in the Tariff Amount being miscalculated and AssetCo receiving a larger or smaller payment than it should.

Although ADNOC's inspection and maintenance practices focus on preventive monitoring and maintenance, there can be no assurance that ADNOC will succeed in operating the Pipelines at the expected level of costs or throughput. ADNOC, not AssetCo, pays for these costs under the U&O Agreement and General Services Agreement. Failure to maintain such expected levels of costs or production could impact AssetCo's cash inflows above the MVC amount as well as ADNOC's ability to make payments under the U&O Agreement and, accordingly, have a material adverse effect on AssetCo's business, results of operations or financial condition, which, in turn, may have an adverse effect on the amount of the quarterly distributions we receive from AssetCo.

***Many of the risks in relation to the Government of Abu Dhabi and/or ADNOC are interrelated.***

The Government of Abu Dhabi owns ADNOC which in turn owns ADNOC Infrastructure which in turn owns 80.0% of the shares in ADNOC HoldCo which as of the date of this Offering Memorandum owns 51% of the shares in AssetCo, see, "*Summary—Shareholders and Sponsors*". Any factors affecting the Government of Abu Dhabi and ADNOC, such as global and regional trends, including in relation to the oil and gas industries, in particular crude oil prices and/or demand for crude oil could affect each of the Government of Abu Dhabi, ADNOC, ADNOC HoldCo and their ability to honor any obligation, including their obligations under the Lease Agreement, the U&O Agreement, the General Services Agreement and the Shareholders' Agreement. We depend upon these agreements in order for AssetCo to generate its cash inflows and free cash for distribution by way of dividend as contemplated by the Shareholders' Agreement. The occurrence of any of these factors that affect the ability of ADNOC to honor any obligations under our contractual structure could have a material adverse effect on AssetCo's business, results of operations or financial condition, including on its ability to make timely dividend distributions to us of our proportionate share of free cash in respect of our 47.7% shareholding, which, in turn, could have a material adverse effect on our ability to make payments on our debt (including the Bonds).

***The potential for the application of a corporate income tax or withholding tax on dividends could impact AssetCo's and our business, results of operations or financial condition.***

Corporate income tax has been implemented in some of the Emirates in the United Arab Emirates, including in Abu Dhabi, through their own decrees or regulations. These Emirate-level corporate income tax decrees or regulations are currently only enforced on entities engaged in upstream oil and gas activities. In addition, currently there is no withholding tax or corporate income tax on the dividends paid by AssetCo to us. However, there is no guarantee that a corporate income tax or a withholding tax will not be enforced on other corporate entities at some time in the future by the Emirate of Abu Dhabi or by another Emirate with existing legislation. Furthermore, it is possible that withholding taxes or corporate income taxes at the Emirate level could be enforced retroactively against us or AssetCo. If this were to occur or if a withholding tax or corporate income tax at the federal level were introduced, this could significantly increase our and AssetCo's expenses depending on the nature of any such tax, which could have a material adverse effect on our and AssetCo's business and financial condition, including its ability to make timely dividend distributions to us of our proportionate share of free cash in respect of our 47.7% shareholding, which, in turn, could have a material adverse effect on our ability to make payments on our debt (including the Bonds).

**Risks Relating to the United Arab Emirates and the Middle East**

***Abu Dhabi and the United Arab Emirates are located in a region that is experiencing political unrest.***

All of the operations of ADNOC are located in the United Arab Emirates. Although Abu Dhabi and the United Arab Emirates enjoy domestic political stability and generally healthy international relations, since early 2011 there has been political unrest in a range of countries in the Middle East North Africa ("**MENA**") region, including Algeria, Bahrain, Egypt, Iraq, Libya, Morocco, Oman, Saudi Arabia, Syria, Tunisia and Yemen. This unrest has ranged from public demonstrations to, in extreme cases, armed conflict and civil war and has given rise to a number of regime changes and increased political uncertainty across the region. There currently are a number of armed conflicts in the MENA region including those in Yemen (in which the United Arab Emirates armed forces, along with a number of other Arab states, are involved), Syria, Iraq and Palestine as well as the multinational conflict with Islamic State. It is not possible to predict the occurrence of events or circumstances such as war or hostilities, or the impact that such events or circumstances might have on Abu Dhabi and the United Arab Emirates.

Abu Dhabi is, and will continue to be, affected by political developments in or affecting the United Arab Emirates and the wider MENA region and investors' reactions to developments in any country in the MENA region may affect securities of issuers in other markets, including Abu Dhabi. Although the United Arab Emirates has not experienced significant terrorist attacks such as those experienced by a number of countries in the MENA region, there can be no assurance that extremists or terrorist groups will not initiate violent activity in the United Arab Emirates. Any terrorist incidents, including cyber-terrorism, in or affecting the United Arab Emirates and increased regional geopolitical instability (whether or not directly involving the United Arab Emirates) may have a material adverse effect on the United Arab Emirates' (and, consequently, Abu Dhabi's) attractiveness for foreign investment and capital, its ability to engage in international trade, its tourism industry and, consequently, its economic, external and fiscal positions.

On June 5, 2017, three GCC countries, Saudi Arabia, the United Arab Emirates and Bahrain, as well as other countries in the MENA region, severed diplomatic ties with the State of Qatar, cut trade and transport links and imposed sanctions on the State of Qatar. The stated rationale for such actions was the State of Qatar's support of terrorist and extremist organizations and the State of Qatar's interference in the internal affairs of other countries. On January 4, 2021, Saudi Arabia and the State of Qatar agreed to reopen their airspace and maritime borders and began the process for reconciliation. There can be no assurance as to when diplomatic relations will be restored or land connections re-opened. Also, United Arab Emirates has decided to end all measures taken against Qatar and to reopen its airspace, land and sea borders with Qatar. It is also not currently possible to predict if there will be any significant deterioration of the current situation for an extended period which could negatively affect Abu Dhabi and the United Arab Emirates.

On August 13, 2020, the United Arab Emirates agreed to a peace agreement with Israel to formally normalize its diplomatic relationship with Israel. While the United Arab Emirates and Israel signed a peace treaty on September 15, 2020 and the official Israeli embassy in the United Arab Emirates was opened on January 24, 2021, it is difficult to predict the timing and ramifications of further steps towards normalized relations.

Our business may be affected by the financial, political and general economic conditions prevailing from time to time in the United Arab Emirates and the MENA region. It is not possible to predict the occurrence of events or circumstances such as wars or hostilities, or the impact of such events or circumstances, and no assurance can be given that we would be able to sustain our current profit levels if adverse political events or circumstances were to occur. The occurrence of any of these events or circumstances may result in a general loss of business confidence, which could potentially lead to an economic recession and reduced demand for hydrocarbon products, including crude oil, and have a material adverse effect on our business, results of operations or financial condition, including on our ability to make payments on our debt (including the Bonds). Prospective purchasers of the Bonds should also note that our business and financial performance could be adversely affected by political, economic or related developments both within and outside the MENA region because of inter-relationships within the global financial markets. Although the United Arab Emirates have enjoyed significant economic growth and stability, there can be no assurance that such growth or stability will continue.

***Abu Dhabi's economy is highly dependent on its oil revenue which is significantly affected by volatility in international crude oil prices.***

Abu Dhabi's economy is highly dependent on crude oil revenue which is significantly affected by volatility in international crude oil prices. The hydrocarbon sector contributed 35.1% of Abu Dhabi's nominal GDP in 2015, 31.7% in 2016, 34.1% in 2017, 40.4% in 2018 and 40.8% in 2019. Abu Dhabi's economy has in the past been adversely affected by periods of low international crude oil prices, and is currently being adversely affected by the sustained period of low international oil prices since mid-2014.

Prior to the oil price volatility seen to date in 2020, oil prices had been in a recovery phase following the fall in prices that started in 2014. Between July 2014 and January 2016, international crude oil prices declined dramatically (falling by approximately 75% from a high monthly average OPEC Reference Basket price per barrel of U.S.$107.89 in July 2014, to a monthly average price of U.S.$26.50 in January 2016). There was a partial correction in global crude oil prices through 2016 to 2018 (according to the OPEC website, the average price of the OPEC Reference Basket was approximately U.S.$40.76 per barrel for the year ended December 31, 2016, approximately U.S.$52.43 per barrel for the year ended December 31, 2017, approximately U.S.$69.78 per barrel for the year ended December 31, 2018 and approximately U.S.$64.04 per barrel for the year ended December 31, 2019). The volatility in oil prices since 2014 has affected the economies of the oil-revenue dependent GCC states, with greater budget deficits, a decrease in fiscal revenues and consequent lower public spending seen between 2016 and 2018. Government fiscal deficits have resulted in weakened net asset positions, larger external financing needs and continued lower government spending. This has resulted in the downgrading, or placing on "creditwatch", of a number of GCC sovereigns including, particularly, the Kingdom of Bahrain and the Sultanate of Oman.

Furthermore, the OPEC Reference Basket price has fallen during 2020. In early March 2020, OPEC officials proposed a plan to the members of OPEC and other non-OPEC member countries, including Russia, to cut global production by 1.5%. No agreement was reached, ending a three-year partnership between OPEC and the major non-OPEC oil exporters. This also resulted in 'OPEC +' failing to extend the agreement of cutting 2.1 million barrels per day that was set to expire at the end of March 2020. In March 2020, Saudi Arabia announced that it would raise oil output and discount its oil in April 2020. In early April 2020, 'OPEC +' announced that it had reached an agreement to cut production by 9.7 million barrels a day, however this action failed to support sufficiently the oil market with prices falling in the days following that announcement. As a result of the above factors and the COVID-19 outbreak weakening the demand for oil, the OPEC Reference Basket price fell significantly. Furthermore, certain oil prices turned negative during April 2020 (with the West Texas Intermediate benchmark falling as low as minus U.S.$37.63 a barrel), as weakened demand as a result of the COVID-19 outbreak led to buyers being paid to take oil due to storage capacity concerns. The OPEC Reference Basket price started recovering after April 2020 and in July 2020 reached above $40 a barrel for the first time in four months and was at $54.41 a barrel as of January 29, 2021.

In addition to the price of crude oil benchmarks, lower oil prices have a significant indirect impact on Abu Dhabi's economy. Many of Abu Dhabi's and the United Arab Emirates' other economic sectors are in part dependent on the hydrocarbon sector. For example, the financial institutions sector (and banks in particular) may experience lower liquidity (if significant Government of Abu Dhabi and Government of Abu Dhabi-owned company deposits are withdrawn to fund the anticipated deficit in 2021) or higher loan losses or impairments. The Government of Abu Dhabi may also decide, as it has done in the past, to further reduce Government of Abu Dhabi expenditures in light of the budgetary pressures caused by low or falling oil prices. As fiscal spending on infrastructure and investment projects drives credit to public sector entities and private contractors and bank credit for personal lending is driven by public sector wages, if this public spending is cut and public sector wages come under pressure, this could, potentially, increase levels of non-performing loans held by banks. In addition, large fiscal deficits, which are likely to result in lower public spending, could also impact many other sectors of the economy, including in particular the construction sector to the extent that large projects are delayed or cancelled. Furthermore, sectors that are dependent on household consumption, including education, healthcare and housing, may be adversely affected by lower levels of economic activity that may result from lower Government of Abu Dhabi revenue from hydrocarbon production.

As a result of significant deficits since 2015, the Government of Abu Dhabi has sought to reduce public spending and increase its non-hydrocarbon revenue. In particular, the Government of Abu Dhabi has significantly reduced the funding it provides to certain wholly-owned companies, reduced energy subsidies and limited development expenditure. On the revenue side, the Government of Abu Dhabi has implemented new administrative fees and, with effect from January 1, 2018, the federal government has introduced a VAT regime in the UAE at a rate of 5%.

These measures have become an integral part of a broader federal government strategy aimed at rationalizing fiscal expenditure generally and reducing fiscal dependency on hydrocarbon related revenues. When taken in totality with the ongoing oil price volatility, the diversion of significant fiscal revenues to the Saudi Arabian led military intervention in the Republic of Yemen since 2015 and domestic job losses in both the private and public sectors across the UAE (and particularly within Abu Dhabi), the impact on the UAE economy since early 2015 has been significant. The measures taken by the UAE federal government to counter the impact of the oil price volatility since 2015 have created significant stress in UAE retail markets.

If the prevailing low crude oil international prices are sustained for a significant period of time into the future this could have a significant adverse effect on Abu Dhabi’s economy. In turn, this could lead to a reduction in resource demand as fewer resources would be required to meet Abu Dhabi's decreased industrial demand. Additionally, this could affect the ability of ADNOC to pay their contractual obligations or their motivations to use the Pipelines, which, in turn, could have a material adverse effect on our business, results of operations or financial condition, including on our ability to make payments on our debt (including the Bonds).

***Information on crude oil and natural gas reserves are based on estimates that have not been reviewed by independent consultants for the purposes of this Offering Memorandum.***

Certain information on oil and gas reserves contained in this Offering Memorandum is based on figures published by OPEC. Neither the Issuer nor the Initial Purchasers have engaged independent consultants or any other person to conduct a review of Abu Dhabi’s natural gas or crude oil reserves in connection with this Offering Memorandum. All reserve estimates presented herein are based on data collected and maintained by OPEC and may differ materially from actual figures and no assurance can be given that material changes will not be made. Furthermore, although based on scientifically backed procedures and research, reserves valuation is a process with an inherently subjective element for estimating underground accumulations of crude oil and natural gas that cannot be measured in an exact manner. The accuracy of any reserve estimate depends on the quality and reliability of available data, engineering and geological interpretations and subjective professional judgement. Additionally, estimates may be revised based on subsequent results of drilling, testing and production. The proportion of reserves that can ultimately be produced, the rate of production and the costs of developing the fields are difficult to estimate and, therefore, the reserve estimates may differ materially from the ultimately recoverable quantities of crude oil and natural gas.

**Risks Relating to the Bonds**

***We are the only party required to make payments on the Bonds and, if we default on the Bonds, your recourse and your ability to act may be limited. There is no recourse to ADNOC, ADNOC HoldCo or AssetCo for repayment of our debt (including the Bonds).***

Our only asset other than cash is our 47.7% shareholding in AssetCo. Our access to the free cashflow generated by AssetCo is limited to amounts actually distributed to us as dividends or other distributions in proportion to our economic interest in AssetCo, which is 47.7% as of the date of this Offering Memorandum. The Bondholders will have no recourse to ADNOC, ADNOC HoldCo, AssetCo or any of their respective affiliates (other than us), nor any of our shareholders for payments in respect of the Bonds. Neither ADNOC, ADNOC HoldCo nor AssetCo or anyone else has guaranteed any payments in respect of the Bonds and our shareholders are not under any obligation to contribute any further funds to us. None of our shareholders, ADNOC, ADNOC HoldCo, AssetCo nor any of their respective affiliates will be party to the Bond Trust Deed and therefore will not be subject to the restrictive covenants contained therein, nor will provide any collateral. The obligation to make payments in respect of the Bonds will solely be our own obligation and the Bondholders will have a claim against us only.

***We might be subject to a change of control.***

There is nothing preventing our shareholders from selling some or all of their interest in our share capital and the Bond Trust Deed does not require us to repurchase the Bonds in the event of a change of control. If a sufficient number of shareholders choose to sell their ownership interest in sufficient quantities, we would be subject to all of the inherent consequences of that change. See "*Risk Factors—We are subject to a Compulsory Transfer Provision which could result in us being forced to transfer a percentage of our interest in AssetCo to ADNOC HoldCo.*"

***We have substantial indebtedness and we may not be able to generate sufficient cash to service our indebtedness, including due to factors outside our control.***

After giving pro forma effect to this offering of the Bonds, we would have had U.S.$7,920,000,000 of total indebtedness consisting of U.S.$3,920,000,000 aggregate principal amount of Bonds and U.S.$4,000,000,000 aggregate principal amount of Original Bonds. Accordingly, we will be highly leveraged. Our ability to make principal or interest payments when due on our indebtedness, including our obligations under the Bonds will depend on our ability to receive dividends from AssetCo which generates its cash inflows and profits solely by providing ADNOC the right to use, operate and maintain the Pipelines. We have no control over the use of the Pipelines. In addition, ADNOC is contractually obliged to cover certain of AssetCo's costs and expenses. If ADNOC does not perform this obligation and fails to finance these costs and expenses, AssetCo might not be able to generate sufficient free cashflow to pay us dividends and our high leverage may mean that we will not have sufficient revenue to meet our debt service (including on the Bonds) or our costs.

***We may incur additional indebtedness which could increase our risk exposure from debt and could decrease the Bondholders' share of enforcement proceeds and control over the enforcement process.***

We are entitled to incur additional senior secured debt that will share the benefits of the security package granted by us on a *pari passu* basis. In particular, we are entitled to incur such additional senior secured debt if the projected DSCR test is met and certain other conditions are satisfied. See "*Terms and Conditions of the Bonds—Covenants—Limitation on incurrence of Financial Indebtedness*". The incurrence of such additional senior secured debt could increase the risks associated with our already substantial indebtedness and reduce the share of the proceeds of the security to which Bondholders will be entitled upon the distribution of the proceeds of any enforcement. In addition, the additional senior secured creditors could have interests that are different from the interests of the Bondholders and, in such an event, the Bondholders may be bound by an exercise of rights, remedies or other enforcement action that is taken by other senior secured creditors in accordance with the STID which has not been approved by the Bondholders and which may be adverse to the interests of the Bondholders.

***Although we have funds available to us under the Debt Service Reserve Facility, the funds may not be sufficient and the Debt Service Reserve Facility may not be available.***

We are required by the terms of the Security Trust and Intercreditor Deed to use reasonable endeavors to ensure that for so long as there are Bonds outstanding to have a debt service reserve facility available to us in an aggregate amount which is not less than our projected interest payments and scheduled amortization under the Bonds, the Original Bonds and any Permitted Additional Financial Indebtedness for the two following Financial Quarters.

Pursuant to the terms of the Debt Service Reserve Facility, we are entitled to make drawings from time to time to cover shortfalls (principally expected to arise during a Non-Dividend Event) in the amounts available to us to make payments of interest and scheduled principal in respect of Senior Debt.

Each DSR Facility Provider is required to have a rating not less than the Minimum Long Term Rating. If a DSR Facility Provider ceases to have the Minimum Long Term Rating we will be required to draw down its commitment by way of a standby drawing. Any standby drawing will result in us incurring greater funding costs on account of the margin that would accrue on the standby drawing.

In the event that one or more of certain events of default by us is outstanding under the Debt Service Reserve Facility Agreement, including non-payment of amounts due to the lenders under the Debt Service Reserve Facility Agreement, the lenders may cancel their commitments to make advances to us.

In accordance with the Pre-Enforcement Priority of Payments and, following delivery of an Enforcement Notice and/or an Acceleration Notice, the Post-Enforcement Priority of Payments, the DSR Facility Providers under the Debt Service Reserve Facility are entitled to receive interest and repayments of principal on drawings in priority to payments to be made to purchasers of the Bonds (which may ultimately reduce the amount available for distributions to the purchasers of the Bonds). Accordingly, purchasers of the Bonds should be aware that no payment may be made to them under the Bonds unless and until all amounts owing to the DSR Facility Providers have been paid in full.

***The Debt Service Reserve Facility may not be available for the entire term of the Bonds.***

Under the Debt Service Reserve Facility Agreement, the DSR Facility Providers have agreed to make available their commitments for a minimum term of 5 years from the issue date of the Original Bonds (being November 5, 2020). We are entitled annually to request that the commitment of each DSR Facility Provider is renewed for a further 364 days initially from the date falling 364 days from the issue date of the Original Bonds and thereafter from the last renewal date. If a DSR Facility Provider agrees to such renewal, its commitment will remain a 5 year commitment from the date of each renewal. If a DSR Facility Provider does not renew, we are required to make a standby drawing in an amount equal to the non-renewing DSR Facility Provider's commitment under the Debt Service Reserve Facility Agreement. This is required unless by the time of the originally proposed renewal date of that DSR Facility Provider's commitment we find a replacement or substitute DSR Facility Provider and/or deposit money into a Debt Service Reserve Account which together with amounts to replace or substitute the applicable commitments and/or cash at least equal to the commitment of the non-renewing DSR Facility Provider. The proceeds of the standby drawing must be deposited in a standby deposit account that we would be required to open and maintain with an Acceptable Bank under the Debt Service Reserve Facility Agreement. We are required to repay any such standby drawing to that DSR Facility Provider four years from the making thereof. Under the STID we are required to use our reasonable endeavors to have available to us a super-senior debt service reserve facility agreement on substantially similar terms as the Debt Service Reserve Facility Agreement (with the exception of, amongst other things, margin, tenor, commitments, commitment commissions and fees) and/or a funded reserve in a Debt Service Reserve Account which in the aggregate is not less than the DSRF Required Amount. There is no guarantee that each DSR Facility Provider will agree to renew its commitment on an annual basis throughout the term of the Bonds and we can provide no assurance that where a DSR Facility Provider declines to renew its commitment, we will be able (having used our reasonable endeavors) to find an Acceptable Bank which is willing to accede to the Debt Service Reserve Facility Agreement or enter into a separate debt service reserve facility agreement with us or that we will have the cash to fund a deposit in a Debt Service Reserve Account which in the aggregate amount would replace or substitute the commitments of the non-renewing DSR Facility Provider. Any such inability to renew or replace the commitments under the Debt Service Reserve Facility Agreement may materially affect our ability to ensure that payments on the Bonds are made on a timely basis. See "*Summary of Certain Finance Documents – Debt Service Reserve Facility Agreement*".

***Bondholders' votes in respect of a STID Proposal may not be taken into account unless exercised at the beginning of a Decision Period.***

The Bondholders exercise their right to vote by "blocking" their Bonds in the clearing system and delivering irrevocable instructions to the Registrar or Principal Paying Agent that the votes in respect of their Bonds are to be cast in a particular way. In respect of modifications, consents and waivers to the Common Documents, the Bond Trustee (as Secured Creditor Representative of the Bondholders) is required to notify the Security Agent of each vote received by the Registrar or Principal Paying Agent no later than the business day on which any vote is received. The STID provides that as soon as the Security Agent has received sufficient votes from the Secured Creditors in favor of a consent, modification or waiver of a Common Document, the Decision Period will be closed and no further votes will be taken into account by the Security Agent.

Accordingly, unless a Bondholder exercises its right to vote at the beginning of a Decision Period, it is possible that a consent, modification or waiver of a Common Document may be approved by the Secured Creditors before such Bondholder has participated in any vote and any consent, modification or waiver of a Common Document duly approved by the Secured Creditors shall be binding on all of the Bondholders.

***Interests of the other Qualifying Secured Creditors may conflict with the interests of the Bondholders on modifications, waivers and consents in respect of the Common Documents.***

We may request the Security Agent to concur with us in making any modification to, giving any consent under, or granting any waiver in respect of any Common Document without the need to obtain prior approval of the Secured Creditors (including the Bondholders). The Security Agent may concur with us if (i) in its opinion, it is required to correct a manifest error, or it is of a formal, minor, administrative or technical nature, or (ii) such modification, consent or waiver is not, in the opinion of the Security Agent, materially prejudicial to the interest of any of the Qualifying Secured Creditors (where "materially prejudicial" means that such modification, consent or waiver could have a material adverse effect on our ability repay any Senior Debt (including the Bonds)).

In respect of any modifications, consents or waivers to the Common Documents that we request to be made and which require the consent of the Qualifying Secured Creditors, the votes of the Bondholders will be treated as single class on a dollar for dollar basis with other Qualifying Secured Creditors. The votes of the Bondholders cannot constitute the requisite majority in respect of any Ordinary Voting Matter or Extraordinary Voting Matter unless the principal amount outstanding under the Bonds is sufficiently greater than the amounts outstanding under all the other Voted Qualifying Debt. Furthermore, only the votes of Bondholders who participate within the specified Decision Period will be taken into account in relation to any Ordinary Voting Matter or Extraordinary Voting Matter. It is possible that the interests of certain Qualifying Secured Creditors will not be aligned with the interests of the Bondholders and that an instruction is given to the Security Agent which is not in the interests of Bondholders.

The STID also contains "snooze you lose" provisions with the consequence that Secured Creditors (including the Bondholders) which fail to participate in a vote or fail to assert an Entrenched Right within the applicable time period are not counted for the purposes of determining whether voting thresholds have been reached and are prevented from later asserting any applicable Entrenched Right respectively.

***Bondholders may be unable to effect service of process within the United States upon our directors or officers or to enforce judgments against them or us in the United States courts.***

All of our directors and officers and all or a significant portion of the assets of such persons may be, and all of our assets are, located outside of the United States. As a result, it may not be possible for Bondholders to effect service of process within the United States upon such persons or to enforce judgments against them or against us in the United States courts, including judgments predicated upon civil liability provisions of the United States federal securities laws.

***Exchange rate risks exist to the extent payments in respect of the Bonds are made in a currency other than the currency in which an investor's activities are denominated.***

We will pay principal and interest on the Bonds in U.S. dollars. This presents certain risks relating to currency conversions if an investor of the Bonds' financial activities are denominated principally in a currency or currency unit (the "**Investor's Currency**") other than U.S. dollars. These include the risk that exchange rates may significantly change (including changes due to devaluation of the dollar or revaluation of the Investor's Currency) and the risk that authorities with jurisdiction over the Investor's Currency may impose or modify exchange controls. In addition, such risks generally depend on economic and political events over which the Issuer, if any, have no control. An appreciation in the value of the Investor's Currency relative to the U.S. dollar would decrease (i) the Investor's Currency equivalent yield on the Bonds, (ii) the investor's Currency equivalent value of the principal payable on the Bonds and (iii) the Investor's Currency equivalent market value of the Bonds. There may be tax consequences for investors as a result of any currency exchange gains or losses resulting from their investment in the Bonds. Investors should consult their tax advisors concerning the tax consequences to them of acquiring, holding and disposing of the Bonds.

***The credit ratings of the Bonds may be suspended, downgraded or withdrawn, which could have an adverse effect on the value of an investment in the Bonds. In addition, Abu Dhabi's credit ratings may change and any ratings downgrade could, in turn, adversely affect the value of our Bonds.***

We expect that, subject to final documentation, the Bonds will be rated "AA/stable" by Fitch and "Aa2/stable" by Moody's. Any credit ratings of the Bonds may not reflect the potential impact of all risks related to structure, market, additional factors discussed in this Offering Memorandum and other factors that may affect the value of the Bonds.

Abu Dhabi has a long-term foreign currency issuer default rating of "AA" with a stable outlook from Fitch and a long-term issue rating of "Aa2" with a stable outlook from Moody's, see "*Overview of the United Arab Emirates and Abu Dhabi—Abu Dhabi Credit Ratings.*" We cannot be certain that Abu Dhabi's credit rating will remain for any given period of time or that a credit rating will not be downgraded or withdrawn entirely by the relevant rating agency if, in its judgment, circumstances in the future so warrant. Our credit rating is dependent on the creditworthiness of Abu Dhabi, consequently if Abu Dhabi were to be downgraded depending on the methodologies of the rating agencies, the Bonds may also be downgraded. We have no control over the rating of Abu Dhabi or the opinions of the rating agencies. A suspension, downgrade or withdrawal at any time of Abu Dhabi's credit rating may impact the rating of the Bonds which may, in turn, adversely affect the market price of the Bonds.

A credit rating is not a recommendation to buy, sell or hold the Bonds and only reflects the view of the applicable rating agency at the time the rating is issued. Any explanation of the significance of the rating may be obtained from the relevant rating agency. Credit ratings are subject to revision, suspension, downgrade or withdrawal at any time by the assigning rating agency. We cannot be certain that a credit rating will remain the same for any given period of time or that a credit rating will not be downgraded or withdrawn entirely by the relevant rating agency if, in its judgment, circumstances at the time so warrant. A suspension, downgrade or withdrawal at any time of the credit rating assigned to the Bonds may adversely affect their market price.

***Transfer of the Bonds will be restricted under applicable securities laws and the Bonds will only be offered and sold in the United States to QIBs that are Qualified Purchasers.***

We have not registered the offer and sale of the Bonds under the Securities Act or any other securities laws. Bondholders may not offer or sell the Bonds, except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act and other applicable securities laws. It is the obligation of each Bondholder to ensure that offers and sales of the Bonds comply with applicable law.

In addition, each purchaser or transferee of a Bond in the form of an interest in a Rule 144A Bond will be deemed to represent, among other things, that it is a QIB that is also a Qualified Purchaser. Each purchaser or transferee of a Bond in the form of an interest in a Regulation S Bond will be deemed to represent, among other things, that it is a not a U.S. Person or persons acquiring for the account or benefit of U.S. persons. The Bond Trust Deed will give us the right to force the sale of an interest in a Rule 144A Bond held by a U.S. Person who is determined not to have been a QIB that is also a Qualified Purchaser and will also give us the right to force the sale of an interest in a Regulation S Bond held by a U.S. Person or persons acquiring for the account or benefit of U.S. persons. A holder of an interest in a Bond that is required to sell such interest in such circumstance may not be able to sell such interest at a price equal to or greater than the purchase price of such interest and may not be able to invest the proceeds from the sale of such interest in an alternative investment that will provide the same return relative to the level of risk assumed on such interest. No payments will be made on any interest in a Bond that we require to be sold in such circumstances from the date notice of the sale requirement is sent to the date on which the interest is sold. See "*Transfer Restrictions*".

***There can be no assurance that an active market for the Bonds will develop or be maintained.***

The Bonds are new securities for which there is currently no market. There can be no assurance that an active market for the Bonds will develop, or if it does develop, that it will continue. Moreover, if a market for the Bonds does develop, the Bonds could trade at prices that may be higher or lower than the initial offering price thereof depending on a number of factors, including prevailing interest rates, events in the United Arab Emirates or elsewhere in the Middle East and the market for similar securities. If a market for the Bonds does not develop or continue, purchasers may be unable to resell the Bonds for an extended period of time, if at all. Consequently, a purchaser of the Bonds may not be able to liquidate its investment readily, and the Bonds may not be readily accepted as collateral for loans.

***The Bonds will be held in book-entry form and therefore you must rely on the procedures of the relevant clearing system to exercise any rights and remedies.***

The Bonds will initially only be issued in global certificated form and held through DTC or its nominee. Interests in the Global Bonds will trade in book-entry form only, and the Bonds in definitive registered form (the "**Definitive Registered Bonds**") will be issued in exchange for book-entry interests only in very limited circumstances. Unless and until Definitive Registered Bonds are issued in exchange for book-entry interests, owners of book-entry interests will not be considered owners or Bondholders. DTC, or its nominee, will be the registered holder of the Global Bonds. Payments of principal, interest and other amounts owing on or in respect of the Global Bonds representing the Bonds will be made to Paying Agent, which will make payments to DTC. Thereafter, these payments will be credited to DTC participants' accounts (including Euroclear and Clearstream, Luxembourg) that hold book-entry interests in the Global Bonds representing the Bonds and credited by such participants to indirect participants. After payment to DTC, we, the Bond Trustee, the Principal Paying Agent, the Transfer Agent and the Registrar will have no responsibility or liability for the payment of interest, principal or other amounts to DTC, or to owners of book-entry interests. Accordingly, if you own a book-entry interest, you must rely on the procedures of DTC, and if you are not a participant in DTC, on the procedures of the participant through which you own your interest, to exercise any rights and obligations of a holder of the Bonds under the Bond Trust Deed.

Unlike the Bondholders themselves, owners of book-entry interests will not have the direct right to act upon our solicitations for consents, requests for waivers or other actions from Bondholders. Instead, if you own a book-entry interest, you will be permitted to act only to the extent you have received appropriate proxies to do so from DTC or, if applicable, from a participant (including Euroclear and Clearstream, Luxembourg). The procedures implemented for the granting of such proxies may not be sufficient to enable you to vote on a timely basis.

Similarly, upon the occurrence of an event of default under the Bond Trust Deed, unless and until the relevant Definitive Registered Bonds are issued in respect of all book-entry interests, if you own a book-entry interest, you will be restricted to acting through DTC or, if applicable, a participant (including Euroclear and Clearstream, Luxembourg). The procedures to be implemented through DTC may not be adequate to ensure the timely exercise of rights under the Bonds. See "*Book-Entry; Delivery and Form*".

***The Bonds are subject to early redemption under certain circumstances.***

The Bonds are subject to redemption (i) with the payment of a make-whole premium in case of an Optional Redemption – see "*Terms and Conditions of the Bonds—Redemption of the Bonds*" and (ii) without payment of a make-whole premium in the event of specified changes affecting the taxation of the Bonds, if we receive a termination payment from ADNOC following an early termination of the U&O Agreement, or, from ADNOC HoldCo following the compulsory acquisition of some of the shares that we own in AssetCo following the occurrence of a Transfer Event under the Shareholders' Agreement. Thus, you may not control how long you will hold the Bonds (and thus the return on your investment) and may not be able to find suitable reinvestment opportunities.

***We are subject to a Compulsory Transfer Provision which could result in us being forced to transfer a percentage of our interest in AssetCo to ADNOC HoldCo.***

Under the Shareholders' Agreement, if one of our shareholders breaches certain specified obligations in the Shareholders' Agreement by becoming subject to a change of control (not consented to by ADNOC HoldCo), becomes insolvent or in breach of certain sanctions requirements, in the absence of such breaches being remedied within a prescribed cure period, including by way of the direct or indirect disposal of the shares held by the defaulting shareholder to one or more of other shareholders of our share capital, we are required to transfer to ADNOC HoldCo a percentage shareholding in AssetCo equal to the proportion of the shareholding that the defaulting shareholder holds indirectly in AssetCo which will also result in a partial mandatory redemption of some or all of the Bonds. The price payable by ADNOC HoldCo to us for the transfer of those shares in a Transfer Event depends on the nature of the breach and will either be the greater of 95% of Fair Value and the MVC NPV multiplied by the number of shares being sold or the greater of 100% of Fair Value and the MVC NPV multiplied by the number of shares being sold – "*Summary of Shareholders' Agreement – Compulsory transfer event*". However, there can be no guarantee this amount will be sufficient to cover our debts. Accordingly, we have no ability to control the circumstances in which such a Transfer Event may arise. Under these circumstances we cannot guarantee that we will have the necessary cashflow to service our debt as this will affect the dividend we receive from AssetCo. The share of dividends we receive thereafter will be reduced as our ownership share of AssetCo will have been reduced.

### Risks Relating to Enforcement

***Bondholders may not be able to recover against us, and neither we nor AssetCo might be able to recover against ADNOC HoldCo or ADNOC under certain Project Documents, given that ADNOC HoldCo and ADNOC are (indirectly or directly) owned by the Government of Abu Dhabi.***

In the United Arab Emirates, there is no written law or regulation concerning any immunity to which government entities are entitled as sovereign entities. However, although government entities can be sued, their assets are not available for attachment and Article: (a) 247 of Federal Law No. (11) of 1992 provides that public assets owned by the United Arab Emirates or any of the Emirates may not be confiscated; and (b) 103 of Federal Law No. (5) of 1985 (United Arab Emirates Civil Code) provides all real property and moveables owned by the United Arab Emirates or public juridical persons, allocated in fact or in law for the public benefit shall be deemed to be public property and in no circumstances may such property be disposed of or distrained. ADNOC HoldCo is indirectly majority, and ADNOC is directly wholly, owned by the Government of Abu Dhabi.

***The United Arab Emirates has a relatively untested bankruptcy regime, which may adversely affect the ability of Bondholders to enforce their rights in the United Arab Emirates including their rights in respect of security.***

In the event of AssetCo's insolvency or the insolvency of ADNOC HoldCo, bankruptcy laws of the UAE may adversely affect the relevant obligor's ability to perform its obligations under the project documents. ADNOC is not subject to UAE federal bankruptcy laws. It can neither be dissolved nor liquidated except pursuant to the passing of an Abu Dhabi law.

In September 2016, Federal Decree No. 9 of 2016 Concerning Bankruptcy (the "**United Arab Emirates Bankruptcy Law**") was issued to implement new measures containing provisions to safeguard the rights of creditors and debtors. The United Arab Emirates Bankruptcy Law replaces Part V of Federal Law No. (18) of 1993 and the relevant obligors fall within its scope. The United Arab Emirates Bankruptcy Law establishes a permanent committee named the "Committee of Financial Reorganization," which is in charge of supervising the management of procedures of financial reorganization for financial institutions licensed by the relevant regulators, and to facilitate mutual agreement between debtors and creditors with the assistance of one or more experts appointed by such committee. The United Arab Emirates Bankruptcy Law also sets out the procedures of bankruptcy aimed at assisting a debtor to reach reconciliation with its creditors pursuant to a plan of bankruptcy under the supervision of a court and assistance of a justice of the peace appointed in accordance with the provisions of the United Arab Emirates Bankruptcy Law. The UAE Bankruptcy Law was also recently amended, as a result of COVID-19 to offer certain protections to the debtors during an emergency financial crisis such as suspension of mandatory bankruptcy proceedings until such crisis comes to an end. Given that the United Arab Emirates Bankruptcy Law came into force on December 29, 2016, it is not yet clear how the new law and the procedures which it introduces will operate in practice and how it will affect the existing Civil Code and the labor law described below.

The United Arab Emirates Bankruptcy Law also provides for a claw-back of certain payments made or security provided between the date of suspension of payments by a company and the adjudication of its bankruptcy (such period not to exceed two years): (a) donations; (b) transactions where the liabilities of the bankrupt notably exceed the liabilities of the counterparty (whether in specie or in kind); (c) amounts paid to settle a debt before the maturity of its term; (d) settlement of a debt in a manner otherwise than as agreed (i.e. by payment in kind); and (e) provision of a mortgage or other security over the debtors property to secure a prior debt.

In addition, the respective laws under which each relevant obligor was incorporated also contain rules and procedures governing dissolution and winding up which are applicable with respect to such relevant obligor. Certain of these rules and procedures are supervised by the United Arab Emirates courts and/or a trustee in bankruptcy, which are granted certain discretions. There can be no assurance that a United Arab Emirates court would compel a bankruptcy administrator to perform any obligations of a relevant obligor under the finance documents during an administration period. In relation to the undertakings given and obligations assumed by the relevant obligors under any agreement in respect of contractual subordination, although contractual subordination of debts and liabilities may possibly be permitted under United Arab Emirates law, the enforcement of such provisions is largely untested and there can be no assurance that a United Arab Emirates court would compel a bankruptcy administrator to honor such undertakings and obligations.

Furthermore, any distribution to be made in the event of AssetCo's insolvency or the insolvency of ADNOC or ADNOC HoldCo must comply with the priority rights outlined below:

- Articles 1512 and 1513 of the United Arab Emirates Civil Code provide for two general priority rights ranking in the following manner: "judicial costs expended for the common benefit of creditors in preserving the property of the debtor and selling the same," and "taxes, imposts and other rights of any kind whatsoever owing to the government."

- In relation to moveable property, Article 1514 of the United Arab Emirates Civil Code provides for a priority right over such assets for "costs expended in preserving or repairing moveable property," to be subordinated to the rights mentioned in the paragraph above. In relation to debt arising out of a tenancy contract, Article 1519 of the United Arab Emirates Civil Code provides for a priority right over "chattels and produce which are on the property leased, notwithstanding that they may be owned by a sub-tenant".

- In addition, Federal Law No. 8 of 1980, as amended (the "**Labor Law**"), Article 4 provides for a priority interest in favor of workers and their beneficiaries over the entire assets of their employer in respect of monies owed under the Labor Law, which include wages, end of services gratuity and industrial compensation. This priority right is subordinate to the settlement of legal expenses and monies due to the government. Further, Article 77 of Federal Law No. 7 of 1999, or the Pensions Law, confers a priority right in respect of pension contributions.

***The Bondholders will be secured only to the extent of the value of the collateral that has been granted as security for the Bonds, and such collateral may not be sufficient to satisfy our obligations under the Bonds.***

The Bondholders will be secured only to the extent of their share of the value of the proceeds of the collateral in respect of which security has been granted for the benefit of the Bonds. There is no requirement for us to provide funds to enhance the value of the collateral if it is insufficient to discharge the liabilities owed by us to the Bondholders. The proceeds of any sale of the collateral following an event of default will be shared between the Bondholders and all of our other senior secured parties (including, for so long as the Original Bonds are outstanding, the holders of the Original Bonds) and only after all amounts that we owe to the DSR Facility Providers under the Debt Service Facility Agreement have been paid in full. Accordingly, the Bondholders' share of such proceeds may not be sufficient to satisfy, and may be substantially less than, the amount owed by us in respect of the Bonds.

The amount of the proceeds realized upon the enforcement of the security will depend upon many factors, including, among others, whether or not AssetCo continues as a going concern, the availability of buyers and the condition of the collateral. The book value of the collateral should not be relied on as a measure of realizable value for the collateral. By its nature, some or all of the collateral may not have a readily ascertainable market value or may not be saleable or, if saleable, there may be substantial delays in its disposal.

If the proceeds of any sale of collateral are not sufficient to repay all amounts due on the Bonds, the Bondholders (to the extent not repaid from the proceeds of the sale of the collateral) would have only an unsecured claim against us.

***There are limitations on the creation, perfection and enforcement of security interests that could affect the Bondholders' rights.***

The security securing the Bonds will be subject to any and all exceptions, defects, encumbrances, liens and other imperfections permitted under the Bond Trust Deed, the STID and the related security documents. The existence of any such exceptions, defects, encumbrances, liens and other imperfections could adversely affect the value of the collateral securing the Bonds, as well as the ability of the Offshore Security Agent and the Onshore Security Agent to realize or foreclose on such collateral. Furthermore, the ranking of the security can be affected by a variety of factors, including, among other things, the timely satisfaction of perfection requirements, statutory liens or re-characterization under the laws of the relevant jurisdictions.

Certain of the security documents that we and the Parent have entered into are subject to a right of first offer agreements entered into with ADNOC HoldCo which requires the Security Agent to first offer the collateral to ADNOC HoldCo at the price it intends to dispose of it in any enforcement of the collateral. These rights of first offer obligations may result in any realization of the collateral being delayed and may prevent there being an active market for our shares or the shares we own in AssetCo in the event of an enforcement of the collateral.

The Issuer and the Parent are incorporated under the laws of Jersey and are subject to Jersey insolvency laws which may pose particular risks for holders of the Bond with respect to the enforcement of the collateral. In the event of an insolvency of the Issuer or the Parent, insolvency proceedings may be initiated in Jersey. For details on the insolvency regime in Jersey and its potential impact on creditors, please see "*Creation and Enforcement of Security and Security in Insolvency and Limitations on the Validity and Enforceability of the Security Interests – Jersey Insolvency Laws*".

In addition, the grant of security in favor of the Bondholders is subject to the requirements, including registration requirements, and constraints of United Arab Emirates law. The Bondholders may face certain legal obstacles and practical difficulties associated with the realization of security interests under United Arab Emirates law. Although we will, pursuant to the Bond Trust Deed and the STID, take all actions as may be reasonably necessary to grant and perfect the security interests in such assets, and in a timely manner, we cannot give any assurance that the Bondholders will be able to effectively realize the value of such assets upon any enforcement, foreclosure or public auction.

In relation to the security which is governed by the laws of the United Arab Emirates and comprises future assets and rights that are not movable property, these are secured through the relevant security provider executing addenda to such security documents that identify such assets and rights. In the case of registered pledges, such addenda would also have to be registered. If the relevant security provider has granted to any third party a security over any such assets and rights prior to the execution and, if applicable, registration of the relevant addenda, the security created pursuant to the addenda will be subject to such third party's security interests.

***Prospective purchasers of the Bonds may experience difficulties in enforcing foreign judgments and foreign arbitration awards in the United Arab Emirates.***

To the extent that the enforcement of remedies must be pursued in the United Arab Emirates, it should be borne in mind that there is limited scope for self-help remedies under United Arab Emirates law and that generally enforcement of remedies in the United Arab Emirates must be pursued through the courts.

The United Arab Emirates is a civil law jurisdiction and judicial precedents in Abu Dhabi have no binding effect on subsequent decisions. In addition, court decisions in Abu Dhabi are generally not recorded. These factors contribute to judicial uncertainty. Furthermore, there can be no assurance that a judgment in U.S. dollars would be awarded by the United Arab Emirates courts in relation to the documents and agreements whose terms are expressed in U.S. dollars.

Any disputes in relation to the Bonds, the Bond Trust Deed and the English law governed documents will be referred to and resolved in the courts of England and Wales in accordance with English law. Any disputes in relation to United Arab Emirates law governed documents will be referred to and resolved by arbitration in Abu Dhabi in accordance with the arbitration rules of the International Chamber of Commerce.

The United States and the United Kingdom do not have any treaty with the United Arab Emirates providing for reciprocal recognition and enforcement of judgments in civil and commercial matters and accordingly the courts of the United Arab Emirates may not enforce the judgment of a United States or United Kingdom court without re-examining the merits of the claim. Moreover, judicial precedent in the United Arab Emirates has no binding effect on subsequent decisions and there is no formal system for the reporting of court decisions in the United Arab Emirates. These factors create greater judicial uncertainty than would be expected in certain other jurisdictions.

As a matter of United Arab Emirates law, United Arab Emirates courts will order the execution and implementation of a foreign court judgment only if:

- United Arab Emirates courts do not have exclusive jurisdiction over the dispute on which the judgment or order has been issued and that the foreign court that issued the judgment or order have jurisdiction according to the rules of international jurisdiction prescribed in its law;

- the foreign judgment or order has been issued by a court in accordance with the law of the country in which it was passed and duly certified;

- the party to the proceedings on which the judgment or order was passed was properly served and represented in the proceedings in the foreign jurisdiction;

- the judgment or order reached was final according to the law of the issuing court, provided that a certificate shall be furnished indicating that the judgment has acquired the legal effect of a final order, or same is already stated in the judgment; and

- the foreign judgment or order does not contradict a decision or order rendered by a court in the United Arab Emirates or violate the public policy or morals of the United Arab Emirates.

The execution judge shall have the authority to demand documents that support the application for enforcement of the foreign judgment before his decision is made. Accordingly, if sufficient documents are not submitted to evidence the factors above an order for an enforcement may not be granted. The regulations on enforcement of judgments were revised in 2018 meaning there is limited experience on how the above criteria are likely to be interpreted and applied by the courts of the United Arab Emirates.

In practice, the above criteria are likely to be applied restrictively and it is therefore unlikely that a judgment passed or an order issued by a foreign court would be enforced or recognized by the courts of the United Arab Emirates. An attempt to enforce such judgment or order in the United Arab Emirates is likely to amount to a re-hearing of the dispute.

The New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards 1958 (the "**New York Convention**") entered into force in the United Arab Emirates on November 19, 2006. Any arbitration award rendered in London should therefore be enforceable in Abu Dhabi in accordance with the terms of the New York Convention. Under the New York Convention, the United Arab Emirates has an obligation to recognize and enforce foreign arbitration awards, unless the party opposing enforcement can prove one of the grounds under Article V of the New York Convention to refuse enforcement, or the Abu Dhabi courts find that the subject matter of the dispute is not capable of settlement by arbitration or enforcement would be contrary to the public policy of the United Arab Emirates.

The Executive Regulations also amended the enforcement regime of foreign arbitral awards. Enforcement of foreign arbitral awards pursuant to the Convention are now to be commenced before an execution judge under the same conditions prescribed in the law of that foreign state for the enforcement of arbitral awards or through the direct application of the Convention. The arbitral award must have been issued on a matter for which arbitration is permissible in accordance with United Arab Emirates law and be enforceable in the jurisdiction wherein it has been issued. However, an enforcement may only be ordered after verifying the points referred to above, in connection with foreign judgments.

As mentioned above, the Executive Regulations have only recently been enacted so there are no extensive and constant case examples of how the above criteria are likely to be interpreted and applied by the courts of United Arab Emirates. There have been limited instances where the United Arab Emirates courts, most notably the Fujairah Court of First Instance and the Dubai Court of Cassation, have ratified or ordered the recognition and enforcement of foreign arbitration awards under the New York Convention. There is, however, no system of binding judicial precedent in the United Arab Emirates and it is unclear if these decisions are subject to any appeal (it should be noted that only the Dubai Court of Cassation decision was a final decision). Therefore, how the New York Convention provisions would be interpreted and applied by the Abu Dhabi courts in practice and whether the Abu Dhabi courts will enforce a foreign arbitration award in accordance with the terms of the New York Convention (or any other multilateral or bilateral enforcement convention), remain largely untested.

***Future attitudes of United Arab Emirates courts regarding interest cannot be predicted.***

Although, under the federal laws of the United Arab Emirates and the laws of Abu Dhabi, contractual provisions for the charging and payment of interest are permissible and have been routinely enforced, a court applying the federal laws of the United Arab Emirates or the laws of Abu Dhabi may not enforce such a provision either to pay interest on interest, default interest (where no loss is actually incurred) or to the extent that, on a given date, accrued but unpaid interest exceeded outstanding principal. The future attitude of the courts and the laws regarding interest of the United Arab Emirates and Abu Dhabi cannot be predicted.

***There is no principle of binding precedent in the United Arab Emirates courts.***

There is no doctrine of binding precedent in the United Arab Emirates courts and decisions of the United Arab Emirates courts are not regularly published. As a result, any experience with and knowledge of prior rulings of the United Arab Emirates courts may not be a reliable basis from which to predict decisions that United Arab Emirates courts may adopt in the future. The outcome of any legal disputes remains uncertain.

***There are limitations on the creation, perfection and enforcement of security interests in the United Arab Emirates.***

The recent United Arab Emirates law concerning security over moveable assets, the Security over Moveables Law (Federal Law No. 4 of 2020 replacing Federal Law No. 20 of 2016) enacted on May 28, 2020, has provided a basis for registerable security to be created over certain moveable assets, which includes the assignment of rights under certain contracts as part of the collateral securing the Bonds. There is also provision for such security to extend to future assets and for certain matters of enforcement without the involvement of the United Arab Emirates courts. While the implementing regulations relating to Federal Law No. 20 of 2016 continue to be in force, the implementing regulations relating to Federal Law No. 4 of 2020 have not yet been published. Security created outside the scope of the new moveable assets law, under alternative provisions of United Arab Emirates law, will be effective only in relation to assets and rights which are specifically identified and existing at the time of creation of such security.

In the absence of the new implementing regulation for the Security over Moveables Law, there is a lack of clarity on treatment of security interests registered pursuant to the implementing regulations of Federal Law No. 20 of 2016.

Outside the new regime to be established under the Security over Moveables Law, judicial sale is the only remedy (over and above normal remedies for breach of contract) available to a mortgagee and pledgee of assets in the United Arab Emirates, and it is a discretionary remedy. To the extent that the security documents provide for additional remedies in the nature of step-in/cure rights, receivership, the use of powers of attorney or otherwise, these will be considered contractual provisions only and would require an order of a United Arab Emirates court in order to be enforced. There can be no assurance that upon an application by the Onshore Security Agent for enforcement of the relevant security, a United Arab Emirates court will order the sale of the mortgaged or pledged assets at all or in the manner sought by the mortgagee or pledgee or allow any other additional remedies to be enforced.

***There are circumstances other than repayment or discharge of the Bonds under which the collateral securing the Bonds will be released automatically, without your consent or the consent of the Bond Trustee.***

Assets forming part of the collateral and which may be disposed of pursuant to disposals or transactions permitted by the Finance Documents may be released from the collateral securing the Bonds in accordance with the Security Trust and Intercreditor Deed without the prior consent of the Bondholders or the Bond Trustee as described under "*Summary of Certain Finance Documents— Security Trust and Intercreditor Deed —Release of Security*", and as otherwise permitted under the Bond Trust Deed.

***The collateral securing the Bonds may be challenged or voidable in accordance with the laws applicable in certain jurisdictions.***

If the collateral securing the Bonds were granted or recreated during the respective hardening period applicable in the relevant jurisdiction, it may be declared void or ineffective and/or it may not be possible to enforce it. To the extent that the creation of the collateral securing the Bonds is voided, the Bondholders, the Offshore Security Agent and the Onshore Security Agent would lose the benefit of such collateral and would be creditors solely of us and would therefore benefit only from any remaining collateral securing the Bonds. The Bondholders may also be required to repay any amounts received with respect to such collateral or release such collateral.

***The security interests in the collateral securing the Bonds have been, or will be, granted to the Security Agent rather than directly to the Bondholders. The ability of the Security Agent to enforce the collateral may be restricted by local law.***

The security interests that will secure our obligations under the Bonds will not be granted directly to the Bondholders but to the Security Agent, and thus the Bondholders will not have any independent power to enforce, or have recourse to, any of the security documents or to exercise any rights or powers arising under the security documents except through the Security Agent as provided in the Security Trust and Intercreditor Deed. By accepting a Bond, you will be deemed to have agreed to these restrictions. As a result of these restrictions, Bondholders will have limited remedies and recourse against us in the event of a default. See "*Summary of Certain Financing Arrangements—Security Trust and Intercreditor Deed*."

In addition, the ability of the Security Agent to enforce the security interests is subject to mandatory provisions of the laws of each jurisdiction in which security interests over the collateral are taken. For example, the laws of certain jurisdictions may not allow for the appropriation of certain pledged assets, but require a sale through a public auction and certain waiting periods may apply. There is some uncertainty under the laws of certain jurisdictions as to whether obligations to beneficial owners of the Bonds that are not identified as registered holders in a security document will be validly secured. In certain jurisdictions, including the United Arab Emirates, due to the laws and other jurisprudence governing the creation and perfection of security interests and the enforceability of such security interests, the Security Trust and Intercreditor Deed provides for the creation of "parallel debt" obligations in favor of the Security Agent ("**Parallel Debt**") mirroring the obligations of the Issuer owed to Bondholders under or in connection with the Bond Trust Deed, as applicable ("**Principal Obligations**"). All or part of the pledges and other security interests in such jurisdictions have been, or will be, granted to the Security Agent as security interests for the Parallel Debt and do not, or will not, directly secure the Principal Obligations. Under the provisions of the Security Trust and Intercreditor Deed, the Parallel Debt will be at all times in the same amount and payable at the same time as the Principal Obligations and any payment in respect of the Principal Obligations shall discharge the corresponding Parallel Debt and any payment in respect of the Parallel Debt shall discharge the corresponding Principal Obligations. In respect of the security interests granted to secure the Parallel Debt, the Bondholders do not have direct security interests and will not be entitled to take enforcement actions in respect of such security interests except through the Security Agent. Therefore, the Bondholders bear the risk of insolvency or bankruptcy of the Security Agent. In addition, the Parallel Debt construct has not been tested under law in certain of these jurisdictions and to the extent that the security interests in the collateral created under the Parallel Debt construct are not validly granted, are unenforceable or are successfully challenged by other parties, Bondholders will not receive any proceeds from an enforcement of such security interests in the collateral.

## USE OF PROCEEDS

*You will find the definitions of capitalized terms used and not defined in this section in* "*Annex A: Glossary of Certain Terms*" *and as provided elsewhere in this Offering Memorandum.*

The gross proceeds to be received by us from this offering of the Bonds will be U.S.$3,920,000,000. We intend to use the proceeds from this offering of the Bonds for the following:

(a) in and towards prepayment of our indebtedness under the Initial Bank Facility Agreement;

(b) in payment of fees, costs and expenses incurred in connection with the issue of the Bonds; and

(c) to the extent of any surplus after (a) and (b) above, general corporate purposes.

The following table reflects the expected sources and uses of funds upon the consummation of the transactions relating to the offering of the Bonds.

| **Sources of Funds** | **(U.S. dollars in millions)** | **Uses of Funds** | **(U.S. dollars in millions)** |
|---|---|---|---|
| Series D Bonds........................................ | 1,750 | Repayment in full of the Initial Bank Facility[2] ..................................................... | 4,015 |
| Series E Bonds ........................................ | 2,170 | Transaction Costs[3]..................................... | 20 |
| Termination amounts owed by the Hedge Counterparties under the Hedging Agreements ............................................. | 122[1] | General Corporate Purposes........................ | 7 |
| **Total Sources .........................................** | **4,042** | **Total Uses...................................................** | **4,042** |

(1) The receipt of the hedge termination payments from the Hedge Counterparties is an estimated amount and may be subject to change.
(2) The Initial Bank Facility was provided to us for the shares we acquired in AssetCo. See "*Summary of Certain Finance Documents—Initial Bank Facility Agreement*." The amount includes U.S.$8.2 million of interest and estimated transaction costs relating to the Initial Bank Facility.
(3) The payment of certain transaction costs is an estimated amount and may be subject to change.

## CAPITALIZATION

The following table sets forth our actual consolidated cash and cash equivalents, capitalization and indebtedness as of December 31, 2020 on an actual basis and on an as-adjusted basis to give effect to the offering and the estimated use of proceeds therefrom, as described in "*Use of Proceeds*." The information set forth below as of December 31, 2020 on an actual basis, is derived from the Issuer Financial Statements.

You should read this table in conjunction with "*Disclosure Regarding Forward-Looking Statements*," "*Risk Factors*," "*Operating and Financial Review*," "*Business*," the Issuer Financial Statements (and related notes).

| | As of December 31, 2020 | |
|---|---|---|
| | **Actual** | **Adjusted** |
| | **(U.S.$ in thousands)** | |
| **Total cash and cash equivalents** | 186,822[1] | 194,158[1] |
| **Long-term debt**: | | |
| Series A Bonds | 1,100,000 | 1,100,000 |
| Series B Bonds | 1,550,000 | 1,550,000 |
| Series C Bonds | 1,350,000 | 1,350,000 |
| Series D Bonds | - | 1,750,000 |
| Series E Bonds | - | 2,170,000 |
| Initial Bank Facility | 4,006,432 | - |
| **Total long-term debt**[2] [3] | 8,006,432 | 7,920,000 |
| **Total equity** | 2,178,497 | 2,178,497 |
| **Total capitalization**[4] | 10,184,929 | 10,098,497 |

(1) On January 27, 2021, the Issuer paid a dividend to the Parent of U.S.$169.3 million which has not been included in the table above.

(2) The transaction cost related to the issuance of Original Bonds and the Initial Bank Facility is U.S.$44 million as of December 31, 2020 which has not been included in the table above.

(3) Total long-term debt does not include derivative asset of U.S$43 million as of December 31, 2020. These derivatives are interest rate swaps which currently cover approximately 100% of the variable loan principal outstanding. The fixed interest rate payable on the swap is 0.87%, and the variable rate on both the swaps and the loans for the first interest period is 0.33% and the legal maturity of the hedges is September 30, 2040.

(4) Total equity plus long-term debt.

## SUMMARY OF THE FINANCIAL MODEL

*The following information from the Financial Model should be read together with the information contained in "Presentation of Financial and Other Information," "Disclosure Regarding Forward-Looking Statements," "Risk Factors," "Selected Financial Data," "Operating and Financial Review," the AssetCo Financial Statements, the Pro Forma AssetCo Tariff Sales, the Issuer Financial Statements (and related notes) and "Summary of Principal Project Documents."*

*The Issuer does not as a matter of course make public projections as to future sales, earnings, or other results. However, the management of the Issuer has prepared the prospective financial information set forth below to present and illustrate the cash inflows available for debt service. The accompanying prospective financial information was not prepared with a view toward complying with the guidelines established by the American Institute of Certified Public Accountants with respect to prospective financial information, but, in the view of the Issuer's management, was prepared on a reasonable basis, reflects the best currently available estimates and judgments, and presents, to the best of management's knowledge and belief, the expected course of action and the expected future financial performance of the Issuer.*

### Summary of the Financial Model

The information contained in the Financial Model, including the results of the technical and operational assumptions for the base scenario presented in the Financial Model (the "**Base Case**") is not a projection or prediction. A financial model such as this simply illustrates hypothetical results that are mathematically derived from specified assumptions. The Financial Model was designed as a financial illustration of, among other things, the cash inflows available for debt service and evaluation tool for credit consideration and not as an operational model. Thus, it is not designed to and will not readily allow comparisons of actual results against the Financial Model and does not include an ongoing budget comparison component. The actual performance and cashflow of the Issuer will likely deviate from the Base Case and will almost certainly result in actual performance being different from that shown in the Financial Model. All figures set forth in the Financial Model are annual as of December 31 of each year.

Although the AssetCo Corporate Costs and tax positions have been modeled in alignment with the Issuer's most accurate expectation of the Pipelines' performance as of the date of this Offering Memorandum, actual AssetCo Corporate Costs and required tax payments may differ over the life of the Bonds. Accordingly, actual performance and cash inflows for any future period are likely to differ from those shown by the results of the Base Case.

The summary of the Financial Model was prepared by the Issuer. The Issuer confirms that the summary Financial Model information has been accurately reproduced and that, as far as the Issuer is aware and is able to ascertain from the Base Case, no facts have been omitted which would render this summary of the Financial Model, in the context of the information contained in the Base Case, inaccurate or misleading.

The inclusion of information derived from the Financial Model should not be regarded as a representation by us, AssetCo, ADNOC HoldCo, the Initial Purchasers, the Model Auditor or any other person (including ADNOC or any member of the ADNOC group) that any of the results of the Financial Model, including the Base Case, will be achieved. In addition, the summary Financial Model information contained herein does not, and does not purport to, restate the Base Case in its entirety. Prospective purchasers of the Bonds are cautioned not to place undue reliance on the performance or cash inflows illustrations contained in the information derived from the Financial Model and should make their own independent assessment of our future results of operations, cash inflows and financial condition. The Independent Auditors of the Issuer and AssetCo have not examined, compiled or performed any procedures with respect to the prospective financial information contained in this Offering Memorandum, including the information derived from the Financial Model, nor have they expressed any opinion or any other form of assurance on such or on the achievability of the Financial Model or the Base Case, and assume no responsibility for, and disclaim any association with any prospective financial information contained in or derived from the Financial Model and any other information derived therefrom included elsewhere in this Offering Memorandum.

We engaged Mazars LLP (the "**Model Auditor**") to review and provide a Model Auditor Report (the "**Model Auditor Report**"), dated February 8, 2021, on the Financial Model. Subject to the assumptions and statements provided by the Model Auditor in the Model Auditor Report, and subject to certain representations received by the Model Auditor from us upon which it has relied, the Model Auditor concluded with regards to the Financial Model that:

(a) the Model's logic, macros and calculations are materially arithmetically correct and that the results are materially: accurate, complete and consistent with the assumptions contained within the Model;

(b) the Model is materially consistent with the relevant financial and contractual provisions in the finance documents as provided to the Model Auditor; and

(c) the Model materially generates profit and loss, cashflow and balance sheet projections and key financial ratios for the project on the basis of the set of operational, financial and economic assumptions set out in the Base Case.

The Model Auditor's work was limited to the matters set out in the paragraph above and accordingly did not include review of the commercial merits, technical feasibility or the factual accuracy of the input data, considering the commercial rationale for the transaction implied by the Financial Model or opining on the reasonableness of the operational and financial assumptions used in the Financial Model.

**Summary of Significant Base Case Assumptions from the Financial Model**

**1. AssetCo Cash inflows**

Under the terms of the U&O Agreement, AssetCo provides ADNOC the right to use, operate and maintain the Pipelines in exchange for which ADNOC pays AssetCo the Tariff Amount. Pursuant to the U&O Agreement, ADNOC is required to pay AssetCo the Tariff Amount (U.S.$0.57 per mmbtu) for the duration of the U&O Agreement, regardless of the availability of the Pipelines, emergency or force majeure events and the amount of gas, NGL and LNG or the associated market price of gas, NGL and LNG that is actually transported. Under the Financial Model, AssetCo's cash inflows equal the Baseline Supply Forecast amount multiplied by U.S.$0.57 per mmbtu. In order to determine the amount of dividends to be paid to us, AssetCo's Corporate Costs are subtracted from AssetCo cash inflows, and this number is multiplied by 0.477.

AssetCo receives quarterly payments from ADNOC under the U&O Agreement, payable no later than five business days before the last day of the billing period in which such invoice is received for the immediately preceding billing period. Billing period means, for any calendar year, each three-month period beginning January 1, April 1, July 1 and October 1, commencing from July 1, 2020 in accordance with the terms of the U&O Agreement. If the amount of gas, NGL and LNG transported through the Pipelines is higher than the minimum throughput quantity of 75% of volume projected in the Baseline Supply Forecast, this would result in increased cash inflows up to the throughput quantity equal to the Baseline Supply Forecast. However, we expect that no additional volumes over and above the minimum throughput quantity are required to ensure that the Issuer is capable of servicing its payments under the Bonds and other Senior Debt. Certain important considerations in evaluating the likelihood that the Baseline Supply Forecast will be achieved in each of the periods presented are described in the Independent Technical Due Diligence Report and the Wood Mackenzie Industry Report included elsewhere in this Offering Memorandum. See "*Summary—Summary of the Independent Technical Due Diligence Report," "Risk Factors—Risks Relating to the Issuer—Our projections and underlying assumptions regarding the Financial Model may not be accurate or may be subject to changed circumstances,"* "*Annex B: Independent Technical Due Diligence Report," and "Annex C:Wood Mackenzie Industry Report."*

**2. AssetCo Corporate Costs**

Except for certain limited AssetCo Corporate Costs, all operating and maintenance costs and decommissioning costs are borne by ADNOC. AssetCo Corporate Costs are certain general, administrative and overhead related costs described in the General Services Agreement. The cost of these services is capped at U.S.$150,000 per annum (indexed at a rate of 2% per annum). The cap excludes (i) any taxes applicable to the Services, and (ii) any fees, costs and expenses associated with the shareholders reserve accounts (established pursuant to the Shareholders' Agreement). For a summary of the cashflow waterfall and an overview of the contractual cost allocations between us, AssetCo and ADNOC under the U&O Agreement and the General Services Agreement, see "*Business—Summary of Cash Flow Waterfall and Contractual Cost Allocations.*"

### 3. Issuer Corporate Costs

Issuer corporate costs principally include fees and expenses in relation to the Bonds, including the maintenance of listing, rating, audit and legal fees and other admin fees, future financings and the Debt Service Reserve Facility and corporate overhead costs. Most of these fee items are not fixed for life of the financing, and are based on the Issuer's best estimates as of the date of this Offering Memorandum, including expectations of fee revisions based on inflation and/or foreign currency exchange rates. These fee items could be subject to changes upon renewals and/or in case of appointment of different parties compared to those engaged as of the date of this Offering Memorandum. The fee assumptions in the Financial Model will therefore be materially different to the actual results of these cost items.

### 4. DSCR

DSCR figures presented below include an assumption as to the interest rate, tenor and amortization schedule of the Bonds and the Original Bonds. DSCR has been presented for illustrative purposes only and does not purport to represent what the DSCR would have actually been had the offering occurred on the date assumed, nor does it purport to project our financial condition at any future date.

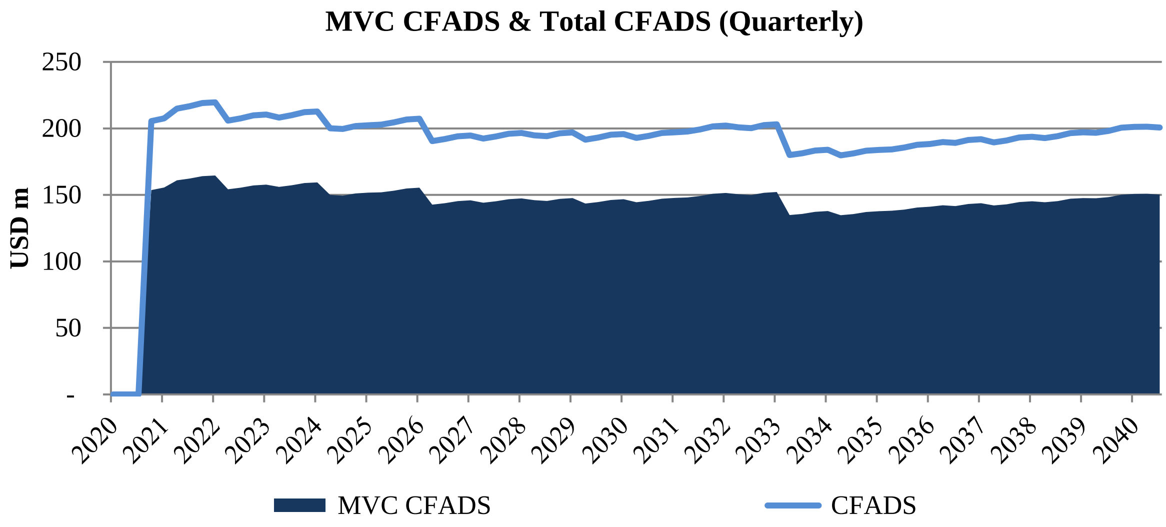
***Base Case Financial Summary***

The Base Case cash inflows produced by the Financial Model are summarized below (in U.S.$ millions except Throughputs and Ratios).

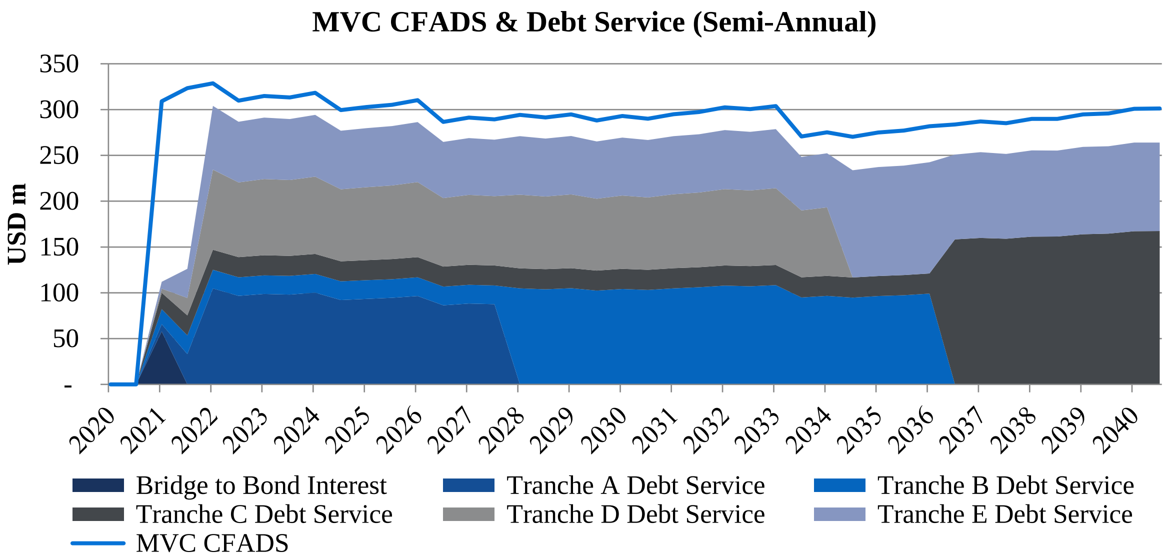
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|---|---|---|---|---|---|---|---|---|---|
| AssetCo Throughputs (bnbtu/d)................................ | 8,794 | 8,425 | 8,519 | 8,103 | 8,302 | 7,796 | 7,874 | 7,887 | 7,842 | 7,895 |
| Of which represent MVC (bnbtu/d) ..................... | 6,595 | 6,319 | 6,389 | 6,077 | 6,226 | 5,847 | 5,906 | 5,916 | 5,882 | 5,921 |
| AssetCo Unlevered Cashflow | 1,804 | 1,772 | 1,767 | 1,712 | 1,717 | 1,648 | 1,634 | 1,645 | 1,634 | 1,640 |
| Of which represent MVC .................................... | 1,353 | 1,329 | 1,326 | 1,284 | 1,288 | 1,236 | 1,226 | 1,234 | 1,225 | 1,230 |
| AssetCo Costs ................ | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) |
| BidCo Distributed Dividends | 861 | 845 | 843 | 817 | 819 | 786 | 779 | 784 | 779 | 782 |
| Of which represent MVC .................................... | 645 | 634 | 632 | 612 | 614 | 590 | 585 | 588 | 584 | 587 |
| Issuer Costs .................... | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) |
| MVC DSCR.......................... | 1.92x | 1.08x | 1.08x | 1.08x | 1.08x | 1.08x | 1.08x | 1.08x | 1.09x | 1.09x |
| MVC + Non-MVC DSCR .... | 2.57x | 1.44x | 1.44x | 1.44x | 1.44x | 1.44x | 1.45x | 1.45x | 1.45x | 1.45x |

| | 2031 | 2032 | 2033 | 2034 | 2035 | 2036 | 2037 | 2038 | 2039 | 2040 |
|---|---|---|---|---|---|---|---|---|---|---|
| AssetCo Throughputs (bnbtu/d)................................ | 8,093 | 8,131 | 7,368 | 7,362 | 7,543 | 7,684 | 7,761 | 7,891 | 8,054 | 8,154 |
| Of which represent MVC (bnbtu/d) .......................... | 6,070 | 6,098 | 5,526 | 5,521 | 5,658 | 5,763 | 5,820 | 5,918 | 6,041 | 6,116 |
| AssetCo Unlevered Cashflow | 1,673 | 1,694 | 1,573 | 1,532 | 1,560 | 1,595 | 1,610 | 1,635 | 1,667 | 1,268 |
| Of which represent MVC | 1,255 | 1,271 | 1,180 | 1,149 | 1,170 | 1,197 | 1,208 | 1,226 | 1,250 | 951 |
| AssetCo Costs ................. | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) | (0) |
| BidCo Distributed Dividends | 798 | 808 | 750 | 731 | 744 | 761 | 768 | 780 | 795 | 605 |
| Of which represent MVC | 599 | 606 | 563 | 548 | 558 | 571 | 576 | 585 | 596 | 454 |
| Issuer Costs ..................... | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (2) | (1) |
| MVC DSCR........................... | 1.09x | 1.09x | 1.09x | 1.09x | 1.16x | 1.13x | 1.13x | 1.13x | 1.14x | 1.14x |
| MVC + Non-MVC DSCR ..... | 1.45x | 1.45x | 1.45x | 1.46x | 1.55x | 1.51x | 1.51x | 1.51x | 1.52x | 1.52x |

*Minimum Volume Commitment Cash Inflows Available for Debt Service ("MVC CFADS") and Total Cash Inflows Available for Debt Service ("Total CFADS")*




*Minimum Volume Commitment Cash Inflows Available for Debt Service ("MVC CFADS") and Debt Service*




**Tax Rate Assumptions**

The Financial Model assumes no corporate taxes applicable to AssetCo. As of the date of this Offering Memorandum, there are no such taxes applicable to AssetCo in the United Arab Emirates. Additionally, the Financial Model assumes that there are no corporate taxes applicable to the Issuer as well as no withholding tax on the debt service from the Issuer. See "*Certain Tax Considerations—United Arab Emirates Taxation*."

## SELECTED FINANCIAL DATA

*The tables below present selected financial and operating data from the Issuer Financial Statements and the AssetCo Financial Statements as of and for the periods indicated. We have not presented historical financial information for the Issuer in this section because the Issuer has had limited corporate activity since its formation other than the (i) issuance of shares in connection with its initial capitalization; (ii) activities in connection with the U&O Agreement and the General Services Agreement; (iii) borrowing under the Initial Bank Facility and the issuance of the Original Bonds; and (iv) in preparation for this offering, and because we believe that a presentation of the results of the Issuer would not be meaningful. However, we have provided the Issuer Financial Statements and the AssetCo Financial Statements appearing elsewhere in this Offering Memorandum. You should read the information below in conjunction with the AssetCo Financial Statements and the Issuer Financial Statements (and related notes), appearing elsewhere in this Offering Memorandum, as well as the sections entitled "Presentation of Financial and Other Information" and "Operating and Financial Review" in this Offering Memorandum.*

*With respect to the Issuer Financial Statements, two sets of statements were prepared, the first covering the period from May 26, 2020 (i.e. the date of incorporation of the Issuer) to July 31, 2020 and the second covering the period from August 1, 2020 to December 31, 2020. The first set of financial statements were prepared to comply with the listing requirements of the Global Exchange Market of Euronext Dublin in connection with the issue of the Original Bonds. Going forward, the Issuer will report on an annual basis in respect of each financial year ending December 31. Due to the difference in the 2020 accounting periods, the amounts presented are not comparable.*

Our summary financial data presented below should be read in conjunction with the information set forth in "*Operating and Financial Review*" and the AssetCo Financial Statements, including the notes thereto, appearing elsewhere in this Offering Memorandum. The following information has been derived from the AssetCo Financial Statements.

### The Issuer

The financial information included in the table below has been derived from the audited financial statements of the Issuer for the period from May 26, 2020 (i.e. the date of incorporation of the Issuer) to July 31, 2020 and for the period from August 1, 2020 to December 31, 2020 (the "**Issuer Financial Statements**").

*Statement of Comprehensive Income*

| | **Period from August 1, 2020 to December 31, 2020** | **Period from May 26, 2020 to July 31, 2020** |
|---|---|---|
| | **(U.S. Dollars in thousands)** | |
| **Income** | | |
| Share of net profit of associate accounted for using the equity method | 209,959 | 46,404 |
| Net gain on derivatives | 248,132 | - |
| Other income | - | 253 |
| **Total income** | **458,091** | **46,658** |
| **Expenses** | | |
| Interest expense | (85,775) | (8,424) |
| Net loss on derivatives | - | (209,007) |
| Administrative expenses | (1,511) | (756) |
| **Total Expenses** | **(87,285)** | **(218,188)** |
| **Profit/(Loss) before taxation** | **370,806** | **(171,530)** |
| Tax expense | - | - |
| **Profit/(Loss) after taxation** | **370,806** | **(171,530)** |
| Other comprehensive income | - | - |
| **Total comprehensive profit/loss for the period** | **370,806** | **(171,530)** |

*Statement of Financial Position*

| | As at December 31, 2020 | As at July 31, 2020 |
|---|---|---|
| | (U.S. Dollars in thousands) | |
| **Non-current assets** | | |
| Investment in an associate | 9,926,869 | 9,924,691 |
| Derivative financial instruments | 42,988 | - |
| **Total non-current assets** | **9,969,857** | **9,924,691** |
| **Current assets** | | |
| Other assets | 614 | 120 |
| Cash and cash equivalents | 186,822 | 4,122 |
| **Total current assets** | **187,436** | **4,242** |
| **Total assets** | **10,157,294** | **9,928,933** |
| **Non-current liabilities** | | |
| Financial liabilities held at amortized cost | (7,962,018) | (7,903,775) |
| Derivative financial liabilities | - | (209,007) |
| **Total non-current liabilities** | **(7,962,018)** | **(8,112,782)** |
| **Current liabilities** | | |
| Interest payable | (16,725) | (4,827) |
| Other payables | (53) | (3,632) |
| **Total current liabilities** | **(16,778)** | **(8,460)** |
| **Total liabilities** | **(7,978,797)** | **(8,121,242)** |
| **Equity** | | |
| Called up share capital | (1,979,221) | (1,979,221) |
| Accumulated (profits)/losses | (199,276) | 171,530 |
| **Total equity** | **(2,178,497)** | **(1,807,691)** |
| **Total liabilities and equity** | **(10,157,294)** | **(9,928,933)** |

*Statement of Cash Flows*

| | Period from August 1, 2020 to December 31, 2020 | Period from May 26, 2020 to July 31, 2020 |
|---|---|---|
| | (U.S. Dollars in thousands) | |
| **Cash flows from operating activities:** | | |
| Profit/(loss) before taxation | 370,806 | (171,530) |
| Adjustments for: | | |
| Share of net profit of associate accounted for using the equity method | (209,959) | (46,404) |
| Interest expense | 51,420 | 4,827 |
| Amortization of transaction cost on financial liabilities at amortized cost | 34,354 | 3,597 |
| Net (gain)/loss on derivatives | (248,132) | 209,007 |
| Increase in other assets | (494) | (120) |
| (Decrease)/Increase in other payables | (3,580) | 3,632 |
| **Net cash (used in)/from operating activities** | **(5,584)** | **3,009** |
| **Cash flow used in investment activities** | | |
| Investment in an associate | - | (9,878,287) |
| Proceeds from derivative settlement | 6,035 | - |
| Dividends received | 207,781 | - |
| **Net cash from/(used in) investment activities** | **213,816** | **(9,878,287)** |
| **Cash flows from financing activities** | | |
| Issue of ordinary shares | - | 1,979,221 |
| Proceeds from issuance of loans | - | 7,960,000 |
| Repayment of loans | (3,953,567) | - |
| Proceeds from issuance of bonds | 4,000,000 | - |
| Transaction cost related to issuance of loans and bonds | (22,543) | (59,882) |
| Interest paid on loans | (39,523) | - |
| Swap payments | (9,898) | - |

| | | |
|---|---|---|
| **Net cash (used in)/from financing activities** | **(25,531)** | **9,879,399** |
| **Net increase in cash and cash equivalents** | **182,700** | **4,122** |
| Cash and cash equivalents at beginning of the period | 4,122 | - |
| **Cash and cash equivalents at end of the period** | **186,822** | **4,122** |

*Statement of Changes in Equity*

| | For the financial period from May 26, 2020 to July 31, 2020 | | |
|---|---|---|---|
| | **Share capital** | **Accumulated losses** | **Total equity** |
| | | **(U.S. Dollars in thousands)** | |
| Balance at incorporation | - | - | - |
| Issue of share capital | 1,979,221 | - | 1,979,221 |
| Loss for the period | - | (171,530) | (171,530) |
| Other comprehensive income | - | - | - |
| Total comprehensive loss for the period | - | (171,530) | (171,530) |
| **Balance at July 31, 2020** | **1,979,221** | **(171,530)** | **(1,807,691)** |

| | For the financial period from August 1, 2020 to December 31, 2020 | | |
|---|---|---|---|
| | **Share capital** | **Retained income/deficit** | **Total equity** |
| | | **(U.S. Dollars in thousands)** | |
| Balance at August 1, 2020 | 1,979,221 | (171,530) | 1,807,691 |
| Profit for the period | - | 370,806 | 370,806 |
| Other comprehensive income | - | - | - |
| Total comprehensive income for the period | - | 370,806 | 370,806 |
| **Balance at December 31, 2020** | 1,979,221 | 199,276 | 2,178,497 |

**AssetCo**

The financial information included in the tables below has been derived from the audited financial statements of AssetCo for the period from May 4, 2020 (i.e. the date of incorporation of AssetCo) to December 31, 2020 (the "**AssetCo Financial Statements**").

*Statement of Financial Position*

| | **As at December 31, 2020** |
|---|---|
| | **(U.S. Dollars in thousands)** |
| Non-current asset | 20,809,786 |
| Other receivable | 3 |
| Cash and cash equivalents | 140 |
| Current assets | 143 |
| Total assets | 20,809,929 |
| Share capital | 20,707,965 |
| Retained earnings | 101,849 |
| Total equity | 20,809,814 |
| Current liabilities | 115 |
| Total equity and liabilities | 20,809,929 |

*Statement of Profit or Loss*

| | Period ended December 31, 2020 |
|---|---|
| | (U.S. Dollars in thousands) |
| Financial income | 537,563 |
| General and administrative expenses | (115) |
| **Profit and total comprehensive income for the period** | **537,448** |

*Statement of Cash Flows*[1]

| | Period ended December 31, 2020 |
|---|---|
| **Operating Activities** | (U.S. Dollars in thousands) |
| Profit for the period | 537,448 |
| Adjustments for: | |
| Finance income | (537,563) |
| **Net cash used in operating activities before movements in working capital** | **(115)** |
| Increase in accrued expense | 115 |
| Settlement of financial asset-tariff collections | 435,739 |
| **Net cash generated from operating activities** | **435,739** |
| **Financing activities** | |
| Dividend paid | (435,599) |
| **Net increase in cash and cash equivalents** | **140** |
| Cash and cash equivalents at beginning of the period | - |
| **Cash and cash equivalents at end of the period** | **140** |

(1) The issuance of $20,708 million of additional share capital has been excluded from the statement of cash flows because the issuance was a non-cash transaction.

*Volumes*

The tables below set forth the unaudited volume of Sales Gas, NGL and LNG transported through the Pipelines for the periods as derived from ADNOC's operations meters and as indicated in both the respective categories' original units and mmbtu:

| | Year ended December 31, | | |
|---|---|---|---|
| | 2020 | 2019 | 2018 |
| Sales Gas transported (MMSCF/day) | 5,715 | 5,658 | 5,835 |
| NGL transported (Tons/day) | 47,693 | 48,689 | 48,641 |
| LNG transported (Tons) | 5,845,366 | 5,865,470 | 5,639,152 |

| | Year ended December 31, | | |
|---|---|---|---|
| | 2020 | 2019 | 2018 |
| Sales Gas transported (bnbtu/d) | 5,603 | 5,547 | 5,721 |
| NGL transported (bnbtu/d) | 2,249 | 2,295 | 2,293 |
| LNG transported (bnbtu/d) | 824 | 829 | 797 |
| **Total (bnbtu/d)** | **8,676** | **8,672** | **8,811** |

Conversion factors from original units to mmbtu: 1.02 for Sales Gas, 47.146 for NGL and 51.6 for LNG
1 Bnbtu = 1,000 mmbtu

*Pro Forma AssetCo Tariff Sales*

The financial information included in the below table has been derived from the Pro Forma AssetCo Tariff Sales.

| | Year ended December 31, | | |
|---|---|---|---|
| | **2020** | **2019** | **2018** |
| | **(U.S. dollars in millions)** | | |
| Sales Gas | 1,169 | 1,154 | 1,190 |
| NGL | 469 | 478 | 477 |
| LNG | 172 | 173 | 166 |
| **Total tariff sales** | **1,810** | **1,804** | **1,833** |

## OPERATING AND FINANCIAL REVIEW

*The following discussion should be read in conjunction with the information set forth in "Presentation of Financial and Other Information", the Issuer Financial Statements and related notes, and the AssetCo Financial Statements and related notes included elsewhere in this Offering Memorandum which include more detailed information regarding the basis of presentation for the following information. The projections and other forward-looking statements in this section are not guarantees of future performance and actual results could differ materially from the projections and forward-looking statements in this section. Numerous factors could cause or contribute to such differences, including the risks discussed in "Risk Factors."*

### Overview

We own a 47.7% shareholding in ADNOC Gas Pipeline Assets LLC which leases 38 onshore natural gas pipelines from ADNOC under a twenty-year lease agreement. The Pipelines cover 982.3 kilometers (610.4 miles) in aggregate and are comprised of four distinct concessions, Sales Gas Pipelines, Injection Pipelines, NGL Pipelines, and LNG Flows, which represent a highly diverse portfolio of assets. The Pipelines have an aggregate gross nameplate capacity of 10.5 billion standard cubic feet per day of sales and injection gas and 161,314 tonnes per day of NGL. We generate our revenue solely through our shareholding in AssetCo.

The Issuer is a special purpose vehicle incorporated on May 26, 2020 and has had limited corporate activity since its incorporation other than the issuance of shares in connection with its initial capitalization and activities in connection with the Acquisition Agreement, the Initial Bank Facility Agreement, the Hedging Agreements, the Original Bonds and the Shareholders' Agreement. The Issuer Financial Statements only set forth our financial position as of December 31, 2020 and for the period from May 26, 2020 to December 31, 2020, and are unlikely to be indicative of our future financial statements. The Issuer Financial Statements therefore have limited information with which to evaluate the performance of our investment in AssetCo, current or future prospects or financial results and performance. Under current laws applicable to the Issuer, the Issuer is not subject to any income or similar taxes in Jersey. See "*Risk Factors*" and "*Certain Tax Considerations—Jersey Taxation*."

AssetCo is a special purpose vehicle incorporated on May 4, 2020 and has had limited corporate activity since its incorporation other than the issuance of shares in connection with its initial capitalization and activities in connection with the Acquisition Agreement, the Shareholders' Agreement, the Lease, the U&O Agreement and the General Services Agreement. AssetCo generates its cash inflows solely pursuant to the U&O Agreement entered into on June 23, 2020 with ADNOC, which uses, manages and operates the Pipelines. See *"Summary of Principal Project Documents—Pipeline Use and Operation Agreement*."

The financial information discussed below is derived from the Pro Forma AssetCo Tariff Sales. The Pro Forma AssetCo Tariff Sales cover a historical period as of and for the years ended December 31, 2018, 2019 and 2020 and are not audited or reviewed. The Pro Forma AssetCo Tariff Sales are based on the performance of the Pipelines as if the arrangements under the Project Documents in respect of the Lease and the Tariff had been in place between ADNOC and AssetCo since January 1, 2018. We have not included any historical financial information of the Pipelines because we do not believe such information would be meaningful or helpful to an investor. Unlike under the current U&O Agreement, the cash inflows from the Pipelines as previously operated by ADNOC were not derived from a similar ship-or-pay obligation. Under the current arrangements, the MVC is payable by ADNOC regardless of the availability of the Pipelines, emergency or force majeure events and the amount of gas, NGL and LNG or the associated market price of gas, NGL and LNG that is actually transported, except in the case of Excluded Supply, see "*Summary of Principal Project Documents—Pipeline Use and Operation Agreement – Modification Works*".

### Principal Factors Influencing AssetCo's Future Operating Results

Described below are certain factors that may be helpful in understanding AssetCo's overall operating results. These factors are based on the information currently available to our management and may not represent all of the factors that are relevant to an understanding of AssetCo's current or future results of operations. See "*Risk Factors*." These factors differ significantly from the factors influencing the historical results derived from the Pipelines prior to the Lease, the U&O Agreement and the General Services Agreement.

#### *Ship-or-Pay Terms*

AssetCo generates its cash inflows and profits solely by providing ADNOC the right to use, operate and maintain the Pipelines in exchange for which ADNOC pays AssetCo the Tariff Amount, which is a quarterly tariff of U.S.$0.57 per mmbtu, multiplied by the sum of (i) the greater of: (a) the lesser of (*x*) the total throughput or deemed throughput (as applicable) of sales and injection gas, NGL and LNG, and (*y*) the Baseline Supply Forecast (the "**Chargeable Throughput**"); and (b) a minimum volume commitment ("**MVC**") which is fixed at 75% of volume projected in the Baseline Supply Forecast, (ii) the carried forward supply (if any), and (iii) the export volumes credit (if any). The Baseline Supply Forecast sets a cap on the Chargeable Throughput and the MVC sets the minimum Tariff Amount. See "*Summary of Principal Project Documents—Pipeline Use and Operation Agreement*." Cash inflows are paid quarterly to the Issuer providing timely cashflow to meet the semi-annual bond payments.

AssetCo receives quarterly payments from ADNOC under the U&O Agreement, payable no later than five business days before the last day of the billing period in which such invoice is received for the immediately preceding billing period. Billing period means, for any calendar year, each three-month period beginning January 1, April 1, July 1 and October 1, commencing from July 1, 2020 in accordance with the terms of the U&O Agreement.

***Additional Shipments***

If the amount of gas, NGL and LNG transported through the Pipelines is higher than the minimum throughput quantity of 75% of volume projected in the Baseline Supply Forecast, this would result in increased cash inflows.

The table below sets forth the unaudited volume of Sales Gas, NGL and LNG transported through the Pipelines for the periods as derived from the Pro Forma AssetCo Tariff Sales and as indicated in original units:

| | Year ended December 31, | | |
|---|---|---|---|
| | 2020 | 2019 | 2018 |
| Sales Gas transported (MMSCF/day)............... | 5,715 | 5,658 | 5,835 |
| NGL transported (Tons/day) ........................... | 47,693 | 48,689 | 48,641 |
| LNG transported (Tons)................................... | 5,845,366 | 5,865,470 | 5,639,152 |

The table below sets forth the unaudited volume of Sales Gas, NGL and LNG transported through the Pipelines for the periods as derived from the Pro Forma AssetCo Tariff Sales in mmbtu converted from original units with an agreed conversion factor:

| | Year ended December 31, | | |
|---|---|---|---|
| | 2020 | 2019 | 2018 |
| Sales Gas transported (bnbtu/d) ....................... | 5,603 | 5,547 | 5,721 |
| NGL transported (bnbtu/d)............................... | 2,249 | 2,295 | 2,293 |
| LNG transported (bnbtu/d)............................... | 824 | 829 | 797 |
| **Total (bnbtu/d)** ............................................... | **8,676** | **8,672** | **8,811** |

Conversion factors from original units to mmbtu: 1.02 for Sales Gas, 47.146 for NGL and 51.6 for LNG

1 Bnbtu = 1,000 mmbtu

***2020 Actual Volumes Compared to 2020 Projected Volumes***

The actual volume of Sales Gas for the year ended December 31, 2020 was 5,603 bnbtu/d. This was slightly above the volume of 5,268 bnbtu/d as projected in the Baseline Supply Forecast.

The actual volume of NGL for the year ended December 31, 2020 was 2,249 bnbtu/d. This was generally in line with the volume of 2,256 bnbtu/d as projected in the Baseline Supply Forecast.

The actual volume of LNG for the year ended December 31, 2020 was 824 bnbtu/d. This was slightly above the volume of 785 bnbtu/d as projected in the Baseline Supply Forecast.

### *AssetCo Corporate Costs*

Except for certain limited AssetCo Corporate Costs, all operating and maintenance costs and decommissioning costs are borne by ADNOC. AssetCo Corporate Costs are certain general, administrative and overhead related costs described in the General Services Agreement. For a summary of the cashflow waterfall and an overview of the contractual cost allocations between AssetCo, ADNOC HoldCo and ADNOC under the U&O Agreement and the General Services Agreement, see *"Business—Summary of Cash Flow Waterfall and Contractual Cost Allocations*." For the period from May 4, 2020 to December 31, 2020, these corporate costs totaled U.S.$115,000 as derived from the AssetCo Financial Statements.

### AssetCo's Tariff Sales

The following table sets forth total pro forma tariff sales generated for the years ended December 31, 2020, December 31, 2019 and December 31, 2018, as if the arrangements under the Project Documents in respect of the Lease and the Tariff had been in place between ADNOC and AssetCo since January 1, 2018. The tariff sales are calculated as volume transported in mmbtu per day multiplied by 365 for the year, or 182 for the six-month period, multiplied by U.S.$0.57 per mmbtu.

The financial information included in the below table has been derived from the Pro Forma AssetCo Tariff Sales.

| | Year ended December 31, | | |
|---|---|---|---|
| | 2020 | 2019 | 2018 |
| | (U.S. dollars in millions) | | |
| Sales Gas | 1,169 | 1,154 | 1,190 |
| NGL | 469 | 478 | 477 |
| LNG | 172 | 173 | 166 |
| **Total tariff sales**............................................ | **1,810** | **1,804** | **1,833** |

### *Operating and Maintenance Costs*

Under the U&O Agreement, all operating and maintenance costs would have been borne by ADNOC.

### *Taxation*

Under current laws applicable to AssetCo, AssetCo is not subject to any income or similar taxes in the United Arab Emirates. See "*Risk Factors*" and "*Certain Tax Considerations—United Arab Emirates Taxation*." If the United Arab Emirates changes its tax laws in the future, ADNOC will bear any additional cost resulting from such taxes (other than corporate income tax or withholding tax) as per the terms of the U&O Agreement.

### Liquidity and Capital Resources

### *Liquidity*

The Issuer's primary source of liquidity is the Debt Service Reserve Facility, governed by the Debt Service Reserve Facility Agreement, which provides financial backstop to support certain shortfalls in the payment of our debt service sized to our scheduled debt service over two Financial Quarters.

AssetCo's primary source of liquidity has been equity funding. Additional liquidity will be provided by the quarterly payments under the U&O Agreement. AssetCo is entitled to receive quarterly payments from ADNOC under the U&O Agreement, payable no later than five business days before the last day of the billing period in which such invoice is received for the immediately preceding billing period. Billing period means, for any calendar year, each three-month period beginning January 1, April 1, July 1 and October 1, commencing from July 1, 2020 in accordance with the terms of the U&O Agreement. Moreover, additional liquidity may be provided by an increase in the amount of gas transported through the Pipelines that is higher than the MVC. However, AssetCo has no control over whether the throughput amount will be in excess of the MVC and cannot provide any assurance that that this will be a reliable source of liquidity.

## Contractual Obligations and Commercial Commitments

### *Contractual Obligations*

The Issuer's primary contractual obligations include the Bonds, the Original Bonds and the Debt Service Reserve Facility Agreement. See *"Terms and Conditions of the Bonds."*

As of the date of this Offering Memorandum, AssetCo had no contractual obligations or commitments to make future payments under contracts for any of the periods (i) ending less than one year, (ii) ending one to three years, (iii) ending three to five years and (iv) more than five years, in each case from such date, except as otherwise disclosed in this Offering Memorandum.

### *Currency Risk*

The Issuer is not exposed to any significant currency risk. All our material transactions and balances are in U.S. dollars. Accordingly, AssetCo's management considers that AssetCo is not exposed to significant currency risk.

## Significant Accounting Policies

With regard to the Issuer, the accounting policies are those that we consider critical in preparing the Issuer Financial Statements. A more detailed description of the significant accounting policies used in preparing the Issuer Financial Statements is included in Note 3 to the Issuer Financial Statements, which is included in this Offering Memorandum.

The accounting policies are those that we consider critical in preparing the AssetCo Financial Statements are included in the Note 3 to the AssetCo Financial Statements, which is included in this Offering Memorandum.

The AssetCo Financial Statements and the Issuer Financial Statements have each been prepared in accordance with IFRS.

## INDUSTRY

*Certain of the projections and other information set forth in this section "Industry" have been derived from external sources, including publicly available information of ADNOC Group. The basis and underlying assumptions of these projections and other information may differ materially from those used in connection with our Financial Model and our other projections set forth in this Offering Memorandum. We believe that these industry publications, surveys and forecasts used in connection with the preparation of this Offering Memorandum are reliable but we have not independently verified them and cannot guarantee their accuracy or completeness. The projections and other forward-looking statements in this section are not guarantees of future performance and actual results could differ materially from the projections and forward-looking statements. Numerous factors could cause or contribute to such differences, including the risks referred to in "Risk Factors."*

The following is an overview of the natural gas market in the UAE and the gas supply and demand dynamics. The industry information provided in this section is based on or taken from publicly available sources as well as information provided in the Wood Mackenzie Industry Report.

### The Natural Gas Industry

Natural gas is one of the major sources of energy, and is a gaseous fossil fuel consisting of 50% to 90% methane and significant quantities of ethane, propane, butane, sulfur and natural gas condensates. Natural gas occurs as a fossil fuel in: conventional reservoirs with naturally porous formations, where it could appear either (1) in liquids-rich reservoirs as gas dissolved in oil, generally referred to as associated-gas, which comes out of solution as the overall pressure is reduced by production, or (2) in gas-rich reservoirs where gas occurs with hydrocarbon liquids of less than 10bbls/MMscf, generally referred to as non-associated gas; and in unconventional reservoirs with low permeability, such as tight gas or shale gas reservoirs.

Natural gas is extracted and processed into several different gaseous and liquefied forms before it is suitable for consumption, either as a fuel or as a raw material / feedstock for various products. It is primarily used in the power generation, residential, industrial and upstream oil production sectors.

Below are the various forms of natural gas:

- Rich gas: Natural gas before processing, containing heavier products such as propane and other NGLs and can be used for injection into upstream reservoirs.

- Lean gas: Natural gas post-processing, and of a certain quality that can be consumed by customers or used for injection into upstream reservoirs to increase condensate recovery. It is the sales gas provided for end-users (residential/industrial sectors).

- Natural Gas Liquids ("**NGLs**"): The liquids separated from natural gas as the gas is processed either in the field or at gathering points before moving to market. NGLs are a mixture of light hydrocarbons including ethane, propane, butane and light naphtha. NGLs are used for production of fuels, lubricants and plastics.

- Liquefied Natural Gas ("**LNG**"): Sales-quality gas that has been chilled to -162℃ and liquefied so it can be loaded on to specialized tankers.

- Condensate: A mixture of light liquid hydrocarbons, similar to a very light crude oil. It is typically separated out of a natural gas stream at the point of production when the temperature and pressure of the gas is dropped to atmospheric conditions. Condensate is mostly composed of NGLs and naphtha range materials. Similarly to NGLs, condensate is used in production of oil related products.

#### *Primary Uses of Natural Gas*

The power generation industry is a key consumer of natural gas, as gas is used to power turbines and generate electricity. Steam turbines are powered by burning natural gas to produce steam, whilst gas turbines are powered directly by the pressure of the natural gas. Natural gas is also consumed directly by the residential and industrial sectors, where gas is piped directly into homes to heat water, air and gas-fired stoves. In the industrial sector, natural gas is used as a component in the production of aluminum, cement and fertilizers. Natural gas liquids are processed and used in the petrochemicals sector, such as for the production of lubricants and plastics.

A significant amount of natural gas is used by oil producers for injection into upstream reservoirs, through enhanced oil recovery techniques, to increase the pressure and improve the flow and recovery of crude oil and condensates. As oil fields mature and liquids recovery becomes more difficult, natural gas injection often provides the producers with a cost-effective technique for optimizing or increasing crude oil and condensate production in maturing fields.

***Key Drivers of Demand of Natural Gas***

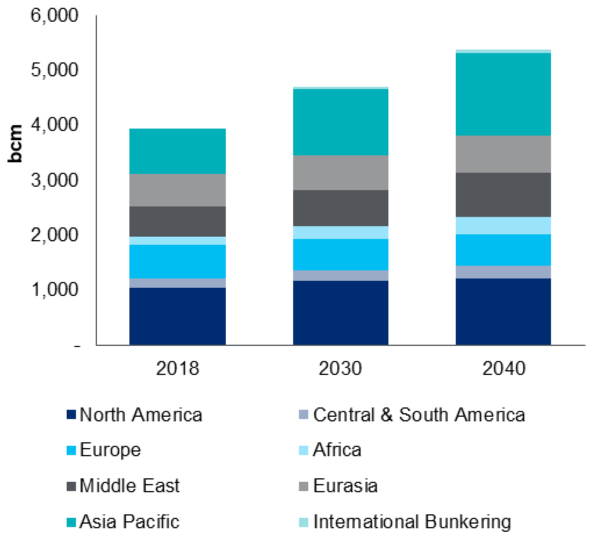
Demand for natural gas is driven by GDP growth and the development of certain industrial sectors, making gas a significant input for economic activity around the globe. Gas prices are set according to various quality benchmarks and fluctuate on the basis of global supply and demand. The availability of a good infrastructure system (i.e. gas processing, separation, pipelines) influences the gas supply to end users and gas prices as a result.

***Increasing Role of Natural Gas in the Energy Transition***

Natural gas is a relatively clean burning fossil fuel. Using natural gas for energy results in fewer emissions of nearly all types of air pollutants and carbon dioxide (CO2) than burning coal or petroleum products to produce an equal amount of energy. As such, it is often referred to as a transition fuel in the evolving energy mix.

Several supermajors, such as Royal Dutch Shell and BP, as well as independent agencies such as International Energy Agency ("**IEA**"), forecast an increasing role of renewables as well as natural gas in the future energy mix, coupled with a diminishing use of coal and oil. The IEA projects that under a scenario which reflects the impact of existing policy frameworks and current policy intentions for emissions reduction, the use of natural gas globally would grow by roughly one-third until 2040, based on 2018 levels.

Chart: Gas demand by region, 2018-2040 (*Source: IEA World Energy Outlook 2019*)




**The Natural Gas Industry in the UAE**

The UAE hold the world's seventh largest natural gas reserves, equivalent to c. 273 Tcf (*Source: OPEC Annual Statistical Bulletin 2020*). Gas plays a key role in driving the country's economic activity, with demand primarily from domestic utilities, industrials, upstream injection and ADNOC owned industries.

The Emirate of Abu Dhabi holds c. 95% of the UAE's proven gas reserves. ADNOC is Abu Dhabi's state-owned oil and gas company, and the custodian of these reserves. It operates across the entire Abu Dhabi energy value chain and controls the supply of oil & gas. ADNOC is the largest contributor to Abu Dhabi government revenue. In 2019, 90% of the government revenues were contributed by ADNOC (*Source: S&P Abu Dhabi ratings article – May 2020*).

Prior to the introduction of Law No. 24 of 2020, the oil & gas policy for Abu Dhabi was determined by the Supreme Petroleum Council ("**SPC**"), which is chaired by the Ruler of Abu Dhabi, H.H. Sheikh Khalifa bin

Zayed Al Nahyan. Following the introduction of Law No. 24 of 2020, the Supreme Council for Financial and Economic Affairs (the "**Council**") was established and all functions and powers of the SPC were transferred to the Council save for the SPC's mandated functions as the Board of Directors of ADNOC (until such time as a new board of directors of ADNOC is established by law). The Council is responsible for, amongst other matters, setting up and adopting the general strategies and policies regulating, amongst other things, the oil and natural resources affairs of the Emirate of Abu Dhabi, reviewing and approving such strategies for entities including ADNOC. Subject to the foregoing, ADNOC is responsible for managing all aspects of the Emirate's oil and gas industry. ADNOC's CEO, H.E. Dr. Sultan Ahmed Al Jaber is a member of the SPC and the UAE Minister of Industry and Advanced Technology.

One of the key goals of Abu Dhabi's 2030 Economic Vision is to become self-sufficient in natural gas, with the further goal of becoming a net gas exporter. The strategy is also focused on sustaining LNG production to 2040 and developing unconventional gas sources.

As a state-owned entity, ADNOC is the sole and main entity to deliver the results in line with 2030 Economic Vision. ADNOC has clear visibility of future projects coming onstream through a detailed and holistic planning program (aligned with the UAE's strategic goals). ADNOC's business plan is reviewed throughout the years and assets/fields are added/removed from the outlook period periodically. Within the last few years, large conventional and unconventional discoveries have been announced in the UAE. Hence the potential future gas production is expected to increase, as more fields are discovered, commissioned and developed. ADNOC operates a concession system for its crude oil production which involves various International Oil Companies acting as minority shareholders; regardless of existing oil concessions, all natural gas is owned solely by the state of Abu Dhabi. This further reflects the strategic nature of Abu Dhabi's natural gas production and its importance to the domestic economy.

**Demand for Natural Gas in the UAE**

According to the Wood Mackenzie Industry Report, the cumulative gas demand in the UAE is expected to reach c. 53 Tcf by 2040. Nearly 50% of this demand is projected to be in the power & utilities sector and the rest is distributed among industries (such as aluminum, cement, steel), ADNOC-owned Ventures and reinjection. The end-users of gas and gas associated products are state-linked, low-risk offtakers such as Emirates Water & Electricity Company (EWEC, the sole procurer of power and water within Abu Dhabi) and Dubai Supply Authority (DUSUP), the energy supplier for key utilities and industrial sectors in Dubai.

Although the UAE's gas demand has been impacted in the short-term due to COVID-19 and a low oil price environment in 2020 that directly and indirectly impacts UAE's GDP, current outlook indicates the start of a transition to normalized growth rates in 2021. The transition will depend on the extent that vaccination and other initiatives in H1 2021 will have a positive impact on commercial activities in the UAE. According to the Wood Mackenzie Industry Report, gas demand in the power & utilities sector could see a c. 6% to c. 8.2% reduction in the short term i.e. 2020-2022, mainly driven by a decrease in GDP, while in 2023 both GDP and gas demand growth are expected to normalize. Changes to gas demand from the industries sector and ADNOC-owned ventures is expected to have relatively limited impact. The recovery in longer-term gas demand is expected to exhibit a similar trend as the UAE's GDP recovery with likely negative impact in the longer term due to lower population growth. According to Wood Mackenzie Industry Report, the lower GDP might lead to a reduction of up to c. 16.1% or 4.37 Tcf in the power & utilities sector between 2020 and 2040 from the initial forecast, however longer term gas demand for injection into upstream reservoir is forecasted to increase by a minimum of 3 Tcf between 2020 and 2040. This would lead to an overall cumulative gas demand of c. 53 Tcf by 2040.

***Gas Demand in the Power & Utilities Sector***

The UAE's power & utilities sector is supervised and managed by a variety of government-owned bodies and around 50% of the total gas demand in the UAE arises from this sector.

Abu Dhabi's power generation sector is comprised almost entirely of gas-fired stations totaling over 13 GW. Most power generation facilities in the UAE are also fueled by natural gas. The power generation industry uses natural gas not only to generate electricity for residential and commercial use, but also to power desalination facilities, which are the primary source of potable water.

According to the Wood Mackenzie Industry Report, whilst the near-term gas demand in the power & utilities sector is expected to be declining until 2025 mainly due to the Barakah nuclear plant coming onstream, the mid to longer-term demand is expected to grow at a rate of 2.5% per year from 2025. In December 2020, ENEC announced that the UAE's largest nuclear operator achieved 100% of the rated power for Barakah 1- a key step for starting commercial operations in mid 2021. This lead to an expectation that the rest of three units will be online for six months longer than expected over the forecast period and have a limited impact on gas demand. The recent development reduced cumulative demand by a very small amount of a 0.6% reduction during 2020-2040 reaching 27.0 Tcf.

The largest player in the power generation sector is EWEC. Established in 2018, EWEC (100% owned by Abu Dhabi Power Corp.) is the sole entity responsible for procuring and delivering all natural gas to power plants in the UAE. It is the largest offtaker of sales gas production from ADNOC.

The second largest gas offtaker is Dubai Electricity & Water Authority (DEWA - 100% owned by the Government of Dubai), a vertically integrated electricity and water provider in the Emirate of Dubai (installed electricity capacity of 10 GW). DEWA aims to generate 75% of electricity from clean energy sources, through a fuel mix consisting of 61% gas and the rest made up of solar, nuclear and clean coal.

Furthermore, there are other entities which source their gas from ADNOC, such as Sharjah Electricity and Water Authority (SEWA) - the electricity and water provider of the Emirate of Sharjah which operates five gas-fired power stations, and the Federal Electricity and Water Authority (FEWA), which regulates and supervises the generation, transmission and distribution of electricity and water to the Northern Emirates.

***Gas Demand in the Industries Sector***

Industrial gas demand in the UAE comes from a diverse group, such as aluminum, steel, cement and other industries. In total, the gas demand from the industries sector over the 2020 to 2040 period is forecast to be c. 9.9 Tcf, as per the Wood Mackenzie Industry Report.

Aluminum represents 65% of industrial gas demand, consuming 0.8 bcf/d in 2019. The UAE's aluminum sector is comprised solely of Emirates Global Aluminum (EGA), which is one of the top five aluminum companies globally by production (EGA total production was at 2.6 Mt in 2019). EGA is significantly export oriented, with UAE consumption amounting to c. 0.5 Mt in 2019. The international demand provides significant upside from exposure to global growth. EGA produces 5.5 GW of power from its own gas-fired generation plant, split between its Jebel Ali and Al Taweelah sites, and with the feedstock gas supplied mostly by ADNOC. According to the Wood Mackenzie Industry Report, the production outlook for EGA is flat over 2020 to 2040, as is related gas demand. Gas demand for the aluminum sector is expected to be at 6.4 Tcf between 2020 and 2040.

Steel represents 11% of industrial gas demand, consuming 0.13 bcf/d in 2019. Lower levels of activity in the construction sector resulted in reduced demand in the steel sector in 2020. However, fundamental drivers of UAE steel demand and production remain intact and construction recovery in the short term is expected with levels above 2019. Emirates Steel is the UAE's only major primary steel producer. In 2019, the UAE produced a total of 3.2 Mt of crude steel. Gas demand for steel production sees potential upside of 1-5% annually from the indicated growth from 0.13 bcf/d in 2019 to 0.16 bcf/d in 2040, representing an increase of 0.007 Tcf between 2020-2040 reaching c.1.1 Tcf.

Cement represents 11% of industrial gas demand in the UAE, consuming 0.13 bcf/d in 2019. According to Wood Mackenzie Industry Report, total cement production in UAE amounted to 21.4 Mt in 2019, which represents c. 47.5% of the UAE's existing cement production capacity. Gas demand for cement is expected to grow reaching c.0.18 bcf/d in 2040 driven by the increasing construction activity and GDP growth. While COVID-19 and the oil price slump in 2020 had little to no impact on the largest industrial gas consumer, certain sectors such as cement and smaller industry have historically seen production, and hence gas demand, heavily correlated with GDP. These may see a cumulative reduction of 0.09 Tcf between 2020 and 2040 reaching a total of 1.0 Tcf.

Other industries which require gas represent 13% of gas demand in the UAE and include fertilizer, Methyl Tertiary Butyl Ether (MTBE) plant, Natural Gas for Vehicles (NGVs) and Industrial City Abu Dhabi (ICAD). The gas demand for other industries is expected to grow slowly, reaching 0.17 bcf/d in 2040 from c. 0.16 bcf/d in 2019.

***Gas Demand in ADNOC-owned Ventures***

ADNOC-owned ventures include multiple ADNOC subsidiaries and projects such as ADNOC Gas Processing, ADNOC Refining (Ruwais), ADNOC Fertilizers, and Borouge petrochemical plants. ADNOC-owned Ventures comprise a significant segment of gas demand within the UAE, representing 13% of cumulative gas demand in the UAE over 2020 to 2040. ADNOC-owned ventures gas demand was at c. 0.8 bcf/d in 2019 and it is expected to increase meaningfully by 2040 due to the development of new projects such as the new refineries, Borouge 4, ethane recovery, LPG offgas recovery and Ruwais upgrade project. The cumulative demand between 2020 and 2040 from ADNOC Industries is expected to be at c.7.1 Tcf.

***Gas Demand for Injection in Upstream Reservoirs***

Injection is an important and flexible source of gas demand. Any shortfall in demand (such as from the power sector) can be replaced by higher lean gas injection into existing reservoirs to maximize liquids production. This flexibility over gas injection provides ADNOC the ability to balance and optimize overall gas supply and demand.

Lean gas is currently reinjected into two key fields. In 2020, approximately 2.0 bcf/d of lean gas was re-injected. According to Wood Mackenzie Industry Report, the injection level may reduce over time, as the injection program could reduce in certain fields in 2032 in the event that the existing contract period for imported gas via the Dolphin, the Qatar to Abu Dhabi subsea pipeline is not extended. The volume and ratio of gas to be re-injected can be flexed by ADNOC.

**Supply of Natural Gas in the UAE**

Natural Gas in the UAE is supplied from several sources, comprising the onshore and offshore fields in Abu Dhabi, imports from Qatar via the Dolphin pipeline, supply from other UAE gas producers outside of Abu Dhabi, and LNG imports. The total average sales gas supply in 2020 for the full year amounts to roughly 8.0 bcf/d, of which Abu Dhabi produces approximately 5.4 bcf/d of associated and non-associated gas from upstream fields, the Dolphin imports amounts to 2.1 bcf/d and the imports from Dubai and Sharjah production account for 0.2 bcf/d. In the event that the existing Dolphin contract may not be extended beyond 2032, the amount of gas imported is expected to be fully substituted by locally produced gas in the UAE, with the addressable market forecasted to jump by 1.5 bcf/d in 2032. According to the Wood Mackenzie Industry Report, the LNG imports at Jebel Ali FSRU facility are expected to run until contract expiry in 2025, with the total contracted import volume of 0.27 Tcf.

***Domestic Gas Production***

Sales gas production in the UAE began in 1977 through the start of LNG exports, followed by supplies into the domestic market in the early 1980s. Gas is produced from fields located both onshore and offshore Abu Dhabi. The upstream fields are made up of 45% associated gas and 55% non-associated gas reservoirs. Historical natural gas production in UAE was at ~8.0 bcf/d (average over 2016 – 2018). According to the Wood Mackenzie Industry Report, between 2020 and 2040, there is c. 46 Tcf of sales gas available, excluding volumes utilized by ADNOC LNG.

***Gas Imports***

In addition to the domestic gas production, the UAE imports gas primarily from Qatar via the Dolphin gas pipeline, as well as other minor sources. According to the Wood Mackenzie Industry Report, Dolphin imports are assumed to provide 2.1 bcf/d supply to 2032. The UAE’s only existing LNG import facility is DUSUP’s FSRU (Floating Storage Regasification Unit) at Jebel Ali, with a total of 3.0 Tcf contracted to 2025.

***Other Sources of Supply***

There are a few different sources of gas supply in the UAE in addition to those mentioned above. These include Abu Al Bukhoosh, which feeds into Das Island, the Al Dhafra joint venture which produces only minimal volumes of associated gas, the Al Yasat joint venture which is being developed by ADNOC and CNPC and is forecast to produce oil and small volumes of associated gas.

Outside of Abu Dhabi, there is minor gas production from Sharjah and Umm Al Qaiwan. Sales gas production in the UAE from other sources than Abu Dhabi has been in rapid decline and represented 0.065 bcf/d in 2019. The total cumulative supply production is expected to be c. 0.1 Tcf over the 2020-40 period and is projected to cease in 2031.

# REGULATION

## Overview

Article 23 of the constitution of the United Arab Emirates provides that the natural resources and wealth in each Emirate are the public property of that Emirate and that the community must preserve and use those resources and that wealth for the public good and in the interests of the national economy. Accordingly, subject to the constitution of the United Arab Emirates, the laws of Abu Dhabi are the principal source of regulation applicable to the oil and gas industry in Abu Dhabi.

This means that each Emirate within the United Arab Emirates has constitutionally entrenched rights to its own natural resources (including oil and natural gas) which are deemed to be the public property of that Emirate. As a result, each Emirate pursues its own policies regarding the development of oil and natural gas, with the ruler in each Emirate retaining ultimate control over the development of oil and natural gas reserves in that Emirate. In addition, each Emirate participates directly in the development of oil and natural gas. In most circumstances, concessions are granted by each Emirate to the relevant state-owned petroleum company, or to a concession project company in which the Emirate or the state-owned petroleum company will hold a majority interest.

Furthermore, each Emirate also governs the sector through its own regulatory bodies. For example, infrastructural development for production, storage, transmission, distribution or export including transportation of oil and natural gas is under each Emirate's control.

## Abu Dhabi

Since 1976, ADNOC has managed upstream, midstream and downstream oil and gas operations on behalf of the Government of Abu Dhabi. Given that the majority of the oil and natural gas reserves in the United Arab Emirates are located in Abu Dhabi, most oil and natural gas development and production activities in the United Arab Emirates are carried out by ADNOC.

### *Gas*

Law No. 4 of 1976, as amended, grants ADNOC the right to exploit and use all natural gas discovered or to be discovered within Abu Dhabi, either solely or through joint agreements or projects concluded with third parties, provided its participation is at least 51%. Law No. 4 of 1976 also grants ADNOC the right to claim all rights derived from agreements concluded by the Government of Abu Dhabi in relation to natural gas discovered or produced or in relation to the facilities of production and extraction of natural gas. As such all natural gas discovered or to be discovered in the territorial zone of Abu Dhabi is the sole property of Abu Dhabi.

ADNOC is wholly owned by the Government of Abu Dhabi and the management of ADNOC reports directly to the SPC which acts as its board of directors.

### *Regulation*

The Council, which was established in 2020, regulates Abu Dhabi's oil and natural gas policy. Abu Dhabi does not have comprehensive laws governing oil and natural gas operations. The applicable laws and decrees governing the industry are as follows:

(a) Tax Decree of 1965, as amended, which sets out the underlying framework for income tax in respect of taxable persons in Abu Dhabi;

(b) Law No. 7 of 1971, as amended which establishes ADNOC and sets out its key functions and operational provisions;

(c) Law No. 4 of 1976 in relation to gas ownership which affirms Abu Dhabi's ownership of gas within its territories and which grants ADNOC with a right to use and exploit such gas;

(d) Law No. 12 of 1973, as amended, in relation to petroleum ports which regulates the use and operation of petroleum ports in Abu Dhabi under the auspices of the Abu Dhabi Petroleum Ports Authority;

(e) Law No. 8 of 1978 in relation to the conservation of petroleum resources which regulates all petroleum operations in Abu Dhabi including exploration, drilling, treatment, production, storage and transportation;

(f) Law No. 1 of 1988 in relation to the Supreme Petroleum Council which sets out the authorities, powers and functions of the Supreme Petroleum Council in respect of the petroleum industry in Abu Dhabi; and

(g) Law No. 24 of 2020 in relation to the Supreme Council for Financial and Economic Affairs which transferred all functions and powers of the Supreme Petroleum Council the newly formed Council and sets out its responsibilities in respect of the strategies and policies regulating the financial, investment and economic, oil and natural resources affairs in Abu Dhabi.

*Law No. 8 of 1978 regarding the Conservation of Petroleum Resources*

The principal legislation governing the oil and natural gas operations in the Emirate is Abu Dhabi Law No. 8 of 1978 regarding the Conservation of Petroleum Resources which covers all stages of upstream petroleum operations. Although drafted in general terms, it imposes high standards on the industry, in particular, requiring the use of 'the most efficient scientific techniques' and the use of machinery and materials that conform to international standards of, amongst others, safety and efficiency. Construction of facilities under this law requires prior consent of the Council, including the submission of detailed studies and technical and economic evaluations. All exploration activity requires prior consent and any data obtained must be submitted to the Council, together with interim and final interpretations of the data. The law also contains detailed provisions regulating the drilling, completing, reworking and abandonment of wells including the process for obtaining consent, minimum standards to be met and reporting obligations.

**The Supreme Petroleum Council and the Supreme Council for Financial and Economic Affairs**

The SPC was established by Law No. (1) of 1988 and acts as the board of ADNOC. The Chairman of the SPC is H.H. Sheikh Khalifa bin Zayed Al Nahyan, Ruler of Abu Dhabi and President of the United Arab Emirates. The SPC has sixteen members, including, among others, H.H. Sheikh Khalifa bin Zayed Al Nahyan, Ruler of Abu Dhabi and President of the United Arab Emirates, and ADNOC's Chief Executive Officer, Dr. Sultan Ahmed Al Jaber.

Following Law No. 24 of 2020, the Council was established as the supreme authority for the financial, investment and economic affairs of the Emirate of Abu Dhabi. Pursuant to Law No. 24 of 2020, all functions and powers of the SPC were transferred to the Council save for the SPC's mandated functions as the Board of Directors, until such time as a new Board of Directors of ADNOC is established by law. The Chairman of the Council is H.H. Sheikh Khalifa bin Zayed Al Nahyan, Ruler of Abu Dhabi and President of the United Arab Emirates and the Vice Chairman is H.H. Sheikh Mohamed bin Zayed Al Nahyan. The Council is responsible for, amongst other matters, setting the strategies and policies regulating the financial, investment and economic, oil and natural resources affairs of the Emirate of Abu Dhabi including the approval of such for entities including ADNOC.

**ADNOC**

ADNOC was incorporated by a decree of the Ruler of Abu Dhabi under Law No. 7 of 1971. ADNOC's principal mandate and objective is to operate at all levels of petroleum production both inside and outside of Abu Dhabi. ADNOC is authorized to explore, extract, refine, produce, transport, store, distribute, sell and export petroleum, natural gas and all other hydrocarbons (including its derivatives). ADNOC may also incorporate or hold shares in companies either on its own or as a joint venture with other parties, enter into agreements with companies or institutions for the performance of services relating to ADNOC's objectives, or to undertake any other lawful means that are necessary for ADNOC's performance of its objectives.

***ADNOC and the Supreme Petroleum Council***

The SPC exercises the functions and responsibilities of ADNOC's board of directors. The Council and ADNOC work together on developing internal guidelines and regulations on best practices with respect to ADNOC's and its subsidiary companies' oil and natural gas activities.

ADNOC leads the day-to-day operations and implementation of the Council's directives and it is the key shareholder in nearly all upstream activity in Abu Dhabi. ADNOC's subsidiaries engage in, amongst other activities, oil and natural gas exploration, processing and distribution. Some of the most notable subsidiaries are ADNOC Onshore, ADNOC Offshore, and the Abu Dhabi National Tanker Company, which operates under the same management team as the National Gas Shipping Company.

ADNOC proactively regulates its group companies and pursues a number of strategic objectives for health, safety and the environment, which are implemented by its subsidiaries including Abu Dhabi Gas Industries Ltd., Abu Dhabi Gas Liquefaction Company Ltd., ADNOC Onshore, and ADNOC Offshore.

***Environmental Regulation***

Environmental protection in the United Arab Emirates is principally subject to Law No. 24 of 1999 (the "**Environmental Protection Law**"). The Ministry of Climate Change and Environment is responsible for developing, issuing and revising environmental protection standards in coordination with other relevant bodies and with establishing plans for dealing with environmental emergencies. The Environmental Protection Law imposes a wide range of obligations and measures including the following:

(a) operators licensed to explore, extract or exploit onshore or offshore oil and gas fields are prevented from disposing any contaminating materials derived from their activities into their surrounding water or land environments unless secure measures are used that do not carry any adverse environmental impact or the contaminating materials are treated in accordance with appropriate technical means in line with international protocols and conventions;

(b) the Ministry of Climate Change and Environment will co-operate with other regulators and licensed operators on preparing and implementing environmental guidelines relating to the process of producing, transporting and exploiting oil and gas. Each of the Ministry of Climate Change and Environment, the relevant regulators and licensed operators must continuously monitor the environmental impact of exploring, extracting and exploiting oil and gas wells;

(c) the environmental obligations and liabilities that arise from oil spills at sea;

(d) prohibition on establishments that are commercial, industrial, agricultural, tourism or service based from disposing any untreated material, wastes or liquids that emanate from land into environmental waters;

(e) complying with air, water and soil standards prescribed by the Ministry of Climate Change and Environment from time to time (including, particularly, in the context of flaring or venting of oil and gas); and

(f) civil and criminal liabilities arising from actions or omissions that cause environmental damages and damages to third parties in violation of the Environmental Protection Law.

The Environmental Protection Law dis-applies some of its licensing provisions in the case of entities that have sufficiently robust systems and programs to protect the environment and to achieve the goals of the law, particularly with respect to environmental impact assessments, licensing requirements for the handling of hazardous materials or the ability of the Ministry of Climate Change and Environment to remove samples from wastes. Accordingly, all ADNOC group companies (and any operating entities in Abu Dhabi that are subject to the jurisdiction or oversight of ADNOC and the SPC) are relieved from applying to the Ministry of Climate Change and Environment with respect to certain environmental licensing requirements.

**Health, Safety and Environment**

Federal Law No (8) of 1980 for the Protection of Labour is the primary health and safety law, governing health and safety issues at the federal level. The ADNOC codes of practice and guidelines specifically applicable to matters of health, safety and environment (the "**HSE Code**") is equivalent to and consistent with, issued by ADNOC's environment, health and safety division is equivalent to and consistent with the federal law and must be complied with by all ADNOC group companies and other companies falling under the jurisdiction of ADNOC and the Council. The ADNOC HSE Code is supplemented by the Health, Safety and Environment Technical Guidance (the "**HSE Guidance**"). The HSE Guidance is not mandatory; however, each relevant company will need to demonstrate that any departure from the HSE Guidance is at least as effective as the approach recommended by the HSE Guidance. Additionally, decommissioning obligations are typically addressed by the relevant concession agreement or by the Council.

**Value Added Tax**

As a result of significant deficits since 2015, the Government of Abu Dhabi has sought to reduce public spending and increase its non-hydrocarbon revenue. In particular, the Government of Abu Dhabi has significantly reduced the funding it provides to certain wholly-owned companies, reduced energy subsidies and limited development expenditure. On the revenue side, the Government of Abu Dhabi has implemented new administrative fees and benefits from the federal VAT regime that has been introduced as part of a GCC-wide initiative since 2018.

**COVID-19**

To address the concerns arising out of the global outbreak of COVID-19, multiple regulations and regulatory directions have been passed in the United Arab Emirates at the Federal and Emirate level to address COVID-19, including directions that directly impact travel to/from the UAE, internal travel and employment activities, noting that certain of these restrictions are time bound and subject to further extension. There are exemptions or special arrangements available under such regulations for infrastructure projects including water services, electricity and communication networks, building and construction sites, contracting and construction firms, engineering consultants and energy companies, in the form of continuing to operate while other sectors were shut-down due to curfew orders, and which ADNOC and its subsidiaries in these industries can utilize, but while complying with the general government requirements to maintain safe distancing, wearing of personal protective equipment, COVID-19 testing and screening and quarantine where applicable.

In alignment with the government direction issued on February 6, 2021, in general terms all ADNOC office based employees are to work remotely where such jobs can be delivered fully from outside the workplace unless considered critical and in any event office attendance is to be reduced to a maximum of 30%. ADNOC intends to continue to monitor the situation while maintaining strict health and safety protocols and ensuring frequent testing and vaccine availability.

## DESCRIPTION OF THE ISSUER

### General

The Issuer was incorporated on May 26, 2020 as a registered private company organized under the laws of Jersey, with registered number 131580. The Issuer is a private company but pursuant to article 17(2)(b) of the Companies (Jersey) Law 1991 it is deemed to be a public company. The Issuer's registered office is located at 2nd Floor Sir Walter Raleigh House, 48-50 Esplanade, St Helier, Jersey JE2 3QB. The memorandum and articles of association of the Issuer may be inspected at the registered address of the Issuer. The secretary of the Issuer is Maples Company Secretary (Jersey) Limited of 2nd Floor Sir Walter Raleigh House, 48-50 Esplanade, St Helier, Jersey JE2 3QB. Maples Company Secretary (Jersey) Limited is regulated to conduct trust company business by the JFSC pursuant to the Financial Services (Jersey) Law 1998.

The Issuer has not engaged in any activity other than the business and activities described or referred to in this Offering Memorandum. The Issuer is managed and controlled by its directors. The Board of the Issuer is currently composed of nine directors, two of which are resident in Jersey.

### Directors Interests

Each of Robert Lucas and Cleveland Stewart are also employees and/or directors of Maples Fiduciary Services (Jersey) Limited and/or its subsidiaries which provides certain corporate administration services to the Issuer and receive remuneration for such services including the provision of such directors. Otherwise, the directors of the Issuer will not be remunerated by the Issuer for performing their role as directors.

As a matter of Jersey law, each director of the Issuer is under a duty to act honestly and in good faith with a view to acting in the best interests of the Issuer, regardless of any other directorship such director may hold. Each director is responsible for advising the board of directors in advance of any potential conflicts of interest.

There are no potential conflicts of interest between the private interests or other duties of the directors of the Issuer and their duties to the Issuer. The business address of each of the directors of the Issuer is the registered office of the Issuer.

### Business of the Issuer

The business of the Issuer is limited to its investment in AssetCo in respect of which it holds 47.7% of the issued share capital of AssetCo.

### Financial Statements

The Issuer publishes financial information to the extent required by Jersey law.

### Directors of the Issuer

The Issuer's management is conducted by the Board of Directors which consists of the following directors:

| Name | Position |
|---|---|
| Camille Depoutot | Director |
| Charles Thomazi | Director |
| Cleveland Stewart | Director |
| Felipe Ortiz | Director |
| Gregg Myers | Director |
| Marco Bartolini | Director |
| Martin Catchpole | Director & Chairperson of the Board of Directors |
| Robert Lucas | Director |
| Wooshick Kim | Director |
| Charlotte Brunning | Alternate Director to Charles Thomazi |
| Natalie Hadad | Alternate Director to Felipe Ortiz |
| Sergio Molisani | Alternate Director to Marco Bartolini |
| Deepak Agrawal | Alternate Director to Martin Catchpole |
| Mark Hill | Alternate Director to Cleveland Stewart and Robert Lucas |

**Camille Depoutot** was appointed to the Board of Directors on June 12, 2020. Mrs. Depoutot is a Senior Vice President in the GIC Infrastructure European team. She has been with GIC since 2010 and currently sits on the board of Terega, a French gas transmission and storage company, Kellas, a UK North Sea gas midstream company, ADNOC Gas and is an observer on the board of ADNOC Oil. Prior to GIC, Mrs. Depoutot worked for 2 years at JP Morgan, in their Natural Resources M&A team. Mrs. Depoutot holds a Master of Sciences in Management from ESCP Europe and a Bachelor in Law from La Sorbonne.

**Charles Thomazi** was appointed to the Board of Directors on June 12, 2020. Mr. Thomazi leads OTPPB's Europe, Middle East and Africa Infrastructure & Natural Resources team, with responsibility for identifying, executing and managing infrastructure and natural resources assets. Mr. Thomazi has more than 25 years of experience in the financial services sector and has been actively involved in infrastructure since 2001. Mr. Thomazi has worked across many sectors, including leading the acquisition of OTPPB's airport assets, High Speed 1 and Koole Terminals and Westerleigh. In addition to Galaxy Pipeline Assets, Mr. Thomazi currently serves on the boards of Brussels Airport, Copenhagen Airport, Ontario Airports Investments Limited and Westerleigh Group.

**Cleveland Stewart** was appointed to the Board of Directors on May 26, 2020. Mr. Stewart is a Jersey resident and provides directorship and fiduciary administrative services to a wide range of structured finance products including structured note issues, note and commercial paper programs, securitizations, Islamic finance vehicles, investment holding companies, investment funds, trust structures and CLOs. Cleveland has more than 16 years of offshore corporate, trust and fund experience in both Jersey and the Cayman Islands and specializes in establishing corporate structures. Mr. Stewart joined the Maples Group in 2004. He previously worked for the Cayman Islands Monetary Authority as a Senior Analyst in Banking Supervision where he was responsible for the regulation, supervision and inspection of Banks and Trust Companies in the Cayman Islands. Mr. Stewart is a member of the Society of Trust and Estate Practitioners (STEP) and an Accredited Director of the Institute Chartered Secretaries of Canada.

**Felipe Ortiz** was appointed to the Board of Directors on June 12, 2020. Mr. Ortiz is a Managing Director in Brookfield's Infrastructure Group, responsible for leading the origination and execution of European deals for Brookfield's open-end core infrastructure fund. Since joining Brookfield in 2009, Mr. Ortiz has led multiple infrastructure transactions that include global investments in the utilities, transportation and telecom sectors. Prior to joining Brookfield, Mr. Ortiz worked in an investment bank in New York, providing M&A and capital markets advisory to infrastructure funds. Mr. Ortiz holds a Master of Science in Management from the Stanford University Graduate School of Business and a Bachelor of Engineering degree from Universidad de los Andes.

**Gregg Myers** was appointed to the Board of Directors on June 12, 2020. Mr. Myers is the Chief Financial Officer of Global Infrastructure Management, LLC and is based in New York City. He is responsible for GIP's finance and accounting functions. Prior to joining GIP in 2007, Mr. Myers spent 9 years at Credit Suisse and was a Vice President in the Alternatives Investments Department. Mr. Myers serves on the board of Galaxy Pipeline Assets Bidco Limited and Galaxy Pipeline Assets Holdco Limited. Mr. Myers holds a B.S. in Accounting and Corporate Finance (1995) from the University of Buffalo and an M.B.A. (1996) from the School of Management at the University of Buffalo.

**Marco Bartolini** was appointed to the Board of Directors on June 12, 2020. Mr. Bartolini joined Citi as an Investment Banking Analyst in 2006 in London. He moved to Milan in 2011 as an Associate, and was promoted to Vice President in 2014 and Director in 2017. From 2016 to his resignation in January 2019, he covered Italian clients and executed M&A transactions mostly in the energy, infrastructure, telecom and media industries. He joined SNAM in January 2019 as Group Head of M&A originating and executing transactions in the core and energy transition businesses, including the acquisition of a co-controlling stake in OLT, a minority stake in ADNOC Gas Pipelines, of biomethane companies Renerwaste and Iniziative Biometano and energy efficiency companies TEA, Mieci and Evolve. Mr. Bartolini sat on the board of OLT since February 2020.

**Martin Catchpole** was appointed to the Board of Directors on June 19, 2020. Mr. Catchpole is a Principal, having joined GIP in January 2020. He focuses on the energy, power and renewable energy sectors in EMEA and is based in London. Prior to joining GIP, Mr. Catchpole was the Co-Head of the European Energy Group, Investment Banking for Credit Suisse, based in London where he was responsible for numerous financing and M&A transactions across the sector for the bank's European energy and infrastructure clients. Mr. Catchpole joined Credit Suisse in 2004, prior to which he was a member of the Utilities and Power team at Dresdner Kleinwort Wasserstein and a senior accountant at EY. Mr. Catchpole holds a BA Business Economics from Exeter University, UK and is a member of the Association of Chartered Accountants in England & Wales.

**Robert Lucas** was appointed to the Board of Directors on May 26, 2020. Mr. Lucas is a Jersey resident and a fellow of the Institute of Chartered Accountants in England and Wales. Mr. Lucas joined the Maples Group in December 2018 as a director of the Fiduciary Services entity and the Head of the Office. Mr. Lucas has more than 18 years of offshore fund, corporate and trust experience in both Jersey and the Cayman Islands and specializes in establishing corporate structures. Mr. Lucas is highly experienced in a variety of corporate operations, including compliance, investor administration, asset administration and valuations. He also specializes in fund management, including directorships, governance and company secretarial services. Prior to joining the Maples Group, Mr. Lucas was the Head of Fund and Corporate Services for two Jersey based providers, and prior to this, Mr. Lucas was a Director of a Global Fund Administrator and Custodian heading up their Real Estate and Infrastructure Fund Administration Business. Mr. Lucas qualified as a Chartered Accountant in England in 2001 and has a BA Honours degree in Accounting and Economics from Liverpool University.

**Wooshick Kim** was appointed to the Board of Directors on June 19, 2020. Mr. Kim has over 22 years of career experience in Finance service industry. Mr. Kim joined KB Bank in 1999 and has spent 15 years in KPMG NY and Korea as a professional advisor in infrastructure and energy sectors. Mr. Kim was instrumental in the establishment of NH-Amundi Asset Management's Alternative Division in 2015 and brought many years of experience to his role. Mr. Kim now manages various funds in diversified infrastructure assets. Mr. Kim has a BA Hons in Business Administration from SUNY Buffalo State College.

**Charlotte Brunning** was appointed to the Board of Directors on June 12, 2020. Ms. Brunning is a member of OTPPB's Europe, Middle East and Africa Infrastructure & Natural Resources team, with responsibility for identifying, executing and managing infrastructure and natural resources assets. She has more than 13 years of experience in the financial services sector and has been actively involved in infrastructure since 2007. In addition to Galaxy Pipeline Assets, Ms Brunning serves on the boards of Scotia Gas Networks and Westerleigh Group.

**Natalie Hadad** was appointed to the Board of Directors on July 13, 2020. Ms. Hadad is a Senior Vice President in Brookfield's Infrastructure Group, responsible for origination and execution of deals in North America for Brookfield's open-end core infrastructure fund. Since joining Brookfield in 2013, Ms. Hadad has led multiple infrastructure transactions in the utilities, energy and telecom sectors. Prior to joining Brookfield, she worked in infrastructure private equity for seven years. Ms. Hadad holds a Bachelor of Science in Engineering from University of Texas at Austin and a Masters in Finance from Tulane University.

**Sergio Molisani** was appointed to the Board of Directors on June 12, 2020. Mr. Molisani has 13 years of experience in the Investment Banking divisions of the two major Italian banks, Unicredit and Banca Commerciale Italiana (currently named Banca Intesa), in Italy and abroad (UK). From the end of 2000 to the end of 2011, he headed the equity research teams of Unicredit covering the Western European Energy sector and the Italian Energy, Utility and Infrastructure sectors. In early 2012, Mr. Molisani joined SNAM as Group Head of Debt & Equity Capital Markets and Credit Rating, Financial Planning and Risk Management, playing a pivotal role in mid-2012 spin-off from Eni. During his four years in this position, his key achievements include the build-up of SNAM's new Finance department, the refinancing of SNAM's debt towards Eni, the set-up and following optimization of Group's financial structure and a large number of structured finance transactions. In November, 2016, Mr. Molisani took over the position of Finance and Insurance Director expanding his role to Tax Director in April 2020. Since November 2019 he has also been covering the position of SNAM's Chief Investment Officer in the TAP project, the largest and most strategic asset held by SNAM abroad. On top of this Mr. Molisani acts as SNAM's representative on a large number of boards of directors, chief among them TAP and SNAM Rete Gas.

**Deepak Agrawal** was appointed to the Board of Directors on July 13, 2020. Mr. Agrawal is a Partner, having joined GIP in 2007. Mr. Agrawal focuses on the energy and electricity and renewables sectors in Europe. Prior to GIP, Mr. Agrawal served as a senior Financial Advisor in the Project Finance Group of Qatar Petroleum where he was involved in developing and financing several energy projects. Prior to joining Qatar Petroleum in 2002, Mr. Agrawal was a Vice President at PSEG India Private Limited, responsible for financing and business development in the Middle East and India. Mr. Agrawal holds a Bachelors of Engineering from the Delhi College of Engineering and an M.B.A. from the Faculty of Management Studies of Delhi University.

**Mark Hill** was appointed to the Board of Directors as an alternate to Robert Lucas and Cleveland Stewart on October 15, 2020. Mr. Hill has more than 30 years of offshore fund, corporate and trust experience and specialises in governance, risk and compliance including directorships and company secretarial services. Before re-joining the Maples Group, Mr. Hill held a number of directorship roles including country responsibility for a multi-jurisdictional fund, trust and corporate service provider whilst also serving as a non-executive director on a variety of client fund structures including alternative assets, real estate and traditional long-only strategies.

# DESCRIPTION OF ASSETCO

## General

AssetCo was incorporated as a limited liability company on May 4, 2020, is duly organized and existing in Abu Dhabi under the law of the United Arab Emirates and is registered with the Department of Economic Development, holding trade license no. CN-3640938. Its registered office is P.O. Box 898, ADNOC Head Quarters Complex, Abu Dhabi, United Arab Emirates.

AssetCo is owned by three shareholders, comprising ourselves in respect of 47.7% of the issued share capital, ADNOC HoldCo in respect of 51% of the issued share capital and NH Galaxy Pipeline Bidco Limited in respect of the remaining 1.3%.

AssetCo was incorporated with a share capital of AED 76,050,000,000 divided into 7,605,000 shares with a par value of AED 10,000 each. All of AssetCo's issued shares have been duly and validly authorized and issued.

AssetCo leases 38 onshore natural gas pipelines from ADNOC under a twenty-year lease agreement. The pipelines cover 982.3 kilometers (610.4 miles in aggregate) are comprised of four distinct concessions, Sales Gas Pipelines, Injection Pipelines, NGL Pipelines and LNG Flows.

## Financial Statements

AssetCo is not required by the law of the United Arab Emirates to publish interim or annual financial statements. AssetCo intends to provide a copy of its annual audited financial statements to the Bond Trustee within 180 days after the end of each financial year. Additionally, the Board of Directors of AssetCo, under its memorandum of association, is required to prepare a balance sheet, profit and loss account and annual report of financial position and submit the same to the shareholders, within three months of its financial year end. Other than the Board of Directors, AssetCo does not have any other active senior management.

## SUMMARY OF SHAREHOLDERS' AGREEMENT

*The following summary of the Shareholders' Agreement is not considered or intended to be full statements of the terms of that agreement. Unless otherwise stated, any reference in this Offering Memorandum to any agreement will mean such agreement and all schedules, exhibits and attachments thereto as in effect on the date hereof. You will find the definitions of capitalized terms used and not defined in this description in "Annex A: Glossary of Certain Terms", in the "Terms and Conditions of the Bonds" and as provided elsewhere in this Offering Memorandum.*

The Shareholders' Agreement was entered into on June 23, 2020 by and between AssetCo as the company, ADNOC HoldCo as an investor in the company and the Issuer and NH Galaxy Pipeline Bidco Limited ("**Investor No. 2**") as the remaining investors in the company (the investors collectively referred to as the "**Shareholders**"). The Shareholders' Agreement effective date was July 15, 2020 (the "**SHA Effective Date**").

**1. *Term***

The Shareholders' Agreement came into force on the SHA Effective Date. The rights and obligations of the Shareholders under the Shareholders' Agreement terminate on the earliest of:

(a) in respect of any Shareholder, the date on which it ceases to hold shares in AssetCo;

(b) the first day on which there is only one Shareholder;

(c) the date on which AssetCo is wound up; and

(d) any date agreed by the Shareholders in writing.

**2. *Business***

The Shareholders' Agreement sets out the business of AssetCo which is limited to:

(a) the leasing from ADNOC of the Ownership Interests (as defined in the Lease Agreement) in the Pipelines pursuant to the Lease Agreement;

(b) the granting to ADNOC of the use and operation rights in the Pipelines pursuant to the U&O Agreement;

(c) the collection of the Tariff (as defined in the U&O Agreement);

(d) the procurement of certain administrative services pursuant to the General Services Agreement; and

(e) the undertaking of any other business activities ancillary to the foregoing, including such other business as may be agreed in writing between the shareholders, subject to the receipt of applicable consents for certain unanimous or super-majority consent matters.

**3. *Board of AssetCo***

(a) Unless and until the Shareholders exercise their rights described under paragraph (b) below, the board of AssetCo initially consists of up to twelve directors, six of which are appointees of the Issuer and six of which are appointees of ADNOC HoldCo.

(b) Each Shareholder is entitled to appoint, remove and replace one director for each 5.8% of shares that it owns in AssetCo. Directors will have a number of votes that is proportionate to the percentage ownership of the appointing Shareholder. Provided that there has not been an ADNOC HoldCo Change of Control (as defined in the Shareholders' Agreement), ADNOC HoldCo shall be entitled to appoint the majority of the directors to the board of AssetCo and the number of directors shall be adjusted accordingly as necessary to the extent ADNOC HoldCo exercises such entitlement. For the purpose of this percentage threshold, the Issuer is deemed to hold all of the shares held by Investor No. 2.

(c) ADNOC HoldCo is entitled to appoint, remove and replace the chairperson for so long as it holds at least 50% in the nominal value of the shares plus one share in AssetCo. The chairperson must be one of the directors appointed by ADNOC HoldCo.

(d) AssetCo's management is conducted by the Chief Executive Officer ("**CEO**") and the board of directors consists of the following directors:

| Name | Date of Confirmation |
|---|---|
| Ahmed Jasim Al Zaabi | June 18, 2020 |
| Bader Al Mohamadi | June 18, 2020 |
| Butti Al Qubaisi | June 18, 2020 |
| Tamadher Al Bashr | June 18, 2020 |
| Klaus Froehlich | September 2, 2020 |
| Mohamed Al Aryani | June 18, 2020 |
| Deepak Agrawal | June 18, 2020 |
| Camille Depoutot | July 15, 2020 |
| Jad Ellawn | June 18, 2020 |
| Alessandra Pasini | June 18, 2020 |
| Charles Thomazi | June 18, 2020 |
| Hosang Shin | June 18, 2020 |

There are no potential conflicts of interest between the private interests or other duties of the directors listed above and their duties to AssetCo. The business address of each of the directors is the registered office of AssetCo. Pursuant to the U&O Agreement, ADNOC provides all of AssetCo's operational, maintenance and management functions in respect of the Pipelines.

**4.** ***Senior management of AssetCo and operations***

(a) For so long as ADNOC HoldCo holds at least 50% in the nominal value of the shares plus one share in AssetCo, ADNOC HoldCo is entitled to appoint, remove and replace the chief executive officer of AssetCo. Otherwise, the chief executive is appointed by the board.

(b) For so long as the Issuer holds at least 5.8% of shares in AssetCo, it has the right to require AssetCo to appoint, remove and replace one or two persons as independent financial, commercial and technical manager(s). Their responsibilities include, but are not limited to, reviewing reports provided by ADNOC under the U&O Agreement, reviewing monthly financial and management reporting from ADNOC in respect of AssetCo, reviewing preparation of invoices to ADNOC under the U&O Agreement, monitoring payment of key invoices by ADNOC under, and generally compliance by ADNOC with, the U&O Agreement, the Pipeline Lease Agreement, the General Services Agreement and the Shareholders' Agreement.

(c) AssetCo is not permitted to appoint or employ any person other than the chief executive officer and the financial, commercial and technical manager(s) without the prior consent of each shareholder holding at least 5.8% or more of the total number outstanding of the shares in AssetCo. For the purpose of this percentage threshold, the Issuer is deemed to hold all of the shares held by Investor No. 2.

(d) The Shareholders' Agreement sets out the matters that are delegated by the board to the chief executive officer and those matters that are delegated to the financial, commercial and technical manager(s).

**5.** ***Shareholders' meetings***

(a) The Shareholders' Agreement contains provisions dealing with the calling of shareholders' meetings, voting and quorum. If a quorum is not met, the meeting will be adjourned to a second meeting, and if a quorum is not present at the second meeting, the meeting will be adjourned to a third meeting where the quorum will be satisfied by the attendance of ADNOC HoldCo, and a resolution may be passed by an affirmative vote of the shareholders present at such meeting, save for any resolution in respect of, amongst other matters, any shareholders' unanimous matter or shareholders' super majority matter.

(b) Shareholders’ unanimous matters require the approval of each shareholder at a shareholders’ meeting or a written resolution signed by each shareholder. Shareholders’ unanimous matters include the amendment of the constitutional documents of AssetCo and the issuance, reduction, consolidation, sub-division, conversion, purchase, redemption of, and variation of the rights of, any shares in AssetCo.

(c) Shareholders’ super majority matters require the approval at a shareholders’ meeting of each shareholder holding 5.8% or more of the total number of outstanding shares of AssetCo or a written resolution signed by each shareholder holding 5.8% or more of the total number of outstanding shares. Shareholders’ super majority matters include the making of a material change to the business, the creation of encumbrances, the incurring of indebtedness or making loans, non-ordinary course or non-arms’ length related party transactions, waiving, amending or varying rights under the Projects Documents the commencement or settlement of litigation, the winding up of AssetCo, material asset or share acquisitions or material disposals, arrangements, regarding joint ventures or partnerships, incorporating a new subsidiary, the listing of securities, incurring of capital expenditure or operating expenditure or making any other capital commitment, making non-cash distributions, increasing or reducing insurance coverage and the amendment of accounting policies or the changing of auditors.

(d) In general, all other matters require a simple majority vote of the Shareholders.

**6. *Annual budgets and business plans***

AssetCo has adopted with the approval of the Shareholders an initial annual budget. The board of AssetCo is required to approve an updated business plan and annual budget for each subsequent financial year based on supply forecasts delivered to AssetCo under the U&O Agreement. AssetCo is required to notify the shareholders if actual or anticipated aggregate expenditure by AssetCo over the period of a month, financial quarter or financial year deviates materially from what has been budgeted for such periods.

**7. *Distributions***

(a) Distributions by AssetCo are to be made in accordance with the dividend policy adopted by the AssetCo board from time to time and the respective shareholdings of the shareholders. The dividend policy of AssetCo as at the date of this Offering Memorandum is to distribute to its shareholders in each financial quarter 100% of free cash generated by AssetCo in that financial quarter based on pro forma accounts. A resolution of the board to adopt, revise or amend the dividend policy requires the affirmative approval of all of the directors.

(b) For the purposes of paying distributions, a board meeting is required to be held to approve the making of the payment of that distribution not later than three business days prior to the end of each financial quarter.

(c) If the board of directors of ADNOC adopts a decision to suspend payments, either by way of dividend, loan or similar payment (excluding royalties and taxes) to the Government of Abu Dhabi in respect of any financial quarter, and no such payments are made during such financial quarter, then ADNOC HoldCo will have the right, at its sole discretion, to amend the dividend policy in respect of that financial quarter and each subsequent financial quarter during which such ADNOC decision remains in place and no such payments are made (including by electing not to pay a dividend). In this circumstance, ADNOC HoldCo must inform each other shareholder and AssetCo of its decision and must set out the amendments to the dividend policy that ADNOC HoldCo is making.

(d) If ADNOC HoldCo exercises its rights to amend the dividend policy, AssetCo is required to transfer to a bank account established in respect of each shareholder (each a “**Shareholder Reserve Account**”) on the last business day of each financial quarter, an amount equal to the difference between (i) the amount that would otherwise have been distributed to the relevant shareholder for the relevant financial quarter but for the amendment to the dividend policy and (ii) the amount (if any) actually distributed by AssetCo to the relevant shareholder for the relevant financial quarter.

(e) If subsequent to the making of an amendment to the dividend policy, ADNOC adopts a decision to recommence payments or actually recommences making payments to the Government of Abu Dhabi, then ADNOC HoldCo must notify the other shareholders within two business days of that decision, the dividend policy adopted prior to the amendment shall be reinstated and AssetCo must distribute all principal amounts standing to the credit of each shareholder's Shareholders Reserve Account and the pro rata portion of any aggregate interest that has accrued on the amounts held in such Shareholder Reserve Accounts within five business days.

**8. *Disposals of shares in AssetCo***

(a) The Issuer is not permitted to dispose of shares in AssetCo if:

(i) the transferee is a sanctions target, international oil company which holds an interest in any of the reservoirs within the transaction perimeter, or to any other oil and gas exploration and/or production company, midstream or downstream oil and gas company or petrochemical company, in each case controlled by any government;

(ii) such disposal occurs prior to the expiry of the 3rd anniversary of the SHA Effective Date, unless, amongst other exceptions, the disposal is to ADNOC HoldCo or another member of the ADNOC group or to any of the Issuer's investor shareholders and certain of their affiliates or as a consequence of a Compulsory Transfer Event (as defined below); or

(iii) such disposal occurs after the expiry of the 3rd anniversary of the SHA Effective Date, unless the disposal is to one permitted under (ii) above or is made to a Qualified Transferee (as defined below) following compliance with the right of first offer requirements set out in the Shareholders' Agreement.

(b) Similar restrictions apply to any person who holds a direct or indirect interest in the Issuer's share capital in relation to the shares held by such person.

(c) The Shareholders' Agreement contains provisions that require the Issuer, following the 3rd anniversary of the SHA Effective Date, to first offer to ADNOC HoldCo any shares in AssetCo that it is proposing to dispose of to a Qualified Transferee. ADNOC HoldCo would be entitled to acquire the relevant shares at the same price that the Issuer is proposing to offer its shares for sale to a Qualified Transferee. A "**Qualified Transferee**" is any person not prohibited from being a transferee for under paragraph (a)(i) above, and is wholly owned, directly or indirectly by a person who (i) is not a sanctions target, (ii) is a fund, pension fund, insurance company, sovereign wealth fund, institutional asset manager or other experienced infrastructure investor or operator which meets the threshold assets requirement or for aggregate assets under management, or a person approved by ADNOC HoldCo in writing. The Shareholders' Agreement contains similar provisions requiring ADNOC HoldCo or any member of the ADNOC group to whom ADNOC has transferred shares in AssetCo to, to first offer to the Issuer and the other shareholders in AssetCo (other than ADNOC HoldCo or ADNOC group transferee) pro rata to the respective shareholdings, the shares it proposes to dispose of following the third anniversary of the SHA Effective Date and at the same price that it is proposing to sell those shares. The principal difference is that ADNOC HoldCo and members of its group can transfer some or all of its shares pursuant to such provisions, whereas the other shareholders can only transfer all of their shares pursuant to such provisions.

(d) If, following a proposed disposal of shares in AssetCo by ADNOC HoldCo or any member of the ADNOC HoldCo group to whom ADNOC has transferred shares in AssetCo, (i) ADNOC would cease to control AssetCo; (ii) ADNOC HoldCo would cease to hold at least 51% of the outstanding shares in AssetCo; (iii) ADNOC Infrastructure LLC would cease to hold at least 51% of the outstanding shares in ADNOC HoldCo and/or (iv) ADNOC would cease to hold, directly or indirectly, at least 51% of the outstanding shares in ADNOC Infrastructure LLC (an "**ADNOC Change of Control**"), then the ADNOC selling shareholder must give notice to the Issuer and the other shareholders of the proposed ADNOC Change of Control following which the Issuer and the other shareholders would be entitled within the period prescribed in the Shareholders' Agreement to require the proposed third party purchaser to purchase all or a portion of the shares held by the Issuer and such other shareholders at the same price and otherwise on terms substantially the same as the terms and conditions applicable to the proposed disposal to the relevant third party purchaser ("**Tag-Along Right**").

(e) Similar right of first offer provisions to those described at paragraph (c) above apply equally under the Shareholders' Agreement to any proposed disposal of shares following the 3rd anniversary of the SHA

Effective Date by any person who from time to time holds any direct or indirect interest in the Issuer's share capital or that of any other shareholder (other than ADNOC HoldCo or any ADNOC group transferee).

(f) The Shareholders' Agreement also includes conditions that the Issuer and other shareholders in AssetCo would need to satisfy in order to encumber the Issuer's and other shareholders' respective shareholdings in AssetCo in favor of a third party in connection with the financing of the relevant shareholding. These conditions require the shareholder wishing to grant the encumbrance to procure that the relevant lender enters into a tripartite agreement with the encumbering shareholder and ADNOC HoldCo, amongst other things, (i) granting ADNOC HoldCo a right of first offer prior to the enforcement of the lender's security interest; and (ii) prohibiting the enforcement of the encumbrance to any person to whom a disposal would be prohibited under the Shareholders' Agreement. The Issuer is a party to a tripartite agreement dated July 27, 2020 with AssetCo, ADNOC HoldCo, the Offshore Security Agent and the Onshore Security Agent in relation to the share pledge the Issuer has granted in favor of the Onshore Security Agent in respect of the Issuer's shareholding in AssetCo dated July 22, 2020. Similar provisions apply to the Sponsors in connection with any encumbrance relating to the financing of their shares that they hold directly or indirectly in the Issuer. The Issuer is a party to a tripartite agreement dated July 30, 2020 with the Parent, ADNOC HoldCo, AssetCo, the Offshore Security Agent and the Onshore Security Agent in relation to the share pledge the Parent has granted in favor of the Offshore Security Agent in respect of the Parent's shareholding in the Issuer dated July 22, 2020. ADNOC HoldCo and members of the ADNOC HoldCo group are generally permitted to grant encumbrances over its shares in favor of third parties as part of a financing arrangement provided that, amongst other things, the relevant financing or encumbrance would not restrict ADNOC HoldCo, ADNOC or AssetCo from complying with its obligations under the Shareholders' Agreement and the Transaction Documents to which they are a party.

**9.** ***Compulsory transfer events***

(a) The Shareholders' Agreement sets out certain events (referred to as "**Transfer Events**") which if they were to occur would result in ADNOC HoldCo being obliged to acquire (or, where ADNOC HoldCo is not the party subject to the Transfer Event, entitled to require the transfer of), subject to the expiry of any applicable cure periods without a cure being effected, the Issuer's shares in AssetCo within the period prescribed by the Shareholders' Agreement. The Transfer Events are:

(i) the occurrence of material breaches of certain provisions of the Shareholders' Agreement by ADNOC HoldCo or an ADNOC HoldCo group transferee (an "**ADNOC HoldCo Material Breach**");

(ii) the occurrence of an ADNOC HoldCo Change of Control;

(iii) a shareholder (other than ADNOC HoldCo or an ADNOC HoldCo group transferee) breaching certain provisions of the Shareholders' Agreement (a "**Shareholder Material Breach**");

(iv) a shareholder (other than ADNOC HoldCo or an ADNOC HoldCo group transferee) undergoing a change of control without the prior written consent of ADNOC HoldCo (a "**Shareholder Change of Control**");

(v) an insolvency event occurring in relation to a shareholder (other than ADNOC HoldCo or an ADNOC HoldCo group transferee) or, subject to certain exceptions, any person holding a direct or indirect interest in the share capital of that shareholder (a "**Shareholder Insolvency Event**");

(vi) a sanctions event occurring in relation to a shareholder (other than ADNOC HoldCo or an ADNOC HoldCo group transferee) (a "**Shareholder Sanctions Event**").

(b) In the event of an ADNOC HoldCo Material Breach or an ADNOC Change of Control, the Issuer has the right to require ADNOC HoldCo to compulsorily acquire all of the Issuer's shares in AssetCo after allowing for the expiry of applicable notice and cure periods (i) at the greater of 105% of Fair Value and the MVC NPV in the event of an ADNOC HoldCo Material Breach; or (ii) at the greater of 100% of Fair Value (which will be the sale price in the event of sale transaction pursuant to which ADNOC HoldCo ceases to hold at least 51% of AssetCo) and the MVC NPV in the event of an ADNOC HoldCo Change of Control.

(c) In relation to the Transfer Events for which a shareholder (other than ADNOC HoldCo or an ADNOC HoldCo group transferee) is the defaulting party, ADNOC HoldCo or a member of the ADNOC HoldCo group has the right to compulsorily acquire the Issuer's shares or, as the case may be, the relevant percentage of its shares in AssetCo after allowing for the expiry of applicable notice and cure periods (i) at the greater of 95% of Fair Value or the MVC NPV in the event of a Shareholder Material Breach or a Shareholder Sanctions Event; or (ii) at the greater of 100% of Fair Value and the MVC NPV in the event of a Shareholder Insolvency Event or a Shareholder Change of Control. Where the relevant Transfer Event is caused by a person holding a direct or indirect shareholding in the Issuer's share capital (such person a "**Relevant Investing Shareholder**"), the number of shares that the Issuer holds in AssetCo which may be compulsorily acquired by ADNOC HoldCo or a member of the ADNOC HoldCo group will be such number of shares as is equal to the number of shares the Issuer holds in AssetCo multiplied by the percentage of the Issuer's share capital held directly or indirectly by the Relevant Investing Shareholder.

(d) For the purposes of the above paragraphs:

(i) "**Fair Value**" means the amount in U.S.$ per share equal to the fair market value of the entire issued share capital of AssetCo at the time of determination assuming that all of the Project Documents remain in full force and effect and the parties thereto comply with their respective obligations thereunder, tariffed supply is consistent with the current supply forecast and all provisions in the U&O Agreement related to the tariff shall be taken into account in the connection with such valuation including "Deemed Tariffed Supply" (as defined in the U&O Agreement); and

(ii) "**MVC NPV**" is (A) the net present value of the tariff from the date of termination of the U&O Agreement until the end of the term under the U&O Agreement, assuming that the U&O Agreement and the Shareholders' Agreement had not been terminated and the parties comply with their obligations thereunder, the tariff is equal to U.S.$0.57 x MVC for such billing period and each tariff payment is discounted at the rate equal to (I) the sum of the relevant yield to maturity of the United States treasury security for the remaining average life of the MVC as is determined on the date on which the MVC NPV is calculated and (II) 50 basis points, (B) plus the amount of any due and unpaid tariff under the U&O Agreement on the date the notice of the relevant Transfer Event is given, (C) divided by the number of AssetCo shares in issue at the time the determination of MVC NPV is made.

**10.** ***ADNOC HoldCo termination put and call option***

(a) Following the earlier of expiry of the U&O Term or the termination of the U&O Agreement in accordance with its terms, the Issuer and the other shareholders are required to use reasonable endeavors to procure that AssetCo receives payment of any and all amounts due to AssetCo under the U&O Agreement and the Lease Agreement and, subject to applicable law and the accounting policy of AssetCo, that any and all free cash in AssetCo is distributed to the shareholders as soon as reasonably practicable, within 5 business days, following such expiry or termination and the receipt of such payment.

(b) Following receipt of any and all amounts due to AssetCo under the U&O Agreement and the Lease Agreement and the subsequent distribution of all free cash in AssetCo to the shareholders, ADNOC HoldCo is entitled to compulsorily acquire shares held by the Issuer and each other shareholder for U.S.$1 per shareholder.

**11.** ***Exercise of AssetCo's rights***

(a) Under the Shareholders' Agreement, the Issuer has the power to act on behalf of AssetCo (including to prosecute or defend) in relation to any claims in respect of:

(i) material breaches by ADNOC under the terms of the Lease Agreement, U&O Agreement and/or the General Services Agreement;

(ii) any change in law, relief or indemnity granted to or by ADNOC under the Lease Agreement, U&O Agreement and/or the General Services Agreement; and/or

(iii) any termination of the Lease Agreement, the U&O Agreement and/or the General Services Agreement,

provided that in relation to any claim for any breach concerning non-payment under the Lease Agreement and/or the U&O Agreement, the amount of any outstanding payment exceeds U.S.$2,000,000 and/or the aggregate amount of all outstanding payments under the Lease Agreement and/or the U&O Agreement exceeds U.S.$10,000,000.

(b) Additionally, the Issuer has the authority to act on behalf of AssetCo and to exercise its rights in relation to any decision or action to be taken by AssetCo in respect of certain matters under the Lease Agreement, U&O Agreement and the General Services Agreement. These matters include the requesting of information under billing period statements under the U&O Agreement, the nomination of an independent third party verifier under the U&O Agreement, the agreement of amendments in relation to a change in applicable law in accordance with the U&O Agreement or the Lease Agreement and any initiation, prosecution or defense of any material claim for indemnification under any of the Project Documents.

**12. Governing law and disputes**

The Shareholders' Agreement is governed by the laws of Abu Dhabi and the federal laws of the UAE. In the case of a dispute, the shareholders who are in dispute are required to use all commercially reasonable efforts to settle any such dispute amicably, failing which there is a process for referring the dispute to a senior representative of the shareholders and as a last resort for settlement through arbitration proceedings in London under the rules of arbitration of the International Chamber of Commerce.

## BUSINESS

### The Issuer and AssetCo

We were incorporated as a limited liability company on May 26, 2020 and are duly organized and existing under the laws of Jersey. Our shares are held directly by the Parent which is held by a group of funds managed by Global Infrastructure Partners, Brookfield Asset Management, GIC, NH I&S, Ontario Teachers' Pension Plan Board, SNAM and NH I&S.

We generate our revenue from our only asset other than cash, which is our 47.7% shareholding in AssetCo. We govern AssetCo, together with other shareholders of AssetCo including primarily ADNOC HoldCo, which holds 51% of the shares in AssetCo, in accordance with the Shareholders' Agreement. Certain decisions concerning AssetCo's governance are designated as reserved matters under the Shareholders' Agreement and cannot be changed without our consent. Such decisions include, among others, dividend policy, debt incurrence, board composition of AssetCo and making a material change to the business. See "*Summary of Shareholders' Agreement*".

AssetCo generates its cash inflows and profits solely by providing ADNOC the right to use the Pipelines in exchange for which ADNOC pays AssetCo the Tariff Amount under the U&O Agreement. The Tariff Amount is calculated as U.S.$0.57 per mmbtu multiplied by the Chargeable Throughput and the U&O Agreement further provides for a MVC fixed at 75% of volume projected in the Baseline Supply Forecast. The MVC represents a robust ship-or-pay obligation, payable regardless of the availability of the Pipelines, emergency or force majeure events and the amount of gas, NGL and LNG that is actually transported. The associated market price of gas, NGL and LNG that is actually transported does not impact the Tariff Amount in any way. ADNOC is required to use and maintain the Pipelines and, except for certain limited AssetCo Corporate Costs, all of the material operating and maintenance costs and any decommissioning costs relating to the Pipelines are paid for by ADNOC. See "*Summary of Principal Project Documents—Pipeline Use and Operation Agreement*".

The legal framework constituting the relationship between us, as the Issuer, AssetCo, ADNOC, NH Galaxy Pipeline Bidco Limited and the control of the Pipelines is outlined in the table below. See "Summary of Principal Project Documents" for detail on the terms of each of these agreements.

| **Agreement** | **Parties** | **Term** | **Description** |
|---|---|---|---|
| Pipelines Lease Agreement | ADNOC and AssetCo | Until June 30, 2040 unless terminated earlier in accordance with its terms | The Pipeline Lease Agreement sets out the legal framework in which ADNOC leases to AssetCo its ownership interest in the Pipelines from the commencement date of the Pipeline Lease Agreement. |
| U&O Agreement | ADNOC and AssetCo | Until June 30, 2040 unless terminated earlier in accordance with its terms | The U&O Agreement governs ADNOC's obligations and rights in relation to the use, operation and maintenance of the Pipelines and its responsibility for all costs related to the operation of the Pipelines. |
| General Services Agreement | ADNOC and AssetCo | Until June 30, 2040 unless terminated earlier in | Pursuant to the GSA, ADNOC will provide general business function services to AssetCo for the |

| | | |
|---|---|---|
| | accordance with its terms | duration of the investment term at a cost with a cap (excluding UAE VAT and costs associated with maintaining bank accounts on behalf of the Investors) of U.S.$150,000 per annum, indexed at a rate of 2% per annum. The relevant services will include services relating to matters such as corporate governance, maintenance of the corporate treasury, IT, insurance, record-keeping and reporting. |

We are the sole obligor under the Bonds and AssetCo will not guarantee the Bonds or otherwise be responsible for making payments under the Bonds.

**The Pipelines**

***Operational History of the Pipelines***

The Pipelines have been historically owned and operated by ADNOC and ADNOC joint venture companies. Commission of the Pipelines commenced in 1984 and since then ADNOC has continuously replaced and added new pipelines to the network to cater to ageing lines and new expansions. The Pipelines design conforms to international standard requirements. AssetCo's management estimates the residual life of each Pipeline to range from 5 to 25 years, out of which the Sales Gas Pipeline #11 is planned for replacement in 2022 and the Injection Pipeline #9 is planned for replacement in 2023.

On June 23, 2020, AssetCo entered into an arrangement to lease the Pipelines from ADNOC for 20 years under the Lease. Simultaneously, ADNOC agreed to use, operate and maintain the Pipelines and pay the Tariff Amount for 20 years under the U&O Agreement with AssetCo. On June 23, 2020, we acquired from ADNOC a 47.7% shareholding interest in AssetCo.

***General Description of the Pipelines***

Pursuant to the Lease Agreement, AssetCo has lease rights over the Pipelines consisting of 38 pipelines covering 982.3 kilometers (610.4 miles) in aggregate and comprising four distinct groups, Sales Gas Pipelines, Injection Pipelines, NGL Pipelines and LNG Flows, which represent a highly diverse portfolio of assets. The Pipelines have an aggregate gross nameplate capacity of 10.5 billion standard cubic feet per day of sales and injection gas and 161,314 tonnes per day of NGL.

The Pipelines transport sales gas and NGL volumes from all of ADNOC's currently producing gas reservoirs. Flows from the new gas discoveries located elsewhere in the UAE (to the extent not classified as Excluded Supply, see "*Summary of Principal Project Documents—Pipeline Use and Operation Agreement – Modification Works*") will also be included within Chargeable Throughput if the UAE downstream market is serviced by such flows in the future. The reservoirs themselves, the transmission network, assets downstream of the transmission network and upstream up to and including the gas processing plants and the LNG facility in Das Island are not included in the Lease. The usage rights held by AssetCo through the U&O Agreement with ADNOC extend for a period of twenty years until June 30, 2040.

The Sales Gas transported in the Sales Pipelines is ultimately used by the UAE's domestic power sector, the UAE's domestic industrial sector, including the cement, aluminum and steel industries. Additionally, injection services use the Injection gas via the Injection Pipelines, and ADNOC's refining and petrochemical business both use gas and fractionated NGL products.

Some of the Pipelines and GPPs are currently forecast to experience capacity constraints during the term of the U&O Agreement. For example, Shah/ASG, Asab 0/3 and Habshan-5 are currently forecast to have capacity constraints after 2025. However, ADNOC has detailed debottlenecking plans to address forecast capacity constraints before they are realized. For example, Shah/ASG is slated to undergo an expansion project during the first half of 2022. As all of Abu Dhabi's current gas production flows through the Pipelines and the Pipelines supply a large part of the UAE's and Abu Dhabi's gas demand, the Pipelines are a key asset that ADNOC has a strong interest in maintaining. Additionally, under the U&O Agreement, ADNOC is also obligated to maintain the Pipelines in accordance with its internationally recognized design codes and standards.

The Technical Adviser has confirmed that the Pipelines were designed in accordance with internationally recognized design codes and standards plus good practices to ensure that the facilities provided can achieve their design capacity in a safe, robust and reliable manner. Additionally, the Pipelines are maintained and operated in accordance with industry norms and good operating practices. The Technical Adviser has also confirmed that the overall condition of the Pipelines is satisfactory, see, "*Summary—Summary of the Independent Technical Due Diligence Report*".

The following table sets out the number, length, capacity, throughput and current throughput of the Pipelines.

| | **Sales Gas Pipeline Flows** | **Injection Pipeline Flows** | **NGL Pipeline Flows** | **LNG Flows(1)** |
|---|---|---|---|---|
| **Number of Pipelines** | 12 | 15 | 11 | N/A |
| **Length (km)** | 280.1 | 194.8 | 507.4 | N/A |
| **Capacity (mmscf/d)** | 6,847 | 3,605 | 161,314 (tpd) | 755 (tph) (2) |
| **2018 Throughput (bnbtu/d)** | 5,721(3) | | 2,293 | 797 |
| **2019 Throughput (bnbtu/d)** | 5,547(3) | | 2,295 | 829 |
| **2020 Throughput (bnbtu/d)** | 5,603(3) | | 2,249 | 824 |

(1) LNG infrastructure is not included as part of the Pipelines.

(2) This refers to LNG train capacity.

(3) This flow number covers both the Sales Gas Pipelines and the Injection Pipelines.

The gas processing network receives both associated gas and non-associated gas streams. Associated gas is natural gas that is produced in conjunction with oil production. Non-associated gas is natural gas that is produced from gas reservoirs where there is no crude oil present.

The produced gas streams are transported through gathering lines to the gas processing facilities for treatment. To produce sales-quality gas, these facilities need to compress the gas to higher pressure, sweeten the gas by removing hydrogen sulfide and carbon dioxide, dry the gas to remove water vapor, and strip the gas of heavier hydrocarbon components. The heavier hydrocarbons removed from the gas stream form a liquid phase called NGL.

A portion of the gas is used for injection purposes. This gas in some cases is not sweetened like the sales gas, but the valuable NGL are stripped from this stream and the gas is dehydrated to create a "lean gas". Some "sales gas quality" lean gas is also injected into onshore fields to increase production of condensates. Additionally, some gas injection is also used for artificial lift purposes (also referred to as gas lift) by injecting the gas into the annulus of oil producing wellbores, which then enters the production tubing by means of gas lift valves and assists in the lifting of the produced fluids to the surface.

*Sales Gas Pipelines*

ADNOC owns and operates a large domestic network of gas processing facilities and associated pipelines within the UAE. The gas processing facilities that are tied into this system include Asab-0, Asab-2, Habshan-(0-4), Habshan-5, Bab, Bu Hasa and Shah-ASG (ADNOC sour gas). These facilities process the raw gas to produce dry natural gas and NGL. The Sales Gas Pipelines are used to transport the processed gas "sales gas" and consists primarily of methane, from the gas processing plants to the Thamama-C manifold. From the Thamama-C manifold, the gas is distributed into the East and West Gas Networks. These gas networks are used for transmission and distribution of natural gas to the final consumers.

Most of the Sales Gas flow meters are pitot tube, orifice plate and venturi that provide volumetric flow measurement with individual uncertainties which fall within the Metering Codes of Practice guidelines. Additionally, a higher accuracy ultrasonic meter is used for more crucial metering.

According to the Independent Technical Due Diligence Report Addendum, maintenance activities were conducted in 2020 for Sales Gas Pipeline #9, and a remaining life assessment estimated that there is no negative impact to pipeline integrity for this pipeline. The medium risk of the pipeline is assigned due to the close proximity of this line to the GPP plants and human occupancy. In addition, ADNOC has plans to replace Sales Gas Pipeline #11 by in 2022. For further information, please see the Independent Technical Due Diligence Report Addendum annexed to this Offering Memorandum.

*Injection Gas Pipelines*

In ADNOC's operated large onshore network of GPPs and associated pipelines, a portion of the produced gas from the field is used for injection into the reservoirs and for lifting oil from producing wells. The raw gas is treated at the GPPs, where it is dehydrated (water vapor is removed), and heavier hydrocarbons are recovered. This process result is a lean, dry gas that can be used for injection. To create Sales Gas, the remaining raw gas is treated at the GPPs similarly, but other contaminants such as H2S and CO2 are removed to create sales gas.

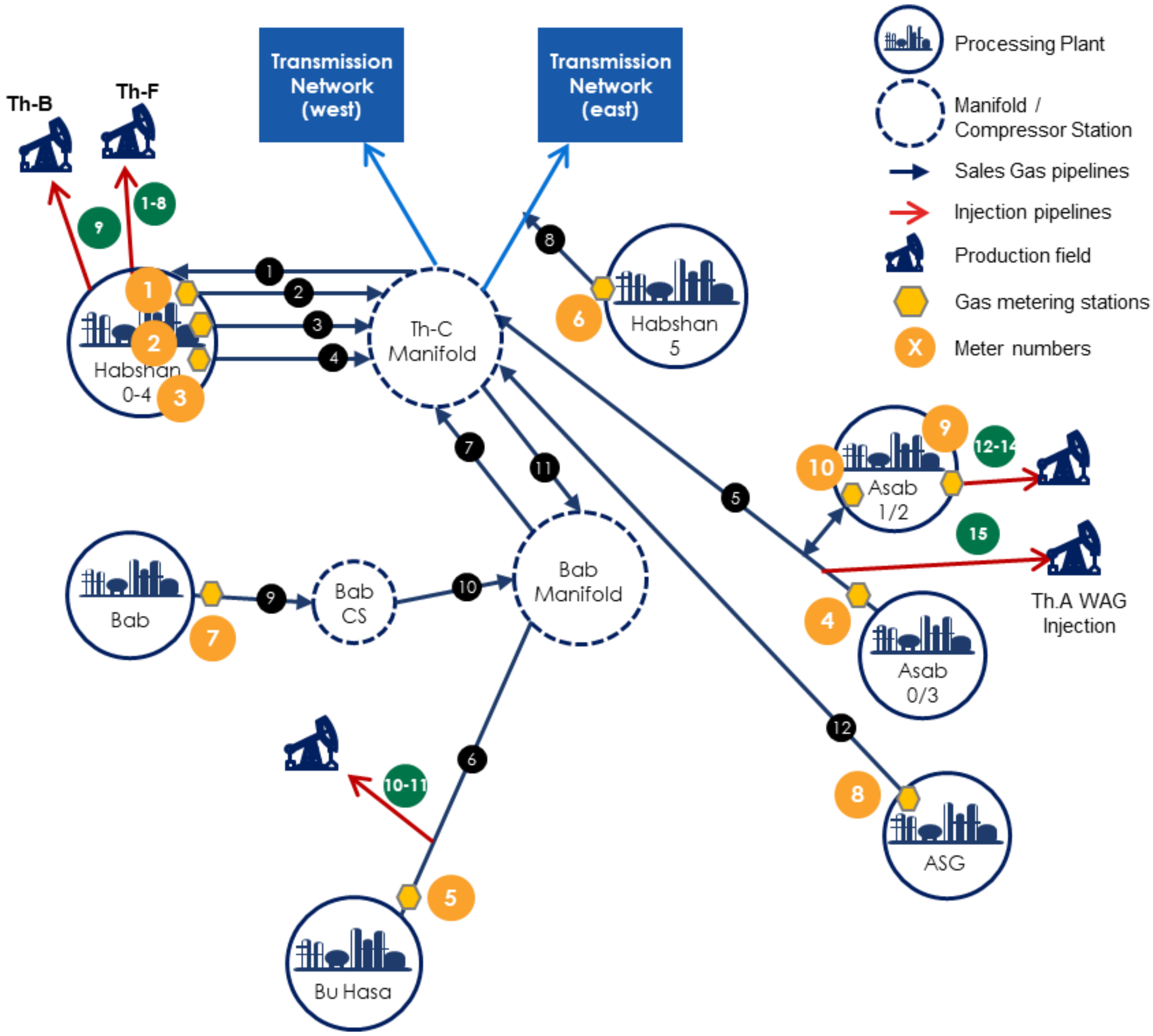
The gas used for injection is further compressed after treatment at the GPPs. The gas injection serves to maintain high oil reservoir pressures, which in turn continues to displace oil to the producing wellbores. Gas injection is also used for condensate recovery. Additionally, some gas injection is also used for artificial lift purposes (also referred to as gas lift) in which the gas is injected into the annulus of oil producing wellbores and enters the production tubing by means of gas lift valves and assists in the lifting of the produced fluids to the surface.

The gas used for injection is transported from the GPPs to the oil fields through gas injection Pipelines. The injection Pipelines consist of injection trunk lines (also herein referred to as Gas Injection Pipelines or Injection Lines), which transport large amounts of gas to sections of a field. From the Gas Injection Pipelines, and gas is directed by smaller side branch lines to individual wells. These side branch lines carrying the gas from the trunk lines to the individual wellheads are known as "injection flowlines".

The oil and gas fields utilizing gas injection and/or gas lift are the Bab, Asab, and Bu Hasa fields. The Habshan 0-4 gas processing plant provides gas for injection into the Bab Field. Habshan 0-4 is a large and complex facility comprised of various processing trains. Habshan 0-4 can be divided into various sub-facilities. The injection compressors, which constitute the starting point of the injection pipelines, are at the Habshan-1 (OGD-1) and Habshan-3 (OGD-3) areas of the plant. There are a total of nine injection trunk lines transporting gas from the Habshan 0-4 facility, five from OGD-1 and four from OGD-3. The injection of gas in reservoirs is necessary for maintaining the reservoir's pressure and improve hydrocarbon recovery. The Asab-2 GPP provides the injection gas for the Asab field, and lastly, the Bu Hasa GPP provides the injection gas for the Bu Hasa area.

Most of the Injection Gas flow meters are pitot tube, orifice plate and venturi that provide volumetric flow measurement with individual uncertainties which fall within the Metering Codes of Practice guidelines.

The diagram below shows the flows in the twelve sales gas and injection pipelines included in the Pipelines:




Gas Lines #1, #5, #6, #7, and #11 are used for other purposes than carrying sales gas as described below:

- Gas Line #1 takes residue gas from the Bu Hasa facility that has been routed through the Thamama-C manifold and directs it back to the Habshan-(0-4) complex for injection;
- Gas Line #5 can be operated bi-directionally and is used to move gas into the sales network or alternatively draw off the system for injection into the reservoir;
- Gas Lines #1, #6, and #7 are used to transport sour residue gas originating from the Bu Hasa facility. This gas is strictly used for injection and therefore does not require hydrogen sulfide removal; and
- Gas Line #11 takes sales gas from the Thamama-C manifold and directs it back to the Bab manifold, this line ties into a sales gas pipeline transporting gas to Ruwais.

*NGL Pipelines*

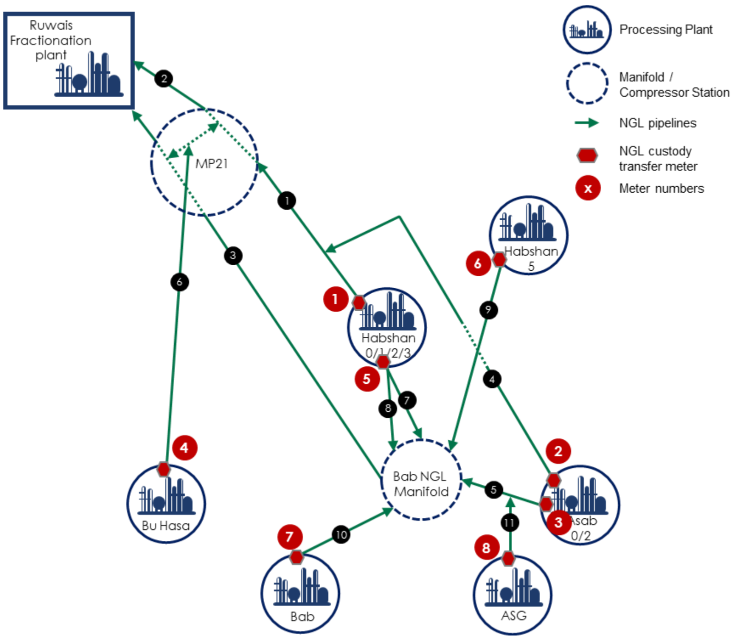
ADNOC and certain of its joint venture companies own and operate seven gas processing plants which produce NGL, as well as the associated pipelines to transport this production within the UAE. This NGL pipeline system is used to transport NGL from several different gas processing plants to the Ruwais NGL Fractionation

Plant. NGL gas processing plants that are tied into this system include Asab-0, Asab-2, Habshan-(0-4), Habshan-5, Bab, Bu Hasa and Shah-ASG.

The gas processing plants are connected into various pipeline networks to accommodate their product streams. The NGL are collected into NGL pipeline networks and are transported to the Ruwais Fractionation Plant for further processing.

There are eleven NGL pipelines which vary in diameter from 8-inch to 24-inch and range in length from 200 meters to 101 kilometers.

The diagram below shows the NGL network and the processing plants:




*LNG Flows*

The LNG facility infrastructure is not included within the scope; however, the exported LNG flows from the existing facility represent Chargeable Throughput under the U&O Agreement.

LNG operations are located solely on Das Island, which is the key offshore hub for Abu Dhabi's offshore initial gas processing and production value chain, including receiving and processing ADNOC's offshore LP/HP gases. Activities carried out on Das Island include processing LP and HP gas to produce LNG, LPG, naphtha and sulfur in addition to transporting gas, after processing, onshore via the Pipelines. The LNG facility is owned and operated by ADNOC LNG, a joint venture with ownership interests from ADNOC, which holds 70%, Mitsui & Co, BP and Total.

*Gas Processing Plants*

The Pipelines connect a number of gas processing plants. The table below provides an overview of the gas processing plants that the Pipelines connect.

| GPP | Owner | COD | Products |
|---|---|---|---|
| Habshan 0-4...... | ADNOC | 1983 | • Sales Gas<br>• NGL |
| Habshan 5......... | ADNOC | - | • Sales Gas<br>• NGL |
| Asab 1/2............ | ADNOC | 2001 | • Injection Gas / Sales Gas[1]<br>• NGL |
| Asab 0/3............ | 68% ADNOC | 1981 | • Sales Gas<br>• NGL |
| Shah / ASG....... | - | - | • Sales Gas |

| | | | |
|---|---|---|---|
| | | | • NGL |
| Bab .................. | ADNOC | 1981 | • Sales Gas<br>• NGL |
| Bu Hasa[2].................. | 68% ADNOC | 1981 | • Injection Gas<br>• NGL |

*Source: VDR, Management Session and Arup Analysis*

[1] Lean gas produced at Asab 1/2 is normally used for injection, but can alternatively supply the Sales Gas network if demand requires.

[2] The Bu Hasa plant cannot produce Sales Gas as it does not remove H2S and CO2. The lean gas produced at Bu Hasa can be used for injection only. All other plants can produce Sales Gas.

The Sales Gas, Injection Gas and NGL Flows meters measure flows entering the pipelines at the outlet of the GPPs, and as confirmed by ADNOC, the meters fully capture the Sales Gas, Injection Gas and NGL flows entering the network. ADNOC tested and calibrated all meters in Sales Gas Pipelines, Injection Pipelines and NGL Pipelines in 2020 to meet the custody transfer requirements.

***Protection and Safety Systems***

The Pipelines are monitored and maintained to ensure that the system remains “fit for purpose” throughout the design life and to minimize environmental and human risk. Pipeline inspection and maintenance activities during operation include: pipeline monitoring, route surveillance, special crossing inspections, monitoring of population and third party activities in close proximity to the pipeline, cathodic protection system monitoring, inventory monitoring surveys, functional operational checks and verification of plant and equipment, and routine maintenance of plant and equipment at pre-defined intervals. The pipelines are inspected via intelligent pigging and maintained in line with planned facility shutdown to ensure no effect on the gas flows.

In the event of any suspected damage or a seismic event, intelligent pigging of the underground portion of the Pipelines is undertaken to confirm the geometry of such portions of the Pipelines.

Sale Pipelines #6, 7, 8, 9, 11 and 12 and NGL Pipeline #11 are equipped with a leak detection system. The other Sales Gas, Injection Gas and NGL Flows Pipelines are monitored by pressures, ROW patrolling and a mass balance procedure. An upgrade project is ongoing to install a leak detection system on a number of other sale and NGL Pipelines. ADNOC estimates this leak detection system project will be fully operational during late 2022 and early 2023.

Pipelines are equipped with an emergency shutdown (“**ESD**”) valve system which includes a control and monitoring system for the safety of station equipment units and an ESD function. To prevent serious damage to the pipeline facilities, the ESD valve system will block dangerous activity and shut down station equipment safely.

ADNOC has implemented and, pursuant to the U&O Agreement will continue to operate and bear the expense of a comprehensive surveillance program to monitor the entire length of the Pipelines, particularly in road crossings, wadis, protected areas, above-ground installations and stretches of the pipeline in proximity to population centers.

Based on the Technical Adviser’s review of the ADNOC procedures and documentation provided, it believes that the asset integrity management system has been implemented for managing the technical risks associated with the Sales Gas Pipelines, Injection Pipelines and NGL Pipelines. In the case of the Sales Gas Pipelines, design data, proof of baseline integrity, inspection reports, risk assessments, repair records and remaining life assessments were provided which indicate that this work has been completed for some of the Sales Gas lines. Based on this analysis, the Technical Adviser has also assumed that a similar asset integrity management system has been implemented for the Injection Pipelines. Finally, in the case of the NGL Pipelines, In the case the Technical Adviser has relied on design data, proof of baseline integrity, inspection reports, risk assessments, repair records and remaining life assessments to conclude that the necessary asset integrity management systems are in place.

***Information Technology and Operating Systems***

In the ordinary course of its business, ADNOC collects and stores sensitive data on its own business information and that of its customers, suppliers and business partners. ADNOC is also dependent on financial, accounting and other data processing systems and other communications and information systems. ADNOC also utilizes a computerized maintenance management system which orders and control maintenance of the Pipelines, thus these technology systems and the operating systems controlling them are integral to the maintenance and continued functioning of the Pipelines.

**Insurance**

Pursuant to the U&O Agreement, ADNOC is obligated to obtain and maintain insurance policies in respect of AssetCo and the Pipelines in conformance with the ADNOC Group Insurance Program. ADNOC is obligated to maintain, repair and keep the Pipelines in good and substantial repair under the U&O Agreement.

Insurance regulations in the United Arab Emirates require that risks located in each territory be insured with locally authorized insurers. ADNOC, through the ADNOC Group Insurance Program, obtains insurance through local insurers in the United Arab Emirates who subsequently reinsure through international insurance companies. Pursuant to the ADNOC Group Insurance Program, AssetCo benefits from certain insurance arrangements, which include property damage and marine/non-marine liability insurance.

Additionally, even if the Pipelines are destroyed, the MVC under the U&O Agreement remains payable. ADNOC believes that the insurance currently maintained on the Pipelines and the ADNOC Group Insurance Pipeline is consistent with the international industry standards for such insurance.

**Health, Safety and Environment**

The Pipelines are subject to various international, national and local health, safety and environmental laws and regulations governing their operations (including in relation to the emission, discharge, handling, storage, transportation, disposal, import and export of hazardous waste and materials). ADNOC is responsible for operating and maintaining the Pipelines pursuant to the U&O Agreement. In addition, the COVID-19 pandemic may cause additional PPE-related costs which will also be borne by ADNOC. See "*AssetCo is exposed to significant environmental, health and safety risks as a result of its operations and the hazardous materials it handles and it is exposed to risks associated with climate change.*"

We believe that the Pipelines are currently in material compliance with all applicable regulations as stated in the Independent Technical Due Diligence Report. The Pipelines currently possess all material environmental licenses and permits required for the operation of the Pipelines. The Pipelines are managed in accordance with ADNOC's Health, Safety and Environmental ("**HSE**") Management System and its Operational Environmental Management Plan and are compliant with all material United Arab Emirates requirements. See "*—Protection and Safety Systems*", in relation to the safety inspection and maintenance activities undertaken in relation to the Pipelines.

ADNOC's HSE risk management systems are generally consistent with national and international industry best practice, including the International Finance Corporation's Performance Standards on Environmental and Social Sustainability. Some of these management systems include HSE training, improvement initiatives and emergency preparedness response. We believe that ADNOC is committed to safeguarding, and minimizing its impact on, the environment and minimizing the health and safety risks to its employees, contractors and the communities in which it operates. We understand that ADNOC periodically assesses, measures and monitors its health, safety and environmental policies to ensure that they are in line with best industry practices.

Based upon its review of the ADNOC procedures and data, the Technical Adviser has concluded ADNOC's HSE approach is consistent with UAE laws and regulations within the construct of its self-regulatory definition. ADNOC maintains compliance with the applicable International Finance Corporation (IFC) performance standards and all evidence indicates that this practice will continue.

**Real Property**

AssetCo does not own any real property and does not have any material assets other than the rights under the Lease Agreement. ADNOC has the rights to use the land on which the Pipelines are located and has committed to indemnify AssetCo against any losses, costs, claims suffered or incurred resulting from not being granted formal rights of use of the land. ADNOC has leased to AssetCo its ownership interest in the Pipelines for the transportation of sales gas, injection gas and NGLs, and any replacement future Pipelines created prior to expiry of the lease term, June 30, 2040. See "*Summary of Principal Project Documents—Lease Agreement.*"

### Employees

Neither we nor AssetCo have any employees, but we do benefit from the experience of our Board of Directors. See "*Description of the Issuer—Directors of the Issuer*."

Pursuant to the U&O Agreement, ADNOC provides all of AssetCo's operational, maintenance and management functions and all of its personnel in respect of the pipeline operations.

We do not anticipate having any employees, other than the Directors, dedicated to operating and managing the Issuer. See "*Description of the Issuer—Directors of the Issuer*."

### Legal Proceedings

Neither we nor AssetCo are currently party to any material legal proceedings.

### Decommissioning, Replacements and Expansions

ADNOC shall determine, in its sole discretion, when to decommission any of the Pipelines and following such determination shall implement such decommissioning. ADNOC shall notify AssetCo of its intent to decommission any Pipeline not less than 90 days prior to the commencement of the decommissioning works and upon commencement of the decommissioning works.

We believe ADNOC has no current plans to expand or upgrade the Pipelines. Instead, it plans to replace the Pipelines when appropriate in line with five year production plans.

## DESCRIPTION OF ADNOC

### ADNOC

ADNOC was established in 1971 by the Ruler of Abu Dhabi, the late H.H. Sheikh Zayed bin Sultan Al Nahyan, to operate in all areas of Abu Dhabi's oil and gas industry. It is the state-owned oil company of Abu Dhabi and one of the largest oil producers in the world. Since its incorporation, ADNOC has played an integral role in Abu Dhabi's economic development. ADNOC manages, produces and preserves Abu Dhabi's hydrocarbon reserves on behalf of the Government of Abu Dhabi.

As of December 31, 2019, the UAE had the world's sixth largest proven crude oil reserves and seventh largest proven natural gas reserves according to OPEC data. ADNOC manages approximately 95% of the United Arab Emirates' total oil and gas reserves. Abu Dhabi's GDP is generated principally by the hydrocarbon sector (mining and quarrying), which contributed 50.6% of Abu Dhabi's nominal GDP in 2014, 35.1% in 2015, 31.7% in 2016, 34.1% in 2017, 41.7% in 2018 and 40.8% in 2019.

ADNOC also wholly owns or has shareholdings in a number of operating companies and subsidiaries that specialize in upstream and downstream oil and gas operations, as well as distribution, shipping and all other aspects of the hydrocarbon industry.

*Exploration and Production*

ADNOC manages and oversees oil production of its operating subsidiaries responsible for all aspects of oil and natural gas exploration, evaluation, development and production.

Below is a brief description of each of the ADNOC businesses that are responsible for all aspects of oil and natural gas exploration and production.

Abu Dhabi Company for Onshore Petroleum Operations Limited ("**ADNOC Onshore**") comprises Bab, Bu Hasa, North East Bab, South East fields and Asab. These fields are linked to the storage and shipping facilities of two main terminals, at Jebel Dhanna and a deep water port in Fujairah, where tankers load crude oil for export. The current international shareholding in ADNOC Onshore includes Total (10%), BP (10%), China National Petroleum Corporation ("**CNPC**") (8%), Japan Oil Development Co., Ltd. ("**JODCO**") (5%), Zhen Hua (4%) and GS Energy Corporation ("**GS Energy**") (3%).

ADNOC Onshore is also involved in the development of gas fields. ADNOC Onshore presently recovers gas from the Asab and Bab fields. These fields currently produce gas that is transported to ADNOC Gas Processing (previously known as GASCO) for further processing.

ADNOC Offshore was formed by a merger between ADMA-OPCO (then a joint venture between ADNOC and Abu Dhabi Marine Areas Limited) and Zakum Development Company in 2015. In 2018, the concessions were renegotiated as follows:

- Lower Zakum – a 40-year concession with ADNOC (60%), CNPC (6%), CNOOC (4%), Falcon Oil & Gas and JODCO (each holding 10%) and Total and ENI S.p.A. (ENI) (each holding 5%);
- Umm Shaif and Nasr – a 40-year concession with ADNOC (60%), Total (20%), CNPC (6%), CNOOC (4%) and ENI (10%); and
- SARB and Umm Lulu – a 40-year concession with ADNOC (60%) and OMV and CEPSA (each holding 20%).

ADNOC Offshore comprises Umm Shaif, Lower Zakum, Upper Zakum, Satah and Umm Al Dalkh fields. Operations extend across several oil operation centers, six artificial islands and four offshore super-complexes. Crude oil from the fields is transferred to Zirku Island and Das Island for further processing, storage and export.

ADNOC Drilling is one of the largest drilling contractors in the Middle East, and has drilled more than 6,200 wells. ADNOC Drilling provides drilling, work-over and well maintenance services through its fleet of land rigs, offshore rigs, island rigs, a multi-purpose service barge and six water-well rigs with ADNOC owning 95% and Baker Hughes owning 5%.

Al Dhafra Petroleum Operations Company was established in 2013 between ADNOC, Korea National Oil Corporation ("**KNOC**") and GS Energy, where ADNOC owns 60%, and KNOC and GS Energy share the remaining 40% under the representation of Korea Abu Dhabi Oil Corporation to operate a concession onshore located south-east of Abu Dhabi city. First oil was achieved from Area 1 in June 2019, with average production of 10,000 b/d in the third quarter of 2019.

Al Yasat Petroleum Operations Company ("**Al Yasat Petroleum**") was established in 2013 between ADNOC (60%) and CNPC International (Hong Kong) Ltd (40%) to operate a concession consisting of an onshore area in western Abu Dhabi and an offshore area located northwest of Abu Dhabi. Al Yasat Petroleum was currently producing 5,000 b/d from the Bu Haseer field as at November 2020.

*Processing and Refining*

ADNOC's portfolio has expanded beyond the upstream production of oil to include sophisticated refining and petrochemicals businesses.

Below is a brief description of each of the ADNOC businesses that are responsible for all aspects of processing and refining.

ADNOC Sour Gas, which is 60% owned by ADNOC and 40% owned by Occidental Petroleum, was established to develop the Arab A, B, C and D sour gas reservoirs located in the Shah field.

ADNOC Gas Processing, which is 68% owned by ADNOC, operates multiple gas processing plants which are among some of the largest integrated gas processing plants in the world.

ADNOC LNG, which is 70% owned by ADNOC, is a natural and associated gas processing company, with a process capability of eight million tons of liquefied natural gas, liquefied petroleum gas, paraffinic naphtha and liquid sulfur per year. ADNOC LNG operates sole liquefied natural gas plant located on Das Island in Abu Dhabi.

ADNOC Industrial Gases, which is 51% owned by ADNOC and 49% owned by Linde, was established to provide industrial gases (nitrogen and oxygen) to oil, gas and other industry sectors in Abu Dhabi and elsewhere in the UAE.

In late 2018, ADNOC signed a 40-year concession agreement for the Ghasha concession with ENI (25%), Wintershall Holding GmBH (10%) and OMV (5%). During 2019, ADNOC transferred 5% from its holding to Lukoil. The concession covers multiple areas within Abu Dhabi.

In late 2018, ADNOC signed a 40-year concession agreement with Total (40%) to explore, develop and produce unconventional gas in the Ruwais Area in order to achieve gas self- sufficiency.

ADNOC Refining is a joint venture owned by ADNOC (65%), ENI (20%) and OMV (15%) and is a leading oil refining company specializing in crude oil and condensate refining, supply of petroleum products and production of granulated sulfur.

Abu Dhabi Polymers Company ("**Borouge**") is a chemical and plastics solutions provider. Borouge specializes in the development of sophisticated, value-added plastics for fast-paced industries. Borouge is a joint venture between ADNOC (60%) and Borealis (40%).

ADNOC has also announced a strategic partnership with OCI N.V. ("**OCI**"), a global fertilizers and chemicals producer, to establish a new joint venture between ADNOC (42%) and OCI (58%) called Fertiglobe. The new company is expected to have an annual production capacity of 5 million tons of urea and 1.5 million tons of ammonia, making it the Middle East's leading producer and supplier of granular urea and ammonia fertilizers.

*Marketing and Distribution*

ADNOC is a global energy provider, which sells its oil, gas, refined products and petrochemicals on six continents. ADNOC subsidiaries are responsible for all aspects of product marketing, offshore marine, petroleum ports and wells services, and the transportation of ADNOC's products. ADNOC's customers range from consumers purchasing their fuels and lubricants to large-scale industrial customers of oil, natural gas and petrochemicals.

Below is a brief description of each of the ADNOC businesses that are responsible for all aspects of marketing and distribution.

ADNOC Distribution is the United Arab Emirates' leading distributor of petroleum products. ADNOC Distribution is a listed company on the ADX with 20% of the company owned by retail and institutional investors.

ADNOC Logistics & Services leverages its international shipping excellence and diversified services expertise to deliver hydrocarbon products from Abu Dhabi to international customers. ADNOC Logistics & Services plays a fundamental role in facilitating the development of the UAE's energy industries, fortifying the nation's position as a global energy provider, and contributing to its overall economic growth.

ADNOC Global Trading is a joint venture between ADNOC, Italy's Eni and Austria's OMV mandated with selling ADNOC Refining's exports. ADNOC Global Trading focuses on trading refined products.

*ADNOC 2030 Strategy*

ADNOC has announced a 2030 Strategy designed to ensure its future success and transform its business. The strategy is focused on creating a:

- more profitable upstream business;
- more valuable downstream business; and
- more sustainable and economic gas supply.

In July 2017, ADNOC announced a new, expanded partnership model and a more active approach to managing its businesses and portfolio of assets, which, together, form an integral part of its 2030 Strategy. This new approach is intended to enable ADNOC to unlock and maximize significant value from across its businesses, drive business and revenue growth, optimize performance and secure greater access for its products in key growth markets.

***ADNOC, the Supreme Petroleum Council and the Supreme Council for Financial and Economic Affairs***

Oil policy and the award of concessions for Abu Dhabi are determined by the Supreme Petroleum Council ("**SPC**"), which is chaired by the Ruler of Abu Dhabi. Following Law No. 24 of 2020, the Supreme Council for Financial and Economic Affairs (the "**Council**") was established as the supreme authority for the financial, investment and economic affairs of the Emirate of Abu Dhabi.

Pursuant to Law No. 24 of 2020, all functions and powers of the SPC were transferred to the Council save for the SPC's mandated functions as the Board of Directors of ADNOC, until such time as a new Board of Directors of ADNOC is established by law. The Chairman of the Council is H.H. Sheikh Khalifa bin Zayed Al Nahyan, Ruler of Abu Dhabi and President of the United Arab Emirates and the Vice Chairman is H.H. Sheikh Mohamed bin Zayed Al Nahyan.

The Council is responsible for, amongst other matters, setting the strategies and policies regulating the financial, investment and economic, oil and natural resources affairs of the Emirate of Abu Dhabi including the approval of such for entities including ADNOC.

## CERTAIN RELATIONSHIPS AND RELATED PARTY TRANSACTIONS

### Transactions with our Sponsors

We are party to a shareholders' agreement with Galaxy Pipeline Assets Holdco Limited, Galaxy Pipeline Assets Topco Limited, GIP III Galaxy Holdco II, Limited, Infracore Investment Holdings Limited, Raffles Infra Holdings Limited, NH Galaxy Pipeline Holdco Limited, SNAM S.p.A. and NH Galaxy Pipeline Bidco Limited dated June 23, 2020 which provides for certain arrangements relating to, amongst other things, our governance, indebtedness, share capital and distributions.

### Transactions with ADNOC

We are party with ADNOC to the U&O Agreement, the Lease and the General Services Agreement. See "*Summary of Principal Project Documents*" and "*Risk Factors – Risks Relating to Our Investment in AssetCo, AssetCo's Business, ADNOC and the Government of Abu Dhabi – Our investment in AssetCo depends on ADNOC and its affiliates for AssetCo's operations and we are involved in certain related party transactions that could create conflicts of interest*".

### Transactions with ADNOC HoldCo

We are party with ADNOC HoldCo to the Shareholders' Agreement. See "*Summary of the Shareholders' Agreement*".

### Corporate services

Our company secretary is Maples Company Secretary (Jersey) Limited. Maples Fiduciary Services (Jersey) Limited and/or its subsidiaries provides certain corporate administration services to us under the corporate services agreement between Maples Fiduciary Services (Jersey) Limited and us dated August 19, 2020. The services include the provision of two directors, provision of a registered office, provision of a company secretary through its subsidiary Maples Company Secretary (Jersey) Limited, quarterly management accounting, annual financial reporting and general administration. See "*Description of the Issuer*".

## SUMMARY OF PRINCIPAL PROJECT DOCUMENTS

*The following summaries of selected provisions of the principal project documents are not considered or intended to be full statements of the terms of these agreements or instruments. Unless otherwise stated, any reference in this Offering Memorandum to any agreement will mean such agreement and all schedules, exhibits and attachments thereto as in effect on the date hereof. You will find the definitions of capitalized terms used and not defined in this description in "Annex A: Glossary of Certain Terms", in the "Terms and Conditions of the Bonds" and as provided elsewhere in this Offering Memorandum.*

### A. Pipelines Use and Operation Agreement

The U&O Agreement was entered into on June 23, 2020 by and between AssetCo as the holder of the leasehold interests in the Pipelines and ADNOC as the user and operator of the Pipelines. The U&O Agreement effective date was July 16, 2020 (the "**U&O Effective Date**").

#### 1. *Term*

The U&O Agreement came into force on the U&O Effective Date and will continue until June 30, 2040 (being the expiry date of the U&O Agreement), unless terminated earlier by:

(a) the termination of the Lease Agreement, in accordance with its terms;

(b) ADNOC for:

- (i) material breach by AssetCo of the U&O Agreement, which would reasonably be likely to have a materially adverse reputational impact on ADNOC and such breach is not remedied within 90 days of notice thereof;
- (ii) an insolvency event occurring in respect of AssetCo; and
- (iii) the sale, assignment, novation or transfer by AssetCo of any of its rights under the U&O Agreement in breach of the assignment provisions thereof,

and in the case of (i) and (iii), where ADNOC controls AssetCo, provided such right to terminate does not arise as a result of acts, omissions or decisions undertaken pursuant to such control.

(c) AssetCo for:

- (i) an insolvency event occurring in respect of ADNOC;
- (ii) the sale, assignment, novation or transfer by ADNOC of any of its rights under the U&O Agreement in breach of the assignment provisions thereof;
- (iii) payment default by ADNOC not remedied within 30 days of notice thereof;
- (iv) failure by ADNOC to conduct, carry out and perform the pipeline operations in accordance with the Performance Standards (as defined below) and terms and conditions under the responsibilities, rights and obligations provisions under the U&O Agreement, and:
  - (A) in four consecutive billing periods, such failure causes a reduction in the capped supply for each billing period by an amount greater than or equal to 10% of the Baseline Supply Forecast (as defined below) for such billing period, notice of which is given by AssetCo to ADNOC after the end of the 4th consecutive billing period (the "**Underperformance Notice**"); and
  - (B) such failure is not remedied within 12 months of the Underperformance Notice (the "**Cure Period**"),

  provided that AssetCo is not entitled to terminate the U&O Agreement if, prior to the end of the Cure Period, ADNOC notifies AssetCo that, for the purposes of calculating the Tariff (as defined below) for the period from the date immediately following the end of the Cure Period to the date on which such failure is remedied, Tariffed Supply (as defined below) for such period shall be deemed to be an amount equal to the most recent Current Supply Forecast (defined below) that was applicable for such period prior to the occurrence of such failure so that the effect of such failure on the Current Supply Forecast is not taken into account;

(v) failure by ADNOC to procure that all sales gas, sales NGL and sales LNG flow to, and are measured at a measuring point using metering equipment, and, to the extent available and installed, custody transfer standard meters (provided that ADNOC shall have no obligation to procure that sales gas is measured at any custody transfer meter located beyond the battery limit of the Thamama-C manifold), and such failure is not remedied (or reasonable steps have not been taken to prevent any reoccurrence of such failure) within 90 days of notice thereof;

(vi) failure by ADNOC to conduct the pipeline operations in accordance with the HSE standards and practices, and:

(A) such failure would reasonably be likely to have a materially adverse reputational impact on AssetCo or its shareholders; and

(B) such failure is not remedied (or reasonable steps have not been taken to prevent any reoccurrence of such failure) within 90 days of notice thereof.

(vii) failure by ADNOC to provide an operating report in accordance with the provisions of the U&O Agreement, and:

(A) such failure is not remedied within 60 days of notice thereof; and

(B) the failure does not relate to the scope of the operating report or operating reports (as the case may be) and there is a good faith disagreement between AssetCo and ADNOC as to the scope of such operating report or operating reports (as the case may be); or

(viii) the occurrence of an event of force majeure which continues for a consecutive period of at least 180 days (further details on the agreed terms in relation to force majeure events are set out under "*Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Force Majeure*").

Except in the case of fraud, and without limiting AssetCo's right to indemnification from ADNOC, termination is AssetCo's sole and exclusive remedy in connection with the breach or failure under paragraphs (c)(iv), (c)(v) and (vi).

**2. *Custody, Control and Use of Pipelines***

(a) In consideration of the payment of the Tariff (as defined below), ADNOC is required to:

(i) be the sole custodian and controller of the existing pipelines and bear the risk of loss of, and damage to, the existing pipelines; and

(ii) from the date on which ADNOC leases its ownership interests in a future pipeline to AssetCo in accordance with the Lease Agreement, be the sole custodian and controller of the relevant future pipeline and bear the risk of loss of, and damage to, each future pipeline.

(b) On the U&O Effective Date and on each future pipeline date, ADNOC is deemed to have assumed custodianship and control of the applicable pipelines on an "as-is, where-is" basis, without right of recourse.

**3. *Responsibilities, Rights and Obligations of ADNOC***

(a) ADNOC will conduct the pipeline operations in accordance with the "**Performance Standards**" as required within the U&O Agreement, applicable laws of Abu Dhabi and the federal laws of the United Arab Emirates ("**UAE**") (including all applicable environmental laws), internationally accepted petroleum industry practices (including good oil and gas field practices generally accepted by the international petroleum industry that a reasonable and prudent operator would employ in similar operating conditions at the time taking into consideration local practices generally recognized and observed by the petroleum industry in Abu Dhabi, including Abu Dhabi Law No. 8 of 1978 “Regarding the Conservation of Petroleum Resources”), the HSE standards and practices, and the relevant requirements of any insurance policies relating to the pipelines

(b) ADNOC is responsible for carrying out all pipeline operations, which shall include ADNOC's business, operations, support and management activities related to the use and operation of the pipelines, and all other activities and components related thereto (including undertaking any modification works). ADNOC shall to the extent of its authority be responsible for:

(i) conducting the pipeline operations efficiently, diligently and economically, in accordance with the Performance Standards;

(ii) obtaining, maintaining, renewing and paying for and complying with all registrations, licenses, consents and permissions required in respect of the pipeline operations, performance of its obligations under the U&O Agreement, and managing all interactions with any persons;

(iii) maintaining, repairing and keeping the pipelines and particularly all machinery, plant, equipment and fixtures which are or may at any time be erected thereon or be part thereof, in good and substantial repair, working order and condition, in accordance with the Performance Standards;

(iv) maintaining operation of the pipelines within the operating parameters as defined by the Performance Standards so as to, at all times, ensure the integrity of the pipelines (including, but not limited to, maintaining minimum flow of sales gas and NGL through the pipelines for integrity purposes, not exceeding design flow rate of sales gas and NGL through the pipelines and ensuring that operating pressures within the pipelines are within the maximum allowable operating pressures as defined in ADNOC’s asset integrity management system);

(v) maintaining comprehensive records of the pipeline operations in accordance with the Performance Standards;

(vi) arranging and maintaining insurance for the pipeline operations;

(vii) selecting contractors and suppliers of goods and materials (including such spare parts as are necessary for the pipeline operations), negotiating with the contractors and suppliers, and executing the contracts; and

(viii) implementing any decommissioning of the pipelines.

(c) ADNOC will use and operate the pipelines and facilities solely to transport sales gas and NGL:

(i) owned by ADNOC or the Government of Abu Dhabi; or

(ii) under the custody of ADNOC or any of its affiliates.

(d) ADNOC shall procure that all sales gas, sales NGL and sales LNG flow to, and are measured at a measuring point using metering equipment, and, to the extent available and installed, custody transfer standard meters (provided that ADNOC shall have no obligation to procure that sales gas is measured at any custody transfer meter located beyond the battery limit of the Thamama-C manifold).

(e) ADNOC is exclusively responsible for all gas operations (including the operation and maintenance of the interconnection facilities connecting the pipelines with the relevant sales gas and NGL production, and processing and exporting facilities sharing a connection with the pipelines).

(f) Upon the occurrence of any emergency event, ADNOC must take any action necessary to prevent, avoid or mitigate any injury, damage or loss, and promptly report any such incidents to AssetCo including

ADNOC response thereto, within the applicable time periods, which are either 1 or 3 business days from ADNOC being notified of the same, as the case may be.

(g) ADNOC must:

(i) keep and maintain the pipelines (and property acquired for the purpose of the pipeline operations) free from all liens;

(ii) use reasonable endeavors to conduct gas operations in accordance with the Performance Standards;

(iii) prepare and deliver the operating report to AssetCo within 28 days of the end of each month;

(iv) in the event AssetCo ceases to be a member of the ADNOC tax group, notify AssetCo within 20 business days thereof.

**4. *No Interference***

Except as allowed under the U&O Agreement, Lease Agreement or the General Services Agreement, AssetCo must not interfere with the pipelines, the pipeline operations or the gas operations.

**5. *Modification Works***

(a) ADNOC must implement, at its cost, any modification works (including repairs) that:

(i) are necessary to operate the pipelines in accordance with the Performance Standards;

(ii) are required to comply with ADNOC's responsibilities and obligations set out in paragraph 3(b) under "*Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Responsibilities, Rights and Obligations of ADNOC*" above; or

(iii) which it otherwise considers (in its sole discretion) necessary or appropriate.

Under the U&O Agreement, AssetCo has provided its prior consent to the implementation and performance of any modification works referenced above.

(b) Any modification work is considered to be part of the pipelines, and ADNOC is not entitled to any reimbursement, suspension, reduction or abasement of ADNOC's payment obligations under the U&O Agreement, or any other compensation from AssetCo.

**6. *Planning and Measurement of Supply***

*Forecast Tariffed Supply*

(a) ADNOC must provide AssetCo with the "**Current Supply Forecast**" (based on the latest SPC-endorsed business plan with respect to the reservoirs):

(i) identifying the forecast of Tariffed Supply (as defined below) during the first contract year, no later than 30 days following the U&O Effective Date; and

(ii) including the forecast of Tariffed Supply (as defined below) during the applicable contract year (other than the first contract year), at the same time as providing the operating report in January of such contract year.

*Measurement of Tariffed Supply, Billing Period Statements and Final Billing Period Statement*

(b) ADNOC must:

(i) measure or procure the measurement of the Tariffed Supply (as defined below) at a measuring point using measuring equipment, and where any Tariffed Supply (as defined below) is measured in more than one place, may make adjustments to any measurements of supply to ensure there is no double counting;

(ii) no later than the 16th day of the second month of each billing period (other than the 1st billing period), provide AssetCo with a Billing Period Statement (as defined below);

(iii) no later than 30 days following the expiry of the term, provide AssetCo with a Final Billing Period Statement (as defined below).

(c) A "**Billing Period Statement**" includes the following:

(i) the actual aggregate sales gas and NGL supply (in mmbtu, delivered during a billing period as measured at the measuring points) and actual aggregate sales LNG (in mmbtu, delivered during a billing period as measured at measuring points) ("**Tariffed Supply**"), and any Deemed Tariffed Supply for the immediately preceding billing period (together with reasonable supporting evidence). The "**Deemed Tariffed Supply**" for a billing period means:

(A) where the amount (in mmbtu) of sales gas and NGL supply for such billing period is greater than or equal to the sales gas and NGL supply component for such billing period set out in the baseline forecast of Tariffed Supply for all billing periods during the term, as set out in the U&O Agreement, (the "**Baseline Supply Forecast**" and, the sales gas and NGL supply component of the Baseline Supply Forecast, the "**Baseline Gas Supply**"), "0";

(B) where the amount (in mmbtu) of sales gas and NGL supply for such billing period is less than the Baseline Gas Supply for such billing period, the lesser of:

(1) if there was no Excluded Supply (as defined below) in such billing period, "0"; or

(2) the greater of "0" and the amount determined in accordance with the following formula:

(a) the amount of Excluded Supply (as defined below) in such billing period; and

(b) the greater of "0" and the amount determined in accordance with the following formula:

DTS = A – B – C

*where*

DTS = Deemed Tariffed Supply

A = the Baseline Gas Supply for such billing period

B = the sales gas and NGL supply for such billing period

C = the opportunity loss for such billing period.

"**Excluded Supply**" for processed gas means: processed gas originating from a reservoir (other than those listed in the U&O Agreement), in the UAE in relation to which ADNOC (or any of its affiliates) has Operational Control, and either: (x) delivered to any person (being an individual, partnership, corporation (including a business trust), company, trust, unincorporated association, joint venture or other entity, whether a body corporate or an unincorporated association of persons, or a government or any political subdivision or agency or instrumentality) in the UAE solely for use in the

UAE, excluding processed gas that is delivered to a liquefaction facility for conversion to LNG, or (y) reinjected by ADNOC (or any of its affiliates) into a reservoir;

"**Excluded Supply**" for NGL means: NGL originating from a reservoir (other than those listed in the U&O Agreement), in the UAE in relation to which ADNOC (or any of its affiliates) has Operational Control, and either: (x) processed at a fractionation facility in the UAE, or (y) delivered, in an unfractionated state, to a person in the UAE solely for the use and/or consumption in the UAE; and

"**Operational Control**" of a reservoir means the direct or indirect ability to determine or procure the determination of all material decisions relating to the operation and management of such reservoir, whether through the ownership of shares, by contract or otherwise, in a manner substantially consistent with the decision-making authority generally held by operators of significant gas reservoirs in the international petroleum industry;

(ii) the Tariff (as defined below) for the relevant billing period based on the Tariffed Supply and any Deemed Tariffed Supply;

(iii) the Carry Forward Supply Balance (defined below) at the end of the billing period calculated in accordance with the U&O Agreement and based on actual Tariffed Supply and any Deemed Tariffed Supply. The "**Carry Forward Supply Balance**" is calculated as follows:

(A) The Carry Forward Supply Balance on the commencement of the first billing period is 0.

(B) Any adjustment to the Carry Forward Supply Balance is calculated as follows:

(1) if there is excess supply in a billing period, the volume (in mmbtu) of such excess supply shall be added to the Carry Forward Supply Balance;

(2) if there is a Baseline Supply Shortfall in a billing period, the volume (in mmbtu) of such Baseline Supply Shortfall shall be subtracted from the Carry Forward Supply Balance. "**Baseline Supply Shortfall**" means the amount (in mmbtu), if any, by which the Baseline Supply Forecast for a relevant billing period is higher than Deemed Supply or the MVC for such billing period (whichever is higher);

(3) if there is a Carry Forward Supply Interest Adjustment in a billing period, such Carry Forward Supply Interest Adjustment shall be subtracted from the Carry Forward Supply Balance. "**Carry Forward Supply Interest Adjustment**" is calculated as follows: if as at the start of a billing period, the Carry Forward Supply Balance is less than 0, such absolute balance shall bear interest from (and including) the start of the billing period until (and including) the end of the billing period at an agreed rate per annum; and

(4) any adjustments to the Carry Forward Supply Balance (if any) required in respect of any Metering Adjustment;

(iv) any Carry Over Tariff Adjustment (if any). A "**Carry Over Tariff Adjustment**" arises in respect of a billing period (other than the last billing period) where an invoice contemplates a payment from ADNOC to AssetCo that is lower than (x) the Baseline Supply Forecast for a billing period multiplied by 75% (the "**MVC**"), multiplied by (y) U.S.$0.57 for such billing period. The result being that the amount payable by ADNOC to AssetCo is equal to the MVC for such billing period multiplied by U.S.$0.57, <u>provided</u> that amounts that remain accrued to the benefit of ADNOC shall:

(A) bear interest at an agreed per annum, compounded quarterly; and

(B) be included in the next Billing Period Statement.

(d) A "**Final Billing Period Statement**" includes the following:

(i) the actual Tariffed Supply and any Deemed Tariffed Supply for the final billing period (together with reasonable supporting evidence);

(ii) the Tariff (as defined below) for the final billing period based on the actual Tariffed Supply and any Deemed Tariffed Supply; and

(iii) the Carry Forward Supply Balance at the end of the billing period calculated in accordance with the U&O Agreement, and based on actual Tariffed Supply and any Deemed Tariffed Supply; and

(iv) any Carry Over Tariff Adjustment.

(e) ADNOC must provide further supporting evidence that AssetCo reasonably requires to support any information, estimate, assessment or calculation set out in a Billing Period Statement or Final Billing Period Statement (as applicable).

(f) If the parties cannot agree on adjustments to the Billing Period Statement or Final Billing Period Statement, within the period prescribed in the U&O Agreement, the adjustments shall be collated (along with all other such adjustments on which the parties have failed to agree in the same contract year) and the parties shall resolve such issues in accordance with the dispute resolution procedures at the commencement of the immediately following contract year. Following any agreement or determination of amendments to a Billing Period Statement or Final Billing Period Statement, the Parties shall include adjustments to correct any resulting underpayments or overpayments to the Tariff, and make any resulting adjustments to the Carry Forward Supply Balance (provided that any resulting underpayment of the Tariff shall bear interest from the due date thereof until the date of payment at an agreed rate per annum, compounded quarterly).

(g) Any adjustment and/or a pursuit of any adjustment to a Billing Period Statement or Final Billing Period Statement will constitute a "**Company Right**" for the purposes of the Shareholders' Agreement.

(h) If ADNOC fails to provide a Billing Period Statement or Final Billing Period Statement for any billing period within the required time period, AssetCo will:

(i) invoice ADNOC for an amount equal to the Tariff for such billing period (the "**Estimated Invoice**"). For the purposes of this, the Tariff will be calculated on the assumption that the Deemed Tariffed Supply for such billing period was equal to the Current Supply Forecast for such billing period, and the Carry Forward Supply Balance for such billing period was 0; and

(ii) within 10 days following receipt of the Billing Period Statement or Final Billing Period Statement (as applicable), issue a supplemental invoice to ADNOC including any adjustment to the Estimated Invoice to correctly reflect the amounts specified in such Billing Period Statement or Final Billing Period Statement (the "**Supplemental Invoice**"). If the Supplemental Invoice is issued after ADNOC has paid the Estimated Invoice, the next Billing Period Statement shall be adjusted to account for any underpayments or overpayments of the Tariff (and bear interest at an agreed per annum, compounded quarterly).

*Operation, Maintenance and Verification of Metering Equipment*

(i) ADNOC must:

(i) operate, maintain, check, verify, recalibrate and replace (or procure the operation, maintenance, checking, verification, recalibration and replacement of) the metering equipment in accordance with the metering codes of practice and, to the extent applicable, the new metering guidelines;

(ii) calibrate (or procure the calibration of) the relevant metering equipment in accordance with the calibration frequencies set out in the U&O Agreement, unless there is any delay or postponement of the calibration:

(A) as a consequence of the occurrence of an event of force majeure;

(B) due to a requirement to comply with the HSE standards and practices as a result of an event which is not reasonably foreseeable or anticipated,

in which case, the calibration will be conducted as soon as reasonably practicable after the reason for such delay or postponement has been removed, mitigated or resolved (the "**Calibration Timeframe**");

(iii) within 45 days of the date on which the calibration of any metering equipment is completed, provide AssetCo with a copy of each instrument calibration report in relation to any metering equipment in respect of sales NGL or sales gas (such reports must be prepared in accordance with the metering codes of practice and the other metering provisions, if applicable).

(j) If any instrument calibration report records any error(s) in any metering equipment, in respect of sales gas and NGL supply, outside the applicable uncertainty level percentage set out in the U&O Agreement (the "**Applicable Tolerance Margin**"), the inaccuracy in relation to the measurement of sales gas and NGL supply as reported will be:

(i) in respect of any measuring and testing equipment, housings, devices and materials (with all related equipment, appliances and buildings to measure and test sales gas, sales NGL and sales LNG at measuring points) ("**Metering Equipment**"), as replaced or updated from time to time:

(A) the difference between the error recorded in the instrument calibration report and the Applicable Tolerance Margin; and

(B) deemed to have extended from (x) where the date on which such error arose is identifiable, such date, or (y) where the date on which such error arose is not identifiable, the date that is the midway point between the date of the recording of the error in the calibration report and the date of the immediately preceding instrument calibration, until the date on which the error identified in the calibration report is corrected (to be evidenced by the calibration report); or

(ii) in respect of certain sales gas pipelines and reinjection gas pipelines specified in the U&O Agreement, until each such meter is upgraded in accordance with the U&O Agreement ("**Relevant Metering Equipment**"):

(A) if ADNOC has conducted the relevant calibration within the Calibration Timeframe for such Relevant Metering Equipment:

(1) the difference between the error recorded in the instrument calibration report and the Applicable Tolerance Margin; and

(2) deemed to have extended from (x) where the date on which such error arose is identifiable, such date, or (y) where the date on which such error arose is not identifiable, the date that is the midway point between the date of the recording of the error in the calibration report and the date of the immediately preceding instrument calibration, until the date on which the error identified in the calibration report is corrected (to be evidenced by the calibration report); or

(B) if ADNOC has conducted the relevant calibration outside the Calibration Timeframe for such Relevant Metering Equipment:

(1) the error would result in an adjustment to increase the amount of the Tariff (as defined below) payable to AssetCo:

(a) the difference between the error recorded in the instrument calibration report and the Applicable Tolerance Margin; and

(b) deemed to have extended from (x) where the date on which such error arose is identifiable, such date, or (y) where the date on which such error arose is not identifiable, the date that is the midway point between the last day the calibration should have been conducted within the Calibration Timeframe and the date of the immediately preceding instrument calibration, until the last day on which the error identified in the calibration report is corrected (to be evidenced by the calibration report); and

(2) the error would result in a reimbursement to ADNOC of the amount of the Tariff (as defined below) paid by ADNOC to AssetCo:

(a) the difference between the error recorded in the instrument calibration report and the Applicable Tolerance Margin; and

(b) deemed to have extended from (x) where the date on which such error arose is identifiable, such date, or (y) where the date on which such error arose is not identifiable, the date that is the midway point between the last day the calibration should have been conducted within the Calibration Timeframe and the date of the immediately preceding instrument calibration, until the last day the calibration should have been conducted within the Calibration Timeframe in which such calibration should have been conducted.

(k) In the Billing Period Statement to be issued, either (i) in the same billing period in which the error was discovered, or (ii) in the billing period immediately following the billing period in which the error was discovered, ADNOC must include any adjustment to correct any resulting underpayments or overpayments of the Tariff as a result of the identified inaccuracy in the measurement of sales gas and NGL supply in the applicable calibration report (provided that any resulting underpayment or overpayment of the Tariff shall bear interest at an agreed rate per annum, compounded quarterly), and include any resulting adjustments to the Carry Forward Supply Balance (a “**Metering Adjustment**”).

(l) ADNOC must:

(i) in respect of any Relevant Metering Equipment, retain a third party registered with UKAS to: (1) optimize the Relevant Metering Equipment and related ancillary equipment; (2) verify distributed control system changes; (3) develop and issue a detailed calibration procedure confirming the applicable calibration frequency; (4) taking into account (1) – (3), confirm the uncertainty levels set out in the U&O Agreement with respect to each of the sales gas meters for the relevant equipment, or recommend any changes to the applicable uncertainty levels, in order to reduce or maintain the applicable uncertainty levels; and (5) develop a mismeasurement procedure in respect of sales gas meters for the Relevant Metering Equipment;

(ii) within 90 business days of the date of the U&O Agreement, procure that such third party completes the activities above, ((i) and (ii), the “**Third Party Baselining Exercise**”); and

(iii) within 90 business days of the U&O Agreement, provide AssetCo with:

(A) a letter from the retained third party confirming that the Third Party Baselining Exercise has been completed;

(B) a letter confirming the completion of certain of the activities forming part of the Third Party Baselining Exercise (as set out in the U&O Agreement) have been completed;

(C) a copy of the calibration procedure and the mismeasurement procedure prepared by the third party; and

(D) any recommended changes to the applicable uncertainty levels.

(m) The calibration frequency and Applicable Tolerance Margin can be amended by ADNOC pursuant to: (i) the Third Party Baselining Exercise, and (ii) ADNOC's new metering guidelines. In order to amend the Applicable Tolerance Margin, ADNOC does not require AssetCo's consent, but ADNOC must notify AssetCo of any amendments (which shall take effect from the date of the notice), and the date on which ADNOC implements the new metering guidelines.

(n) Until ADNOC implements new metering guidelines, in respect of the Relevant Metering Equipment:

(i) once per contract year (during the first 2 contract years), and thereafter once every 2 contract years, AssetCo can nominate (with ADNOC not to unreasonably withhold or delay its consent to such nomination), at its own cost, an independent third party verifier to confirm whether the Relevant Metering Equipment has been calibrated in accordance with the applicable calibration frequencies, and the calibration procedure established pursuant to the Third Party Baselining Exercise. ADNOC must provide the third party verifier with sufficient information to enable it to confirm the applicable matters; and

(ii) if the third party verifier determines that ADNOC has not calibrated any Relevant Metering Equipment in accordance with the applicable calibration procedure established pursuant to the Third Party Baselining Exercise, any inaccuracy in relation to the measurement of sales gas and NGL supply by that Relevant Metering Equipment as reported will:

(A) only be taken into account in any adjustment to the Tariff if the adjustment would increase the amount of the Tariff payable to AssetCo; and

(B) be deemed to have extended from (x) where the date on which such error arose is identifiable, that date, or (y) where the date on which such error arose is not identifiable, the date that is the midway point between the date of the recording of the error in the calibration report and the date of the immediately preceding instrument calibration, until the earlier of (1) the date on which that Relevant Metering Equipment is next calibrated, or (2) the date on which ADNOC rectifies the non-compliance identified by the third party verifier.

(o) ADNOC intends to upgrade the Relevant Metering Equipment to custody transfer standard meters (or meters with a comparable level of accuracy). Such upgrade may not be on a one-for-one replacement basis.

(p) ADNOC must prepare and deliver to AssetCo such technical, operational and other information in respect of the pipeline operations and gas operations as may be reasonably necessary to satisfy any request by AssetCo's shareholders (in accordance with the Shareholders' Agreement).

**7. *Payments***

(a) In consideration for AssetCo's grant of rights and appointment of ADNOC under the U&O Agreement, ADNOC must:

(i) pay the Tariff (as defined below) to AssetCo for each billing period; and

(ii) accept sole responsibility for and make payment of (i) all expenditures incurred in connection with the Pipelines or the pipeline operations (including all maintenance, repairs, decommissioning costs, utilities, rates, taxes, duties and charges whatsoever imposed by any governmental authority, insurance premiums and group programme premium allocations and other related third party charges) ("**OPEX**"), and (ii) any expenditures other than OPEX in engineering, procuring or constructing any modification works or future pipelines (howsoever incurred) ("**CAPEX**").

(b) The "**Tariff**" in any billing period is an amount determined in accordance with the following formula:

T = US $0.57 x (A + B + C)

Where

T = the Tariff

A = the greater of:

(i) the Deemed Supply for such billing period or the Baseline Supply Forecast for such billing period (whichever is less); and

(ii) the MVC for such billing period.

B = any Carry Forward Supply for such billing period

C = any Export Volumes Credit for such billing period.

"**Export Volume Credit**" for a billing period means:

(i) if ADNOC has not made a decision to declare abandonment with respect to all of the reservoirs listed in the U&O Agreement and/or the Carry Forward Supply Balance is greater than 0, "0"; or

(ii) if ADNOC has made a decision to declare abandonment with respect to all of the reservoirs listed in the U&O Agreement and the Carry Forward Supply Balance is 0, and:

  (A) there is no Excluded Supply for such billing period, "0";

  (B) if Excluded Supply for such billing period is above the MVC for such billing period, the lesser of:

    (1) the Export Amount is less than the MVC for such billing period;

    (2) the difference between the Excluded Supply for such period and the MVC for such period; and

    (3) the difference between the Baseline Supply Forecast for such billing period and the MVC for such billing period; and

(iii) if Excluded Supply for such billing period is below the MVC for such billing period, "0".

"**Export Amount**" means:

(a) the aggregate amount (in mmbtu) of processed gas (other than sales gas), NGL (other than sales NGL) or LNG (other than sales LNG) originating from a reservoir listed in the U&O Agreement that is exported from the UAE in the period commencing on July 1, 2020 and ending on the date on which ADNOC has made a decision to declare abandonment with respect to all of the reservoirs listed in the U&O Agreement; less

(b) the aggregate of the Export Volumes Credit for the billing periods prior to the relevant billing period; less

(c) the aggregate of the Export Volumes Deficit for the billing periods prior to the relevant billing period,

provided that if the above calculation results in a number less than zero, the Export Amount is zero.

"**Export Volumes Deficit**" for a billing period means:

(a) if ADNOC has not made a decision to declare abandonment with respect to all of the reservoirs listed in the U&O Agreement and/or the Carry Forward Supply Balance is greater than zero, zero;

(b) if ADNOC has made a decision to declare abandonment with respect to all of the reservoirs listed in the U&O Agreement and the Carry Forward Supply Balance is zero, and:

(i) if Excluded Supply for such billing period is above the MVC for such billing period, the MVC for such billing period; or

(ii) if Excluded Supply for such billing period is below the MVC for such billing period, the Excluded Supply for such billing period.

(c) If any amounts payable by ADNOC have not been paid by the due date, it shall incur interest from the due date until the date of payment at an agreed rate per annum compounded daily. If ADNOC objects to any amounts invoiced by AssetCo, ADNOC will notify AssetCo of such objection, but pay all undisputed amounts pending resolution of the matter. Any disputed payments will be settled in accordance with the dispute resolution procedure (set out in "*Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Governing Law and Dispute Resolution*" below). Interest at an agreed rate per annum will apply on any amounts determined to be due to AssetCo from ADNOC.

(d) The Tariff does not include any allowance for (and is exclusive of) UAE VAT. Where UAE VAT is applicable to the rights granted by AssetCo in relation to the pipelines, AssetCo (i) is entitled to charge VAT on the applicable supply (in addition to the Tariff), (ii) shall include UAE VAT as an additional line item on the applicable invoice, and (iii) must do and provide any reasonably requested information to allow ADNOC to claim an input credit or refund.

(e) Within 10 days following receipt of a Billing Period Statement or the Final Billing Period Statement, AssetCo must invoice ADNOC for the amounts specified in such Billing Period Statement or Final Billing Period Statement. No later than 5 business days before the last day of the billing period in which such invoice is received (or in the case of the Final Billing Period Statement, no later than 30 days following delivery thereof), ADNOC must pay the full amount of any such invoice (including as adjusted by any Supplemental Invoice).

(f) All amounts payable by ADNOC to AssetCo must be paid into an account as AssetCo may direct, in US Dollars, by way of immediately available funds, without demand and without withholding (including taxes), counterclaim, deduction or set off of any kind, at such place and in such manner as AssetCo may from time to time, designate by notice to ADNOC.

(g) Unless expressly set out in the U&O Agreement, ADNOC shall not be entitled to any payment or compensation from AssetCo pursuant to the U&O Agreement arising out of or in connection with ADNOC's performance of the pipeline operations or otherwise.

(h) ADNOC's payment obligations will not be suspended, reduced or abated by the non-use or non-operation of any pipeline for any reason, including as a consequence of any event of loss, any emergency event or any force majeure.

(i) AssetCo is responsible for the payment of any rates, taxes and charges levied by a governmental authority in connection to its leasehold interests in the pipelines or in relation to the U&O Agreement.

(j) If a change in law occurs after the U&O Effective Date results in:

(i) either, new or additional taxes (excluding corporate income taxes) payable by AssetCo in relation to revenues earned under the U&O Agreement, or any increase in, or additional liability for, operating expenditure of AssetCo, the Tariff will be increased to put AssetCo in the same position as if such change in law had not occurred; or

(ii) any material financial or economic impact, cost, loss or liability for AssetCo and the Tariff is not increased under the U&O Agreement or the Lease Agreement, the parties must meet within 8 business days (unless AssetCo waives this right by notifying ADNOC) to discuss any amendments to the U&O Agreement and any other steps which may be reasonably required to mitigate or eliminate the impact of the change in law on AssetCo.

**8. *Subcontractors and Suppliers***

ADNOC shall have full authority to subcontract the performance of any part of the pipeline operations and negotiate contracts with suppliers for the purchase of materials and equipment required for such operations.

ADNOC is solely responsible for payments to its subcontractors, and indemnifies AssetCo against any claims from such subcontractors in relation to such subcontractors' performance of the pipeline operations.

**9. *Decommissioning***

ADNOC will determine when to decommission any of the pipelines and, following such determination, will implement such decommissioning. ADNOC must notify AssetCo (i) not less than 90 days prior to the commencement of decommissioning work, its intent to decommission any pipeline, and (ii) upon the commencement of decommissioning works.

**10. *Force Majeure***

(a) An event of force majeure means any event or combination of events which was not reasonably foreseeable on the U&O Effective Date and which is beyond the reasonable control of the party affected (and was not caused by the affected party or its affiliates' personnel, contractors or suppliers), to the extent that such event hinders, prevents or delays the performance of either Party's obligations under the U&O Agreement. A Party claiming relief from its obligations due to the occurrence of an event of Force Majeure shall be relieved of its obligations under the U&O Agreement only to the extent that:

(i) the act, event, circumstance or condition that constitutes an event of force majeure continues to delay, prevent or impede the affected party's performance of its obligations;

(ii) there is a direct causal link between the prevention, impediment or delay claimed and the events invoked;

(iii) the affected party has taken all actions (at its own expense) which are reasonable under the circumstances to overcome any such cause of prevention, impediment or delay and to proceed with the performance of its obligations under the U&O Agreement;

(iv) the affected party has given notice of such event to the non-affected party; and

(v) the affected party proves the occurrence of an event of force majeure and its effect on such party.

(b) Subject to paragraph (a), force majeure events include, amongst other things:

(i) flood, lightning, storm, typhoon, tornado, earthquake, landslide, soil erosion, subsistence, washout, radioactive contamination and epidemic;

(ii) war (whether declared or undeclared), blockade, insurrection, military uprising or acts of public enemies; and

(iii) revolution, rebellion, civil war, riot, civil disturbance, civil commotion, terrorist acts, seizure or act of sabotage, imposition of sanctions, embargo or breaking off diplomatic relations.

(c) Trade or labor disputes, strikes, lockout and industrial disturbances that are not on an industry-wide basis will not constitute events of force majeure.

(d) Neither party shall be considered in default of the performance of its obligations under the U&O Agreement to the extent that performance of such obligations is prevented, hindered or delayed because of a force majeure event. Notwithstanding the foregoing, ADNOC will not be entitled to any relief, reimbursement, suspension, reduction or abatement of its payment obligations.

(e) Neither party will be liable to the other party to the extent any loss, damage, cost or expense is suffered or incurred by such party as a consequence of the occurrence of an event of force majeure.

**11. *Termination***

(a) AssetCo and ADNOC's right to terminate the U&O Agreement are listed in "*Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Term*".

(b) ADNOC is not entitled to terminate the U&O Agreement or claim any rights, relief, claim or defense to the extent that any such right, relief, claim or defense (including the right to terminate) arises as a result of any default, failure, act or omission or breach of ADNOC under the General Services Agreement or the Lease Agreement or any entity performing ADNOC's obligations under such agreements.

(c) Neither party will have any liability to the other arising out of, or in connection with, any termination of the U&O Agreement other than the payment of the Refund Amount (as defined in the Lease Agreement), in accordance with the Lease Agreement (except for any due and payable Tariff payments arising prior to the date of termination, any other payments by ADNOC to AssetCo under the U&O Agreement or the Lease Agreement or payments in respect to any indemnities).

(a) If there is an amendment to the dividend policy of AssetCo (pursuant to the terms of the Shareholders' Agreement at a time that AssetCo is or becomes entitled to terminate the U&O Agreement), then AssetCo's right to terminate the U&O Agreement extends to 30 days after AssetCo's original dividend policy is reinstated.

**12.** ***Liability and Indemnity***

(a) Without limiting ADNOC's liability for fraud and without prejudice to AssetCo's termination rights, right to receive the Refund Amount and right to claim any amount of tariff that is due and payable but remains unpaid, ADNOC has no liability to AssetCo for any claims by AssetCo for, or in connection with, loss of or reduction in the Tariff resulting from ADNOC's negligence or breach of the U&O Agreement.

(b) Without limiting either party's liability for fraud and without prejudice to AssetCo's termination rights and right to receive the Refund Amount, each party waives all rights of recourse against the other party, and shall not be liable to the other party, for consequential loss or damage, loss of profits, loss of production, loss of opportunity and/or loss of contract.

(c) ADNOC will indemnify and hold harmless AssetCo against:

(i) any claim, demand, action, fine, directive, other penalty or proceedings (whether criminal, regulatory or otherwise) brought or instituted against AssetCo by any third party in connection with, relating to, or arising out of the exercise of its rights or the performance or non-performance by ADNOC of its obligations under the U&O Agreement and against all costs, claims, demands and damages involved therewith; and

(ii) to the extent permissible under applicable law, any liability for any accident, death or injury to any personnel of ADNOC or its affiliates against any loss of or damage to any property belonging to ADNOC or its affiliates or any of their personnel (including personnel seconded to ADNOC or its affiliates), including the pipelines notwithstanding AssetCo's lease of the ownership interests, which may arise out of or in connection with the U&O Agreement (including any claim for loss of sales gas, NGL or LNG) and against all costs, claims, demands and damages involved therewith,

in each case, except to the extent arising out of the gross negligence of AssetCo, where such gross negligence arises as a result of acts, omissions or decisions undertaken pursuant to decision(s) of the Issuer or AssetCo's shareholders with respect to a shareholder's unanimous matter or a shareholder's super majority matter (as set out in the Shareholders' Agreement).

(d) ADNOC will indemnify AssetCo against all losses that AssetCo suffers or incurs arising out of, or in connection with:

(i) the UAE VAT liabilities of the ADNOC tax group (whether such losses arise under VAT law or otherwise);

(ii) AssetCo ceasing to be a member of the ADNOC tax group (whether such losses arise under VAT law or otherwise); and

(iii) any dispute or challenge by ADNOC (or any administrator, liquidator or receiver of ADNOC) of any of the pipeline rights of AssetCo on the basis of ADNOC not holding the ownership interests, and/or having the ability to grant the pipeline rights to AssetCo in the manner contemplated in the Lease Agreement.

(e) AssetCo will indemnify and hold harmless ADNOC against:

(i) any claim, demand, action, fine, directive, other penalty or proceedings (whether criminal, regulatory or otherwise) brought or instituted against ADNOC by any third party in connection with, relating to, or arising out of the exercise of its rights or the performance or non-performance by AssetCo of its obligations under the U&O Agreement and against all costs, claims, demands and damages involved therewith; and

(ii) any liability for any accident, death or injury to any personnel of ADNOC or its affiliates against any loss of or damage to any property belonging to ADNOC or its affiliates or any of their personnel, excluding the pipelines notwithstanding AssetCo's lease of the ownership interests, which may arise out of or in connection with the U&O Agreement and against all costs, claims, demands and damages involved therewith,

in each case, only to the extent such costs, claims, demands and damages arise as the result of acts, omissions or decisions taken pursuant to decision(s) of the Issuer or AssetCo's shareholders with respect to a shareholder's unanimous matter or a shareholder's super majority matter (as set out in the Shareholders' Agreement).

**13. *Insurance***

(a) ADNOC and its affiliates will obtain and maintain (at their own cost) all insurances in conformance with the ADNOC group risk management policies and procedures.

(b) If ADNOC fails to provide or maintain any insurance coverage specified in the U&O Agreement, AssetCo has the right to provide or maintain such coverage, and may recover all costs incurred in such provision or maintenance from ADNOC.

**14. *Intellectual Property***

Any intellectual property rights (whether or not patentable or registrable) which are made, discovered, produced, generated, or developed by ADNOC (or any person on secondment at ADNOC), in the course of the pipeline operations, and all designs, drawings, reports, studies, calculations, machine-readable or computer-generated information or data or other documents produced or generated in the course of the pipeline operations (including by an employee of ADNOC or any person on secondment at ADNOC) belong to, and copyright will vest in, ADNOC.

**15. *Assignment***

(a) Except as stated below, neither party can assign, transfer, create an encumbrance over, declare a trust of or otherwise dispose of all or any part of its rights and benefits under the U&O Agreement (including any cause of action arising in connection with any of them), or of any right or interest in any of them.

(b) AssetCo may assign any of its rights and benefits under the U&O Agreement (including any cause of action arising in connection with any of them) by way of security to any provider of debt finance to AssetCo (or a security agent or security trustee on its behalf).

**16. *Governing Law and Dispute Resolution***

(a) The construction, validity and performance of the U&O Agreement are governed by the laws of Abu Dhabi and the federal laws of the UAE.

(b) Resolution of a dispute will follow the procedure below:

(i) parties must engage in good-faith discussions with a spirit of cooperation, using all commercially reasonable efforts to amicably settle any dispute;

(ii) if a dispute is not settled within 90 days from the date the dispute is first notified to the other party, either party may refer the dispute for resolution by the Downstream Director of ADNOC and a representative nominated by AssetCo within seven days of such referral, holding a position within AssetCo (or any of its affiliates) that is equivalent in seniority to the Downstream Director of ADNOC;

(iii) if a dispute is not settled within 60 days from referral of the dispute to stage (ii) above, either party may refer the dispute for resolution by the chief executive officer of ADNOC and a representative nominated by AssetCo within seven days of such referral, holding a position within AssetCo (or any of its affiliates) that is equivalent in seniority to the chief executive officer of ADNOC; and

(iv) if the dispute is not settled within 90 days from the referral of the dispute to stage (iii) above, either party may commence arbitration proceedings. The arbitration will be conducted in accordance with the Rules of Arbitration of the International Chamber of Commerce, and are required to be determined by an arbitral tribunal composed of three arbitrators whose award will be final and binding. The legal seat and venue of the arbitration will be London and the arbitration will be conducted in the English language.

(b) An expert will determine any disagreement between AssetCo and ADNOC regarding any adjustment to a bill period statement in relation to the amount of opportunity loss or Excluded Supply to be taken into account in determining Deemed Tariffed Supply.

**B. Pipelines Lease Agreement**

The Lease Agreement was entered into on June 23, 2020 by and between AssetCo as the lessee and ADNOC as the lessor of the Ownership Interests (as defined below) in the pipelines. The Lease Agreement effective date was July 16, 2020 (the "**LA Effective Date**").

**1. *Effectiveness, Term and Survival***

(a) The Lease Agreement came into force on the LA Effective Date and will continue until the earlier of:

(i) the termination of the U&O Agreement; and

(ii) June 30, 2040 (being the expiry date of the Lease Agreement),

(the "**Lease Term**").

**2. *Lease***

(a) ADNOC grants AssetCo all of ADNOC's ownership interests in:

(i) for the Lease Term, the existing sales gas pipelines, NGL pipelines and injection (lean / processed gas) pipelines (including any modification works) in the Emirate of Abu Dhabi, as more particularly described in the Lease Agreement; and

(ii) from the completion of commissioning of each of the future pipelines until the expiry of the Lease Term:

(A) a pipeline replacing an existing pipeline that has been decommissioned;

(B) a pipeline for the transportation of sales gas from the outlet flange of a gas processing facility listed in the Lease Agreement, and continuing to the battery limit of the Thamama-C manifold; and

(C) a pipeline for the transportation of sales NGL from the outlet flange of a gas processing facility listed in the Lease Agreement, and continuing to the battery limit of the Ruwais Gas Fractionation Facility, ((i) and (ii) together, the "**Ownership Interests**").

(b) The lease for any such pipeline will terminate if any pipeline is decommissioned during the Lease Term in accordance with the U&O Agreement. The termination will be effective automatically upon the commencement of the decommissioning by ADNOC.

(c) ADNOC covenants that AssetCo has quiet enjoyment of the Ownership Interests, to the extent required for AssetCo to grant all necessary rights under the U&O Agreement.

**3.** ***Rent***

Within five (5) business days of the date on which the provisions regarding rent come into force, AssetCo is required to pay ADNOC (as a single lump sum) the rent, being $20,705,142,934.93 (the "**Rent**"). The rent was satisfied in consideration for AssetCo allotting and issuing 7,604,999 ordinary shares of AED 10,000 each in the share capital of AssetCo to ADNOC HoldCo.

**4.** ***AssetCo's Covenants***

AssetCo covenants not to:

(a) create any encumbrance over all or part of the Ownership Interest without the prior consent of ADNOC; and

(b) underlet all or part of the Ownership Interests without the consent of ADNOC.

**5.** ***Termination and Refund of Rent***

(a) As noted in "*Summary of Principal Project Documents – Pipelines Lease Agreement – Effectiveness, Term and Survival*", the Lease Agreement will terminate upon termination of the U&O Agreement.

(b) ADNOC is required to pay to AssetCo the Refund Amount if the Lease Agreement is terminated prior to June 30, 2040. The "**Refund Amount**" shall be equal to:

(i) if the Lease Agreement is terminated on the basis of ADNOC breaching the assignment obligations of the U&O Agreement or failing to pay any undisputed amounts under the U&O Agreement, 105% of the Fair Value. "**Fair Value**" means the value of the entire issued share capital of AssetCo at the time of determination (being the value that would be obtained in an arms-length transaction for ownership of such shares for cash between an informed and willing seller and an informed and willing purchaser). Calculation of the Fair Value assumes that the U&O Agreement and the Lease Agreement have not been terminated and that the Tariffed Supply is consistent with the Current Supply Forecast, taking into account any Carry Forward Supply. All provisions of the U&O Agreement relating to the Tariff will be taken into account in connection with such valuation (including the Deemed Tariffed Supply); or

(ii) if the Lease Agreement is terminated for any reason other than as stated in (i) above, 100% of the Fair Value,

<u>provided</u>, in both cases, that the Refund Amount will never be less than the MVC NPV. This assumes that:

(A) the U&O Agreement and the Lease Agreement have not been terminated;

(B) the Tariff is equal to U.S.$0.57 x MVC for such period; and

(C) each Tariff payment is discounted at a rate equal to the sum of: (a) the relevant MVC yield to maturity of the United States Treasury security, for the remaining average life of the MVC, as is determined on the date on which the MVC NPV is calculated; and (b) 50 basis points, *plus* the aggregate amount (if any) of the Tariff due but unpaid under the U&O Agreement on the date of termination.

(c) If the Refund Amount is not agreed within 20 business days following the date of termination and:

(i) there is a dispute in relation to the Current Supply Forecast, then either party may (by notice to the other party) commence arbitration proceedings to resolve the dispute; or

(ii) the Current Supply Forecast is not in dispute, then either party may (by notice to the other party) require the determination of the Refund Amount by expert determination.

(d) The Refund Amount is exclusive of UAE VAT. Where UAE VAT is applicable to all or part of the Refund Amount, AssetCo is entitled to charge it to ADNOC.

(e) ADNOC is required to transfer the Refund Amount to AssetCo's designated account within two business days following agreement or determination of the Refund Amount. If the Refund Amount has not been settled by 20 business days from the date the Lease Agreement is terminated, then it will bear interest until the date of payment at an agreed rate per annum, computed daily, provided that ADNOC will pay the portion of the Refund Amount equal to the MVC NPV within 20 business days of the date the Lease Agreement is terminated.

(f) If a change in law occurs after the LA Effective Date which results in:

(i) new or additional taxes (excluding corporate income taxes) payable by AssetCo in relation the Rent or the Refund Amount, AssetCo will be entitled to reimbursement of such amounts or an increase to the Refund Amount (if applicable) to put AssetCo in the same position as if such change in law had not occurred; or

(ii) any material financial or economic impact, cost, loss or liability for AssetCo in respect of which AssetCo does not receive reimbursement and/or the Refund Amount is not increased under the U&O Agreement or the Lease Agreement, the parties must meet within eight business days (unless AssetCo waives this right by notifying ADNOC) to discuss any amendments to the Lease Agreement and any other steps which may be reasonably required to mitigate or eliminate the impact of the change in law on AssetCo.

(g) The Refund Amount is AssetCo's sole and exclusive right and remedy with respect to the termination of the Lease Agreement or the U&O Agreement.

**6. *Liability and Indemnity***

(a) Notwithstanding the provisions in paragraphs 6(b) and 6(c) of "*Summary of Principal Project Documents – Pipelines Lease Agreement – Liability and Indemnity*" below, neither party shall be liable to the other party for consequential loss or damage, loss of profits, loss of production, loss of opportunity and/or loss of contract.

(b) ADNOC will indemnify and hold harmless AssetCo against:

(i) any claim, demand, action, fine, directive, other penalty or proceedings (whether criminal, regulatory or otherwise) brought or instituted against AssetCo by any third party in connection with, relating to, or arising out of the exercise of its rights or the performance or non-performance by ADNOC of its obligations under the Lease Agreement and against all costs, claims, demands and damages involved therewith; and

(ii) to the extent permissible under applicable law, any liability for any accident, death or injury to any personnel of ADNOC or its affiliates against any loss of or damage to any property belonging to ADNOC or its affiliates or any of their personnel (including personnel seconded to ADNOC or its affiliates) which may arise out of or in connection with the Lease Agreement and against all costs, claims, demands and damages involved therewith, in each case, except to the extent arising out of the gross negligence of AssetCo, where such gross negligence arises as a result of acts, omissions or decisions undertaken pursuant to decision(s) of the Issuer or AssetCo's shareholders with respect to a shareholder's unanimous matter or a shareholder's super majority matter (as set out in the Shareholders' Agreement).

(c) AssetCo will indemnify and hold harmless ADNOC against:

(i) any claim, demand, action, fine, directive, other penalty or proceedings (whether criminal, regulatory or otherwise) brought or instituted against ADNOC by any third party in connection with, relating to, or arising out of the exercise of its rights or the performance or non-performance by AssetCo of its obligations under the Lease Agreement and against all costs, claims, demands and damages involved therewith; and

(ii) any liability for any accident, death or injury to any personnel of AssetCo against any loss of or damage to any property belonging to AssetCo or any personnel of AssetCo (excluding the pipelines) which may arise out of or in connection with the Lease Agreement and against all costs, claims, demands and damages involved therewith,

in each case, only to the extent such costs, claims, demands and damages arise as the result of acts, omissions or decisions taken pursuant to decision(s) of the Issuer or AssetCo's shareholders with respect to a shareholders' unanimous matter or a shareholders' super majority matter (as set out in the Shareholders' Agreement).

(d) To the extent permissible under applicable law, ADNOC will indemnify and hold harmless AssetCo against any losses, costs, claims suffered or incurred by AssetCo as a result of AssetCo not being granted formal rights of use of the land upon which the pipelines are located, or any other liabilities arising out of land ownership or title to the pipelines.

(e) If AssetCo is required to pay any UAE VAT pursuant to the Lease Agreement, ADNOC (or its designated Affiliate) will provide cash to AssetCo through an interest free loan prior to the date on which payment of the VAT is due. AssetCo is required to repay the loan out of proceeds of any UAE VAT that is actually recovered by AssetCo pursuant to VAT law.

**7. *Custody, Risk of Loss and Insurance***

The rights and obligations of the parties with respect to the custody of, risk of loss in, and insurance of the pipelines during the Lease Term are as set out in the U&O Agreement.

**8. *Assignment***

(a) Except as stated below, neither party can assign, transfer, create an encumbrance over, declare a trust of or otherwise dispose of all or any part of its rights and benefits under the Lease Agreement (including any cause of action arising in connection with any of them), or of any right or interest in any of them.

(b) AssetCo may assign any of its rights and benefits under the Lease Agreement (including any cause of action arising in connection with any of them) by way of security to any provider of debt finance to AssetCo (or a security agent or security trustee on its behalf).

**9. *Governing Law and Dispute Resolution***

(a) The construction, validity and performance of the Lease Agreement are governed by the laws of Abu Dhabi and the federal laws of the UAE.

(b) Resolution of a dispute will follow the procedure below:

(i) parties must engage in good-faith discussions with a spirit of cooperation, using all commercially reasonable efforts to amicably settle any dispute;

(ii) if a dispute is not settled within 90 days from the date the dispute is first notified to the other party, either party may refer the dispute for resolution by the Chief Executive Officer of

ADNOC and a representative nominated by AssetCo within seven days of such referral, holding a position within AssetCo (or any of its affiliates) that is reasonably equivalent in seniority to the Chief Executive Officer of ADNOC;

(iii) if a dispute is not settled within 60 days from referral of the dispute to stage (ii), above, either party may refer the dispute for resolution by the chief executive officer of ADNOC and a representative nominated by AssetCo within seven days of such referral, holding a position within AssetCo (or any of its affiliates) that is equivalent in seniority to the chief executive officer of ADNOC; and

(iv) if the dispute is not settled within 90 days from the referral of the dispute to stage (iii) above, either party may, by notice given to the other party, commence arbitration proceedings. The arbitration will be conducted in accordance with the rules of the International Chamber of Commerce, and are required to be determined by an arbitral tribunal composed of three arbitrators whose award will be final and binding. The legal seat and venue of the arbitration will be London and the arbitration will be conducted in the English language.

**C. General Services Agreement**

The General Services Agreement was entered in to on June 23, 2020 by and between AssetCo and ADNOC regarding the provision of general business function services. The General Services Agreement effective date was July 16, 2020 (the "**GSA Effective Date**").

***1. Effectiveness, Term and Survival***

The General Services Agreement came into force on the GSA Effective Date and will continue until the termination or expiry of the U&O Agreement.

***2. Provision of the Services***

(a) From the GSA Effective Date, ADNOC is required to provide, or procure the provision of the Services to or on behalf of AssetCo in order to supplement AssetCo's own capabilities. "**Services**" are:

(i) audit, tax and accounting services (and other services subcontracted to a third party) (the "**Third Party Services**");

(ii) board secretary services;

(iii) legal and compliance services;

(iv) finance and treasury services;

(v) human resources services;

(vi) logistics services;

(vii) information technology services;

(viii) procurement services;

(ix) insurance services;

(x) risk management services;

(xi) record-keeping and reporting services;

(xii) general management and administrative services (including the administration, preparation and logistics of board meetings); and

(xiii) provision of office space for use by AssetCo in connection with the exercise of its rights and performance of its obligations under the U&O Agreement and the Lease Agreement.

(b) ADNOC is required to provide or procure the provision of the Services through use of appropriately qualified and experienced personnel or third parties.

(c) ADNOC must:

(i) comply with applicable laws;

(ii) use reasonable endeavors to ensure that it provides or procures the provision of the Services with the same degree of care, accuracy, quality and responsiveness used in performing the same or similar services for its own businesses; and

(iii) comply with all reasonable requirements and requests of AssetCo (including providing AssetCo with (or procuring the provision of) copies of all documents relevant to AssetCo on request).

(d) The parties shall, and shall procure that third parties must, observe all rules and/or regulations that are in force when visiting, or, in the case of ADNOC, when performing the Services at, the other party's respective premises. Each party shall inform the other party of any hazards known to it (actual or potential) to the safety of personnel associated with the provision of the Services. If a party is of the opinion that a site represents a danger to the safety of its personnel it can keep or withdraw its personnel from the site without any liability of delay in the provision of the Services.

(e) ADNOC may subcontract the performance of the Services. ADNOC is responsible for the performance or non-performance of the Services. ADNOC is solely responsible for payments to its subcontractors (including Deloitte & Touche LLP, Ernst and Young LLP, KPMG and PricewaterhouseCoopers LLP, each an "**Approved Accounting Firm**") and indemnifies AssetCo against any claims from such subcontractors (including Approved Accounting Firms) in relation to the performance of the Services.

(b) If AssetCo considers that all or part of the Third Party Services have not been, or are not being performed in accordance with the performance standard expected of an appropriately qualified service provider, then it can issue a de-scoping notice. Following issuance of a de-scoping notice, ADNOC is required to use its reasonable endeavors to procure that the outgoing service provider co-operates with AssetCo to transfer the Third Party Services to another service provider.

(c) ADNOC is required to engage an Approved Accounting Firm to provide audit, tax and accounting services.

(d) AssetCo shall provide ADNOC with all such data and/or information (in the English language) as it may reasonably require to fulfil ADNOC's obligations under the General Services Agreement. If data and/or information requested by ADNOC cannot be provided by AssetCo, ADNOC is permitted to (i) suspend the affected part of the Services until such data and/or information becomes available and is provided to ADNOC, or (ii) exclude the part of the Services for which the data and/or information is required for the proper provision of the services.

**3. *Reimbursement of Costs***

(a) The cost of the Services is capped at U.S.$150,000 per annum (indexed at a rate of 2% per annum). The cap excludes (i) any taxes applicable to the Services, and (ii) any fees, costs and expenses associated with the shareholders reserve accounts (established pursuant to the Shareholders' Agreement).

(b) AssetCo is required to reimburse undisputed invoices on or before the last day of the billing period in which such invoice, issued by ADNOC, is received. AssetCo can defer any reimbursement to the extent it does not possess available funds to make such reimbursement.

**4. *Audit Rights***

ADNOC must maintain and preserve accurate documentation and records pertaining to the performance of the Services for no less than five years after the date of the applicable invoice.

5. ***Relationship between the Parties***

AssetCo and ADNOC's relationship is that of independent contractors. No partnership, joint venture, employment franchise, agency or other form of legal association between AssetCo and ADNOC is intended by the General Services Agreement.

6. ***Undertakings***

ADNOC undertakes that it will use reasonable diligence, skill and care in the performance of the Services and its other obligations pursuant to the General Services Agreement.

7. ***Force Majeure***

(a) An event of force majeure means any event, or combination of events, which was not reasonably foreseeable on the GSA Effective Date and which is beyond the reasonable control of the party affected (and was not caused by the affected party or its affiliates' personnel, contractors or suppliers). A Party claiming relief from its obligations due to the occurrence of an event of Force Majeure shall be relieved of its obligations under the General Services Agreement, but only if and to the extent that:

(i) the event or circumstance that constitutes an event of force majeure continues to delay, prevent or impede the affected party's performance of its obligations;

(ii) there is a direct causal link between the prevention, impediment or delay claimed, and the events invoked;

(iii) the affected party has taken all reasonable precautions and reasonable alternative measures to avoid the effect of such circumstance on the party's ability to perform its obligations under the General Services Agreement;

(iv) the affected party has given notice of such event to the non-affected party; and

(v) the affected party proves the occurrence of an event of force majeure and its effect on such party.

(b) *Force majeure* events include, amongst other things:

(i) flood, lightning, storm, typhoon, tornado, earthquake, landslide, soil erosion, subsistence, washout, radioactive contamination and epidemic;

(ii) war (whether declared or undeclared), blockade, insurrection, military uprising or acts of public enemies; and

(iii) revolution, rebellion, civil war, riot, civil disturbance, civil commotion, terrorist acts, seizure or act of sabotage, imposition of sanctions, embargo or breaking off diplomatic relations.

(c) Trade or labor disputes, strikes, lockout and industrial disturbances that are not on an industry-wide basis will not constitute events of force majeure.

(d) Notwithstanding the foregoing, AssetCo will not be entitled to any relief, reimbursement, suspension, reduction or abatement of its payment obligations.

(e) Neither party will be liable to the other party to the extent any loss, damage, cost or expense is suffered or incurred by such party as a consequence of the occurrence of an event of force majeure.

8. ***Liability and Indemnity***

(a) Notwithstanding the provisions in paragraph 8(b) of "*Summary of Principal Project Documents – General Services Agreement – Liability and Indemnity*" below, neither party shall be liable to the other party for consequential loss or damage, loss of profits, loss of production, loss of opportunity and/or loss of contract.

(b) ADNOC will indemnify and hold harmless AssetCo against:

(i) any claim, demand, action, fine, directive, other penalty or proceedings (whether criminal, regulatory or otherwise) brought or instituted against AssetCo by any third party in connection with, relating to, or arising out of the exercise of its rights or the performance or non-performance by ADNOC of its obligations under the General Services Agreement and against all costs, claims, demands and damages involved therewith; and

(ii) to the extent permissible under applicable law, any liability for any accident, death or injury to any personnel of ADNOC or its affiliates against any loss of or damage to any property belonging to ADNOC or its affiliates or any of their personnel (including personnel seconded to ADNOC or its affiliates) which may arise out, of or in connection with, the General Services Agreement and against all costs, claims, demands and damages involved therewith,

in each case, except to the extent arising out of the gross negligence of AssetCo, where such gross negligence arises as a result of acts, omissions or decisions undertaken pursuant to decision(s) of the Issuer or AssetCo's shareholders with respect to a shareholder's unanimous matter or a shareholder's super majority matter (as set out in the Shareholders' Agreement).

(c) AssetCo will indemnify and hold harmless ADNOC against:

(i) any claim, demand, action, fine, directive, other penalty or proceedings (whether criminal, regulatory or otherwise) brought or instituted against ADNOC by any third party in connection with, relating to, or arising out of the exercise of its rights or the performance or non-performance by AssetCo of its obligations under the General Services Agreement and against all costs, claims, demands and damages involved therewith; and

(ii) to the extent permissible under applicable law, any liability for any accident, death or injury to any personnel of AssetCo against any loss of or damage to any property belonging to AssetCo or any of its personnel which may arise out of or in connection with the General Services Agreement and against all costs, claims, demands and damages involved therewith,

in each case, only to the extent such costs, claims, demands and damages arise as the result of acts, omissions or decisions taken pursuant to decision(s) of the Issuer or AssetCo's shareholders with respect to a shareholders' unanimous matter or a shareholders' super majority matter (as set out in the Shareholders' Agreement).

**9.** ***Insurance***

(b) ADNOC and its affiliates will obtain and maintain (at their own cost) all insurances in conformance with the ADNOC group risk management policies and procedures.

(c) If ADNOC fails to provide or maintain any such insurance coverage, AssetCo will have the right to provide or maintain such coverage and may recover all costs incurred in such provision or maintenance from ADNOC.

**10.** ***Intellectual Property***

Any intellectual property rights (whether or not patentable or registrable) which are made, discovered, produced, generated, or developed by ADNOC (or any person on secondment at ADNOC), in the course of the Services, and all designs, drawings, reports, studies, calculations, machine-readable or computer-generated information or data or other documents produced or generated in the course of the Services (including by an employee of ADNOC or any person on secondment at ADNOC) belong exclusively to, and copyright will vest in, ADNOC.

**11.** ***Assignment***

(a) Except as stated below, neither party can assign, transfer, create an encumbrance over, declare a trust of or otherwise dispose of all or any part of its rights and benefits under the General Services Agreement (including any cause of action arising in connection with any of them) or of any right or interest in any of them.

(b) AssetCo may assign any of its rights and benefits under the General Services Agreement (including any cause of action arising in connection with any of them) by way of security to any provider of debt finance to AssetCo (or a security agent or security trustee on its behalf).

**12. *Governing Law and Dispute Resolution***

(a) The construction, validity and performance of the General Services Agreement are governed by the laws of Abu Dhabi and the federal laws of the UAE.

(b) Resolution of a dispute will follow the procedure below:

(i) parties must engage in good-faith discussions with a spirit of cooperation, using all commercially reasonable efforts to amicably settle any dispute;

(ii) if a dispute is not settled within 90 days from the date the dispute is first notified to the other party, either party may refer the dispute for resolution by the Group Chief Financial Officer of ADNOC and a representative nominated by AssetCo within seven days of such referral, holding a position within AssetCo (or any of its affiliates) that is equivalent in seniority to the Group Chief Financial Officer of ADNOC;

(iii) if a dispute is not settled within 60 days from referral of the dispute to stage (ii) above, either party may refer the dispute for resolution by the chief executive officer of ADNOC and a representative nominated by AssetCo within seven days of such referral, holding a position within AssetCo (or any of its affiliates) that is equivalent in seniority to the chief executive officer of ADNOC; and

(i) if the dispute is not settled within 90 days from the referral of the dispute to stage (iii) above, either party may commence arbitration proceedings. The arbitration will be conducted in accordance with the rules of the International Chamber of Commerce, and are required to be determined by an arbitral tribunal composed of three arbitrators whose award will be final and binding. The legal seat and venue of the arbitration will be London and the arbitration will be conducted in the English language.

## TERMS AND CONDITIONS OF THE BONDS

*The following is the text of the terms and conditions of the Bonds (as defined below) which, except for the paragraphs in italics, will be endorsed on each Individual Certificate (as defined below) and will be attached and (subject to the provisions thereof) apply to the Global Bond Certificates.*

The issue of the U.S.$1,750,000,000 2.16 per cent. Senior Secured Bonds due 2034 (the "**Series D Bonds**") and the U.S.$2,170,000,000 2.94 per cent. Senior Secured Bonds due 2040 (the "**Series E Bonds**", together with the Series D Bonds, the "**Bonds**", which expression shall include any Further Bonds issued pursuant to Condition 15 (*Further Issues*) and consolidated and forming a single series therewith) was authorized by a resolution of the Board of Directors of Galaxy Pipeline Assets Bidco Limited, a limited liability company incorporated on May 26, 2020 and existing under the laws of Jersey, having its registered office at 2nd Floor Sir Walter Raleigh House, 48-50 Esplanade, St. Helier, Jersey, JE2 3QB with registration number 131580 (the "**Issuer**"). The Bonds will be constituted by a first supplemental bond trust deed to be dated on or about February 18, 2021 (the "**Issue Date**") and made between the Issuer and Citicorp Trustee Company Limited as the "**Bond Trustee**", which expression includes the trustee or trustees for the time being thereunder (the "**First Supplemental Bond Trust Deed**"), which will be supplemental to the bond trust deed dated November 5, 2020 among the Issuer and Citicorp Trustee Company Limited in connection with the issuance of the Original Bonds (as defined below) (the "**Principal Bond Trust Deed**" and, together with the First Supplemental Bond Trust Deed, as the same may be amended, supplemented restated and/or novated from time to time, the "**Bond Trust Deed**").

These terms and conditions (the "**Conditions**") include summaries of, and are subject to, the detailed provisions of the Bond Trust Deed. The Issuer, on or about the Issue Date, will also enter into an amendment and restatement agreement in relation to the agency agreement the Issuer had entered into with the Bond Trustee, Citibank, N.A, London Branch as principal paying agent (the "**Principal Paying Agent**"), Citibank, N.A, London Branch as transfer agent (the "**Transfer Agent**") and Citigroup Global Markets Europe AG as registrar (the "**Registrar**") on November 5, 2020 (such agreement, as amended and restated and in relation to the issuance of the Original Bonds and the Bonds, the "**Agency Agreement**", as the same may be amended, supplemented, restated and/or novated from time to time).

References herein to the "**Agents**" are to the Principal Paying Agent, the Transfer Agent and the Registrar and any reference to an "**Agent**" is to any one of them. Unless a contrary indication appears, any reference in these Conditions to the "**Issuer**", the "**Bond Trustee**" and any "**Agent**" shall be construed so as to include its successors in title, permitted assigns and permitted transferees.

The Issuer entered into a U.S.$7.96 billion term loan facility agreement dated June 23, 2020 (as amended and restated on October 21, 2020 and as may be further amended and restated from time to time) (the "**Initial Bank Facility Agreement**") with, among others, First Abu Dhabi Bank PJSC as the facility agent and the financial institutions listed therein as lenders (the "**Lenders**"). On or about June 23, 2020, the Issuer further entered into certain associated interest rate hedging agreements (the "**Hedging Agreements**") in accordance with the Hedging Policy (as defined below) with initially one or more of the Lenders (or their affiliates). The remaining outstanding principal balance of the Intial Bank Facility will be fully prepaid using the proceeds of the Bonds, and the associated interest rate hedging transactions under the Hedging Agreements will be terminated in full, concurrent with such prepayment.

On October 27, 2020, the Issuer entered into a debt service reserve facility agreement (the "**Debt Service Reserve Facility Agreement**") with the financial institutions listed therein as debt service reserve facility providers (each a "**DSR Facility Provider**" and together, the "**DSR Facility Providers**") pursuant to which the DSR Facility Providers have agreed to make available a debt service reserve facility in the aggregate principal amount of U.S.$320,000,000 (the **"Debt Service Reserve Facility**") to meet, amongst other things, any shortfalls in monies credited to the Debt Service Payment Account (as defined below) on any Interest Payment Date to meet scheduled payments of interest and principal on the Bonds.

On November 5, 2020, the Issuer issued the U.S.$1,100,000,000 1.750 per cent. Senior Secured Bonds due 2027 (the "**Series A Bonds**"), the U.S.$ 1,550,000,000 2.625 per cent. Senior Secured Bonds due 2036 (the "**Series B Bonds**") and U.S.$ 1,350,000,000 3.250 per cent. Senior Secured Bonds due 2040 (the "**Series C Bonds**", together with the Series A Bonds and the Series B Bonds, the "**Original Bonds**"). The Original Bonds are constituted by the Principal Bond Trust Deed.

The Issuer's obligations under the Bonds, the Original Bonds and the Debt Service Reserve Facility Agreement are secured under the Security Documents (as defined below) by the Issuer and its parent company, Galaxy Pipeline Assets Holdco Limited (the "**Parent**"), and are subject to the arrangements contained in the Security Trust and Intercreditor Deed (as defined below).

On February 10, 2021 the Issuer entered into a subscription agreement in relation to the Series D Bonds and the Series E Bonds (the "**Series D and E Subscription Agreement**") pursuant to which the Managers (as defined below) agreed to subscribe for the Series D Bonds and the Series E Bonds.

Copies of each of the Bond Documents (as defined below) other than the Series D and E Subscription Agreement are available for inspection during usual business hours at the principal office of the Principal Paying Agent (presently at Citigroup Centre, Canada Square, Canary Wharf, London E14 5LB) and at the Specified Offices (as defined in the Agency Agreement) of each of the Agents, the initial Specified Offices of which are set out below.

The Bondholders are entitled to the benefit of, are bound by, and are deemed to have notice of, all the provisions of the Bond Trust Deed and the Security Trust and Intercreditor Deed, and are deemed to have notice of those provisions of the Agency Agreement applicable to them.

Capitalized terms and expressions used and not otherwise defined in these Conditions will have the meanings given to them in the Bond Trust Deed.

## 1. FORM, DENOMINATION, REGISTER, TITLE AND TRANSFER

### 1.1 Form and denomination

The Bonds are in registered form, in the denomination of U.S.$200,000 and integral multiples of U.S.$1,000 in excess thereof. An individual certificate (each, an "**Individual Certificate**") will be issued to each Bondholder in respect of its registered holding of Bonds. Each Bond and each Individual Certificate will have an identifying number which will be recorded on the relevant Individual Certificate and in the Register (as defined in Condition 1.2 (*Register*)).

Individual Certificates issued with respect to Rule 144A Bonds ("**Rule 144A Individual Certificates**") will bear the Rule 144A Legend (as defined in the Bond Trust Deed), unless determined otherwise in accordance with the provisions of the Agency Agreement by reference to applicable law. Individual Certificates issued with respect to the Regulation S Bonds ("**Regulation S Individual Certificates**") will not bear the Rule 144A Legend.

Upon issue, the Rule 144A Bonds will be represented by a restricted global certificate (the "**Rule 144A Global Bond Certificate**") and the Regulation S Bonds will be represented by the unrestricted global certificate (the "**Regulation S Global Bond Certificate**" and, together with the Rule 144A Global Bond Certificate, the "**Global Bond Certificates**"). The Rule 144A Global Bond Certificate will be deposited with a custodian for, and registered in the name of Cede & Co. as nominee of, The Depository Trust Company ("**DTC**") and the Regulation S Global Bond Certificate will be deposited with Citibank Europe PLC as common depositary, and registered in the name of Citivic Nominees Limited as nominee of the common depositary for Euroclear Bank SA/NV ("**Euroclear**") and Clearstream Banking S.A. ("**Clearstream, Luxembourg**").

*These Conditions are modified by certain provisions contained in the Global Bond Certificates. See "Summary of Provisions Relating to the Bonds While in Global Form".*

Except in the limited circumstances described in the Global Bond Certificates, owners of interests in Bonds represented by the Global Bond Certificates will not be entitled to receive physical Individual Certificates in definitive form in respect of their individual holdings of Bonds. The Bonds are not issuable in bearer form.

### 1.2 Register

The Registrar will maintain outside the United Kingdom a register in respect of the Bonds (the "**Register**") in accordance with the provisions of the Agency Agreement. In these Conditions, the "**Holder**" of a Bond means the Person in whose name such Bond is for the time being registered in the

Register (or, in the case of a joint holding, the first named thereof) and "**Bondholder**" shall be construed accordingly.

1.3 **Title**

Title to the Bonds passes only by transfer and registration in the Register (as defined in Condition 1.2 (*Register*)). The Holder of each Bond shall (except as otherwise required by a court of competent jurisdiction or applicable law) be treated as the absolute owner of such Bond for all purposes (whether or not it is overdue and regardless of any notice of ownership, trust or any other interest therein, any writing on the Individual Certificate relating thereto (other than the endorsed form of transfer) or any notice of any previous loss or theft of such Individual Certificate) and no Person shall be liable for so treating such Holder.

1.4 **Transfers**

Subject to the terms of the Agency Agreement and Condition 1.8 (*Regulations concerning transfers and registration*), a Bond may be transferred by delivering the Individual Certificate in respect of it, with the endorsed form of transfer duly completed and signed, at the Specified Office of the Registrar or the Principal Paying Agent and Transfer Agent. No transfer of a Bond will be valid unless and until entered on the Register.

Where some but not all of the Bonds in respect of which an Individual Certificate is issued are to be transferred, a new Individual Certificate in respect of the Bonds not so transferred will, within five business days of receipt by the Registrar or the relevant Agent of the original Individual Certificate, be mailed by uninsured mail at the risk of the holder of the Bonds not so transferred to the address of such holder appearing on the register of Bondholders or as specified in the form of transfer.

Transfers of interests in the Bonds evidenced by the Global Bond Certificates will be effected in accordance with the rules of the relevant clearing system.

Upon the transfer, exchange or replacement of a Rule 144A Bond, the Principal Paying Agent and Transfer Agent will only deliver Individual Certificates with respect to Rule 144A Bonds that do not bear the Rule 144A Legend if there is delivered to the Principal Paying Agent and Transfer Agent such satisfactory evidence as may be reasonably required by the Issuer, that neither the Rule 144A Legend nor the restrictions on transfer set forth therein are required to ensure compliance with the provisions of the United States Securities Act of 1933, as amended (the "**Securities Act**").

An interest in Bonds represented by the Regulation S Global Bond Certificate may be transferred to a person within the United States subject to any applicable transfer restrictions under the Securities Act.

Interests in Bonds represented by the Rule 144A Global Bond Certificate may be transferred to a person who wishes to take delivery of any such interest in the form of an interest in Bonds represented by the Regulation S Global Bond Certificate only if the Principal Paying Agent and Transfer Agent receives a written certificate from the transferor (in the form provided in the Agency Agreement) to the effect that such transfer is being made in accordance with Rule 903 or 904 of Regulation S.

*Transfers of Bonds are also subject to the restrictions described under "Selling and Transfer Restrictions".*

1.5 **Registration and delivery of Individual Certificates**

Within five business days of the delivery of an Individual Certificate in accordance with Condition 1.4 (*Transfers*), the Registrar will register the transfer in question and deliver a new Individual Certificate of a like principal amount to the Bonds transferred to each relevant Holder at its Specified Office or (as the case may be) the Specified Office of the Principal Paying Agent and Transfer Agent or (at the request and risk of any such relevant Holder) by uninsured first-class mail (airmail if overseas) to the address specified for the purpose by such relevant Holder.

In this paragraph, "**business day**" means a day on which banks are open for general business (including dealings in foreign currencies) in the city where the Registrar or (as the case may be) the Principal Paying Agent and Transfer Agent has its Specified Office.

*Except in the limited circumstances described in "Summary of Provisions Relating to the Bonds While in Global Form", owners of interests in Bonds represented by the Global Bond Certificates will not be entitled to receive physical delivery of Individual Certificates. Issues of Individual Certificates upon transfers of Bonds are subject to compliance by the transferor and transferee with the certification procedures described above and in the Agency Agreement and, in the case of the Rule 144A Bonds, compliance with the Rule 144A Legend.*

1.6 **No charge**

The transfer of a Bond will be effected without charge by or on behalf of the Issuer, the Registrar or the Principal Paying Agent and Transfer Agent but against such indemnity as the Registrar or (as the case may be) the Principal Paying Agent and Transfer Agent may require in respect of any tax or other duty of whatsoever nature which may be levied or imposed in connection with such transfer.

1.7 **Closed periods**

Bondholders may not require transfers to be registered during the period of 15 days ending on the due date for any payment of principal, premium (to the extent premium, if any, is required to be paid under these Conditions) or interest in respect of the Bonds.

1.8 **Regulations concerning transfers and registration**

All transfers of Bonds and entries on the Register are subject to the detailed regulations concerning the transfer of Bonds scheduled to the Agency Agreement. The regulations may be changed by the Issuer with the prior written approval of the Trustee and the Registrar. A copy of the current regulations will be mailed (free of charge) by the Registrar and/or the Principal Paying Agent and Transfer Agent to any Bondholder who requests in writing a copy of such regulations.

**2. STATUS AND PRIORITY OF THE BONDS**

2.1 **Status of the Bonds**

The Bonds constitute direct, unsubordinated and unconditional obligations of the Issuer, are secured in the manner described in this Condition, and shall, save for such exceptions as may be provided by applicable legislation, these Conditions or the Transaction Documents, at all times rank *pari passu* and without any preference among themselves and with all outstanding unsubordinated obligations of the Issuer, present and future, in accordance with the Pre-Enforcement Priority of Payments or, as applicable, the Post-Enforcement Priority of Payments and pursuant to which the Bondholders will receive payment from monies standing to the credit of the Debt Service Payment Account or proceeds from enforcement of the Security only after any obligations secured on a super priority basis, including the Debt Service Reserve Facility Agreement, have been repaid in full.

2.2 **Security**

As continuing security for the payment or discharge of the Secured Obligations (including all moneys payable in respect of the Bonds and otherwise under the Bond Trust Deed, the Security Documents and any deed or other document executed in accordance with the Bond Trust Deed or any Security Document and expressed to be supplemental to the Bond Trust Deed or any Security Document (as applicable) (including the remuneration, expenses and other claims of the Security Agents and any Receiver appointed under any Security Document)), the Issuer has entered in to the Security Documents to which it is a party to create as far as permitted by and subject to compliance with any applicable law, the Security in favor of the Offshore Security Agent or the Onshore Security Agent (as applicable) for itself and on trust for the other Secured Creditors. All Bonds issued by the Issuer will share in the Security constituted by the Security Documents, upon and subject to the terms thereof.

2.3 **Relationship among Bondholders and with other Secured Creditors**

(a) The Bondholders from time to time are Secured Creditors. The Bond Trustee is a Secured Creditor on its own behalf and on behalf of the Bondholders from time to time.

(b) The Bond Trust Deed contains provisions detailing the Bond Trustee's obligations to consider the interests of the Bondholders as regards all discretions of the Bond Trustee (except where expressly provided).

2.4 **Enforceable Security**

In the event of the Security becoming enforceable as provided in the Security Documents, the Security Agents shall, if instructed by the Qualifying Secured Creditors (in accordance with the terms of the Security Trust and Intercreditor Deed) enforce their rights with respect to the Security, but without any liability as to the consequence of such action and without having regard to the effect thereof on, or being required to account for such action to, any particular Secured Creditor, provided that neither Security Agent shall be obliged to take any action unless it is indemnified and/or secured and/or prefunded to its satisfaction.

2.5 **Application after Enforcement or Acceleration**

After the Security has become enforceable in accordance with the terms of the Security Trust and Intercreditor Deed, the Post-Enforcement Priority of Payments shall apply and all amounts received or recovered by the Security Agents pursuant to the terms of any Finance Document and/or in connection with the realization or enforcement of all or part of the Security shall be applied by or on behalf of the Security Agents or, as the case may be, any Receiver, in or towards satisfaction of any amounts due according to the Post-Enforcement Priority of Payments (as set out in the Security Trust and Intercreditor Deed).

2.6 **Bond Trustee, Offshore Security Agent and Onshore Security Agent not liable for Security**

The Bond Trustee, the Offshore Security Agent and the Onshore Security Agent will not make, and will not be liable for any failure to make any investigations in relation to the property which is the subject of the Security, and shall not be bound to enquire into or be liable for any defect or failure in the right or title of the Issuer to the Security, whether such defect or failure was known to the Bond Trustee, the Offshore Security Agent or the Onshore Security Agent or might have been discovered upon examination or enquiry or whether capable of remedy or not, nor will it have any liability for the enforceability of the Security created under the Security Documents whether as a result of any failure, omission or defect in registering or filing or otherwise protecting or perfecting such Security or otherwise. The Bond Trustee, the Offshore Security Agent and the Onshore Security Agent shall have no responsibility for the value of any such Security.

2.7 **Corporate Obligations**

Each Bondholder is deemed to acknowledge and agree that no recourse under any obligation, covenant, or agreement of the Issuer contained in any Transaction Document may be sought by it against any shareholder, officer, agent, employee or director of the Issuer, by the enforcement of any assessment or by any proceeding, by virtue of any statute or otherwise, it being deemed expressly agreed and understood that the Transaction Documents are corporate obligations of the Issuer only. Each Bondholder and each of the Finance Parties (other than the Issuer) is deemed to acknowledge and agree that no personal liability will attach to or be incurred by the shareholders, officers, agents, employees or directors of the Issuer, or any of them, under or by reason of any of the obligations, covenants or agreements of the Issuer contained in any Transaction Document, or implied therefrom, and any and all personal liability of every such shareholder, officer, agent, employee or director for breaches by the Issuer of any such obligations, covenants or agreements, either at law or by statute or constitution, of every such shareholder, officer, agent, employee or director is thereby deemed expressly waived by the parties.

## 3. COVENANTS

3.1 **Bond Trust Deed**

So long as any of the Bonds remains outstanding, the Issuer shall comply with the covenants as set out in the Bond Trust Deed which shall include the covenants as set out in this Condition 3 (*Covenants*).

3.2 **General Covenants – Positive**

So long as any of the Bonds remains outstanding, the Issuer shall:

(a) do all such things as are necessary to maintain its corporate status;

(b) promptly (subject to any applicable Perfection Requirements which will be carried out within the prescribed time limit) obtain, comply with and do all that is necessary to maintain in full force and effect any Authorization required under any law or regulation of a Relevant Jurisdiction:

(i) to enable it to perform its obligations under the Finance Documents;

(ii) to ensure the legality, validity and enforceability or admissibility in evidence of any Finance Document or Project Document; and

(iii) to carry on its business,

where failure to do so has or would reasonably be expected to have a Material Adverse Effect;

(c) comply with all laws to which it may be subject, if failure to comply has or is reasonably likely to have a Material Adverse Effect;

(d) use reasonable endeavors to maintain a rating of the Bonds issued by the Issuer from at least two Rating Agencies and to co-operate with the Rating Agencies in connection with any reasonable request for information in respect of the maintenance of a rating and with any review of its business which may be undertaken by one or more of the Rating Agencies;

(e) use all reasonable endeavors to maintain the listing of the Bonds on the official list of Euronext Dublin, and admission to the trading of the Bonds on the Global Exchange Market of Euronext Dublin for so long as any Bond is outstanding or, if it is unable to do so having used all reasonable endeavors or if the Issuer certifies to the Bond Trustee (upon which certification the Bond Trustee shall be entitled to rely without enquiry or liability) that (x) the maintenance of such listing or admission to trading is impractical or unduly onerous or (y) the listing or admission of trading of the Bonds on other stock exchange or exchanges or securities market or markets would not be materially prejudicial to the interests of the Bondholders (taken as a whole), use all reasonable endeavors to obtain and maintain a quotation or listing and admission to trading of the Bonds on such other stock exchange or exchanges or securities market or markets as the Issuer may (with the prior written approval of the Bond Trustee) decide;

(f) maintain the Debt Service Payment Account and apply all amounts standing to the credit of the Debt Service Payment Account on each Interest Payment Date in accordance with the Pre-Enforcement Priority of Payments and the provisions of the Security Trust and Intercreditor Deed;

(g) maintain in good working order and condition (ordinary wear and tear excepted) all of its assets necessary or desirable in the conduct of its business where failure to do so has or would reasonably be expected to have a Material Adverse Effect;

(h) ensure that at all times any unsecured and unsubordinated claims of a Secured Creditor against it under the Finance Documents rank at least pari passu with the claims of all its other unsecured and unsubordinated creditors except those creditors whose claims are mandatorily preferred by laws of general application to companies;

(i) ensure that all hedging arrangements required by the Hedging Policy are implemented in accordance with the terms of the Hedging Policy;

(j) pay and discharge all Taxes imposed upon it or its assets within the time period allowed (taking into account any applicable grace period or extension) without incurring penalties, unless and only to the extent that:

(i) payment of such Tax is being contested in good faith and such payment can be lawfully withheld; or

(ii) failure to pay those Taxes does not have and would not reasonably be expected to have a Material Adverse Effect; and

(k) exercise, or procure the exercise of, its rights under the Shareholders' Agreement to:

(i) prevent any amendments to the Dividend Policy (other than as expressly contemplated pursuant to the terms of the Shareholders' Agreement (including in respect of a Non-Dividend Event)) which would be material and adverse to the interests of the Bondholders (taken as a whole);

(ii) prevent any amendments to the memorandum of association of AssetCo which would be material and adverse to the interests of the Bondholders (taken as a whole);

(iii) ensure that no Project Document is amended, novated or supplemented in a manner that has or would reasonably be expected to have a Material Adverse Effect;

(iv) prevent incurrence of any Financial Indebtedness and/or granting of any Security by AssetCo other than (i) any Working Capital Loan (as defined in the Lease Agreement (in its original form)) and (ii) any loans or other financial accommodation provided to AssetCo by any of its shareholders for the purpose of ordinary course of business activities of AssetCo and which would not be material and adverse to the interests of the Bondholders (taken as a whole);

(v) prevent AssetCo from making any acquisitions or disposals in each case which has or would reasonably be expected to have a Material Adverse Effect;

(vi) ensure that all distributions of AssetCo Free Cash to which the Issuer is entitled under the Shareholders' Agreement are distributed to the Issuer; and

(l) subject to the Agreed Security Principles:

(i) promptly do all such acts or execute all such documents (including assignments, transfers, mortgages, charges, notices and instructions) as any Security Agent may reasonably specify (and in such form as that Security Agent may reasonably require in favor of that Security Agent or any of its nominees):

(A) to perfect the Security created or intended to be created under or evidenced by the Transaction Security Documents (which may include the execution of a mortgage, charge, assignment or other Security over all or any of the assets which are, or are intended to be, the subject of the Transaction Security) or for the exercise of any rights, powers and remedies of that Security Agent or the Secured Creditors provided by or pursuant to the Senior Debt Documents or by law; and/or

(B) following the delivery of an Acceleration Notice under and as defined in the Security Trust and Intercreditor Deed, to facilitate the realization of the assets which are, or are intended to be, the subject of the Transaction Security; and

(ii) take all such action as is available to it (including making all filings, recordings and registrations) as may be necessary for the purpose of the creation, perfection, protection or maintenance of any Security conferred or intended to be conferred on the Security Agents or the Secured Creditors by or pursuant to the Senior Debt Documents.

3.3 **General Covenants – Negative**

So long as any of the Bonds remains outstanding, the Issuer shall not:

(a) enter into any amalgamation, demerger, merger, consolidation, or corporate reconstruction other than a Permitted Transaction;

(b) enter into any transaction with any person otherwise than on arm's length terms (or better for the Issuer) provided that the following shall not be in breach of this undertaking if permitted under applicable law:

(i) any Subordinated Indebtedness;

(ii) any fees, costs and expenses payable under the Finance Documents in the amounts set out therein;

(iii) a Permitted Transaction or Permitted Payment; or

(iv) any other transactions between the Issuer and AssetCo which are permitted by the Finance Documents or contemplated under the terms of the Transaction Documents;

(c) amend, vary, novate, supplement, supersede, waive or terminate any term of a Finance Document, except in accordance with the provisions of the Security Trust and Intercreditor Deed and the terms of the relevant Finance Document;

(d) amend, vary, novate, supplement, supersede, waive or terminate:

(i) the constitutional documents of the Issuer in a way which would be reasonably likely to have a Material Adverse Effect; or

(ii) any term of the Shareholders' Agreement in a way that has or would reasonably be expected to have a Material Adverse Effect;

(e) compromise or settle any claim, litigation or arbitration which would be reasonably likely to have a Material Adverse Effect without prior notification to the Bond Trustee and the Security Agents; and

(f) cause or do anything to change its centre of main interests (as that term is used in Article 3(1) of Regulation (EU) 2015/848 of 20 May 2015 on insolvency proceedings (recast)).

3.4 **AssetCo Shares**

The Issuer shall not dispose of any shares in AssetCo except to the extent required pursuant to article 17, article 18 or article 19 of the Shareholders' Agreement.

3.5 **Negative Pledge**

(a) Except as permitted under paragraph (b) below:

(i) the Issuer shall not create or permit to subsist any Security over any of its assets; and

(ii) the Issuer shall not:

(A) sell, transfer or otherwise dispose of any of its assets on terms whereby they are or may be leased to or re-acquired by the Issuer;

(B) sell, transfer or otherwise dispose of any of its receivables on recourse terms;

(C) enter into any arrangement under which money or the benefit of a bank or other account may be applied, set off or made subject to a combination of accounts; or

(D) enter into any other preferential arrangement having a similar effect,

in circumstances where the arrangement or transaction is entered into primarily as a method of raising Financial Indebtedness or of financing the acquisition of an asset (such arrangement or transaction described hereunder being "**Quasi-Security**").

(b) Paragraph (a) above does not apply to any Security or (as the case may be) Quasi-Security, which is:

(i) Permitted Security; or

(ii) a Permitted Transaction.

(c) The Issuer shall not grant Security or Quasi-Security over any of its assets which are subject to the Transaction Security except for any Permitted Security under paragraph (b) of the definition thereof.

3.6 **Holding Company**

The Issuer shall not trade, carry on any business, own any assets or incur any liabilities except for:

(a) normal holding company activities, including all activities contemplated by or in connection with the Transaction Documents or referred to in the definition of Permitted Payment as carried on by the Issuer;

(b) the entry into and performance of its obligations under the Transaction Documents;

(c) the provision of management and administrative services of a type customarily provided by a holding company to its subsidiaries;

(d) any Financial Indebtedness and/or other liabilities incurred and any loan, guarantee, security or payment made and/or transactions entered into under the Finance Documents, any Senior Debt Documents or in respect of any other Permitted Financial Indebtedness;

(e) carrying on business, incurring any liability or owning any asset solely to the extent necessary to maintain its corporate existence;

(f) activities desirable to maintain Tax status;

(g) incurring liability to pay Tax and paying that Tax (but not, for the avoidance of doubt, the trading, carrying on of business, owning of assets or incurring of liabilities which triggered such liability to pay Tax other than as otherwise permitted under the Finance Documents);

(h) making claims (and the receipt of any related proceeds) for rebates or indemnification with respect to Taxes;

(i) ownership of shares in AssetCo and any liabilities incurred or payments made by a holding company in respect of its share capital and professional fees, employee costs, administration costs and Taxes in each case incurred in the ordinary course of its business as a holding company and not expressly prohibited under the Finance Documents;

(j) ownership of credit balances in bank accounts, cash and Cash Equivalent Investments;

(k) the making of any Permitted Guarantee, Permitted Loan, Permitted Security, Permitted Share Issue, Permitted Transaction and/or Treasury Transaction;

(l) the receipt of any Permitted Payments and the making of any Permitted Payments to the Parent, a Sponsor or a Sponsor Affiliate;

(m) the receipt of the proceeds of any New Shareholder Injection by the Issuer and incurrence and payment of Subordinated Indebtedness;

(n) incurring liabilities arising by operation of law;

(o) activities in connection with any litigation or court or other proceedings that are, in each case, being contested in good faith; or

(p) those activities, rights, liabilities and other obligations arising in connection with any employee or management incentive or participation scheme operated by the Issuer or any Holding Company thereof or in connection with any investment in the Issuer or any Holding Company thereof which does not result in any payment in, or receipt of, cash (as applicable) which is not a Permitted Payment.

3.7 **Loans or credit**

(a) Except as permitted under paragraph (b) below, the Issuer shall not be a creditor in respect of any Financial Indebtedness.

(b) Paragraph (a) above does not apply to a Permitted Loan or a Permitted Transaction.

3.8 **No guarantees or indemnities**

(a) Except as permitted under paragraph (b) below, the Issuer shall not incur or allow to remain outstanding any guarantee in respect of any obligation of any person.

(b) Paragraph (a) above does not apply to a guarantee or indemnity which is a Permitted Guarantee or a Permitted Transaction.

3.9 **Limitation on incurrence of Financial Indebtedness**

(a) Except as permitted under paragraph (b) below, the Issuer shall not incur or allow to remain outstanding any Financial Indebtedness other than Permitted Financial Indebtedness or a Permitted Transaction.

(b) Paragraph (a) above does not apply to Financial Indebtedness which is Permitted Financial Indebtedness or a Permitted Transaction.

3.10 **Share capital**

The Issuer shall not issue any shares except pursuant to a Permitted Share Issue or a Permitted Transaction.

3.11 **Treasury Transactions**

The Issuer shall not enter into any Treasury Transaction, other than:

(a) the hedging transactions documented by the Hedging Agreements;

(b) spot and forward delivery foreign exchange contracts entered into in connection with any future Permitted Additional Financial Indebtedness; and

(c) Treasury Transactions entered into for the hedging of actual or projected real exposures arising in the ordinary course of its day-to-day business, provided that they are not for speculative purposes.

3.12 **Distributions and shareholder loans**

(a) Except as permitted under paragraph (b) below, the Issuer shall not:

(i) declare, make or pay any dividend, charge, fee or other distribution (or interest on any unpaid dividend, charge, fee or other distribution) (whether in cash or in kind) on or in respect of its share capital (or any class of its share capital);

(ii) repay or distribute any dividend or share premium reserve;

(iii) pay any management, advisory or other fee or other amount to or to the order of any of the shareholders of the Issuer, AssetCo, a Sponsor or, in each case, their Affiliates;

(iv) redeem, repurchase, defease, retire or repay any of its share capital or resolve to do so;

(v) repay or prepay any amount (in cash or in kind) (including, without limitation, in respect of principal, interest, capitalized interest, commission, charges and fees) under any Subordinated Indebtedness; or

(vi) make a loan to a Sponsor or its Affiliates, each a "**Restricted Payment**".

(b) Paragraph (a) above does not apply to:

(i) a Permitted Payment; or

(ii) a Permitted Transaction (other than one referred to in paragraph (c) of the definition of that term).

## 4. INFORMATION COVENANTS

### 4.1 Financial Statements

(a) The Issuer shall deliver to the Bond Trustee and publish, in a manner permitted by the rules of Euronext Dublin (or any other or further stock exchange or stock exchanges or any relevant authority or authorities on which the Bonds may, from time to time, be listed or admitted to trading), as they become available, but in any event within 180 days after the end of its Financial Year, copies of the Issuer's audited annual financial statements for the most recent Financial Year, audited by the Auditors (and including their report) and prepared in accordance with Accounting Principles (the "**Annual Financial Statements**").

(b) The Issuer shall as soon as the same become available, but in any event within 60 days after the end of each Financial Quarter in each Financial Year, deliver to the Bond Trustee and publish, in a manner permitted by the rules of Euronext Dublin (or any other or further stock exchange or stock exchanges or any relevant authority or authorities on which the Bonds may, from time to time, be listed or admitted to trading), the Issuer's unaudited management accounts for that Financial Quarter (the "**Quarterly Management Accounts**").

(c) The Issuer shall ensure that each set of Annual Financial Statements and Quarterly Management Accounts delivered by it pursuant to this Condition:

(i) shall be certified by a director of the Issuer as giving a true and fair view (in the case of any Annual Financial Statements) or fairly representing (in the case of any Quarterly Management Accounts) its financial condition and operations as at the date at which those financial statements or management accounts were drawn up;

(ii) in the case of the Annual Financial Statements, shall be accompanied by a letter addressed to management of the Issuer by the Auditors of those Annual Financial Statements; and

(iii) in the case of the Annual Financial Statements, shall include a balance sheet, a profit and loss account and a cashflow statement.

### 4.2 Compliance Certificate

(a) The Issuer will provide to the Bond Trustee a Compliance Certificate (i) with each set of its Annual Financial Statements and (ii) with each set of its Quarterly Management Accounts.

(b) The Compliance Certificate shall state:

(i) the DSCR with respect to the four most recent Financial Quarters and showing in reasonable detail the calculations thereof; and

(ii) that a review has been conducted of the activities of the Issuer and its performance under the Finance Documents, and that the Issuer has fulfilled all obligations thereunder or, if there has been a default in the fulfilment of any such obligation, specifying each such default and the nature and status thereof.

(c) Each Compliance Certificate shall be signed by an authorized signatory of the Issuer.

4.3 **Regulatory Information**

(a) The Issuer undertakes to furnish to the Bond Trustee such information as Euronext Dublin (or any other or further stock exchange or stock exchanges or any relevant authority or authorities on which the Bonds may, from time to time, be listed or admitted to trading) may require as necessary in connection with the listing or admission to trading on such stock exchange or relevant authority of such instruments at the same time as such information is provided to Euronext Dublin (or any other or further stock exchange or stock exchanges or any relevant authority or authorities on which the Bonds may, from time to time, be listed or admitted to trading).

(b) So long as the Bonds remain outstanding and during any period during which the Issuer is not subject to Section 13 or 15(d) of the Exchange Act nor exempt therefrom pursuant to Rule 12g3-2(b) of such Act, the Issuer shall furnish to the Bondholders (with a copy to the Bond Trustee) and to securities analysts and prospective investors, upon their request, the information required to be delivered pursuant to Rule 144A(d)(4) under the Securities Act.

(c) Contemporaneously with the provision of the information discussed in this Condition 4.3, the Issuer will also either provide the information to a Regulatory Information Service or file a press release with the appropriate internationally recognized wire services with respect to such information and post such press release on the Issuer's website.

The Bond Trustee shall have no obligation to read or analyze any information or report delivered to it under this Condition and shall have no obligation to determine whether any such information or report complies with the provisions of this Condition and shall not be deemed to have notice of anything disclosed therein and shall incur no liability by reason thereof.

4.4 **Notification of a Non-Dividend Event**

The Issuer shall notify the Bond Trustee of any Non-Dividend Event or any Non-Dividend Event End Date promptly upon becoming aware of its occurrence.

4.5 **AssetCo financial statements**

The Issuer shall promptly, but in any event within 180 days after the end of each Financial Year, supply a copy to the Bond Trustee of the annual audited financial statements of AssetCo.

**5. INTEREST**

5.1 **Rate of Interest**

(a) The Series D Bonds bear interest from (and including) the Issue Date at the rate of 2.16 per cent. per annum, payable semi-annually in arrear on March 31 and September 30 in each year (each an "**Interest Payment Date**"), beginning March 31, 2021, provided that the last Interest Payment Date shall be the Series D Bonds Maturity Date (as defined below).

(b) The Series E Bonds bear interest from (and including) the Issue Date at the rate of 2.94 per cent. per annum, payable semi-annually in arrear on each Interest Payment Date, beginning March 31, 2021, provided that the last Interest Payment Date shall be the Series E Bonds Maturity Date (as defined below).

5.2 **Interest Accrual**

Each Bond will cease to bear interest from the due date for redemption unless, upon due presentation, payment of principal and any premium (to the extent premium, if any, is required to be paid under these Conditions) is improperly withheld or refused. In such event, it shall continue to bear interest at such rate (both before and after judgment) until whichever is the earlier of (a) the day on which all sums due in respect of such Bond up to that day are received by or on behalf of the relevant Bondholder and (b) the day seven days after the Bond Trustee or the Principal Paying Agent and Transfer Agent has notified the Bondholders of receipt of all sums due in respect of all the Bonds up to that seventh day (except to the extent that there is failure in the subsequent payment to the relevant Holders under these Conditions).

5.3 **Interest Period**

If interest is required to be calculated for a period of less than a complete Interest Period (as defined below), the relevant day-count fraction will be determined on the basis of a 360-day year consisting of 12 months of 30 days each and, in the case of an incomplete month, the number of days elapsed. The period beginning on (and including) the Issue Date and ending on (but excluding) the first Interest Payment Date and each successive period beginning on (and including) an Interest Payment Date and ending on (but excluding) the next succeeding Interest Payment Date is called an "**Interest Period**".

## 6. REDEMPTION OF THE BONDS

### 6.1 Redemption at Maturity

(a) Unless previously redeemed or purchased and cancelled as provided below, the Issuer will redeem in full:

(i) the Series D Bonds at their principal amount Outstanding on March 31, 2034 (the "**Series D Bonds Maturity Date**"); and

(ii) the Series E Bonds at their principal amount Outstanding on September 30, 2040 (the "**Series E Bonds Maturity Date**"),

together with accrued (and unpaid) interest up to but excluding the Series D Bonds Maturity Date or the Series E Bonds Maturity Date (as applicable).

(b) Other than as specified below, the Bonds are not optionally redeemable prior to the Series D Bonds Maturity Date in respect of the Series D Bonds and the Series E Bonds Maturity Date in respect of the Series E Bonds.

### 6.2 Pre-funding Requirements on the Bonds

(a) On each Quarter Date (which is not an Interest Payment Date), the Issuer shall, in accordance with the Pre-Enforcement Priority of Payments, credit to the Pre-Funding Ledger in respect of the Series D Bonds on account of (i) accrued and unpaid interest on the Series D Bonds as at such Quarter Date and (ii) a proportion of the scheduled amortization payment falling due on the next following Interest Payment Date with respect to the Series D Bonds the amounts indicated in the table below (based on the initial principal amount of the Series D Bonds) for each Quarter Date:

| Quarter Date | Accrued Interest (U.S.$) | Amortization payment (U.S.$) |
|---|---:|---:|
| December 31, 2020 | - | - |
| June 30, 2021 | 9,450,000 | - |
| December 31, 2021 | 9,450,000 | 32,629,536 |
| June 30, 2022 | 9,080,105 | 30,064,906 |
| December 31, 2022 | 8,737,969 | 31,299,612 |
| June 30, 2023 | 8,383,054 | 31,277,262 |
| December 31, 2023 | 8,027,143 | 32,538,064 |
| June 30, 2024 | 7,658,172 | 30,261,024 |
| December 31, 2024 | 7,316,911 | 30,942,432 |
| June 30, 2025 | 6,965,922 | 31,523,090 |
| December 31, 2025 | 6,607,241 | 32,760,906 |
| June 30, 2026 | 6,235,637 | 29,512,050 |
| December 31, 2026 | 5,899,841 | 30,664,707 |
| June 30, 2027 | 5,551,874 | 30,623,165 |
| December 31, 2027 | 5,203,453 | 33,150,083 |
| June 30, 2028 | 4,826,422 | 33,276,242 |
| December 31, 2028 | 4,450,187 | 33,995,171 |
| June 30, 2029 | 4,063,588 | 33,273,070 |
| December 31, 2029 | 3,684,303 | 34,514,997 |
| June 30, 2030 | 3,291,822 | 34,359,928 |

| Quarter Date | Accrued Interest (U.S.$) | Amortization payment (U.S.$) |
|---|---|---|
| December 31, 2030 .......................... | 2,900,238 | 35,621,419 |
| June 30, 2031 ................................. | 2,495,229 | 36,295,049 |
| December 31, 2031 .......................... | 2,081,679 | 37,604,789 |
| June 30, 2032 ................................. | 1,654,207 | 37,911,456 |
| December 31, 2032 .......................... | 1,225,589 | 38,701,155 |
| June 30, 2033 ................................. | 785,704 | 33,931,775 |
| December 31, 2033 .......................... | 399,300 | 35,120,208 |

(b) On each Quarter Date (which is not an Interest Payment Date), the Issuer shall, in accordance with the Pre-Enforcement Priority of Payments, credit to the Pre-Funding Ledger in respect of the Series E Bonds on account of (i) accrued and unpaid interest on the Series E Bonds as at such Quarter Date and (ii) a proportion of the scheduled amortization payment falling due on the next following Interest Payment Date with respect to the Series E Bonds the amounts indicated in the table below (based on the initial principal amount of the Series E Bonds) for each Quarter Date:

| Quarter Date | Accrued Interest (U.S.$) | Amortization payment (U.S.$) |
|---|---|---|
| December 31, 2020 .......................... | - | - |
| June 30, 2021 ................................. | 15,949,500 | - |
| December 31, 2021 .......................... | 15,949,500 | 17,971,027 |
| June 30, 2022 ................................. | 15,672,210 | 16,558,533 |
| December 31, 2022 .......................... | 15,415,729 | 17,238,559 |
| June 30, 2023 ................................. | 15,149,670 | 17,226,249 |
| December 31, 2023 .......................... | 14,882,862 | 17,920,648 |
| June 30, 2024 ................................. | 14,606,265 | 16,666,547 |
| December 31, 2024 .......................... | 14,350,441 | 17,041,839 |
| June 30, 2025 ................................. | 14,087,324 | 17,361,641 |
| December 31, 2025 .......................... | 13,818,440 | 18,043,380 |
| June 30, 2026 ................................. | 13,539,869 | 16,254,042 |
| December 31, 2026 .......................... | 13,288,141 | 16,888,879 |
| June 30, 2027 ................................. | 13,027,290 | 16,865,999 |
| December 31, 2027 .......................... | 12,766,098 | 18,257,723 |
| June 30, 2028 ................................. | 12,483,459 | 18,327,207 |
| December 31, 2028 .......................... | 12,201,416 | 18,723,163 |
| June 30, 2029 ................................. | 11,911,604 | 18,325,460 |
| December 31, 2029 .......................... | 11,627,275 | 19,009,463 |
| June 30, 2030 ................................. | 11,333,053 | 18,924,057 |
| December 31, 2030 .......................... | 11,039,505 | 19,618,835 |
| June 30, 2031 ................................. | 10,735,892 | 19,989,844 |
| December 31, 2031 .......................... | 10,425,876 | 20,711,195 |
| June 30, 2032 ................................. | 10,105,423 | 20,880,095 |
| December 31, 2032 .......................... | 9,784,112 | 21,315,029 |
| June 30, 2033 ................................. | 9,454,355 | 18,688,248 |
| December 31, 2033 ........................ | 9,164,689 | 19,342,789 |
| June 30, 2034 ................................. | 8,865,356 | 43,227,419 |
| December 31, 2034 ........................ | 8,135,145 | 44,752,661 |
| June 30, 2035 ................................. | 7,380,399 | 45,592,046 |
| December 31, 2035 ........................ | 6,610,427 | 47,176,435 |
| June 30, 2036 ................................. | 5,815,014 | 36,990,100 |
| December 31, 2036 ........................ | 5,220,080 | 37,778,640 |
| June 30, 2037 ................................. | 4,608,848 | 37,842,924 |
| December 31, 2037 ........................ | 3,995,923 | 39,163,549 |
| June 30, 2038 ................................. | 3,362,600 | 39,526,533 |
| December 31, 2038 ........................ | 2,722,758 | 40,885,969 |
| June 30, 2039 ................................. | 2,061,921 | 41,426,354 |

| Quarter Date | Accrued Interest (U.S.$) | Amortization payment (U.S.$) |
|---|---|---|
| December 31, 2039 | 1,391,677 | 42,831,413 |
| June 30, 2040 | 699,749 | 43,553,338 |

(c) In the event of any redemption of the Bonds in part (other than by way of scheduled amortization pursuant to Condition 6.3 (*Scheduled Principal Repayments*)), the amount indicated in this Condition 6.2 for any Quarter Date which has yet to occur in respect of any Series of Bonds shall be reduced in the proportion that the amount applied in redemption of such Series of Bonds bears to the principal amount Outstanding of such series of Bonds immediately prior to such redemption.

6.3 **Scheduled Principal Repayments**

(a) Unless redeemed early as described in this Condition, the principal amount Outstanding on the Series D Bonds will be repayable in semi-annual installments on the Interest Payment Dates as follows in accordance with the Pre-Enforcement Priority of Payments:

| Scheduled Payment Date | Per U.S.$1,000 of Original Principal Amount Payable (in U.S.$) |
|---|---|
| March 31, 2021 | - |
| September 30, 2021 | - |
| March 31, 2022 | 39.14 |
| September 30, 2022 | 36.20 |
| March 31, 2023 | 37.56 |
| September 30, 2023 | 37.66 |
| March 31, 2024 | 39.04 |
| September 30, 2024 | 36.11 |
| March 31, 2025 | 37.14 |
| September 30, 2025 | 37.96 |
| March 31, 2026 | 39.32 |
| September 30, 2026 | 35.53 |
| March 31, 2027 | 36.82 |
| September 30, 2027 | 36.87 |
| March 31, 2028 | 39.90 |
| September 30, 2028 | 39.81 |
| March 31, 2029 | 40.91 |
| September 30, 2029 | 40.14 |
| March 31, 2030 | 41.53 |
| September 30, 2030 | 41.44 |
| March 31, 2031 | 42.86 |
| September 30, 2031 | 43.76 |
| March 31, 2032 | 45.24 |
| September 30, 2032 | 45.36 |
| March 31, 2033 | 46.55 |
| September 30, 2033 | 40.89 |
| March 31, 2034 | 42.26 |

(b) Unless redeemed early as described in this Condition, the principal amount Outstanding on the Series E Bonds will be repayable in semi-annual installments on the Interest Payment Dates as follows in accordance with the Pre-Enforcement Priority of Payments:

| Scheduled Payment Date | Per U.S.$1,000 of Original Principal Amount Payable (in U.S.$) |
|---|---|
| March 31, 2021 | - |
| September 30, 2021 | - |
| March 31, 2022 | 17.39 |
| September 30, 2022 | 16.08 |
| March 31, 2023 | 16.68 |
| September 30, 2023 | 16.73 |

| Scheduled Payment Date | Per U.S.$1,000 of Original Principal Amount Payable |
|---|---|
| March 31, 2024 | 17.34 |
| September 30, 2024 | 16.04 |
| March 31, 2025 | 16.50 |
| September 30, 2025 | 16.86 |
| March 31, 2026 | 17.47 |
| September 30, 2026 | 15.78 |
| March 31, 2027 | 16.35 |
| September 30, 2027 | 16.38 |
| March 31, 2028 | 17.72 |
| September 30, 2028 | 17.68 |
| March 31, 2029 | 18.17 |
| September 30, 2029 | 17.83 |
| March 31, 2030 | 18.45 |
| September 30, 2030 | 18.40 |
| March 31, 2031 | 19.04 |
| September 30, 2031 | 19.44 |
| March 31, 2032 | 20.09 |
| September 30, 2032 | 20.15 |
| March 31, 2033 | 20.68 |
| September 30, 2033 | 18.16 |
| March 31, 2034 | 18.77 |
| September 30, 2034 | 45.78 |
| March 31, 2035 | 47.32 |
| September 30, 2035 | 48.28 |
| March 31, 2036 | 49.87 |
| September 30, 2036 | 37.30 |
| March 31, 2037 | 38.32 |
| September 30, 2037 | 38.43 |
| March 31, 2038 | 39.71 |
| September 30, 2038 | 40.12 |
| March 31, 2039 | 41.43 |
| September 30, 2039 | 42.02 |
| March 31, 2040 | 43.38 |
| September 30, 2040 | 43.86 |

(c) In the event of any redemption of the Bonds in part (other than by way of scheduled amortization pursuant to this Condition 6.3), the amount indicated in this Condition 6.3 for any Quarter Date which has yet to occur in respect of any series of Bonds shall be reduced in the proportion that the amount applied in redemption of such series of Bonds bears to the principal amount Outstanding of such series of Bonds immediately prior to such redemption.

6.4 **Optional Redemption**

(a) The Issuer may redeem all or part of the Bonds upon not less than 30 nor more than 60 days' notice to the Bondholders in accordance with Condition 16 (*Notices*), at a redemption price equal to (i) 100% of the principal amount of the Bonds to be redeemed *plus* (b) accrued and unpaid interest on the principal amount of the Bonds to be redeemed to, but not including, the redemption date (without prejudice to the right of the holders of record of such Bonds on the relevant Record Date to receive interest due on the relevant scheduled payment date to the extent that such date precedes the redemption date) *plus* (c) the Applicable Premium as of the redemption date.

(b) If the optional redemption date is on or after an interest record date and on or before the related Interest Payment Date, then the accrued and unpaid interest, if any, will be paid to the Person in whose name the Bond is registered at the close of business on such record date, and no additional interest will be payable to Holders whose Bonds will be subject to redemption by the Issuer.

(c) Notices of redemption delivered in accordance with this Condition 6.4 will specify (i) the date fixed for redemption, (ii) the amount to be redeemed. In addition, the Issuer shall give not less than two days notice to the Bondholders in accordance with Condition 16 (*Notice*) prior to the redemption date notifying the Bondholders on the Record Date of the Applicable Premium and the applicable redemption price (determined in accordance with Condition 6.4(a)). No such notice of redemption may be given by the Issuer unless it shall have delivered to the Bond Trustee an Officers' Certificate (upon which the Bond Trustee may rely absolutely and without liability to, or further enquiry of, any person) that it will have the funds, not subject to the interest of any other person, required to redeem the Bonds at the redemption price of the Bonds plus accrued and unpaid interest, if any, after taking into account its obligations to make payments of a more senior or equal ranking in accordance with the Pre-Enforcement Priority of Payments on the date specified for redemption. Upon the expiry of any notice of redemption delivered in accordance with this Condition 6.4, the Issuer shall be bound to redeem the Bonds in accordance with this Condition 6.4.

6.5 **Redemption for Taxation Reasons**

The Issuer may redeem the Bonds in whole (but not in part) at their principal amount Outstanding together with accrued (and unpaid) interest thereon up to but excluding the date of redemption if, on any Interest Payment Date, the Issuer is or will become obliged to make any withholding or deduction for, or on account of, any Taxes, duties or charges of whatsoever nature from payments in respect of any Bonds (a "**Tax Event**"), subject to the following:

(a) that the Issuer has given not less than 30 nor more than 60 days' notice to the Bond Trustee and the Bondholders in accordance with Condition 16 (*Notices*) and the Registrar and the Principal Paying Agent of its intention to redeem all (but not some only) of the Bonds;

(b) that prior to giving any such notice, the Issuer has provided to the Bond Trustee:

(i) a legal opinion (addressed to the Bond Trustee) from a firm of lawyers in the applicable jurisdiction, opining that the consequence of (x) any change in, or amendment to, the laws or regulations of Jersey and/or any other taxing jurisdiction that the Issuer is, or would at the time of the relevant payment be, subject to and/or, in each case, any political or governmental subdivision or any authority thereof or therein having power to tax, or (y) any change in the application or official interpretation of such laws or regulations, which change or amendment becomes effective on or after the Issue Date, is a Tax Event;

(ii) a certificate signed by two directors of the Issuer to the effect that the obligation to make such withholding or deduction cannot be avoided (upon which certificate the Bond Trustee may rely absolutely and without enquiry or liability); and

(iii) a certificate signed by two directors of the Issuer to the effect that it will have the funds on the Interest Payment Date, not subject to the interest of any other person, required to redeem the Bonds pursuant to this Condition and meet its payment obligations of a higher priority under the Pre-Enforcement Priority of Payments (upon which certificate the Bond Trustee may rely absolutely and without enquiry or liability).

6.6 **Mandatory Redemption for Termination of Project Documents or the Shareholders' Agreement**

(a) If a Project Document or the Shareholders' Agreement is terminated and, in respect of the Shareholders' Agreement or the General Services Agreement, such termination has or would reasonably be expected to have a Material Adverse Effect, the Issuer shall:

(i) notify the Bond Trustee promptly upon becoming aware the same; and

(ii) promptly upon receipt by it of amounts due to it from AssetCo in accordance with the Shareholders' Agreement following such termination (and in any event within 30 Business Days (as defined in the Shareholders' Agreement (in its original form)) following such termination), apply such amounts to redeem all of the Bonds at a redemption price equal to 100% of principal amount Outstanding of the Bonds being redeemed plus accrued and unpaid interest up to but excluding the date of redemption (without, for the avoidance of doubt, any make-whole premium).

(b) The Issuer shall take such action as is available to it under the Shareholders' Agreement to ensure that the payments to it in accordance with the terms of the Shareholders' Agreement are made as soon as practicable following such termination.

6.7 **Mandatory Redemption for a Compulsory Transfer Event**

(a) Subject to the Pro Rata Allocation Mechanic, the Issuer shall apply the Allocated Amount of Transfer Event Proceeds in redeeming the Bonds in whole or in part at a redemption price equal to 100 per cent. of the principal amount of the Bonds being redeemed plus any accrued and unpaid interest up to but excluding the date of redemption.

(b) For the purpose of this Condition 6.7:

(i) "**Allocated Amount**" means an amount equal the proportion of the aggregate principal amount Outstanding of the Bonds and the aggregate of any other outstanding Secured Debt attributable to the percentage of the AssetCo Shares sold pursuant to a Transfer Event determined in accordance with the following formula:

$$X = \frac{Y \times Z}{N}$$

where:

X = the aggregate principal amount of the Bonds and any other Secured Debt to be redeemed or prepaid

Y = the percentage of the issued share capital of AssetCo that the Relevant AssetCo Shares represent

Z = the aggregate principal amount Outstanding of the Bonds and the aggregate principal amount outstanding of any other Secured Debt (including any capitalized or deferred amounts) as at the date of redemption or prepayment

N = the percentage of the issued share capital of AssetCo held by the Issuer immediately prior to the sale of the Relevant AssetCo Shares

(ii) "**Relevant AssetCo Shares**" means the issued share capital of AssetCo in respect of which ADNOC HoldCo (or any ADNOC HoldCo Group Transferee (as defined in the Shareholders' Agreement (in its original form))) is entitled to exercise, and does exercise, following the occurrence of a Transfer Event, its rights to compulsorily acquire such AssetCo Shares in accordance with the terms of the Shareholders' Agreement (in its original form).

(iii) "**Transfer Event**" has the meaning given to it in the Shareholders' Agreement (in its original form).

(iv) "**Transfer Event Proceeds**" means the proceeds received by the Issuer from ADNOC HoldCo (or any ADNOC HoldCo Group Transferee (as defined in the Shareholders' Agreement (in its original form))) in respect of the Relevant AssetCo Shares in accordance with the terms of the Shareholders' Agreement (in its original form).

6.8 **Purchases**

The Issuer may at any time purchase Bonds in any manner and at any price. The Bonds so purchased, while held by or on behalf of any of them, shall not entitle them to vote at any meetings of the Bondholders and shall not be deemed to be outstanding for the purposes of, inter alia, calculating quorums at meetings of the Bondholders or for the purposes of Conditions 8 (*Bond Events of Default*), 11.2 (*Meetings of Bondholders*) and 13 (*Enforcement*).

### 6.9 Cancellation

All Bonds purchased by or on behalf of the Issuer may be surrendered for cancellation by surrendering the Individual Certificate representing such Bonds to the Registrar and, if so surrendered, shall, together with all Bonds redeemed by the Issuer, be cancelled forthwith. Any Bonds so surrendered for cancellation may not be reissued or resold and the obligations of the Issuer in respect of any such Bonds shall be discharged.

## 7. PAYMENTS

### 7.1 Method of Payment

Payments of principal, premium (to the extent premium, if any, is required to be paid under these Conditions) and interest shall be made, upon application by a Holder of a Bond to the Specified Office of the Principal Paying Agent and Transfer Agent not later than the fifteenth day before the due date for any such payment, by transfer to a U.S. dollar account (or any account to which U.S. dollars may be credited or transferred) maintained by the payee with, a bank in New York City and, in the case of payments of principal and premium (to the extent premium, if any, is required to be paid under these Conditions) in respect of the Bonds and accrued and unpaid interest payable on a redemption of the Bonds otherwise than on an Interest Payment Date, shall only be made upon surrender (or, in the case of part payment only, endorsement) of the relevant Individual Certificates at the Specified Office of the Principal Paying Agent and Transfer Agent.

### 7.2 Payments subject to laws

All payments in respect of the Bonds are subject in all cases to any applicable fiscal or other laws and regulations in the place of payment. No commissions or expenses shall be charged to the Bondholders in respect of such payments.

### 7.3 Payments on business days

Where payment is to be made by transfer to a U.S. dollar account, payment instructions (for value the due date, or, if the due date is not a business day, for value the next succeeding business day) will be initiated and, where payment is to be made by U.S. dollar cheque, the cheque will be mailed (i) (in the case of payments of principal, premium, if any, and interest payable on redemption or, as the case may be, purchase by the Issuer for cancellation) on the later of the due date for payment and the day on which the relevant Individual Certificate is surrendered (or, in the case of part payment only, endorsed) at the Specified Office of the Principal Paying Agent and Transfer Agent and (ii) (in the case of payments of interest payable other than on redemption or, as the case may be, purchase by the Issuer) on the due date for payment. A Holder of a Bond shall not be entitled to any interest or other payment in respect of any delay in payment resulting from (A) the due date for a payment not being a business day or (B) a cheque mailed in accordance with this Condition 7 arriving after the due date for payment or being lost in the mail. In this paragraph, "**business day**" means any day on which banks are open for general business (including dealings in foreign currencies) in London, Jersey and New York City and, in the case of surrender (or, in the case of part payment only, endorsement) of an Individual Certificate, in the place in which the Individual Certificate is surrendered (or, as the case may be, endorsed).

### 7.4 Partial payments

If the Principal Paying Agent and Transfer Agent makes a partial payment in respect of any Bond, the Issuer shall procure that the amount and date of such payment are noted on the Register and, in the case of partial payment upon presentation of an Individual Certificate, that a statement indicating the amount and the date of such payment is endorsed on the relevant Individual Certificate. The Issuer shall notify the Bondholders in accordance with Condition 16 (*Notices*) of the adjusted amortization and pre-funding amounts in accordance with Condition 6.2(d) (*Pre-funding Requirements on the Bonds*) and Condition 6.3(d) (*Scheduled Principal Repayments*).

### 7.5 Record Date

Each payment in respect of a Bond will be made to the Person shown as the Holder in the Register (i) while the Bonds are in global form, at the Clearing System Business Day immediately preceding the corresponding payment date; and (ii) while the Bonds are in definitive form, the fifteenth calendar day preceding the corresponding payment date (the "**Record Date**"). Where payment in respect of a Bond is to be made by cheque, the cheque will be mailed to the address shown as the address of the Holder in the Register at the close of business on the relevant Record Date. "**Clearing System Business Day**" means Monday to Friday inclusive except December 25 and January 1.

7.6 **Agents**

The initial Agents and their initial specified offices are listed below. The Issuer reserves the right at any time with the prior written approval of the Bond Trustee to vary or terminate the appointment of any Agent and appoint additional or other Agents, *provided that* they will maintain (i) a Registrar and (ii) Principal Paying Agent and Transfer Agent.

Notice of any change in the Agents or their specified offices will promptly be given to the Bondholders in accordance with Condition 16 (*Notices*).

## 8. BOND EVENTS OF DEFAULT

8.1 **Bond Event of Default**

Each and any of the events described in Condition 8.1(a) (*Non-Payment*) to Condition 8.1(m) (*Project Documents*) shall be treated as a "**Bond Event of Default**":

(a) Non-Payment

Default is made in the payment of principal, premium (to the extent premium, if any, is required to be paid under these Conditions) or interest on any of the Bonds when due with no grace period unless:

(i) its failure to pay is caused by:

(A) administrative or technical error; or

(B) a Disruption Event; and

(ii) payment is made within five (5) Business Days of its due date.

(b) Breach of Other Obligations

The Issuer fails to observe or perform any other term, covenant, undertaking or agreement under or in respect of the Bonds or other Bond Documents (other than the Series D and E Subscription Agreement and other than any obligation whose breach would give rise to the Bond Event of Default provided for in Condition 8.1(a) (*Non-Payment*)) and such failure (where capable of remedy) remains unremedied for 20 Business Days following the earlier of (i) the Issuer becoming aware of such failure and (ii) service of written notice thereof on the Issuer by the Bond Trustee requiring the same to be remedied.

(c) Cross-Acceleration

(i) Any scheduled payment of principal or interest under any Financial Indebtedness of the Issuer (other than the Bonds) is not paid when due nor within any originally applicable grace period.

(ii) Any Financial Indebtedness of the Issuer (other than the Bonds) is declared to be or otherwise becomes due and payable prior to its specified maturity as a result of an event of default (however described).

(iii) No Bond Event of Default will occur under this Condition 8.1(c) if:

(A) the failure to pay an amount of principal or interest when due would not constitute an event of default (however described) under any Senior Debt Document (other than any Bond Document) or the non-payment is due to the deferral and/or a capitalization of any amounts unpaid;

(B) an event of default (however described) under any Senior Debt Document (other than any Bond Document) occurs and evidence is provided to the Bond Trustee's satisfaction (acting in accordance with the Bond Trust Deed) that such event of default (however described) has been waived or cured in each case to the effect that no creditor under that Senior Debt Document can accelerate or take any other enforcement action in respect of the Financial Indebtedness documented under such Senior Debt Document (and, without prejudice to any other form of evidence which may be provided by any person, written confirmation from each relevant creditor or agent on its or their behalf that any one or more of the foregoing is the case shall be deemed to be evidence satisfactory to the Bond Trustee); or

(C) the relevant Financial Indebtedness is Subordinated Indebtedness; or

(D) in respect of paragraph (i) above, the aggregate amount of principal or interest due but unpaid does not exceed U.S.$80,000,000 (as increased each Financial Year in line with UK consumer price index) (or its equivalent in any other currency or currencies); or

(E) in respect of paragraph (ii) above, the aggregate amount of Financial Indebtedness or commitment for Financial Indebtedness does not exceed U.S.$100,000,000 (as increased each Financial Year in line with UK consumer price index) (or its equivalent in any other currency or currencies).

(d) Insolvency

(i) The Issuer, AssetCo or the Parent:

(A) is unable or admits inability to pay its debts as they fall due or is declared to be unable to pay its debts under applicable law;

(B) suspends or threatens to suspend making payments on any of its debts generally; or

(C) commences negotiations with one or more of its creditors (excluding any Secured Creditor in its capacity as such) with a view to rescheduling any of its indebtedness,

in each case by reasons of actual or anticipated financial difficulty.

(ii) A moratorium is declared in respect of any indebtedness of the Issuer, AssetCo or the Parent. If a moratorium occurs, the ending of the moratorium will not remedy any Bond Event of Default caused by that moratorium.

(e) Insolvency Proceedings

(i) Any corporate action, legal proceedings or other procedure or step is taken in relation to:

(A) the suspension of payments, a moratorium of any indebtedness, winding-up, désastre, dissolution, administration or reorganization (by way of voluntary arrangement, scheme of arrangement or otherwise) of the Issuer, AssetCo or the Parent;

(B) (by reason of actual or anticipated financial difficulties) a composition, compromise, assignment or arrangement with any creditor of the Issuer, AssetCo or the Parent (other than a composition, compromise, assignment or arrangement arising under the Bond Documents or in respect of Subordinated Indebtedness);

(C) the appointment of a liquidator, receiver, administrative receiver, administrator, compulsory manager, Viscount of the Royal Court of Jersey or other similar officer in respect of the Issuer, AssetCo or the Parent or the Issuer's, AssetCo's or the Parent's assets; or

(D) enforcement of any Security over any assets of the Issuer, AssetCo or the Parent,

or any analogous procedure or step is taken in any jurisdiction.

(ii) Paragraph (i) above shall not apply to:

(A) any winding-up petition which is discharged, stayed or dismissed within 30 Business Days of commencement or, if earlier, the date on which it is advertised;

(B) in respect of any such action, legal proceedings or step over or relating to assets, the aggregate value of which does not exceed:

(I) to the extent it relates to the Issuer or the Parent, U.S.$25,000,000 (as increased each Financial Year in line with UK consumer price index); or

(II) to the extent it relates to AssetCo, U.S.$50,000,000 (as increased each Financial Year in line with UK consumer price index) (or its equivalent in any other currency or currencies).

(f) Creditors' process

(i) Any expropriation, attachment, sequestration, distress or execution or any analogous process in any jurisdiction affects any asset or assets of the Issuer, AssetCo or the Parent when such enforcement has an aggregate value:

(A) to the extent it relates to the Issuer or the Parent, in excess of U.S.$25,000,000 (as increased each Financial Year in line with UK consumer price index) (or its equivalent in any other currency or currencies); or

(B) to the extent it relates to AssetCo, in excess of U.S.$50,000,000 (as increased each Financial Year in line with UK consumer price index) (or its equivalent in any other currency or currencies).

(ii) Paragraph (i) above shall not apply to any such process that is discharged, stayed or dismissed within 30 Business Days of commencement.

(g) Unlawfulness and Invalidity

(i) It is or becomes unlawful for the Issuer or the Parent to perform any of its obligations under the Finance Documents to which it is a party;

(ii) any subordination created under the Security Trust and Intercreditor Deed ceases to be effective or is alleged by a party to it (other than a Finance Party) to be ineffective;

(iii) any obligation or obligations of the Issuer or the Parent under any Finance Documents to which it is a party are not or cease to be legal, valid, binding or enforceable; or

(iv) any Finance Document ceases to be in full force and effect or any Transaction Security or any subordination created under the Security Trust and Intercreditor Deed ceases to be legal, valid, binding, enforceable or effective or is alleged by a party to it (other than a Finance Party) to be ineffective, in each case, to the extent the relevant unlawfulness, invalidity or ineffectiveness has a Material Adverse Effect and where capable of remedy, the circumstances are not remedied within 20 Business Days from the earlier of:

(A) the Bond Trustee giving notice to the Issuer or the Parent; and

(B) the Issuer or the Parent becoming aware of the relevant circumstance.

(h) Cessation of Business

The Issuer, the Parent or AssetCo suspends or ceases to carry on (or threatens to suspend or cease to carry on) all or a material part of its business, except as a result of a Permitted Transaction.

(i) Expropriation

The authority or ability of the Parent, the Issuer or AssetCo to conduct its business is limited or wholly or substantially curtailed by any seizure, expropriation, nationalization, intervention, restriction or other action by or on behalf of any governmental, regulatory or other authority or other person in relation to the Parent, the Issuer or AssetCo or any of their assets, in each case to the extent that this has, or would reasonably be expected to have, a Material Adverse Effect.

(j) Repudiation and Rescission of Agreements

The Issuer or the Parent rescinds or purports to rescind or repudiates or purports to repudiate a Finance Document to which it is a party or any Transaction Security; or evidences an intention to rescind or repudiate a Finance Document to which it is a party or any Transaction Security.

(k) Litigation

Any litigation, arbitration, administrative, governmental, regulatory or other investigations, proceedings or disputes are commenced or threatened in writing in relation to the Finance Documents or the transactions contemplated in the Finance Documents or against the Parent or the Issuer or its assets which could reasonably be expected to be adversely determined and if so determined have or would reasonably be expected to have a Material Adverse Effect.

(l) Shareholders' Agreement

(i) A breach by the Issuer of the Shareholders' Agreement in a manner or to an extent which has or would reasonably be expected to have a Material Adverse Effect.

(ii)

(A) It is or becomes unlawful for the Issuer to perform any of its obligations under the Shareholders' Agreement to the extent that such unlawfulness has, or would reasonably be expected to have, a Material Adverse Effect;

(B) any obligation or obligations of the Issuer under the Shareholders' Agreement are not or cease to be legal, valid, binding or enforceable to the extent that this has, or would reasonably be expected to have, a Material Adverse Effect; or

(C) the Issuer rescinds or purports to rescind or repudiates or purports to repudiate the Shareholders' Agreement or evidences an intention to rescind or repudiate the Shareholders' Agreement.

(m) Project Documents

(i) It is or becomes unlawful for any party to a Project Document to perform any of its obligations under thereunder to the extent that such unlawfulness has, or would reasonably be expected to have, a Material Adverse Effect;

(ii) any Project Document ceases to be legal, valid, binding and enforceable under its governing law to the extent that this has, or would reasonably be expected to have, a Material Adverse Effect; or

(iii) any party to a Project Document rescinds or purports to rescind or repudiate a Project Document or evidences an intention to rescind or repudiate a Project Document in a manner or to an extent which has or would reasonably be expected to have a Material Adverse Effect.

8.2 **Delivery of Bond Enforcement Notice**

Subject to the provisions of the Security Trust and Intercreditor Deed, if any Bond Event of Default occurs and is continuing, the Bond Trustee (i) may, at any time, at its discretion and (ii) shall, upon being so directed in writing by the Holders of at least 25 per cent. in aggregate of the principal amount Outstanding of the Bonds or if directed by an Extraordinary Resolution, deliver a Bond Enforcement Notice to the Issuer provided that, in either case, it is indemnified and/or secured and/or prefunded to its satisfaction.

8.3 **Consequences of the delivery of a Bond Enforcement Notice**

Upon delivery of a Bond Enforcement Notice in accordance with Condition 8.2 (*Delivery of Bond Enforcement Notice*), all Bonds then outstanding shall immediately become due and repayable at their respective principal amount Outstanding plus accrued but unpaid interest.

## 9. PRESCRIPTION

Claims in respect of principal, premium, if any, and interest (or any other payment due under these Conditions) will become void, unless presentation for payment is made as required by Condition 7 (*Payments*) within a period of 10 years, in the case of principal and premium, if any, and five years, in the case of interest, from the appropriate Relevant Date.

## 10. REPLACEMENT OF INDIVIDUAL CERTIFICATES

If any Individual Certificate is lost, stolen, mutilated, defaced or destroyed, it may be replaced at the Specified Office of the Registrar or the Principal Paying Agent and Transfer Agent, subject to all applicable laws and stock exchange requirements, upon payment by the claimant of the expenses incurred in connection with such replacement and on such terms as to evidence, security, indemnity and otherwise as the Issuer may reasonably require. Mutilated or defaced Individual Certificates must be surrendered before replacements will be issued.

## 11. MEETINGS OF BONDHOLDERS; MODIFICATION, WAIVER AND SUBSTITUTION

11.1 **STID**

(a) The Security Trust and Intercreditor Deed contains provisions dealing with the following matters:

(i) any modification to, any consent under, or any waiver in respect of any breach or proposed breach of, any Common Documents;

(ii) the terms upon which the Security constituted by the Security Documents shall be enforced;

(iii) the ranking of the Secured Creditors' claim upon enforcement; and

(iv) the Pre-Enforcement Priority of Payments and, as regards the application of the Available Enforcement Proceeds, the Post-Enforcement Priority of Payments.

(b) In respect of any STID Proposal which gives rise to an Entrenched Right affecting the Bondholders as the Secured Creditors, such STID Proposal shall be approved by an Extraordinary Resolution in accordance with Condition 11.2 (*Meetings of Bondholders*) and the Bond Trust Deed.

(c) In respect of any STID Proposal:

(i) each Bondholder may only vote on such STID Proposal by way of Block Voting Instruction or, as applicable, proxy and each Bondholder shall have one vote in respect of each U.S.$1 of the principal amount Outstanding of Bonds held or represented by it;

(ii) each Bondholder must vote on or prior to the time specified by the Principal Paying Agent or, as the case may be, Registrar and/or relevant clearing system in order to enable the Principal Paying Agent or, as the case may be, the Registrar to issue a Block Voting Instruction or, as the case may be, a proxy on the voting date, provided that if a Bondholder does not vote in sufficient time to allow the Principal Paying Agent, or, as the case may be, the Registrar to issue a Block Voting Instruction or, as the case may be, a proxy in respect of its Bonds prior to the end of the relevant voting period, the votes of such Bondholder may not be counted;

(iii) in respect of such STID Proposal, the Bond Trustee shall vote as the Secured Creditor Representative of the Bondholders in respect of each Series of Bonds then outstanding by notifying the Security Agents and the Issuer, in accordance with the STID promptly following the receipt by it of such votes (and in any case not later than the Business Day following receipt of each such vote), of each vote comprised in a Block Voting Instruction or, as the case may be, a proxy received by it from the Principal Paying Agent or the Registrar on or prior to the voting date; and

(iv) such STID Proposal duly approved by the Qualifying Secured Creditors in accordance with the STID shall be binding on all Bondholders (subject as provided in the STID). The Bond Trustee shall, following receipt of the result of any vote in respect of such STID Proposal, promptly notify the Bondholders in accordance with Condition 16 (*Notices*).

11.2 **Meetings of Bondholders**

(a) The Bond Trust Deed contains provisions for convening meetings of Bondholders to consider any matter affecting their interests, including the sanctioning by Extraordinary Resolution (as defined in the Bond Trust Deed) of a modification of any of these Conditions or any provisions of the Bond Trust Deed. Such a meeting may be convened by the Issuer, the Bond Trustee or the Bondholders holding not less than 10 per cent. in the principal amount Outstanding of the Bonds.

(b) The quorum for any meeting convened to consider an Extraordinary Resolution will be one or more Persons holding or representing a clear majority in the principal amount Outstanding of the Bonds, or at any adjourned meeting one or more Persons being or representing Bondholders whatever the principal amount Outstanding of the Bonds held or represented, unless the business of such meeting includes consideration of the following proposals:

(i) to change the maturity of the Bonds or the due date for any payment in respect of the Bonds;

(ii) to reduce or cancel the principal amount of, or premium payable on redemption of, or rate of interest on, the Bonds, or changing the method of calculating thereof;

(iii) to change the currency of payment of the Bonds;

(iv) to modify the quorum required at any meeting of Bondholders or the majority required to pass an Extraordinary Resolution or sign a resolution in writing;

(v) to waive a redemption payment with respect to any Bond;

(vi) to alter the Pre-Enforcement Priority of Payments or the Post-Enforcement Priority of Payments insofar such alteration would affect any Bonds;

(vii) to change the governing law of the Bonds (other than a change in the governing law of the Bonds as a result of the substitution of the Issuer and in accordance with Clause 22.3 of the Bond Trust Deed);

(viii) to change the ranking of the Bonds; or

(ix) to amend this Condition 11.2 (*Meetings of Bondholders*), paragraph 7 of schedule 3 (*Provisions for Meetings of Bondholders*) to the Bond Trust Deed or the proviso to paragraph 8 of schedule 3 (*Provisions for Meetings of Bondholders*) to the Bond Trust Deed,

(each of clauses (i) through (ix) being a "**Basic Term Modification**"), in which case the necessary quorum will be one or more Persons holding or representing not less than three quarters in the principal amount Outstanding of the Bonds, or at any adjourned meeting one or more Eligible Persons present and holding or representing in the aggregate not less than one-third of the principal amount of the Bonds for the time being outstanding.

(c) Any Extraordinary Resolution passed by a majority of not less than three quarters of the votes cast at a meeting of Bondholders duly convened and held shall be binding on all Bondholders (whether or not they were present at the meeting at which such resolution was passed).

(d) The Bond Trust Deed also provides that:

(i) a resolution passed electronically or in writing and signed by or on behalf of holders of not less than 50 per cent. of the aggregate principal amount of Bonds outstanding shall for all purposes be as valid and effective as an Extraordinary Resolution (other than in respect of a Basic Term Modification) passed at a meeting of Bondholders duly convened and held; and

(ii) a resolution passed electronically or in writing and signed by or on behalf of holders of not less than 75 per cent. of the aggregate principal amount of Bonds outstanding shall for all purposes be as valid and effective as an Extraordinary Resolution (with respect to a Basic Term Modification) passed at a meeting of Bondholders duly convened and held.

Such resolutions passed electronically or in writing may be in one document or several documents in like form, each signed by, or on behalf of, one or more Bondholders.

(e) The Bond Trustee may, without the consent of the Issuer or the Bondholders, prescribe such further regulations regarding voting by the Bondholders in respect of all voting matters except STID Proposals as the Bond Trustee may in its sole discretion think fit, including the calling of one or more meetings of Bondholders in order to approve any resolution to be put to the Bondholders where the Bond Trustee, in its sole discretion, considers it to be appropriate to hold a meeting.

### 11.3 Modification and Waiver

The Bond Trustee may agree, without the consent of the Bondholders, to (i) any modification of any of the provisions of the Bond Trust Deed, which in the opinion of the Bond Trustee is of a formal, minor or technical nature or is made to correct a manifest error and (ii) any other modification (except in respect of any Basic Term Modification), and any waiver or authorization of any breach or proposed breach, of any of the provisions of the Bond Trust Deed or determine, without any such consent as aforesaid, that any Bond Event of Default or Potential Bond Event of Default shall not be treated as such (provided that, in any such case specified in (ii), it is not, in the opinion of the Bond Trustee, materially prejudicial to the interests of the Bondholders). Any such modification, authorization or waiver shall be binding on the Bondholders and, unless the Bond Trustee otherwise requires, such modification shall be promptly notified to the Bondholders in accordance with Condition 16 (*Notices*).

### 11.4 Substitution

Subject to the terms of the Bond Trust Deed, the Bond Trustee, being satisfied that the substitution is not materially prejudicial to the interests of the Bondholders, may, without the consent of the Bondholders, agree to the substitution of the Issuer's successor in business in place of the Issuer (or of any previous substitute under this Condition 11.4) as the principal debtor under the Bond Trust Deed or the Bonds.

### 11.5 Entitlement of the Bond Trustee

In connection with the exercise by it of any of its trusts, powers, authorities and discretions (including, without limitation, any modification, waiver, authorization determination or substitution), the Bond Trustee shall have regard to the general interests of the Bondholders as a class but shall not have regard to any interests arising from circumstances particular to individual Bondholders (whatever their number) and, in particular but without limitation, shall not have regard to the consequences of any such exercise for individual Bondholders (whatever their number) resulting from their being for any purpose domiciled or resident in, or otherwise connected with, or subject to the jurisdiction of, any particular territory or any political sub-division thereof, and the Bond Trustee shall not be entitled to require, nor shall any Bondholder be entitled to claim, from the Issuer, the Bond Trustee or any other person any indemnification or payment in respect of any tax consequence of any such exercise upon individual Bondholders.

## 12. BOND TRUSTEE RELIANCE

The Issuer shall deliver to the Bond Trustee annually a certificate of the Issuer as to there not having occurred a Bond Event of Default or a Potential Bond Event of Default since the date of the last such certificate or, if such event has occurred, as to the details of such event. The Bond Trustee shall be entitled to rely on any such certificate and shall not be obliged to monitor independently compliance by the Issuer with the covenants set forth in Condition 3 (*Covenants*) or elsewhere in these Conditions or the Bond Trust Deed, nor shall it be liable to any person for not so doing and the Bond Trustee need not enquire further as regards to circumstances existing on the date of such certificate.

## 13. ENFORCEMENT

The Bond Trustee may, at any time at its discretion and without further notice, institute such steps, actions or proceedings against the Issuer as it may think fit to enforce the terms of the Bond Trust Deed and the Bonds, but it need not take any such steps, actions or proceedings or take any other action under or pursuant to the Bond Trust Deed or the Bonds, unless (a) it shall have been so directed by an Extraordinary Resolution or so requested in writing by Bondholders holding at least one-quarter in principal amount of the Bonds Outstanding and (b) it shall have been indemnified and/or secured and/or prefunded to its satisfaction. No Bondholder may proceed directly against the Issuer unless the Bond Trustee, having become bound so to proceed, fails to do so within a reasonable time and such failure is continuing.

## 14. INDEMNIFICATION OF THE BOND TRUSTEE

The Bond Trust Deed contains provisions for the indemnification of the Bond Trustee and for its relief from responsibility. The Bond Trustee is entitled to enter into business transactions with the Issuer and any entity related to the Issuer without accounting for any profit.

The Bond Trustee shall be entitled to rely on reports, certificates and opinions of the Auditors and other experts, notwithstanding that the Auditors' or expert's liability in respect thereof may be limited by reference to a monetary cap or otherwise.

## 15. FURTHER ISSUES

### 15.1 Additional Bonds

The Issuer may from time to time without the consent of the Bondholders but subject to these Conditions, including, without limitation, Condition 3.9 (*Limitation on incurrence of Financial Indebtedness*), create and issue:

(a) further bonds in respect of any series of Bonds, each of which will have the same terms and conditions as the relevant series of Bonds in all respects (or in all respects except for the issue date, the first Interest Payment Date, the first Interest Period and the initial principal amount outstanding) so as to be consolidated and form a single series and rank *pari passu* with the relevant series of Bonds or upon such terms as the Issuer may determine at the time of their issue ("**Further Bonds**"); and/or

(b) additional bonds of a new series which may rank *pari passu* with, ahead of or after any series of Bonds then in issue (save that no such bonds shall rank ahead of the Series A Bonds, the Series B Bonds and the Series C Bonds) and may carry terms that differ from any of the Series A Bonds, the Series B Bonds and the Series C Bonds and do not form a single series with any of them ("**New Bonds**", together with the Further Bonds or either the Further Bonds or the New Bonds, the "**Additional Bonds**").

15.2 **Supplemental Bond Trust Deeds and Security**

Any Additional Bonds issued pursuant to this Condition 15 will be secured by the Security constituted by the Security Documents, upon and subject to the terms thereof. Any such Additional Bonds will be constituted by a further deed or deeds supplemental to the Bond Trust Deed and have the benefit of the Security pursuant to the Security Documents as described in Condition 2.2 (*Security*). The Bond Trust Deed contains provisions for convening a single meeting of the Bondholders and the holders of such Additional Bonds.

## 16. NOTICES

Notices to the Bondholders required to be given under these Conditions will be sent to them by first-class mail (or its equivalent) or (if posted to an overseas address) by airmail at their respective addresses on the Register. Any such notice shall be deemed to have been given on the second day after the date of mailing. In addition, notices to Bondholders required to be given under these Conditions will (so long as the Bonds are admitted to trading on the Global Exchange Market of Euronext Dublin and the rules of such exchange so require) be published on the website of Euronext Dublin. Any such notice shall be deemed to have been given on the date of such publication.

*So long as the Bonds are represented by the Global Bond Certificates and the Global Bond Certificates are held on behalf of Euroclear or Clearstream, Luxembourg, notices to Bondholders required to be given under these Conditions may be given by delivery of the relevant notice to Euroclear or Clearstream, Luxembourg for communication by it to entitled accountholders in substitution for notification as required by these Conditions.*

## 17. CONTRACTS (RIGHTS OF THIRD PARTIES) ACT 1999

No Person shall have any right to enforce any term or condition of the Bonds under the Contracts (Rights of Third Parties) Act 1999.

## 18. GOVERNING LAW AND JURISDICTION

18.1 **Governing Law**

The Bond Documents, the Bonds, and any non-contractual obligations arising out of or in connection with them, are governed by and shall be construed in accordance with the Laws of England and Wales.

18.2 **Jurisdiction**

The courts of England and Wales have exclusive jurisdiction to settle any disputes that may arise out of or in connection with the Bond Documents and the Bonds (including a dispute relating to non-contractual obligations or a dispute regarding the existence, validity or termination of any of the such documents or the consequences of their nullity) and accordingly any legal action or proceedings arising out of or in connection with the Bond Documents or the Bonds may be brought in such courts. The Issuer has in each of the Bond Documents to which it is a party irrevocably submitted to the jurisdiction of such courts and waives any objection to the exercise of such jurisdiction on the grounds that they are an inconvenient or inappropriate forum. The Bond Trustee and the Bondholders may take any suit, action or proceeding arising out of or in connection with the Bond Documents and the Bonds (together referred to as the "**Proceedings**") against the Issuer in any court of competent jurisdiction and concurrent Proceedings in any number of jurisdictions.

18.3 **Service of process**

(a) Without prejudice to any other mode of service allowed under any relevant law, the Issuer:

(i) irrevocably appoints Maples and Calder (company no. 03369233) as its agent for service of process in relation to any proceedings before the English courts in connection with the Bond Documents and the Bonds; and

(ii) agrees that failure by an agent for service of process to notify the Issuer of the process will not invalidate the proceedings concerned.

(b) If any person appointed as an agent for service of process is unable for any reason to act as agent for service of process, the Issuer must immediately (and in any event within five days of such event taking place) appoint another agent on terms acceptable to the Bond Trustee. Failing this, the Bond Trustee may appoint another agent for this purpose.

## 19. DEFINITIONS AND INTERPRETATION

### 19.1 References to U.S. dollar amounts

References to any amounts or thresholds specified in U.S. dollars in these conditions shall be deemed to include amounts equivalent thereto in any other currency, whether or not so specified, which shall be determined on the basis of the middle spot rate for the relevant currency against the U.S. dollar as quoted by any leading bank on the day on which the relevant paragraph operates.

### 19.2 Definitions

In these Conditions, the following terms have the meanings given to them in this Condition 19.2.

"**Acceptable Bank**" means:

(a) a bank or financial institution which has at least two ratings for its long-term unsecured and non credit-enhanced debt obligations of A- or higher by S&P or Fitch or A3 or higher by Moody's or a comparable rating from an internationally recognised credit rating agency, or such lower rating as may be agreed between the Issuer and each rating agency appointed by the Issuer which is then ascribing a rating to any of the Secured Debt, provided that any such lower rating would not lead to any downgrade of the then current rating ascribed by such rating agencies to any of such Secured Debt; or

(b) any other bank or financial institution approved by the Bond Trustee.

"**Accounting Principles**" means IFRS as issued by the International Accounting Standards Board.

"**Acquisition**" means the acquisition by the Issuer of AssetCo Shares pursuant to the Acquisition Agreement.

"**Acquisition Costs**" means all fees, costs and expenses, stamp, registration, notarial and other Taxes incurred by the Issuer, the Parent or AssetCo in connection with the Acquisition, the Finance Documents or any Acquisition Document.

"**Acquisition Agreement**" means the sale and purchase agreement dated on or about June 23, 2020 between, amongst others, ADNOC HoldCo as seller and the Issuer as purchaser in relation to the Acquisition.

"**Acquisition Documents**" means the Acquisition Agreement, the Share Transfer Agreement, the Escrow Agreement, and the Seller's Guarantee (as such terms are defined in the Acquisition Agreement (in its original form)).

"**Additional Bonds**" has the meaning given to it in Condition 15.1 (*Additional Bonds*).

"**ADNOC**" means Abu Dhabi National Oil Company, a company duly established and existing under Law No. 7 of 1971 of Abu Dhabi with its principal place of business at P.O. Box 898, ADNOC Head Quarters Complex, Abu Dhabi, United Arab Emirates.

"**ADNOC HoldCo**" means ADNOC Gas Pipelines Holdco LLC, a company duly established and existing in the Emirate of Abu Dhabi with its principal place of business at P.O. Box 898, ADNOC Head Quarters Complex, Abu Dhabi, United Arab Emirates or, if applicable, any other person who acquires all of AssetCo Shares owned by ADNOC HoldCo and accedes to the Shareholders' Agreement as "**ADNOC HoldCo**" from time to time in accordance with the terms of the Shareholders' Agreement.

"**Affiliate**" of any specified Person means any other Person, directly or indirectly controlling, controlled by, or under direct or indirect common control with, such specified Person. For purposes of this definition, "control" (including, with correlative meanings, the terms "controlling", "controlled by" and "under common control with"), as applied to any Person, means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting securities, by contract or otherwise, *provided that* ownership of 10 per cent. of the voting securities of any Person shall be deemed to be control. "**Affiliate**" shall include funds advised by the specific Person.

"**Agency**" means any agency, authority, central bank, department, committee, government, legislature, minister, ministry, official or public or statutory person (whether autonomous or not).

"**Agency Agreement**" has the meaning given to it in the introduction to these Conditions.

"**Agent(s)**" has the meaning given to it in the introduction to these Conditions.

"**Agreed Security Principles**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Applicable Premium**" means, with respect to a Bond on any redemption date, an amount equal to the excess of (i) the sum of the present value of each remaining scheduled payment of interest (exclusive of interest accrued and unpaid to such redemption date) and scheduled payment of the then-outstanding principal amount of such Bond (exclusive of such redemption date), calculated using a discount rate equal to the Treasury Rate at such redemption date plus 50 basis points over (ii) the principal amount Outstanding of such Bond on such redemption date.

"**AssetCo**" means ADNOC Gas Pipeline Assets LLC, a company duly established and existing in the Emirate of Abu Dhabi, with registered office at PO Box 898, ADNOC Head Quarters Complex, Abu Dhabi, United Arab Emirates.

"**AssetCo Free Cash**" means, in respect of any period, Free Cash (as defined in the Shareholders' Agreement (in its original form)) for that period multiplied by the Relevant Percentage.

"**AssetCo MoA**" means the memorandum of association of AssetCo, as amended and restated from time to time (including the Amended and Restated MOA (as defined in the Acquisition Agreement)).

"**AssetCo Shares**" means the issued share capital of AssetCo.

"**Auditors**" means the auditors for the time being of the Issuer or, if they are unable or unwilling promptly to carry out any action requested of them under these Conditions, such other firm of accountants as may be nominated or approved in writing by the Bond Trustee for the purpose, provided that it shall not be obliged to nominate or appoint any such firm unless it shall have been indemnified and/or secured and/or prefunded to its satisfaction.

"**Authorization**" means an authorization, consent, approval, resolution, license, exemption, filing, notarization or registration.

"**Authorized Credit Facility**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Available Enforcement Proceeds**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Block Voting Instruction**" has the meaning given to it in the Bond Trust Deed.

"**Board of Directors**" means, as to any Person, the board of directors or other equivalent executive body of such Person or any duly authorized committee thereof.

"**Bond Documents**" means:

(a) any Bonds;

(b) the First Supplemental Bond Trust Deed;

(c) the Agency Agreement; and

(d) the Series D and E Subscription Agreement.

"**Bond Enforcement Notice**" means a notice delivered by the Bond Trustee in accordance with Condition 8.2 (*Delivery of Bond Enforcement Notice*) by which the Bond Trustee declares that all Bonds then outstanding shall immediately become due and repayable.

"**Bond Event of Default**" has the meaning given to it in Condition 8 (*Events of Default*).

"**Bond Trust Deed**" has the meaning given to it in the introduction to these Conditions.

"**Bond Trustee**" has the meaning given to it in the introduction to these Conditions.

"**Bonds**" has the meaning given to it in the introduction to these Conditions.

"**Borrowings**" means, at any time and without double-counting, the aggregate outstanding principal, capital or nominal amount of any Financial Indebtedness of the Issuer other than any Financial Indebtedness under paragraph (d) of the definition thereof and any Subordinated Indebtedness.

"**Business Day**" means a day which is a day on which commercial banks and foreign exchange markets settle payments and are open for general business (including dealings in foreign exchange and foreign currency deposits) in Dublin, Jersey, London, Abu Dhabi and New York City.

"**Cash Equivalent Investments**" means at any time:

(a) certificates of deposit maturing within one year after the relevant date of calculation and issued by an Acceptable Bank;

(b) any investment in marketable debt obligations issued or guaranteed by the government of:

    (i) the United States of America; or

    (ii) the United Kingdom, any member state of the European Economic Area or any Participating Member State which has a credit rating of either A-1 or higher by S&P or F1 or higher by Fitch or P-1 by Moody's, or by an instrumentality or agency of any of them having an equivalent credit rating, maturing within one year after the relevant date of calculation and not convertible or exchangeable to any other security;

(c) commercial paper not convertible or exchangeable to any other security:

    (i) for which a recognized trading market exists;

    (ii) issued by an issuer incorporated in the United States of America, the United Kingdom, any member state of the European Economic Area or any Participating Member State;

    (iii) which matures within one year after the relevant date of calculation; and

    (iv) which has a credit rating of either A-1 or higher by S&P or F1 or higher by Fitch or P-1 by Moody's, or, if no rating is available in respect of the commercial paper, the issuer of which has, in respect of its long-term unsecured and non-credit enhanced debt obligations, an equivalent rating;

(d) any investment in money market funds which (i) have a credit rating of either A-1 or higher by S&P or F1 or higher by Fitch or P-1 by Moody's, (ii) which invest substantially all their assets in securities of the types described in paragraphs (a) to (c) above and (iii) can be turned into cash on not more than 30 days' notice; and

(e) any other debt security approved by the Bond Trustee (acting in accordance with the Bond Trust Deed),

in each case to which the Issuer is beneficially entitled at that time and which is not issued or guaranteed by the Parent or AssetCo or subject to any Security other than Transaction Security or any Permitted Security.

"**Clearstream, Luxembourg**" has the meaning given to it in Condition 1.1 (*Form and denomination*).

"**Common Documents**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Compliance Certificate**" means a certificate in which the Issuer periodically provides certain financial information and statements to the Bond Trustee as required under Condition 4.2 (*Compliance Certificate*).

"**Debt Service**" means, in respect of any Relevant Period, the aggregate of:

(a) Net Finance Charges for that Relevant Period; and

(b) the aggregate of all scheduled and mandatory repayments of principal in respect of Borrowings falling due in that Relevant Period but excluding:

(i) any amounts falling due under any overdraft or revolving facility and which were available for simultaneous redrawing according to the terms of that facility;

(ii) any mandatory prepayment made under the Senior Debt Documents; and

(iii) any payments at final maturity of any Borrowings,

and so that no amount shall be included more than once.

"**Debt Service Payment Account**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Debt Service Reserve Account**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Debt Service Reserve Facility**" has the meaning given to it in the introduction to these Conditions.

"**Debt Service Reserve Facility Agreement**" has the meaning given to it in the introduction to these Conditions.

"**Disruption Event**" means either or both of:

(a) a material disruption to those payment or communications systems or to those financial markets which are, in each case, required to operate in order for payments to be made in connection with the Bonds which disruption is not caused by, and is beyond the control of, any of the Parties; or

(b) the occurrence of any other event which results in a disruption (of a technical or systems-related nature) to the treasury or payments operations of a Party preventing that, or any other Party:

(i) from performing its payment obligations under the Bonds; or

(ii) from communicating with other Parties in accordance with the Conditions,

and which (in either such case) is not caused by, and is beyond the control of, the Party whose operations are disrupted.

"**Dividend Policy**" means the Dividend Policy as defined in, and set out in a schedule to, the Shareholders' Agreement (in its original form).

"**DSCR**" means, in respect of any Relevant Period, the ratio of (i) AssetCo Free Cash in respect of that Relevant Period less any Permitted Payments under paragraph (b) of the definition thereof made during that Relevant Period to (ii) Debt Service in respect of that Relevant Period.

"**DSR Facility Provider**" has the meaning given to it in the introduction to these Conditions.

"**DSRF Required Amount**" means, in respect of any Quarter Date and without double counting, an amount equal to the aggregate of:

(a) interest and commitment or commission payments under any Authorized Credit Facility; and

(b) payments of principal that are part of the scheduled amortization under any Authorized Credit Facility (excluding (i) the repayment from time to time of any drawings under an Authorized Credit Facility that constitutes a revolving facility (including by way of rollover loans); (ii) any payments of principal on a final maturity date in connection with any non-amortizing Authorized Credit Facility; and (iii) any amortization payments under the Initial Bank Facility Agreement); and

(c) net payments under the Hedging Agreements (other than accretion payments, payments on any break or final termination payments under any Hedging Agreements),

in each case, scheduled to fall due for payment in the following two Financial Quarters (calculated on a rolling basis on each Quarter Date).

"**DTC**" has the meaning given to it in Condition 1.1 (*Form and denomination*).

"**Eligible Person**" has the meaning given to that term in the Bond Trust Deed.

"**Entrenched Rights**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Euroclear**" has the meaning given to it in Condition 1.1 (*Form and denomination*).

"**Euronext Dublin**" means The Irish Stock Exchange plc, trading as Euronext Dublin.

"**European Union**" or the "**EU**" means the European Union.

"**Exchange Act**" means the Securities Exchange Act of 1934, as amended.

"**Extraordinary Resolution**" has the meaning given to it in the Bond Trust Deed.

"**Finance Charges**" means, for any Relevant Period, the aggregate amount of the accrued interest, commission, fees, discounts, prepayment fees, premiums or charges and other finance payments (excluding any repayments or prepayments of principal, whether voluntary or mandatory and any associated hedge termination payments) in respect of Borrowings whether paid, payable, capitalized or required to be reserved (and not yet applied as the relevant payment) in accordance with the terms of any Finance Document by the Issuer in respect of that Relevant Period:

(a) excluding any such costs to the extent funded by a utilization under the Senior Debt Documents other than to the extent funded by utilization under the Debt Service Reserve Facility and any equivalent debt service reserve facilities available to the Issuer;

(b) including any commission, fees, discounts and other finance payments payable by (and deducting any such amounts payable to) the Issuer under any interest rate hedging arrangement;

(c) excluding any interest cost or expected return on plan assets in relation to any postemployment benefit schemes;

(d) excluding any Acquisition Costs;

(e) excluding capitalized and non-capitalized interest, fees, premiums or charges in respect of Financial Indebtedness subordinated to the Bonds in accordance with the Security Trust and Intercreditor Deed;

(f) taking no account of any unrealized gains or losses on any derivative instruments other than any derivative instruments which are accounted for on a hedge accounting basis; and

(g) excluding interest, fees, premiums or charges in respect of any Subordinated Indebtedness and, to the extent they constitute Borrowings, any New Shareholder Injections,

and so that no amount shall be added (or deducted) more than once.

"**Finance Documents**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Finance Lease**" means any lease or hire purchase contract, a liability under which would, in accordance with the Accounting Principles, be treated as a finance or capital lease.

"**Finance Party**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Financial Indebtedness**" means any indebtedness for or in respect of:

(a) moneys borrowed and debit balances at banks or other financial institutions;

(b) any amount raised by acceptance under any acceptance credit facility or bill discounting facility (or dematerialized equivalent);

(c) any amount raised pursuant to any note purchase facility or the issue of bonds, notes, debentures, loan stock or any similar instrument;

(d) any Treasury Transaction (and, when calculating the value of that Treasury Transaction, only the net marked to market value (or, if any actual amount is due as a result of the termination or close-out of that Treasury Transaction, the net value of that amount) shall be taken into account);

(e) any counter-indemnity obligation in respect of a guarantee, indemnity, bond, standby or documentary letter of credit or any other instrument issued by a bank or financial institution which liability would fall within one of the other paragraphs of this definition;

(f) any amount raised by the issue of shares which are redeemable (other than at the option of the issuer) prior to the latest final maturity date in respect of all Authorized Credit Facilities then outstanding;

(g) the amount of any liability in respect of any Finance Leases;

(h) receivables sold or discounted (other than any receivables to the extent that they are sold on a non-recourse basis);

(i) any amount of any liability under an advance or deferred purchase agreement if: (i) one of the primary reasons for entering into the agreement is to raise finance or to finance the acquisition or construction of the asset or service in question; or (ii) the agreement is in respect of the supply of assets or services and payment is due more than 180 days after the date of supply;

(j) any amount raised under any other transaction (including any forward sale or purchase, sale and saleback or sale and leaseback agreement) not referred to in any other paragraph of this definition, having the commercial effect of a borrowing and classified as such under Accounting Principles; and

(k) the amount of any liability in respect of any guarantee or indemnity for any of the items referred to in paragraphs (a) to (j) above,

in each case, without double counting.

"**Financial Quarter**" means each period commencing on the day after one Quarter Date and ending on the next Quarter Date.

"**Fitch**" means Fitch Ratings Ltd and its successors.

"**Further Bonds**" has the meaning given to it in Condition 15.1 (*Additional Bonds*).

"**General Services Agreement**" means the general services agreement dated on or about June 23, 2020 between ADNOC and AssetCo.

"**Global Bond Certificate**" has the meaning given to it in Condition 1.1 (*Form and denomination*).

"**Hedging Agreement**" has the meaning given to it in the introduction to these Conditions.

"**Hedging Policy**" means the initial hedging policy applicable to the Issuer set out in schedule 4 (*Hedging Policy*) to the Security Trust and Intercreditor Deed.

"**Holder**" or "**Bondholder**" has the meaning given to it in Condition 1.2 (*Register*).

"**Holding Company**" means, in relation to a person, any other person in respect of which it is a Subsidiary.

"**IFRS**" means international accounting standards within the meaning of IAS Regulation 1606/2002 to the extent applicable to the relevant financial statements.

"**Individual Certificate**" has the meaning given to it in Condition 1.1 (*Form and denomination*).

"**Interest Payment Date**" has the meaning given to it in Condition 5 (*Interest*).

"**Interest Period**" has the meaning given to it in Condition 5 (*Interest*).

"**Issue Date**" has the meaning given to it in the introduction to these Conditions.

"**Issuer**" has the meaning given to it in the introduction to these Conditions.

"**Jersey**" means the Bailiwick of Jersey.

"**Managers**" means Citigroup Global Markets Limited of Citigroup Centre, Canada Square, Canary Wharf, London E14 5LB; HSBC Bank plc of 8 Canada Square, London E14 5HQ, United Kingdom; Mizuho International plc of Mizuho House, 30 Old Bailey, London EC4M 7AU, United Kingdom; First Abu Dhabi Bank PJSC of FAB Building, Khalifa Business Park – Al Qurm District, P.O. Box 6316, Abu Dhabi, United Arab Emirates; Santander Investment Securities Inc. of 45 E 53rd Street, 5th Floor, New York, NY 10022; SMBC Nikko Capital Markets Limited of One New Change, London, EC4M 9AF, United Kingdom; Société Générale of 29, boulevard Haussmann, 75009 Paris, France; Abu Dhabi Commercial Bank PJSC of PO Box 939, Abu Dhabi, United Arab Emirates; BNP Paribas of 16, boulevard des Italiens, 75009 Paris, France; Crédit Agricole Corporate and Investment Bank of 12, place des Etats-Unis, CS 70052, 92547 Montrouge Cedex, France; Emirates NBD Bank PJSC of PO Box 777, Dubai, United Arab Emirates; MUFG Securities EMEA plc of Ropemaker Place, 25 Ropemaker Street, London EC2Y 9AJ, United Kingdom; Natixis Securities Americas LLC of 1251 Avenue of the Americas, 4th Floor, New York, NY, USA 10020; Samba Financial Group of Umm Suqeim 2, Jumeriah Beach Road, P.O.Box 6038, Dubai, United Arab Emirates; Standard Chartered Bank of 7th Floor Building One, Gate Precinct, Dubai International Financial Centre, P.O. Box 999, Dubai, United Arab Emirates; CaixaBank S.A. of Calle Pintor Sorolla 2-4, Valencia 46002, Spain; and DBS Bank Ltd. of 12 Marina Boulevard, Level 42, DBS Asia Central, Marina Bay Financial Centre Tower 3, Singapore 018982.

"**Material Adverse Effect**" means an event or circumstances which, taking into account all the circumstances, has a material adverse effect on:

(a) the business, assets or financial condition of the Issuer, provided that, for the avoidance of doubt, the occurrence or continuation of a Non-Dividend Event shall not constitute such an event or circumstance;

(b) the ability of the Issuer to perform its payment obligations under any of the Bonds (taking into account all resources available to it) provided that, for the avoidance of doubt, the occurrence or continuation of a Non-Dividend Event shall not constitute such an event or circumstance; or

(c) (x) the validity or enforceability of any Transaction Security granted pursuant to the Finance Documents in any way which is materially adverse to the interests of the Bondholders or (y) the rights and remedies of the Bondholders under the Bond Documents taken as a whole, and which in each case, if capable of remedy, is not remedied within 20 Business Days of the earlier of the (i) Bond Trustee notifying the Issuer of the relevant event or circumstance; and (ii) the Issuer becoming aware of the relevant event or circumstance.

"**Moody's**" means Moody's Investors Service Limited or any successor to its rating business.

"**Net Finance Charges**" means, for any Relevant Period, the Finance Charges for that Relevant Period after deducting any interest payable in that Relevant Period to the Issuer on any cash or Cash Equivalent Investment.

"**New Bonds**" has the meaning given to it in Condition 15.1 (*Additional Bonds*).

"**New Shareholder Injections**" means the aggregate amount (without double counting) subscribed for by the Parent for ordinary shares in the Issuer (including any share premium) or for subordinated loan notes or other subordinated debt instruments in the Issuer, provided that any subordination is on the terms of the Security Trust and Intercreditor Deed or otherwise on terms acceptable to the Bond Trustee.

"**Non-Dividend Event**" means an amendment to the Dividend Policy by ADNOC HoldCo made in accordance with the Shareholders' Agreement following the adoption by the board of directors of ADNOC of a decision to suspend payments to the government of Abu Dhabi in respect of any Financial Quarter which amendment results in (a) no amount being distributed by AssetCo to its shareholders in that Financial Quarter and any subsequent Financial Quarter during which such decision remains in place; or (b) an amount distributed by AssetCo to its shareholders in that Financial Quarter and any subsequent Financial Quarter during which such decision remains in place being less than the amount that would otherwise have been distributed by AssetCo to its shareholders in such Financial Quarters.

"**Non-Dividend Event End Date**" means, with respect to a Non-Dividend Event, the first date on which the Company Segregated Amount relating to that Non-Dividend Event is distributed by AssetCo to the Issuer.

"**Officers' Certificate**" means a certificate signed by a director of the Issuer.

"**Original Bonds**" has the meaning given to it in the introduction to these Conditions.

"**Original Bond Documents**" means:

(a) any Original Bonds;

(b) the Principal Bond Trust Deed;

(c) the Agency Agreement; and

(d) the Series A, B and C Subscription Agreement.

"**Outstanding**" has the meaning given to it in the Bond Trust Deed.

"**Parent**" has the meaning given to it in the introduction to these Conditions.

"**Perfection Requirements**" means the making or procuring of the appropriate registrations, filings, endorsements, annotations, notarizations, stampings and/or notifications of the Security Documents and/or the Security created or purported to be created thereunder (but without prejudice to the obligations of the Parent and the Issuer to comply with any applicable time periods required by law or by the Finance Documents for such registrations, filings, endorsements, annotations, notarizations, stampings or notifications).

"**Permitted Additional Debt Document**" means any agreement or other document setting out the terms (or any of them) of, or evidencing or constituting, any Permitted Additional Financial Indebtedness.

"**Permitted Additional Financial Indebtedness**" means any Financial Indebtedness incurred by the Issuer (whether by way of bank debt, institutional debt, private placement debt, bonds or otherwise) in accordance with the provisions of the Security Trust and Intercreditor Deed, provided that the following conditions must be satisfied:

(a) no Bond Event of Default is continuing or would result from the incurrence of such Permitted Additional Financial Indebtedness;

(b) on or prior to the date on which such Permitted Additional Financial Indebtedness is incurred, each provider of such Permitted Additional Financial Indebtedness (or their respective representatives) has acceded to the Security Trust and Intercreditor Deed as a Secured Creditor in accordance with the Security Trust and Intercreditor Deed;

(c) such Permitted Additional Financial Indebtedness ranks no better than *pari passu* to the Bonds and the Bonds will not be contractually subordinated to any Financial Indebtedness provided under the Permitted Additional Financial Indebtedness;

(d) the creditors of such Permitted Additional Financial Indebtedness shall share in the Transaction Security on a *pari passu* basis with the Bonds and such creditors will not benefit from additional Security or guarantees;

(e) the DSCR (in respect of which (i) Debt Service is adjusted on a pro forma basis for the incurrence of such Permitted Additional Financial Indebtedness and the repayment of any Financial Indebtedness from the proceeds of such Permitted Additional Financial Indebtedness and (ii) AssetCo Free Cash is projected on the basis that Free Cash is derived solely from MVC) projected for each period of 12 months commencing on each Quarter Date, from and including the Quarter Date immediately preceding the date on which such Permitted Additional Financial Indebtedness is to be incurred and ending on September 30, 2040 is not less than 1.02:1;

(f) such Permitted Additional Financial Indebtedness is incurred in U.S.$ or fully hedged to U.S.$;

(g) the Issuer will, following the incurrence of such Permitted Additional Financial Indebtedness, continue to be in compliance with the Hedging Policy; and

(h) the interest periods for such Permitted Additional Financial Indebtedness shall, except in the case of the first and last interest periods, be for a period of six months, and the interest payment dates in respect of which shall align with the Interest Payment Dates of the Bonds save for the final maturity date of such Permitted Additional Financial Indebtedness.

"**Permitted Financial Indebtedness**" means Financial Indebtedness:

(a) which is Permitted Additional Financial Indebtedness;

(b) arising under any of the Finance Documents;

(c) arising under the Acquisition Documents;

(d) which is Subordinated Indebtedness;

(e) arising under the Debt Service Reserve Facility or any successor or replacement facility in whole or in part thereto;

(f) arising under a Permitted Loan or a Permitted Guarantee or a Treasury Transaction permitted in accordance with Condition 4.9 (*Treasury Transactions*);

(g) arising under any netting or set-off arrangement entered into by the Issuer in the ordinary course of its banking arrangements to the extent permitted pursuant to the definition of Permitted Security;

(h) any Financial Indebtedness entered into with the prior written consent of the Bond Trustee (acting in accordance with the Bond Trust Deed); or

(i) not permitted by the preceding paragraphs or as a Permitted Transaction and the outstanding principal amount of which does not exceed U.S.$50,000,000 (or its equivalent in other currencies) in aggregate at any time.

"**Permitted Guarantee**" means:

(a) any guarantee or indemnity under or in respect of Permitted Financial Indebtedness (including customary guarantees and indemnities contained in mandate, engagement and commitment letters, facility agreements, purchase agreements and indentures in each case entered into in respect of or in contemplation of Permitted Financial Indebtedness);

(b) any guarantee or indemnity granted by the Issuer in an Acquisition Document;

(c) any guarantee given in respect of the netting or set-off arrangements permitted pursuant to paragraph (c) of the definition of Permitted Security;

(d) any indemnity or guarantee granted by the Issuer to AssetCo in respect of any withholding or other tax paid or payable by AssetCo on any dividend or other distribution by AssetCo to the Issuer;

(e) any guarantee entered into with the prior written consent of the Bond Trustee (acting in accordance with the Bond Trust Deed); or

(f) any guarantee not permitted by the preceding paragraphs or as a Permitted Transaction and the outstanding principal amount of which does not exceed U.S.$50,000,000 (or its equivalent in other currencies) in aggregate at any time.

"**Permitted Loan**" means:

(a) Financial Indebtedness which is referred to in the definition of, or otherwise constitutes, Permitted Financial Indebtedness;

(b) any loan which constitutes a Permitted Payment;

(c) any loan to AssetCo provided that to the extent the aggregate principal amount of all such loans exceeds U.S.$50,000,000 (or its equivalent in other currencies) at any time and subject to the Agreed Security Principles, the Issuer shall provide to the relevant Security Agent for the benefit of the Secured Creditors Security over its receivables in respect of such loans (in form and substance reasonably satisfactory to the relevant Security Agent);

(d) any loan entered into with the prior written consent of the Bond Trustee (acting in accordance with the Bond Trust Deed); or

(e) any loan not permitted by the preceding paragraphs so long as the aggregate amount of the Financial Indebtedness under any such loans does not exceed U.S.$5,000,000 (or its equivalent in other currencies) at any time.

"**Permitted Payment**" means any of the following:

(a) a Restricted Payment, provided that the Restricted Payment Condition is satisfied;

(b) payment by the Issuer:

    (i) of reasonable professional or legal fees (not referred to in sub-paragraphs (iii) or (iv) below) required to maintain its corporate existence, regulatory and, provided that they are on arm's length terms and reasonably incurred, administrative, operating and corporate overhead costs and expenses of the Sponsors or of Holding Companies of the Issuer of up to U.S.$5,000,000 (as increased each Financial Year in line with UK consumer price index) (or its equivalent in other currencies) in any Financial Year;

    (ii) in respect of Taxes, provided that such Taxes are attributable to the Issuer;

    (iii) to any of the Sponsors, Sponsor Affiliates or any advisor to any Sponsor for corporate finance, investment, M&A and transaction advice provided to the Issuer on bona fide arms' length commercial terms; and

    (iv) of monitoring or advisory fees to the Sponsors, Sponsor Affiliates and directors'/managers' fees (or directors'/managers' costs and expenses, including customary salary, bonus and other benefits) which are attributable to the Issuer, provided that the aggregate of all such payments under sub-paragraphs (iii) and (iv) does not exceed U.S.$10,000,000 (as increased each Financial Year in line with UK consumer price index) (or its equivalent in other currencies) in any Financial Year;

(c) a payment which is a Permitted Transaction;

(d) (without double counting) any payment of Acquisition Costs;

(e) payment by the Issuer to any person out of monies that would otherwise be available to fund the making of a Restricted Payment (provided that the Restricted Payment Condition is satisfied) for any purpose which is not prohibited by the Finance Documents; or

(f) any other payment consented to or approved by the Bond Trustee (acting in accordance with the Bond Trust Deed).

"**Permitted Security**" means:

(a) any Transaction Security;

(b) any lien arising by operation of law in the ordinary course of day to day business and not as a result of any default or omission by the Parent or the Issuer;

(c) any netting or set-off arrangement entered into by the Issuer in the ordinary course of its banking arrangements for the purpose of netting its debit and credit balances;

(d) any payment or close-out netting or set-off arrangement pursuant to any Treasury Transaction not prohibited by these Conditions;

(e) any Security or Quasi-Security provided by the Issuer to a stock, trade or derivative exchange for the purpose of entering into any Treasury Transaction permitted in accordance with Condition 3.11 (*Treasury Transactions*) not entered into for speculative purposes;

(f) any Security arising under statute or by operation of law in favor of any government, state or local authority in respect of Taxes, assessments or government charges which are being contested by the Parent or the Issuer in good faith and where adequate reserves are being maintained in respect of such claims;

(g) any rights of set-off and combination of accounts or other customary Quasi-Security arising in favor of the account holding bank with whom the Issuer maintains a banking relationship in the ordinary course of business and granted as part of that bank's standard terms and conditions;

(h) any Security created in respect of any pre-judgment legal process or any judgment or judicial award relating to security for costs, where the relevant proceedings are being contested in good faith by the Parent or the Issuer by appropriate procedures and where adequate reserves are being maintained in respect of such claim;

(i) any Security or Quasi-Security arising over any bank accounts or custody accounts or other clearing banking facilities held by the Issuer with any bank or financial institution under the standard terms and conditions of such bank or financial institution;

(j) any Security constituting an escrow arrangement to which proceeds from any issue of any Permitted Additional Financial Indebtedness are subject;

(k) a right of set-off, banker's liens or the like arising by operation of law or by contract by virtue of the provision of any overdraft facility and like arrangements arising as a consequence of entering into arrangements on the standard terms of any bank providing an overdraft;

(l) any Security or Quasi-Security constituting an escrow arrangement for the purpose of the payment of the purchase price for the Acquisition as contemplated in accordance with the terms of the Acquisition Agreement;

(m) any other Security or Quasi-Security approved with the prior written consent of the Bond Trustee (acting in accordance with the Bond Trust Deed); or

(n) any Security or Quasi-Security securing indebtedness the outstanding principal amount of which (when aggregated with the outstanding principal amount of any other indebtedness which has the benefit of Security given by the Issuer other than any permitted under paragraphs (a) to (m) (inclusive) above) does not exceed in aggregate U.S.$50,000,000 (or its equivalent in other currencies).

"**Permitted Share Issue**" means an issue of:

(a) shares by the Issuer to the Parent, paid for in full in cash upon issue and which by their terms are not redeemable and where the newly-issued shares become subject to the Transaction Security as soon as is reasonably practicable thereafter on the same terms as the existing Transaction Security in respect of the shares in the Issuer; or

(b) shares by AssetCo to the Issuer, provided that, in each case, those shares become subject to the Transaction Security as soon as is reasonably practicable thereafter on the same terms as the existing Transaction Security in respect of AssetCo Shares.

"**Permitted Transaction**" means:

(a) any disposal required, Financial Indebtedness incurred, guarantee, indemnity or Security or Quasi-Security given, or other transaction arising, under the Finance Documents;

(b) transactions (other than (i) any sale, lease, license, transfer or other disposal and (ii) the granting or creation of Security or the incurring or permitting to subsist of Financial Indebtedness) conducted in the ordinary course of trading on arm's length terms; or

(c) any transaction consented to or approved by the Bond Trustee (acting in accordance with the Bond Trust Deed).

"**Person**" means any individual, corporation, partnership, joint venture, trust, unincorporated organization or government or any Agency or political subdivision thereof.

"**Post-Enforcement Priority of Payments**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Potential Bond Event of Default**" means any condition, event or act which, with the lapse of time and/or the issue, making or giving of any notice, certification, declaration, demand, determination and/or request and/or the taking of any similar action and/or the fulfilment of any similar condition, would constitute a Bond Event of Default.

"**Pre-Enforcement Priority of Payments**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Pre-Funding Ledger"** has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Pre-Funding Required Amount**" means the aggregate of each Interest Reserve Amount and Amortization Reserve Amount as defined in Schedule 6 of the Security Trust and Intercreditor Deed.

"**Principal Paying Agent**" has the meaning given to it in the introduction to these Conditions.

"**Pro Rata Allocation Mechanic**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Project Documents**" means the General Services Agreement, the Lease Agreement and the U&O Agreement.

"**proxy**" has the meaning given to it in the Bond Trust Deed.

"**Qualifying Secured Creditors**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Quarter Date**" means March 31, June 30, September 30 and December 31 in each calendar year.

"**Quasi-Security**" has the meaning given to it in Condition 3.5(a) (*Negative Pledge*).

"**Rating**" means any rating ascribed by any Rating Agency appointed by the Issuer from time to time to provide a rating in respect of any Secured Debt.

"**Rating Agency**" means (1) each of Fitch, Moody's and S&P and (2) if any of Fitch, Moody's or S&P ceases to rate the Bonds or fails to make a rating of the Bonds publicly available for reasons outside of our control, a "nationally recognized statistical rating organization" within the meaning of Rule 15c3-1(c)(2)(vi)(F) under the U.S. Exchange Act, selected by us as a replacement agency for Fitch, Moody's or S&P, as the case may be.

"**Receiver**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Record Date**" has the meaning given to it in Condition 7.5 (*Record date*).

"**Register**" has the meaning given to it in Condition 1.1 (*Form and denomination*).

"**Registrar**" has the meaning given to it in the introduction to these Conditions.

"**Regulation S**" means Regulation S under the Securities Act.

"**Regulation S Individual Certificates**" has the meaning given to it in Condition 1.1 (*Form and denomination*).

"**Regulation S Bonds**" mean the Bonds offered and sold outside the United States to investors that are not U.S. persons or persons acquiring for the account or benefit of U.S. persons in reliance on Regulation S.

"**Relevant Date**" means whichever is the later of (i) the date on which such payment first becomes due and (ii) if the full amount payable has not been received by the Principal Paying Agent and Transfer Agent or the Bond Trustee on or prior to such due date, the date on which, the full amount having been so received, notice to that effect shall have been given to the Bondholders.

"**Relevant Jurisdiction**" means, in relation to the Issuer, the Parent or AssetCo, as applicable:

(a) its jurisdiction of incorporation;

(b) any jurisdiction where any asset subject to or intended to be subject to the Transaction Security to be created by it is situated;

(c) any jurisdiction where it conducts its business; and

(d) any jurisdiction whose laws govern the perfection of any of the Security Documents entered into by it.

"**Relevant Percentage**" means the percentage of AssetCo Shares held by the Issuer from time to time.

"**Relevant Period**" means each period of four consecutive Financial Quarters ending on a Quarter Date.

"**Restricted Payment**" has the meaning given to that term in Condition 3.12 (*Distributions and shareholder loans*).

"**Restricted Payment Condition**" means:

(a) no Bond Event of Default has occurred and is continuing or would occur as a result of the making of such Restricted Payment;

(b) no Non-Dividend Event has occurred and is continuing;

(c) unless the Restricted Payment is being made within 90 days of an Interest Payment Date, the amount standing to the credit of each Pre-Funding Ledger maintained by the Issuer in respect of the Debt Service Payment Account is not less than the Pre-Funding Required Amount for the Quarter Date immediately preceding such Restricted Payment;

(d) the Compliance Certificate most recently delivered pursuant to the Bond Trust Deed demonstrates that the DSCR was greater than or equal to 1.02:1; and

(e) the aggregate amount available under the Debt Service Reserve Facility, any equivalent debt service reserve facility available to the Issuer and the amount (if any) credited to the Debt Service Reserve Account is in aggregate at least equal to the DSRF Required Amount and no drawing is outstanding (other than a Standby Drawing) under the Debt Service Reserve Facility or any such equivalent debt service reserve facility.

"**Rule 144A**" means Rule 144A under the Securities Act.

"**Rule 144A Global Bond Certificates**" has the meaning given to it in Condition 1.1 (*Form and denomination*).

"**Rule 144A Individual Certificates**" has the meaning given to it in Condition 1.1 (*Form and denomination*).

"**Rule 144A Bonds**" means the Bonds initially offered and sold to persons who are "qualified institutional buyers" as defined in Rule 144A who are "qualified purchasers" as defined in Section 2(a)(51) under the U.S. Investment Company Act of 1940, as amended, and the rules and regulations thereunder.

"**Securities Act**" has the meaning given to it in Condition 1.4 (*Transfers*).

"**Secured Creditors**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Secured Debt**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Secured Obligations**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Security**" means a mortgage, charge, pledge, lien or other security interest securing any obligation of any person or any other agreement or arrangement having a similar effect.

"**Security Agent**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Security Document**" means:

(a) the Jersey law security interest agreement dated June 30, 2020 between the Parent and the Offshore Security Agent in respect of: (i) the shares in the Issuer; and (ii) any receivables under any subordinated indebtedness owed to the Parent by the Issuer;

(b) the Jersey law security interest agreement dated June 30, 2020 between the Issuer and the Offshore Security Agent in respect of bank accounts of the Issuer located in Jersey;

(c) the English law security assignment agreement dated June 30, 2020 between the Issuer and the Offshore Security Agent in respect of all of the Issuer's rights under the Hedging Agreements;

(d) the Abu Dhabi law moveables security agreement dated June 30, 2020 between the Issuer and the Onshore Security Agent in respect of any receivables under the Acquisition Agreement, the Escrow Agreement and the Seller's Guarantee (in each case as defined in the Acquisition Agreement) owed to the Issuer;

(e) the Abu Dhabi law security assignment agreement dated June 30, 2020 between the Issuer and the Onshore Security Agent in respect of the Issuer's rights (excluding the rights to any receivables that are payable) under the Acquisition Agreement, the Escrow Agreement and the Seller's Guarantee (in each case as defined in the Acquisition Agreement);

(f) the Abu Dhabi law share pledge agreement dated July 22, 2020 between the Issuer and the Onshore Security Agent in respect of the AssetCo Shares;

(g) a right of first offer agreement dated July 27, 2020 between, amongst others, the Issuer, the Onshore Security Agent and ADNOC HoldCo in respect of the AssetCo shares pledged by the Issuer;

(h) a right of first offer agreement dated June 30, 2020 between, amongst others, the Parent, the Offshore Security Agent and ADNOC HoldCo in respect of the shares in the Issuer pledged by the Parent; and

(i) any other document entered into by the Parent or the Issuer creating or expressed to create any Security Interests over all or any part of its assets in respect of the obligations of any of the Issuer under any of the Finance Documents.

"**Security Trust and Intercreditor Deed**" or "**STID**" means the security trust and intercreditor deed dated June 23, 2020 and made between, among others, the Parent, the Issuer, the Security Agents and First Abu Dhabi Bank PJSC, as amended and/or restated on or about the Issue Date.

"**Senior Debt Documents**" means:

(a) the Common Documents;

(b) the Bond Documents;

(c) the Original Bond Documents;

(d) the Debt Service Reserve Facility Agreement and any successor to or replacement of such Debt Service Reserve Facility Agreement from time to time; and

(e) any agreement documenting an Authorized Credit Facility.

"**Series A, B and C Subscription Agreement**" means a subscription agreement entered into on October 28, 2020 between the Issuer and the initial purchasers as named therein in relation to the Series A Bonds, the Series B Bonds and the Series C Bonds, pursuant to which the initial purchasers named therein agreed to subscribe for the Series A Bonds, the Series B Bonds and the Series C Bonds.

"**Series D and E Subscription Agreement**" means a subscription agreement entered into on February 10, 2021 between the Issuer and the Managers in relation to the Series D Bonds and the Series E Bonds pursuant to which the Managers agreed to subscribe for the Series D Bonds and the Series E Bonds.

"**Series D Bonds Maturity Date**" has the meaning given to it in Condition 6.1 (*Redemption at Maturity*).

"**Series E Bonds Maturity Date**" has the meaning given to it in Condition 6.1 (*Redemption at Maturity*).

"**Shareholders' Agreement**" means the shareholders' agreement relating to AssetCo Shares entered into on or about June 23, 2020 (as the same may be amended, supplemented, restated and/or novated from time to time in accordance with its terms and these Conditions) between the Issuer and certain other shareholders of AssetCo.

"**Sponsor**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Sponsor Affiliate**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**STID Proposal**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Subordinated Indebtedness**" means any Financial Indebtedness made available to the Issuer by the Parent which is subordinated to the Bonds as Subordinated Liabilities under and as defined in the Security Trust and Intercreditor Deed or which is otherwise subordinated to the Bonds on terms reasonably satisfactory to the Bond Trustee and which, subject to the Agreed Security Principles, is subject to the Transaction Security.

"**Subsidiary**" means in relation to any company, corporation or partnership, another company, corporation or partnership:

(a) more than half the issued share capital of which is beneficially owned, directly or indirectly, by the first-mentioned company or corporation or partnership;

(b) which is controlled, directly or indirectly, by the first-mentioned company or corporation or partnership; or

(c) which is a Subsidiary of another Subsidiary of the first-mentioned company, corporation or partnership,

and for this purpose, a company or corporation or partnership shall be treated as being controlled by another if that other company or corporation or partnership is able to direct its affairs and/or to control the composition of its board of directors or equivalent body, and includes any subsidiary within the meaning of Articles 2 and 2A of the Companies (Jersey) Law 1991.

"**S&P**" means S&P Global Ratings, a division of S&P Global Inc. or any successor to its rating agency business.

"**Taxes**" means any taxes, duties, assessments or governmental charges of whatever nature imposed, levied, collected, withheld or assessed by or within the Relevant Jurisdiction of the Issuer or any authority therein or thereof having power to tax.

"**Transaction Documents**" means the Finance Documents, the Hedging Agreements, the Acquisition Documents, the Shareholders' Agreement, the Project Documents and the AssetCo MoA.

"**Transaction Security**" means the Security created or expressed to be created in favor of the Security Agents pursuant to the Security Documents.

"**Transfer Agent**" has the meaning given to it in the introduction to these Conditions.

"**Treasury Rate**" means the yield to maturity at the time of computation of U.S. Treasury securities with a constant maturity most nearly equal to the period from the redemption date to the Series A Bonds Maturity Date, the Series B Bonds Maturity Date or the Series C Bonds Maturity Date (as applicable). The Issuer will obtain such yield to maturity from the information compiled and published in the most recent Federal Reserve Statistical Release H. 15(519) which has become publicly available at least two Business Days prior to the redemption date. If such Statistical Release is no longer published, the Issuer will use any publicly available source or similar market data. If the period from the redemption date to the Series A Bonds Maturity Date, the Series B Bonds Maturity Date or the Series C Bonds Maturity Date (as applicable) is not equal to the constant maturity of a U.S. Treasury security for which a weekly average yield is given, the Issuer will obtain the Treasury Rate by linear interpolation, calculated to the nearest one-twelfth of a year, from the weekly average yields of U.S. Treasury securities for which such yields are given. If the period from the redemption date to the Series A Bonds Maturity Date, the Series B Bonds Maturity Date or the Series C Bonds Maturity Date (as applicable) is less than one year, the Issuer will use the weekly average yield on actually traded U.S. Treasury securities adjusted to a constant maturity of one year to make such calculation.

"**Treasury Transaction**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**U&O Agreement**" means the pipelines uses and operation agreement, dated on or about June 23, 2020 between ADNOC and AssetCo.

## BOOK-ENTRY; DELIVERY AND FORM

*The information set out below is subject to any change in or reinterpretation of the rules, regulations and procedures of DTC, Euroclear or Clearstream, Luxembourg (together, the "**Clearing Systems**") currently in effect. Investors wishing to use the facilities of any of the Clearing Systems are advised to confirm the continued applicability of the rules, regulations and procedures of the relevant Clearing System. None of the Issuer or any other party to the Bond Trust Deed will have any responsibility or liability for any aspect of the records relating to, or payments made on account of, beneficial ownership interests in the Bonds held through the facilities of any Clearing System or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests.*

### The Clearing Systems

Custodial and depositary links are to be established between DTC, Euroclear and Clearstream, Luxembourg to facilitate the initial issue of the Bonds and cross-market transfers of the Bonds associated with secondary market trading. See "*— Book-Entry Ownership*" and "*—Settlement and Transfer of Bonds*."

Investors may hold their interests in a global certificate directly through DTC, Euroclear or Clearstream, Luxembourg if they are accountholders ("**Direct Participants**") or indirectly ("**Indirect Participants**" and, together with Direct Participants, "**Participants**") through organizations which are Direct Participants therein.

### Euroclear and Clearstream, Luxembourg

Euroclear and Clearstream, Luxembourg each hold securities for their customers and facilitate the clearance and settlement of securities transactions through electronic book-entry transfer between their respective accountholders. Indirect access to Euroclear and Clearstream, Luxembourg is available to other institutions which clear through or maintain a custodial relationship with an accountholder of either system. Euroclear and Clearstream, Luxembourg provide various services including safekeeping, administration, clearance and settlement of internationally-traded securities and securities lending and borrowing. Euroclear and Clearstream, Luxembourg also deal with domestic securities markets in several countries through established depository and custodial relationships. Euroclear and Clearstream, Luxembourg have established an electronic bridge between their two systems across which their respective customers may settle trades with each other. Their customers are worldwide financial institutions including underwriters, securities brokers and dealers, banks, trust companies and clearing corporations.

### DTC

DTC has advised as follows: DTC is a limited purpose trust company organized under the laws of the State of New York, a "banking organization" under the laws of the State of New York, a member of the U.S. Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial code and a "clearing agency" registered pursuant to the provisions of Section 17A of the Exchange Act. DTC was created to hold securities for its participants and facilitate the clearance and settlement of securities transactions between participants through electronic computerized book-entry changes in accounts of its participants, thereby eliminating the need for physical movement of certificates. Participants include securities brokers and dealers, banks, trust companies, clearing corporations and certain other organizations. Indirect access to DTC is available to others, such as banks, securities brokers, dealers and trust companies, which clear through or maintain a custodial relationship with a DTC Direct Participant, either directly or indirectly.

Investors may hold their interests in the Rule 144A Bonds directly through DTC if they are Direct Participants in the DTC system, or as Indirect Participants through organizations which are Direct Participants in such system.

Under the rules, regulations and procedures creating and affecting DTC and its operations (the "**DTC Rules**"), DTC makes book-entry transfers of Rule 144A Bonds represented by a restricted global certificate (the "**Restricted Global Certificate**") among Direct Participants on whose behalf it acts with respect to Rule 144A Bonds and receives and transmits distributions of principal and interest on Rule 144A Bonds. The DTC Rules are on file with the SEC. Direct Participants and Indirect Participants with which beneficial owners of Rule 144A Bonds have accounts with respect to the Rule 144A Bonds similarly are required to make book-entry transfers and receive and transmit such payments on behalf of their beneficial owners. Accordingly, although beneficial owners who hold Rule 144A Bonds through Direct Participants or Indirect Participants will not possess Rule

144A Bonds, the DTC Rules, by virtue of the requirements described above, provide a mechanism by which Participants will receive payments and will be able to transfer their interest in respect of the Rule 144A Bonds.

DTC has advised the Issuer that it will take any action permitted to be taken by a holder of Bonds only at the direction of one or more Direct Participants and only in respect of such portion of the aggregate principal amount of the Restricted Global Certificates as to which such Participant or Participants has or have given such direction.

***Payments through DTC***

Payments of principal and interest in respect of the Restricted Global Certificates registered in the name of, or in the name of a nominee for, DTC are, and will be, made to the order of DTC or such nominee (as the case may be) as the registered holder of such Bond.

**Book-Entry Ownership**

***Euroclear and Clearstream, Luxembourg***

The unrestricted global certificate evidencing Regulation S Bonds (the "**Unrestricted Global Certificate**" and, together with the Restricted Global Certificate, the "**Global Certificate**") will have an ISIN and a Common Code and will be deposited with a common depositary for Euroclear and Clearstream, Luxembourg and registered in the name of a nominee for such common depository.

***DTC***

The Restricted Global Certificate evidencing the Rule 144A Bonds will have an ISIN and CUSIP number and will be deposited with the Custodian and registered in the name of Cede & Co. as nominee of DTC. The Custodian and DTC will electronically record the principal amount of the Bonds held within the DTC system.

***Relationship of Participants with Clearing Systems***

Each of the persons shown in the records of DTC, Euroclear or Clearstream, Luxembourg as the holder of a Bond evidenced by a Global Certificate must look solely to DTC, Euroclear or Clearstream, Luxembourg (as the case may be) for its share of each payment made by the Issuer to the holder of such Global Certificate and in relation to all other rights arising under such Global Certificate, subject to and in accordance with the respective rules and procedures of DTC, Euroclear or Clearstream, Luxembourg (as the case may be). The Issuer expects that, upon receipt of any payment in respect of Bonds evidenced by a Global Certificate, the common depositary by whom such Bond is held, or nominee in whose name it is registered, will immediately credit the relevant Clearing System which will in turn credit the relevant Direct Participants' or account holders' accounts in the relevant Clearing System with payments in amounts proportionate to their respective beneficial interests in the principal amount of the relevant Global Certificate as shown on the records of the relevant Clearing System or its nominee. The Issuer also expects that payments by Direct Participants in any Clearing System to owners of beneficial interests in any Global Certificate held through such Direct Participants in any Clearing System will be governed by standing instructions and customary practices. Save as aforesaid, such persons shall have no claim directly against the Issuer in respect of payments due on the Bonds for so long as the Bonds are evidenced by such Global Certificate and the obligations of the Issuer will be discharged by payment to the registered holder of such Global Certificate in respect of each amount so paid. None of the Issuer, the Bond Trustee or any other paying and transfer agent will have any responsibility or liability for any aspect of the records relating to or payments made on account of ownership interests in any Global Certificate or for maintaining, supervising or reviewing any records relating to such ownership interests.

**Settlement and Transfer of Bonds**

Subject to the rules and procedures of each applicable Clearing System, purchases of Bonds held within a Clearing System must be made by or through Direct Participants, which will receive a credit for such Bonds on the Clearing System's records. The ownership interest of each actual purchaser of each such Bond (the "**Beneficial Owner**") will in turn be recorded on the Direct and Indirect Participants' records.

Beneficial Owners will not receive written confirmation from any Clearing System of their purchase, but beneficial Owners are expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participant through which such beneficial owner entered into the transaction.

Transfers of ownership interests in Bonds held within the Clearing System will be effected by entries made on the books of Participants acting on behalf of beneficial owners. Beneficial Owners will not receive certificates evidencing their ownership interests in such Bonds, unless and until interests in any Global Certificate held within a Clearing System are exchanged for Bond Certificates.

No Clearing System has knowledge of the actual beneficial owners of the Bonds held within such Clearing System and their records will reflect only the identity of the Direct Participants to whose accounts such Bonds are credited, which may or may not be the beneficial owners. The Participants will remain responsible for keeping account of their holdings on behalf of their customers. Conveyance of notices and other communications by the Clearing Systems to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to beneficial owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time.

The laws of some jurisdictions may require that certain persons take physical delivery in definitive form of securities. Consequently, the ability to transfer interests in a Global Certificate to such persons may be limited. As DTC can only act on behalf of Direct Participants, who in turn act on behalf of Indirect Participants, the ability of a person having an interest in a Restricted Global Certificate to pledge such interest to persons or entities that do not participate in DTC, or otherwise take actions in respect of such interest, may be affected by a lack of a physical certificate in respect of such interest.

***Trading between Euroclear and Clearstream, Luxembourg Participants***

Secondary market sales of book-entry interests in the Unrestricted Global Certificates held through Euroclear or Clearstream, Luxembourg to purchasers of book-entry interests in the Bonds held through Euroclear or Clearstream, Luxembourg, will be conducted in accordance with the normal rules and operating procedures of Euroclear and Clearstream, Luxembourg and will be settled using its standard procedures.

***Trading between DTC Participants***

Secondary market sales of book-entry interests in the Restricted Global Certificates between Participants holding their interests through DTC (the "**DTC Participants**"), will occur in the ordinary way in accordance with DTC rules and will be settled using the procedures applicable to United States corporate debt obligations in DTC's "Same-Day Funds Settlement" system in same-day funds, if payment is effected in dollars, or free of payment, if payment is not effected in dollars. Where payment is not effected in dollars, separate payment arrangements outside DTC are required to be made between the DTC Participants.

***Trading between DTC Seller and Euroclear/Clearstream, Luxembourg Purchaser***

When book-entry interests in Bonds are to be transferred from the account of a DTC Participant holding a beneficial interest in a Restricted Global Certificate to the account of a Euroclear or Clearstream, Luxembourg accountholder wishing to purchase a beneficial interest in an Unrestricted Global Certificate (subject to the certification procedures provided in the Bond Trust Deed) the DTC Participant will deliver instructions for delivery to the relevant Euroclear or Clearstream, Luxembourg accountholder to DTC by 12:00 noon, New York time, on the settlement date. Separate payment arrangements are required to be made between the DTC Participant and the relevant Euroclear or Clearstream, Luxembourg Participant. On the settlement date, the custodian of a Restricted Global Certificate will instruct the Registrar to (i) decrease the amount of Bonds registered in the name of Cede & Co. and evidenced by such Restricted Global Certificate and (ii) increase the amount of Bonds registered in the name of the nominee of the common depositary for Euroclear and Clearstream, Luxembourg and evidenced by the Unrestricted Global Certificate. Book-entry interests will be delivered free of payment to Euroclear or Clearstream, Luxembourg, as the case may be, for credit to the relevant accountholder on the first business day following the settlement date.

***Trading between Euroclear/Clearstream, Luxembourg Seller and DTC Purchaser***

When book-entry interests in the Bonds are to be transferred from the account of a Euroclear or Clearstream, Luxembourg accountholder to the account of a DTC Participant wishing to purchase a beneficial interest in a Restricted Global Certificate (subject to the certification procedures provided in the Bond Trust Deed) the Euroclear or Clearstream, Luxembourg Participant must send to Euroclear or Clearstream, Luxembourg delivery free of payment instructions by 7:45 p.m., Brussels or Luxembourg time, one business day prior to the settlement date. Euroclear or Clearstream, Luxembourg, as the case may be, will in turn transmit appropriate instructions to the common depositary for Euroclear and Clearstream, Luxembourg and the Registrar to arrange delivery to the DTC Participant on the settlement date. Separate payment arrangements are required to be made between the DTC Participant and the relevant Euroclear or Clearstream, Luxembourg accountholder, as the case may be. On the settlement date, the common depositary for Euroclear and Clearstream, Luxembourg will (a) transmit appropriate instructions to the custodian of such Restricted Global Certificate who will in turn deliver such book-entry interests in the Bonds free of payment to the relevant account of the DTC Participant and (b) instruct the Registrar to (i) decrease the amount of Bonds registered in the name of the nominee of the common depositary for Euroclear and Clearstream, Luxembourg and evidenced by an Unrestricted Global Certificate; and (ii) increase the amount of Bonds registered in the name of Cede & Co. and evidenced by such Restricted Global Certificate.

Although DTC, Euroclear and Clearstream, Luxembourg have agreed to the foregoing procedures in order to facilitate transfers of beneficial interests in Global Certificates among Participants and accountholders of DTC, Euroclear and Clearstream, Luxembourg, they are under no obligation to perform or continue to perform such procedures, and such procedures may be discontinued at any time. None of the Issuer, the Bond Trustee, any other Principal Paying Agent and Transfer Agent will have any responsibility for the performance by DTC, Euroclear, Clearstream, Luxembourg or their respective Direct or Indirect Participants of their respective obligations under the rules and procedures governing their operations.

## SUMMARY OF CERTAIN FINANCE DOCUMENTS

*The following summaries of selected provisions of certain finance documents are not considered or intended to be full statements of the terms of these agreements or instruments. Unless otherwise stated, any reference in this Offering Memorandum to any agreement will mean such agreement and all schedules, exhibits and attachments thereto as in effect on the date hereof. Copies of each of these agreements and instruments are available for inspection at the registered office of the Principal Paying Agent on the basis described under "Terms and Conditions of the Bonds." You will find the definitions of capitalized terms used and not defined in this description in "Annex A: Glossary of Certain Terms", in the "Terms and Conditions of the Bonds" and as provided elsewhere in this Offering Memorandum.*

### Security Trust and Intercreditor Deed

#### *General*

The intercreditor arrangements in respect of the Parent and the Issuer (the "**Intercreditor Arrangements**") are contained in the STID. The Intercreditor Arrangements bind each of the Secured Creditors, the Parent and the Issuer.

The Secured Creditors will include all providers of Secured Debt that enter into or accede to the STID. Any new Secured Creditor will be required to accede to the STID. The STID also contains provisions restricting the rights of the Parent (being a subordinated creditor) and any additional subordinated creditors (the "**Subordinated Creditors**") and contains mechanics requiring any creditors in respect of all present and future liabilities at any time of the Issuer to any Subordinated Creditor in respect of any Financial Indebtedness (the "**Subordinated Liabilities**") to accede to the STID as a Subordinated Creditor.

The purpose of the Intercreditor Arrangements is to regulate, among other things: (a) the claims of the Secured Creditors; (b) the enforcement of rights (including enforcement of security and acceleration of indebtedness) by the Secured Creditors; (c) the rights of the Secured Creditors to instruct the Offshore Security Agent and the Onshore Security Agent (as applicable); (d) the Entrenched Rights and the Reserved Matters of the Secured Creditors and (e) the giving of consents and waivers under and the making of modifications to the STID and the Common Documents.

The Intercreditor Arrangements also contains a number of allocation mechanics and waterfalls setting out, among other things: (a) the Post-Enforcement Priority of Payments regulating the ranking of claims of the Secured Creditors during an Enforcement Period; (b) the Pro Rata Allocation Mechanic, which regulates the application of mandatory prepayment proceeds; and (c) the Pre-Enforcement Priority of Payments regulating the allocation of monies towards scheduled interest, net payments and amortization payments at the end of each Quarter prior to the delivery of an Enforcement Notice and/or an Acceleration Notice. Each Secured Creditor, the Parent and the Issuer give certain undertakings in the STID which serve to maintain the integrity of these arrangements.

#### *Secured Creditor Representative*

Each Secured Creditor or class of Secured Creditors shall appoint a representative in accordance with the STID (the "**Secured Creditor Representative**") to act as its representative in the exercise of all of their rights under the Common Documents (including casting all votes on its behalf). The following persons shall act as Secured Creditor Representative for the persons set out below:

(a) in respect of the Bonds and the Original Bonds, the Bond Trustee and any successor Bond Trustee in respect of itself and the Bondholders and holders of the Original Bonds in accordance with the Bond Trust Deed;

(b) in respect of the Lenders, the Facility Agent;

(c) in respect of each Super-Senior Liquidity Facility Provider, the Super-Senior Liquidity Facility agent under the relevant Super-Senior Liquidity Facility Agreement;

(d) in respect of each Hedge Counterparty, that Hedge Counterparty on its own behalf;

(e) in respect of the Security Agent, the Security Agent on its own behalf;

(f) in respect of each other Authorized Credit Facility (except as otherwise provided above), the Facility Agent or other Secured Creditor Representative named in the relevant Accession Memorandum or in any notice delivered pursuant to the STID, in each case in respect of such Authorized Credit Facility.

"**Authorized Credit Facility**" means any facility or agreement from time to time entered into by the Company for Secured Debt as permitted by the terms of the Finance Documents, the providers of which are parties (or, in the case of any Bonds, the relevant Bond Trustee is party) to or have or has acceded to this Deed, and includes:

(a) the Initial Bank Facility;

(b) any Super-Senior Liquidity Facility;

(c) the Hedging Agreements;

(d) any Permitted Additional Debt Document;

(e) any fee letter or commitment letter entered into in connection with the facilities or agreements referred to in paragraphs (a) to (d) (inclusive) above or the transactions contemplated by such facilities or agreements; and

(f) any other document (not being a Common Document) that has been entered into in connection with the facilities or agreements referred to in paragraphs (a) to (d) (inclusive) above or the transactions contemplated by such facilities or agreements that has been designated as a document that should be deemed to be an Authorized Credit Facility for the purposes of this definition by the parties thereto (including the Issuer).

"**Authorized Credit Facility Agreement**" means an agreement documenting an Authorized Credit Facility.

"**Permitted Additional Debt Document**" means any agreement or other document setting out the terms (or any of them) of, or evidencing or constituting, any Permitted Additional Financial Indebtedness.

"**Permitted Additional Financial Indebtedness**" means Financial Indebtedness incurred by the Issuer or a Relevant Issuer which the Issuer or the Relevant Issuer and the creditors of such Financial Indebtedness (the "**Incoming Creditors**") (or their representative(s)) have designated as Permitted Additional Financial Indebtedness for the purposes of the Common Documents provided that:

(a) the Incoming Creditors (or their representative(s)) accede to the STID;

(b) the Incoming Creditors do not, and may not at any time, benefit from any Security Interests, guarantees or other credit support, or recourse to, the Parent or the Issuer other than pursuant to the Security Documents and the STID;

(c) the Issuer provides a certificate to the Offshore Security Agent at the time of establishing such Permitted Additional Financial Indebtedness confirming that:

    (i) any hedging in respect of the Permitted Additional Financial Indebtedness complies with the Hedging Policy; and

    (ii) such Permitted Additional Financial Indebtedness complies with any other conditions to incurrence set out in any Finance Document;

(d) such Financial Indebtedness ranks no higher than *pari passu* with each other Authorized Credit Facility (unless it is a Super-Senior Liquidity Facility); and

(e) the other Authorized Credit Facilities will not be contractually or structurally subordinated to any such Financial Indebtedness (unless it is a Super-Senior Liquidity Facility).

"**Super-Senior Liquidity Facility**" means any liquidity facility made available under a Super-Senior Liquidity Facility Agreement.

"**Super-Senior Liquidity Facility Agreement**" means any Authorized Credit Facility Agreement:

(a) in respect of which the Issuer provides a certificate to the Offshore Security Agent at the time of entering into such Authorized Credit Facility Agreement confirming that such Authorized Credit Facility Agreement satisfies any conditions in respect of the entry into of a "Super Senior Liquidity Facility Agreement" set out in any Finance Document; and

(b) which has been designated by the parties thereto (including the Issuer) as a "Super-Senior Liquidity Facility Agreement".

***Modifications, Consents and Waivers***

<u>General</u>

The STID contains detailed provisions setting out the voting and instruction mechanics in respect of: (a) Ordinary Voting Matters; (b) Extraordinary Voting Matters; (c) Entrenched Rights and (d) Reserved Matters (as further described below in "*Types of Voting Categories*"). Subject to Entrenched Rights and Reserved Matters (which will always require the consent of the Secured Creditors affected by such Entrenched Right, and, in the case of Reserved Matters, only, are reserved only to the relevant Secured Creditors who are affected) and Extraordinary Voting Matters, the Offshore Security Agent will only agree to any modification of or grant any consent or waiver under the Common Document with the consent of, or if so instructed by, the relevant majority of Qualifying Secured Creditors which participate in a vote on any STID Proposal or other matter pursuant to the STID (the "**Participating Qualifying Secured Creditors**") provided that the relevant Quorum Requirement has been met.

The Issuer may request an amendment, waiver or consent in respect of a Common Document by issuing (a "**STID Proposal**"). The STID Proposal will set out whether the subject matter of the STID Proposal is a Discretion Matter, an Ordinary Voting Matter or an Extraordinary Voting Matter or whether it gives rise to an Entrenched Right (as further described in "*Types of Voting Categories*"), and stating the Decision Period (as further described in "*Decision Periods*" below). If the STID Proposal is in relation to a Discretion Matter, the Issuer must also provide a certificate evidencing this status. If the STID Proposal is in relation to an Entrenched Right, the Issuer must include information to the Secured Creditors who are affected by such Entrenched Right. The STID also contains mechanics permitting the Secured Creditors to challenge the Issuer's determination of the relevant voting category.

The Offshore Security Agent will (provided that it has received from the Issuer any updated details of the relevant Secured Creditor Representatives of each Secured Creditor), following receipt of such STID Proposal, promptly but no later than five Business Days thereafter send a request (the "**STID Voting Request**") in respect of any Ordinary Voting Matter, Extraordinary Voting Matter or Entrenched Right to each Secured Creditor (through its Secured Creditor Representative).

If the STID Proposal gives rise to an Entrenched Right, the STID Voting Request will contain a request that each relevant Secured Creditor who is affected by an Entrenched Right (the "**Affected Secured Creditor**") confirms (through its Secured Creditor Representative) on or before the Business Day immediately preceding the last day of the Decision Period whether or not it consents to the relevant STID Proposal that gives rise to the Entrenched Right.

The Qualifying Secured Creditors (acting through their Secured Creditor Representatives) representing at least 20 per cent. of the Qualifying Secured Debt may challenge the Issuer's determination of the voting category of a STID Proposal (the "**Determination Dissenting Creditors**") and, subject to such Determination Dissenting Creditors providing supporting evidence or substantiation for their disagreement, instruct the Offshore

Security Agent to deliver a notice in writing, within 10 Business Days of receipt of the relevant STID Proposal, to inform the Issuer that the Determination Dissenting Creditors disagree the determination of the voting category made in such STID Proposal (the "**Determination Dissention Notice**"). The Determination Dissention Notice should specify, as applicable, the voting category they propose should apply, along with the required supporting evidence or substantiation of the matters set out in the Determination Dissention Notice required to be provided by the Determination Dissenting Creditors.

In addition, the Secured Creditors (acting through their Secured Creditor Representatives) may challenge the Issuer's determination as to whether there is an Entrenched Right (the "**Entrenched Right Dissenting Creditors**") and, subject to such Entrenched Right Dissenting Creditors providing supporting evidence or substantiation for their disagreement, instruct the Offshore Security Agent to deliver a notice in writing, within 10 Business Days of receipt of the relevant STID Proposal, to inform the Issuer that the Entrenched Right Dissenting Creditor disagrees with the determination of whether such STID Proposal gives rise to an Entrenched Right affecting such Secured Creditor (the "**Entrenched Right Dissention Notice**"). The Entrenched Right Dissention Notice should specify the Secured Creditor affected by the Entrenched Right (if any) and contain the supporting evidence or substantiation of the matters set out in the Entrenched Right Dissention Notice required to be provided by the Entrenched Right Dissenting Creditors.

The Issuer and the relevant Determination Dissenting Creditors or relevant Entrenched Right Dissenting Creditors (as applicable) will agree the voting category or whether there is an Entrenched Right affecting a Secured Creditor (as applicable) within five Business Days from receipt by the Issuer of the relevant notice from the Offshore Security Agent. If they are unable to agree within this time, or if no agreement can be reached, then an appropriate expert (instructed at the Issuer's expense) will make a decision as to the voting category or whether there is an Entrenched Right which decision will be final and biding on each of the parties.

If the Offshore Security Agent is not instructed to deliver such notice to the Issuer within ten Business Days (as set out above), the Qualifying Secured Creditors or Secured Creditors shall be deemed to have consented to the voting category proposed in the STID Proposal or, as applicable, agreed to there being an Entrenched Right, and the Decision Period will commence (see "*Decision Periods*" below).

***Types of Voting Categories***

<u>Ordinary Voting Matters</u>

Ordinary Voting Matters include all matters which are not designated as Extraordinary Voting Matters or Discretion Matters (see "*Extraordinary Voting Matters*" and "*Discretion Matters*" below). If the Quorum Requirement is met (see "*Quorum Requirements*" below), a resolution in respect of an Ordinary Voting Matter may be passed by a simple majority of the Voted Qualifying Debt in accordance with the section entitled "*Qualifying Secured Debt*" below. A STID Proposal in respect of any Ordinary Voting Matter which gives rise to an Entrenched Right will only be implemented, notwithstanding the passing of the relevant majority of the Voted Qualifying Debt if the relevant Affected Secured Creditor(s) (or, as applicable its or their, Secured Creditor Representative) has/have consented or deemed to consent to such STID Proposal, on which it/they will vote separately, as described in "*Entrenched Rights*" below.

<u>Extraordinary Voting Matters</u>

Extraordinary Voting Matters are those which, broadly speaking, affect the key structural principles on which voting of Extraordinary Voting Matters have been founded, affect the Extraordinary Voting Matters themselves or would result in a release of Security (unless such release is permitted in accordance with the terms of the Common Documents). If the Quorum Requirement for an Extraordinary Voting Matter is met (see "*Quorum Requirements*" below), the majority required to pass a resolution in respect of an Extraordinary Voting Matter will be at least 66⅔ per cent. of the Voted Qualifying Debt in accordance with the section entitled "*Qualifying Secured Debt*" below. A STID Proposal in respect of any Extraordinary Voting Matter which gives rise to an Entrenched Right will only be implemented, notwithstanding the passing of 66⅔ per cent. of the Voted Qualifying Debt if the relevant Affected Secured Creditor(s) (or, as applicable its or their, Secured Creditor Representative) has/have consented or deemed to consent to such STID Proposal, on which it/they will vote separately, as described in "*Entrenched Rights*" below.

Entrenched Rights

Entrenched Rights are rights that cannot be modified or waived in accordance with the STID without the consent of the Affected Secured Creditor(s). Entrenched Rights are divided in to Secured Creditor Entrenched Rights and Hedge Counterparty Entrenched Rights.

"**Secured Creditor Entrenched Rights**" means in relation to a Secured Creditor (other than a Hedge Counterparty) any amendment, waiver or consent that relates to, among other things, the priority of payments, Secured Creditors' status as Secured Creditors, certain key voting definitions and principles, delaying payments of principal or interest, changes to the standstill period, the exchange or conversion of the Secured Creditor's debt, changes to the allocation mechanics and waterfalls, the governing law and dispute resolution procedures of the Common Documents and transfer provisions.

"**Hedge Counterparty Entrenched Rights**" means matters which would change the definition of Hedging Agreement or Permitted Hedge Termination, change Hedge Counterparties' rights under the Hedging Policy, change the allocation mechanics and waterfalls, affect Hedge Counterparties' rights and obligations or adversely change a Hedge Counterparty's ranking in the Post-Enforcement Priority of Payments or application of payments (including the ranking of its claims).

Reserved Matters

Reserved Matters are matters which, subject to the STID, a Secured Creditor is free to exercise in accordance with its own debt instrument including:

(a) to receive any sums owing to it for its own account in respect of premia, fees, costs, charges, liabilities, damages, proceedings, claims and demands in relation to any Finance Documents to which it is a party as permitted pursuant to the terms of the STID;

(b) to make determinations of and require the making of payments due and payable to it under the provisions of the Finance Documents to which it is a party as permitted by the terms of the STID;

(c) to exercise the rights vested in it or permitted to be exercised by it under and pursuant to the terms of the STID and the other Finance Documents;

(d) to receive notices, certificates, communications or other documents or information under the Finance Documents or otherwise;

(e) to assign its rights or transfer any of its rights and obligations under any Finance Documents to which it is a party subject always to the provisions of the STID; and

(f) in the case of each Hedge Counterparty:

    (i) to terminate the relevant Hedging Agreement or any transaction thereunder provided such termination is a Permitted Hedge Termination; or

    (ii) to exercise rights permitted to be exercised by it under a Hedging Agreement.

Discretion Matters

The Offshore Security Agent may (but is not obliged to) make modifications, give any consent under, or grant any waiver in respect of any breach or proposed breach of the Common Documents to which the Offshore Security Agent is a party or over which it has the benefit of the Security Interests under the Security Documents, without any requirement to seek the approval of any Secured Creditor or Secured Creditor Representative, if:

(a) in the opinion of the Offshore Security Agent, it is required to correct a manifest error, or it is of a formal, minor or technical nature; or

(b) such modification, consent or waiver is not, in the opinion of the Offshore Security Agent, materially prejudicial to the interests of any of the Qualifying Secured Creditors (where "**materially prejudicial**" means that such modification, consent or waiver could have a material adverse effect on the ability of the Issuer to repay any of its Secured Obligations);

A matter cannot be a Discretion Matter if it is an Ordinary Voting Matter, an Extraordinary Voting Matter, is subject to an Entrenched Right or is subject to an ongoing disagreement with regard to the determination of the applicable voting category or the application of any of the Entrenched Rights. The Offshore Security Agent may choose not to exercise its discretion in respect of any STID Proposal designated as a Discretion Matter, and in such circumstance, the Issuer may issue a STID Proposal referring to another voting category in accordance with the STID.

Quorum Requirements

Pursuant to the terms of the STID, the Quorum Requirement is:

(a) in respect of an Ordinary Voting Matter, one or more Participating Qualifying Secured Creditors representing in aggregate at least 20 per cent. of the entire outstanding principal amount of all Qualifying Secured Debt **provided that** if the Quorum Requirement has not been met within the Decision Period (as described further in "*Decision Periods*" below), the Quorum Requirement shall be reduced to one or more Participating Qualifying Secured Creditors representing, in aggregate, at least 10 per cent. of the aggregate outstanding principal amount of all Qualifying Secured Debt and the Decision Period shall be extended for a period of a further ten Business Days from the expiry of the initial Decision Period; and

(b) in respect of an Extraordinary Voting Matter, one or more Participating Qualifying Secured Creditors representing, in aggregate, at least 20 per cent of the entire outstanding principal amount of all Qualifying Secured Debt **provided that** if the Quorum Requirement for an Extraordinary Voting Matter is not met by the Business Day immediately preceding the last day of the Decision Period, the Quorum Requirement will reduce to one or more Participating Qualifying Secured Creditors representing, in aggregate, at least 10 per cent. of the aggregate outstanding principal amount of all Qualifying Secured Debt and the Decision Period shall be extended for a period of a further ten Business Days from the expiry of the initial Decision Period.

Decision Periods

The STID includes provisions specifying the relevant decision periods within which votes must be cast (each a "**Decision Period**") which period must be:

(a) not less than ten Business Days from the date of delivery of the STID Proposal for any Discretion Matter;

(b) not less than 15 Business Days from the Decision Commencement Date for any Ordinary Voting Matter (which may be extended for a further period of ten Business Days if the quorum requirement for the relevant Ordinary Voting Matter has not been met within the initial Decision Period);

(c) not less than 15 Business Days from the Decision Commencement Date for any Extraordinary Voting Matter (which may be extended for a further period of ten Business Days if the quorum requirement for the relevant Extraordinary Voting Matter has not been met within the initial Decision Period); and

(d) not less than 15 Business Days from the Decision Commencement Date for an Entrenched Right. However, the Decision Period for an Entrenched Right for which the Bondholder is the Affected Secured Creditor will not be less than 45 days of the Decision Commencement Date.

"**Decision Commencement Date**" means:

(a) if the Qualifying Secured Creditors or, as the case may be, Secured Creditors are deemed to have agreed to the voting category proposed in the STID Proposal or, as applicable, as to whether the STID Proposal gives rise to any Entrenched Right affecting a Secured Creditor pursuant to the STID, the date which is ten Business Days from the receipt of the relevant STID Proposal;

(b) the date on which the Dissenting Creditors and the Issuer reach agreement on the applicable voting category; or

(c) if the agreement or determination is such that the existing STID Proposal is incorrect, the date of receipt by the persons specified in the STID Voting Request of an appropriately amended STID Proposal from the Issuer (as amended by or on behalf of the Issuer with the agreement of the Dissenting Creditors).

Modifications, consents and waivers will be passed by the requisite number of creditors as further described in "*Types of Voting Categories*" above.

In respect of any Ordinary Voting Matter and any Extraordinary Voting Matter, the relevant Qualifying Secured Creditors who did not cast their votes on or before the Business Day immediately preceding the last day of the Decision Period shall be considered to have waived their entitlement to vote and will not be counted towards the Quorum Requirement or majority required to approve the relevant STID Proposal, **provided that** if the requisite minimum quorum and voting requirements have been met under any Authorized Credit Facility (other than the Hedging Agreements and the Bonds) as set out in "*Voting of Authorized Credit Facilities (other than the Hedging Agreements, the Bonds and the PP Notes)*" below, the entire outstanding principal amount under any such Authorized Credit Facility (other than the Hedging Agreements and the Bonds) may be used to calculate whether the relevant Quorum Requirement or the majority required to approve such STID Proposal has been met.

In respect of any Entrenched Right, any Affected Secured Creditor who does not cast its vote within the Decision Period will be deemed to have consented to the relevant STID Proposal and to have confirmed to the Offshore Security Agent their approval of the relevant modification, consent or waiver.

***Qualifying Secured Debt***

<u>General</u>

Only the Qualifying Secured Creditors may vote (through their Secured Creditor Representatives) in respect of the Qualifying Secured Debt owed to or deemed to be owed to them other than in respect of an Entrenched Right where the relevant Secured Creditors, in each case through their Secured Creditor Representative where appointed or deemed to be appointed, are entitled to vote pursuant to the STID if they are Affected Secured Creditors.

"**Qualifying Secured Debt**" is comprised of:

(a) in respect of any Authorized Credit Facility that are loans:

  (i) the principal amount (or U.S.$ amount) of any drawn amounts that are outstanding under such Authorized Credit Facility; and

  (ii) for the purposes of any vote in connection with the STID only (other than in the case of any vote relating to the termination of a Standstill, the taking of enforcement action, the delivery of an Enforcement Notice or the delivery of an Acceleration Notice and any vote during an Enforcement Period), any amounts that are committed under such Authorized Credit Facility;

(b) in respect of each Hedging Transaction, if at the date of calculation or any vote:

(i) such Hedging Transaction has been terminated or closed out the amount outstanding to the relevant Hedge Counterparty following such termination: and

(ii) the relevant Hedge Counterparty is entitled to close out or terminate the Hedging Transaction, the U.S.$ amount, as calculated by the Hedge Counterparty and notified in writing by the Hedge Counterparty to the Offshore Security Agent and the Issuer (representing the mark-to-market value of the relevant Hedging Transaction to the extent that such value represents the amount which would be payable to the relevant Hedge Counterparty if the termination or close-out occurred on the date falling two Business Days after the date of the calculation (or in relation to any vote or Quorum Requirement, on the date falling two Business Days after the commencement of the relevant Decision Period) and only such mark-to-market value will be counted towards the relevant vote, calculation or Quorum Requirement);

(c) in respect of any other Secured Obligations, the U.S.$ amount or (i) in relation to a Bond, the original face value thereof less any repayment of principal made to the holder(s) thereof in respect of such Bond or (ii) in relation to any PP Note, the original face value thereof less any repayment of principal made to the holder(s) thereof in respect of such PP Note, of such debt on such date in accordance with the relevant Finance Document,

on the date on which the Qualifying Secured Creditors have been notified of a Relevant Voting Matter or on the date on which the relevant amount is to be determined, as the case may be, all as most recently certified or notified to the Offshore Security Agent pursuant to the STID.

"**Voted Qualifying Debt**" means the outstanding principal amount of Qualifying Secured Debt which is actually voted thereon by the Qualifying Secured Creditors.

***Certification of amounts of Qualifying Secured Debt***

Each Qualifying Secured Creditor (acting through its Secured Creditor Representative) must certify to the Offshore Security Agent within five Business Days of the date on which either: (i) the Qualifying Secured Creditors have been notified of a STID Proposal, a Qualifying Secured Creditor Instruction Notice or a Direction Notice; or (ii) the Offshore Security Agent requests such certification, the outstanding principal amount of any debt which constitutes Qualifying Secured Debt held by such Qualifying Secured Creditor. If any Qualifying Secured Creditor fails to provide such certification through its Secured Creditor Representative within the time required, then the Offshore Security Agent will notify the Issuer of such failure. The Issuer must promptly inform the Offshore Security Agent of the outstanding principal amount of Qualifying Secured Debt of such Qualifying Secured Creditor and such notification will be binding on the relevant Qualifying Secured Creditors except in the case of manifest error and without liability to the Issuer.

***Voting of Bonds by Bondholders***

As described in the section "*Qualifying Secured Debt*" above, amounts owed to the Bondholders by the Issuer are included in the Qualifying Secured Debt to the extent relating to the Bonds.

The votes of the Bondholders of each Tranche of Bonds in respect of any Relevant Voting Matter will be cast by the Bondholders of such Tranche (through the relevant Bond Trustee on their behalf) subject to and as required by the STID and the relevant Bond Trust Deed, in respect of a Tranche of Bonds and such Relevant Voting Matter as follows:

(a) in respect of any Tranche of Bonds where the Bond Trust Deed does not contain a quorum requirement, votes under that Tranche of Bonds will be counted on a U.S.$-for-U.S.$ basis either for or against the Relevant Voting Matter in each case in an amount equal to the aggregate of the outstanding principal amount of each Bond which is voted both in respect to the Quorum Requirements and the requisite majority; and

(b) in respect of any Tranche of Bonds where the relevant Bond Trust Deed contains a quorum requirement, that Tranche of Bonds votes will be cast for and against, provided that:

(i) if holders of 25 per cent. or more of the outstanding principal amount of such Tranche of Bonds participate in the vote and 75 per cent. or more vote in the same way, 100 per cent. of the outstanding principal amount of that Tranche of Bonds will be treated as having voted in that way for the purposes of the Quorum Requirements and requisite majority requirements; and

(ii) if holders of 25 per cent. or more of the outstanding principal amount of such Tranche of Bonds participate in the vote and less than 75 per cent. vote in the same way, 100 per cent. of the outstanding principal amount of that Tranche of Bonds will be treated as having voted in that way for the purposes of the Quorum Requirements but for the purposes of the requisite majority, they will vote for and against on a U.S.$-for- U.S.$ basis.

***Voting of Authorized Credit Facilities (other than the Hedging Agreements, the Bonds and the PP Notes)***

If in respect of any Authorized Credit Facility (other than the Hedging Agreements, the Bonds and the PP Notes) provided other than on a bilateral basis, the minimum quorum and voting majorities specified in the relevant Authorized Credit Facility are:

(a) met, only a single vote by reference to the entire outstanding principal amount of the Qualifying Secured Debt applicable to the Participating Qualifying Secured Creditors of such Authorized Credit Facility will be counted for the applicable proposal (and for the applicable Quorum Requirement); and

(b) not met, votes in respect of the relevant Authorized Credit Facility will be divided between votes cast in favour and votes cast against, on a U.S.$-for- U.S.$ basis in respect of the Qualifying Secured Debt then owed to Participating Qualifying Secured Creditors that vote on a proposed resolution within the Decision Period. Votes cast in favour and votes cast against will then be aggregated by the Offshore Security Agent with the votes cast for and against by the other Qualifying Secured Creditors.

***Voting of PP Notes***

A Secured Creditor Representative (including where a PP Noteholder is its own Secured Creditor Representative) may vote in respect of a Relevant Voting Matter the outstanding principal amount of the PP Notes of a PP Noteholder in respect of which it is appointed as the Secured Creditor Representative and a single vote by reference to that outstanding principal amount will be counted for or against the applicable Relevant Voting Matter.

***Voting in respect of Hedging Transactions by Hedge Counterparties***

Voting in respect of any Hedging Transaction arising under a Hedging Agreement in respect of any Relevant Voting Matter will be made by each Hedge Counterparty in respect of the outstanding principal amount (calculated in accordance with paragraph (b) of the definition of Qualifying Secured Debt under the section entitled "*Qualifying Secured Debt*") of such Hedging Transaction and, in respect of each Hedge Counterparty, a single vote by reference to the aggregate of outstanding principal amount (calculated in accordance with paragraph (b) of the definition of Qualifying Secured Debt under the section entitled "*Qualifying Secured Debt*") of all such Hedging Transactions of such Hedge Counterparty will be counted for or against the applicable Relevant Voting Matter.

"**Hedging Transaction**" means any interest rate or exchange rate hedging transactions in respect of any Secured Debt (other than Financial Indebtedness under the Hedging Agreements) which are entered into by the Issuer under a Hedging Agreement and in accordance with the Hedging Policy.

***Qualifying Secured Creditor Instructions***

Qualifying Secured Creditors with at least 40 per cent of the aggregate outstanding principal amount of all Qualifying Secured Debt then outstanding, may by giving notice ("**Qualifying Secured Creditor Instruction Notice**"), instruct the Security Agent (subject to providing the required indemnity pursuant to the STID) to, subject to any Entrenched Rights or Reserved Matters, exercise any of the rights granted to the Security Agent under the Common Documents (**provided that** the termination of any Standstill Period and/or the delivery of an Enforcement Notice and/or an Acceleration Notice shall instead be subject to the quorum and requisite majority requirement set out in the STID). The Security Agent shall, exercise the rights in accordance with the instructions set out in the Qualifying Secured Creditor Instruction Notice and incur no liabilities for doing so (subject to the provisions of the STID).

***Disenfranchisement of Sponsor Affiliates***

For so long as a Sponsor Affiliate either:

(a) beneficially owns any Secured Debt; or

(b) has entered into a sub-participation agreement relating to any Secured Debt or other agreement or arrangement having a substantially similar economic effect and such agreement or arrangement has not been terminated,

in ascertaining whether:

(A) any relevant percentage of Secured Debt; or

(B) the agreement or instruction of any Qualifying Secured Creditor, any specified group of Qualifying Secured Creditors or any Secured Creditor Representative on behalf of any particular Qualifying Secured Creditors,

has been obtained for the purposes of any Ordinary Voting Matter, Extraordinary Voting Matter, Direction Notice, Qualifying Secured Creditor Instruction Notice, proposal giving rise to an Entrenched Right in respect of which the Sponsor Affiliates would otherwise be an Affected Secured Creditor, instruction required in accordance with, or to carry any other vote or approve any action, in each case, under the STID:

I. the Secured Debt held or owned by the Sponsor Affiliate shall be deemed to be zero and that Sponsor Affiliate (or the person with whom it has entered into that sub-participation, other agreement or arrangement (a "**Counterparty**")) shall be deemed not to be a Qualifying Secured Creditor other than to the extent that a Counterparty is a Qualifying Secured Creditor (as the case may be) by virtue otherwise than by beneficially owning the relevant Qualifying Secured Debt;

II. the Bonds or PP Notes held or owned by the Sponsor Affiliate shall be deemed not to be outstanding and the Sponsor Affiliate or the person holding the Bonds or the PP Notes on behalf of or for the benefit of the Sponsor Affiliate shall be deemed not to be a Bondholder in respect of that Bond or s PP Noteholder in respect of those PP Notes; and

III. each of the Security Agent, the Secured Creditor Representatives and the relevant Bond Trustee shall be entitled to assume, unless it has actual notice to the contrary, that no Secured Debt is held by or for the benefit of any Sponsor Affiliate.

*Enforcement and Standstill*

Immediately upon the notification to the Offshore Security Agent of the occurrence of an Event of Default (other than an Event of Default as defined under any Hedging Agreement where the relevant Hedge Party is the defaulting party) which is continuing, and if any Secured Debt is outstanding, a standstill period will commence, during which enforcement action against the Issuer and the Parent will not be permitted (the "**Standstill Period**"), provided that the Standstill Period and other provisions of the STID relating to the Standstill Period (the "**Standstill Provisions**") will cease to apply and have no further effect on and from the date on which the Initial Bank Facility is discharged in full (the "**Initial Bank Facility Discharge Date**"). If on the Initial Bank Facility Discharge Date, a Standstill Period is continuing, such Standstill Period will immediately terminate on the Initial Bank Facility Discharge Date.

The Standstill Period will terminate on the earlier of:

(a) the commencement of insolvency proceedings against the Issuer or the Parent (other than proceedings (i) commenced by the Security Agent; (ii) discharged, stayed or dismissed within 30 Business Days of commencement or, if earlier, the date such insolvency proceedings are advertised; or (iii) actions, legal proceedings or steps relating to assets with an aggregate value equal to or less than USD25,000,000);

(b) the date a vote is taken or instructions are delivered to end the standstill by Participating Qualifying Secured Creditors holding 66⅔ per cent. or more of the aggregate outstanding principal amount of the Qualifying Secured Debt;

(c) the date falling 6 months after commencement of the Standstill Period;

(d) the occurrence of a Non-Payment Event of Default;

(e) the date of any waiver granted by the relevant Finance Parties in accordance with the relevant Finance Document(s) under which the Event of Default giving rise to the Standstill Period has occurred, or the date of remedy of such Event of Default ( a "**Standstill Remedy**").

Following an Enforcement Period Commencement Date (as defined below), the Security Agent will, if instructed to do so by an extraordinary STID resolution voted on by the Participating Qualifying Secured Creditors as an Extraordinary Voting Matter (and subject to the provisions on quorum and majorities applicable to Extraordinary Voting Matters described above):

(a) deliver an Enforcement Notice to the Issuer and the Security Agent shall, if directed by any Secured Creditor (who may act through their Secured Creditor Representative) in accordance with the provisions of the STID and subject to the Security Agent being indemnified and/or secured and/or prefunded to its satisfaction in accordance with the provisions of the STID, take any enforcement action including:

    (i) enforcing all or any part of the Security and taking possession of and holding or disposing of all or any part of the Charged Property;

    (ii) instituting such proceedings against the Parent or the Issuer and taking such action to enforce all or any part of the Security;

    (iii) appointing or removing any Receiver; and

    (iv) whether or not it has appointed a Receiver, exercising all or any of the powers, authorities and discretions conferred by the Law of Property Act 1925 (as varied or extended by the STID) on mortgagees and by the STID and the Security Documents on any Receiver or otherwise conferred by law on mortgagees or Receivers; and/or

(b) deliver an Acceleration Notice pursuant to which all Secured Obligations will be accelerated in full (or an equivalent action will be taken under any Authorized Credit Facility) and the whole of the Security will become enforceable.

"**Enforcement Period Commencement Date**" means:

(a) at any time whilst the Standstill Provisions apply, the date on which a Standstill Period terminates (other than a termination on the Initial Bank Facility Discharge Date or pursuant to a Standstill Remedy); and

(b) at any other time, the date the Offshore Security Agent notifies the Secured Creditor Representatives of the occurrence of an Event of Default (other than, for the avoidance of doubt, an Event of Default as defined in any Hedging Agreement in respect of which the relevant Hedge Counterparty is the defaulting party).

***Release of Security***

Other than release of security following the discharge of all Secured Obligations or any release of security described below upon the occurrence of a disposal not prohibited by the Initial Bank Facility Agreement in respect of disposal of AssetCo Shares (or an equivalent provision in any other Finance Document) (a "**Permitted Disposal**") or a Permitted Transaction, the Security Agent will (at the cost of the Issuer) only release the benefit of any encumbrance, right, obligation or other security held by it as a Security Interest for all or any of the Secured Obligations upon the passing of an extraordinary STID resolution in accordance with the provisions of the STID relating to Extraordinary Voting Matters described above.

The Security Agent is authorized by each Secured Creditor and every other Party, automatically upon the occurrence of any Permitted Disposal or any Permitted Transaction, and at the cost of the Issuer, to execute on behalf of itself, each Secured Creditor and every other relevant Party and without the need for any further referral or authority from any person all necessary releases of any security in relation to such Permitted Transaction or Permitted Disposal, provided that a director or an authorized signatory of the Issuer certifies in writing to the Security Agent that the relevant conditions (if any) to such Permitted Transaction or Permitted Disposal have been met (upon which the Security Agent will rely without investigation and without liability to any person for so doing).

***Priority of Payments***

<u>Debt Service Payment Account</u>

The Issuer will maintain in the name of the Issuer a U.S.$ denominated bank account with an Acceptable Bank in Jersey designated as the "**Debt Service Payment Account**" which shall be charged by way of first ranking fixed security in favor of the Offshore Security Agent as security for the Secured Obligations and have sole signing rights in relation to the Debt Service Payment Account prior to the delivery of an Enforcement Notice and/or an Acceleration Notice by the Offshore Security Agent, following which the Offshore Security Agent shall have sole signing rights.

The Issuer will:

(a) procure that:

(i) all monies distributed or paid to it by AssetCo on and following the Issue Date;

(ii) all monies paid to it by ADNOC HoldCo and/or any ADNOC HoldCo Group Transferee;

(iii) the proceeds of each drawing under a Super-Senior Liquidity Facility Agreement (other than a standby drawing);

(iv) the proceeds of all Subordinated Indebtedness; and

(v) all monies paid to it by a Hedge Counterparty under a Hedging Agreement, are in each case paid directly into the Debt Service Payment Account;

(b) maintain a Pre-Funding Ledger in respect of each Authorized Credit Facility which provides for the reserving of amounts on account of accrued interest and scheduled amortization payments on any date on which scheduled interest, net payment and/or amortization payment is required to be made under any Authorized Credit Facility Agreement (a "Payment Date") which is not a Payment Date with respect to that Authorized Credit Facility; and

(c) on each Payment Date prior to the delivery of an Enforcement Notice and/or an Acceleration Notice by the Offshore Security Agent, withdraw from and apply and reserve (as applicable) all monies standing to the credit of the Debt Service Payment Account in accordance with the Pre-Enforcement Priority of Payments or, if applicable, in accordance with the Pro Rata Allocation Mechanic, in each case described below.

For this section "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed*", "**Acceptable Bank**" means:

(a) a bank or financial institution which has at least two ratings for its long-term unsecured and non credit-enhanced debt obligations of A- or higher by S&P or Fitch or A3 or higher by Moody's or a comparable rating from an internationally recognised credit rating agency, or such lower rating as may be agreed between the Company and each rating agency appointed by the Company which is then ascribing a rating to any of the Secured Debt, provided that any such lower rating would not lead to any downgrade of the then current rating ascribed by such rating agencies to any of such Secured Debt; or

(b) any other bank or financial institution approved by the Offshore Security Agent (acting reasonably).

***Post-Enforcement Priority of Payments***

<u>General provisions applicable to Post-Enforcement Priority of Payments</u>

(a) obligations appearing in any one item in this Post-Enforcement Priority of Payments are to rank *pari passu* and *pro rata* with each other provided that if obligations appearing in any one item of this Post-Enforcement Priority of Payments have been or will be repaid and discharged by the application of Defeasance Amounts, DSRA Amounts, Pre-Funding Ledger Amounts or amounts credited to a Super-Senior Liquidity Standby Account as described in the paragraphs below relating to Defeasance Amounts, DSRA Amounts, Pre-Funding Ledger Amounts or amounts credited to a Super-Senior Liquidity Standby Account (as applicable), the *pro rata* application of Available Enforcement Proceeds will be made *pro rata* to those Secured Creditors which do not benefit from such Defeasance Amounts, DSRA Amounts, Pre-Funding Ledger Amounts or amounts credited to a Super-Senior Liquidity Standby Account (as applicable) and to those Secured Creditors which do benefit from such Defeasance Amounts, amounts standing to the credit of any Super-Senior Liquidity Standby Account, DSRA Amounts or Pre-Funding Ledger Amounts (as applicable) but in respect of the latter having first taken into account, and reduced by an equivalent amount, the amount of the obligations which will be satisfied by the relevant Defeasance Amounts, amounts standing to the credit of any Super-Senior Liquidity Standby Account, DSRA Amounts or Pre-Funding Ledger Amounts (as applicable) which have been or will be applied as described in the paragraphs below relating to Defeasance Amounts, DSRA Amounts, Pre-Funding Ledger Amounts or amounts credited to a Super-Senior Liquidity Standby Account (as applicable); and

(b) if there are insufficient funds to discharge in full amounts due and payable in respect of an item and any other item(s) ranking pari passu with such item in a Post-Enforcement Priority of Payments, all items which rank *pari passu* with each other shall be discharged to the extent there are sufficient funds to do so and on a *pro rata* basis, according to the respective amounts thereof.

Amounts other than Defeasance Amounts, amounts standing to the credit of any Super-Senior Liquidity Standby Account, DSRA Amounts and Pre-Funding Ledger Amounts

Pursuant to the STID, all Available Enforcement Proceeds shall, following the delivery of an Enforcement Notice and/or an Acceleration Notice by the Security Agent, be applied (to the extent that it is lawfully able to do so) by or on behalf of the Security Agent as set out below, without double counting:

(a) *first*, *pro rata* and *pari passu*, according to the respective amounts thereof in or towards satisfaction of the fees, costs, charges, liabilities, expenses and other remuneration and indemnity payments (if any) and any other amounts payable by the Issuer to the Security Agent (including any delegate thereof) and any Receiver under any Finance Document;

(b) *second*, *pro rata* and *pari passu*, according to the respective amounts thereof, in or towards satisfaction of:

(i) the fees, costs, charges, liabilities, expenses and other remuneration and indemnity payments (if any) and any other amounts payable by the Issuer to each Secured Creditor Representative under each Authorized Credit Facility; and

(ii) the fees, costs, charges, liabilities, expenses and remuneration and indemnity payments or provisions in respect thereof (if any) and any other amounts payable by the Issuer to any Principal Paying Agent, any Registrar and the relevant Bond Trustee under any Finance Document;

(c) *third, pro rata and pari passu,* according to the respective amounts thereof all amounts due by the Issuer to any Super-Senior DSR Facility Provider and any arranger under any Super-Senior Liquidity Facility Agreement, in each case other than in respect of any Subordinated Liquidity Payments;

(d) *fourth, pro rata and pari passu,* according to the respective amounts thereof, in or towards satisfaction of:

(i) all amounts of interest, underwriting and commitment commissions and costs and expenses payable under any Authorized Credit Facility (other than the Hedging Agreements and any Super-Senior Debt Service Reserve Facility); and

(ii) all amounts of accrued interest (including accrued interest on unpaid amounts) and all scheduled amounts payable to each Hedge Counterparty under any Hedging Agreement;

(e) *fifth*, *pro rata* and *pari passu*, according to the respective amounts thereof, in each case without double counting, in or towards satisfaction of:

(i) all amounts of principal (including scheduled amortization amounts) and make-whole amounts due or overdue under any Authorized Credit Facility (other than the Hedging Agreements and any Super-Senior Debt Service Reserve Facility);

(ii) any Swap Breakage Loss which is due and payable under an Authorized Credit Facility; and

(iii) all unscheduled amounts payable to each Hedge Counterparty under any Hedging Agreement including any Hedging Termination Payments;

(f) *sixth, pro rata and pari passu* towards any other amounts due to any Secured Creditor under the Finance Documents, other than in respect of any Subordinated Liquidity Payments*;*

(g) *seventh*, *pro rata and pari passu* towards Subordinated Liquidity Payments due under any Super-Senior Liquidity Facility Agreement;

(h) *eighth,* in payment or distribution to any person to whom the Security Agent is obliged to pay or distribute in priority to the Parent, the Issuer or the Relevant Issuer*; and*

(i) *ninth,* any surplus (if any) shall be available to the Parent, the Issuer or the Relevant Issuer (as applicable) entitled thereto to deal with as it sees fit.

"**Available Enforcement Proceeds**" means on any date, all monies received or recovered by the Security Agent (or any Receiver appointed by it) pursuant to the terms of any Finance Document (including pursuant to clause 7.4 of the STID) and/or in connection with the realization or enforcement of all or part of the Security, but excluding any amounts standing to the credit of or recovered by the Security Agent (or any Receiver appointed by it) from any Defeasance Account, any Super-Senior Liquidity Standby Account, any Debt Service Reserve Account and any Pre-Funding Ledger.

"**Defeasance Account**" means any account opened by the Issuer with an Acceptable Bank which may be credited with a particular class of Defeased Debt and from which no withdrawals may be made by the Issuer except as permitted pursuant to the STID and the Finance Documents the Financial Indebtedness under which is the relevant class of Defeased Debt and which is subject to Defeasance Security.

"**Defeasance Amount**" means amounts standing to the credit of a particular Defeasance Account or any amount representing proceeds of withdrawal from such Defeasance Account (other than amounts permitted to be withdrawn from such Defeasance Account in accordance with the STID and the Finance Documents the Financial Indebtedness under which is the relevant class of Defeased Debt).

"**Defeasance Liabilities**" means, in respect of a particular class of Defeased Debt, the liabilities of the Issuer in respect of such Defeased Debt.

"**Defeasance Security**" means each Security Interest created by the Issuer over a Defeasance Account in favor of the Offshore Security Agent as security for the relevant Defeasance Liabilities.

"**Defeased Creditor**" means each PP Noteholder or Bondholder in respect of which any Defeased Debt is outstanding.

"**Defeased Debt**" means any PP Notes or any Permitted Additional Financial Indebtedness incurred by an Issuer in the form of public or private bonds (excluding PP Notes) in respect of which the relevant Secured Creditors (or their respective Secured Creditor Representatives on their behalf) have notified the Issuer that they are unable to accept a prepayment of Relevant Debt to the extent that such prepayment is made without any applicable make-whole amounts or any PP Notes or Bonds for which the Issuer has exercised the defeasance provisions of the applicable indenture.

"**DSRA Amounts**" means, in respect of any Debt Service Reserve Account, any amount standing to the credit of that Debt Service Reserve Account.

"**Hedging Termination Payment**" means any amount payable by the Issuer under a Hedging Agreement as a result of the termination or close-out (whether partial or total) of one or more transactions governed by that Hedging Agreement.

"**PP Note Purchase Agreement**" means each note purchase agreement and, if applicable, related indenture pursuant to which the Issuer issues PP Notes from time to time.

"**PP Notes**" means any Secured Debt incurred in the form of privately placed notes issued by the Issuer from time to time under and pursuant to a PP Note Purchase Agreement.

"**Pre-Funding Ledger**" means a written record maintained by the Issuer reflecting on any date on which scheduled interest, net payment and/or amortization payment is required to be made under any Authorized Credit Facility Agreement the reserving, and the subsequent application, of each Interest Reserve Amount and/or Amortization Reserve Amount in accordance with the relevant Authorized Credit Facility and the Pre-Enforcement Priority of Payments.

"**Relevant Debt**" means, without double counting, the aggregate of all outstanding principal amounts under any Authorized Credit Facility (disregarding for these purposes the notional amount under any Hedging

Agreement, the drawn or undrawn commitments under any Super-Senior Liquidity Facility Agreement and the drawn or undrawn commitments under any revolving or re-drawable facility) from time to time.

"**Relevant Issuer**" means, in respect of any Permitted Additional Financial Indebtedness incurred by an Issuer in the form of public or private bonds (excluding any PP Notes), the Issuer or a new subsidiary incorporated by the Issuer to act as issuer (as applicable) which is the issuer of those bonds.

"**Super-Senior Liquidity Facility Provider**" means any bank or financial institution which has become a party to a Super-Senior Liquidity Facility Agreement in accordance with the terms of such Super-Senior Liquidity Facility Agreement which in each case has not ceased to be a party in accordance with the terms of such Super-Senior Liquidity Facility Agreement.

"**Subordinated Liquidity Payments**" means all amounts payable under, or in any way in connection with, a Super-Senior Liquidity Facility Agreement, other than:

(a) principal and interest in respect of a drawing under a Super-Senior Liquidity Facility or a Super-Senior Liquidity Standby Drawing;

(b) the commitment fee payable in respect of a Super-Senior Liquidity Facility; and

(c) any increased costs payable in accordance with a Super-Senior Liquidity Facility Agreement,

and which arise upon the occurrence of a breach by the relevant Super-Senior Liquidity Facility Provider of its obligations under the relevant Super-Senior Liquidity Facility.

"**Super-Senior Liquidity Standby Account**" means the reserve account to be opened, if required by the terms of such Super-Senior Liquidity Facility Agreement or any relevant Supported Authorized Credit Facility, in the name of the Issuer and held with the applicable Super-Senior Liquidity Facility Provider in respect of whom the Super-Senior Liquidity Standby Drawing has been made or, if required by the terms of any relevant Super-Senior Liquidity Facility Agreement or Supported Authorized Credit Facility, with such bank or financial institution as is required by the terms of such Super-Senior Liquidity Facility Agreement or Supported Authorized Credit Facility.

"**Super-Senior Liquidity Standby Drawing**" means a utilization of a Super-Senior Liquidity Facility into a Super-Senior Liquidity Standby Account if:

(a) any relevant Super-Senior Liquidity Facility Provider does not renew the relevant Super-Senior Liquidity Facility prior to the end of its scheduled term in accordance with the terms of such Super-Senior Liquidity Facility; or

(b) any relevant Super-Senior Liquidity Facility Provider ceases to have the Minimum Long-Term Rating and there is no substitute or successor eligible Super-Senior Liquidity Facility Provider having the Minimum Long-Term Rating.

"**Supported Authorized Credit Facility**" means, in respect of any Super-Senior Liquidity Facility, any Authorized Credit Facility the Issuer's payment obligations under which are capable of being funded through the proceeds of utilization of such Super-Senior Liquidity Facility.

<u>Pre-Funding Ledger Amounts</u>

Following the delivery of an Enforcement Notice and/or an Acceleration Notice, an amount equal to the credit balance of the Pre-Funding Ledger in respect of the relevant liabilities to which such Pre-Funding Ledger relates (the "**Pre-Funding Ledger Liabilities**") shall be applied (to the extent it is lawfully able to do so) by the Security Agent in the discharge of the relevant Pre-Funding Ledger Liabilities, in each case, pro rata in respect of the Pre-Funding Ledger Liabilities to which the Pre-Funding Ledger relates.

<u>Super-Senior Liquidity Standby Account</u>

Following the delivery of an Acceleration Notice, all amounts (if any) credited to a Super-Senior Liquidity Standby Account shall be applied in accordance with section "*Repayment of Super-Senior Liquidity Standby Drawings*" below.

Defeasance Amounts

Following the delivery of an Enforcement Notice and/or an Acceleration Notice, all available Defeasance Amounts shall be applied (to the extent that it is lawfully able to do so) by the Security Agent in repayment and discharge of the relevant Defeasance Liabilities, in each case, pro rata in respect of the Defeased Debt to which the relevant Defeasance Amount relates.

DSRA Amounts

Following the delivery of an Enforcement Notice and/or an Acceleration Notice, all available DSRA Amounts shall be applied (to the extent that it is lawfully able to do so) by the Security Agent in repayment and discharge of the relevant DSRA Liabilities, in each case, pro rata in respect of the Secured Debt to which the relevant DSRA Amount relates.

Repayment of Super-Senior Liquidity Standby Drawings

Upon the delivery of an Acceleration Notice or, if earlier, upon acceleration and cancellation of a Super-Senior Liquidity Facility pursuant to a Super-Senior Liquidity Facility Agreement, all amounts (if any) credited to a Super-Senior Liquidity Standby Account shall be paid by the Issuer, the Security Agent or any Receiver (as applicable) to the relevant Super-Senior Liquidity Facility Provider which funded that Super-Senior Liquidity Standby Account or the relevant Super-Senior Liquidity Facility agent (for the account of the relevant Super-Senior Liquidity Facility Providers) in accordance with the relevant repayment provisions set out in the relevant Super-Senior Liquidity Facility Agreement.

Distressed Disposals

The STID will contain provisions relating to the distressed disposal of an asset of the Parent or the Issuer following (or pursuant to) the instructions relating to or by enforcement of the Security. On the occurrence of a distressed disposal the Security Agent may, and without any consent, sanction, authority or further confirmation from any Secured Creditor, any Subordinated Creditor, the Parent or the Issuer, release any Security as is required to effect the disposal in accordance with the STID. The net proceeds of disposal are to be applied in accordance with priorities of payments (see the section "*Post-Enforcement Priority of Payments*" above).

***Pro Rata Allocation Mechanic***

(a) In the event that it is specified in a provision of a Common Document or an Authorized Credit Facility Agreement (a "**Relevant Prepayment Provision**") that Relevant Debt (or certain classes of Relevant Debt) shall be prepaid in accordance with the Pro Rata Allocation Mechanic then:

(i) the amount required to be applied in prepayment of the applicable Relevant Debt pursuant to the Relevant Prepayment Provision shall be calculated in accordance with the Relevant Prepayment Provision, as reduced in accordance with paragraph (ii) below (the "**Prepayment Amount**"); and

(ii) the Prepayment Amount shall be applied to prepay the applicable Relevant Debt on a Pro Ra*ta* Basis across all such applicable Relevant Debt, save that:

(A) in respect of each Finance Document representing Relevant Debt, the relevant prepayment shall be applied against repayment and/or current payment obligations as specified in the relevant Authorized Credit Facility;

(B) to the extent that the Finance Documents governing the terms of one or more of those classes of Relevant Debt require the payment of Repayment Costs (including make-whole amounts, if applicable) in connection with such prepayment or if the making of such prepayment would result in a payment becoming due to any Hedge Counterparty as a result of the operation of the Hedging Policy, then:

I. such Prepayment Amount shall be allocated between the classes of Relevant Debt to be prepaid by reference only to the Outstanding Principal Amount under each such class of Relevant Debt (in each case, a **Relevant Finance Document Original Prepayment Amount**); and

II. the Relevant Finance Document Original Prepayment Amount in respect of each such class of Relevant Debt shall be reduced so that the aggregate of:

(1) the reduced prepayment amount for that class of Relevant Debt;

(2) the Repayment Costs payable in respect of the reduced prepayment to be made under that class of Relevant Debt; and

(3) (without double counting) any Hedging Termination Payments will would result from such reduced prepayment to be made under that class of Relevant Debt,

is equal to the amount of the Relevant Finance Document Original Prepayment Amount allocated to that class of Relevant Debt;

(iii) if the provisions of an Authorized Credit Facility allow an Authorized Credit Facility Provider to elect not to receive its *pro rata* proportion of the Prepayment Amount either in whole or in part and such election is exercised (the **Declining Relevant Debt**), the relevant amount allocated to the Declining Relevant Debt shall either, at the option of the Issuer:

(A) to the extent applicable, be deposited into a Defeasance Account as Defeased Debt; or

(B) be re-applied to prepay applicable Relevant Debt on a *Pro Rata* Basis across all such applicable Relevant Debt but, for these purposes, excluding the Declining Relevant Debt,

or any combination of sub-paragraphs (A) and (B) above at the Issuer’s discretion.

(b) If, following the application of sub-paragraphs (iii)(A) and (iii)(B) of paragraph (a) above there remains an excess Prepayment Amount then such excess shall be applied in the Issuer’s discretion (subject to the terms of the Finance Documents).

For the purposes of this section “*Pro Rata Allocation Mechanic*”:

“**Pro Rata Basis**” means that the relevant Prepayment Amount will be apportioned between the Relevant Debt according to the proportions which the outstanding principal amount of each class of Relevant Debt bears to the aggregate outstanding principal amount of all Relevant Debt, in each case as at the date upon which the relevant prepayment is made.

“**Repayment Costs**” means in respect of the repayment or prepayment of all or part of an Authorized Credit Facility, the associated costs of such prepayment (including any related Hedging Termination Payments (including as a result of compliance with the Hedging Policy), break costs, interest, make-whole amount and redemption premium) payable by the Issuer.

***Pre-Enforcement Priority of Payments***

Amounts in Debt Service Payment Account

Pursuant to the STID, all amounts standing to the credit of the Debt Service Payment Account shall, prior to the delivery of an Enforcement Notice and/or an Acceleration Notice by the Security Agent, be applied (to the extent that it is lawfully able to do so) by the Issuer, in accordance with the following "Pre-Enforcement Priority of Payments" (including in each case any amount of or in respect of VAT) as set out below, without double counting:

(a) *first, pro rata and pari passu*, according to the respective amounts thereof in or towards satisfaction of the fees, costs, charges, liabilities, expenses and other remuneration and indemnity payments (if any) and any other amounts payable by the Issuer to the Security Agent (including any delegate thereof) under any Finance Document;

(b) *second, pro rata and pari passu*, according to the respective amounts thereof, in or towards satisfaction of:

   (i) the fees, costs, charges, liabilities, expenses and other remuneration and indemnity payments (if any) and any other amounts payable by the Issuer to each Secured Creditor Representative under each Authorized Credit Facility; and

   (ii) the fees, costs, charges, liabilities, expenses and remuneration and indemnity payments or provisions in respect thereof (if any) and any other amounts payable by the Issuer to any Principal Paying Agent, any Registrar and the relevant Bond Trustee under any Finance Document;

(c) *third, pro rata and pari passu*, according to the respective amounts thereof all amounts due by the Issuer to any Super-Senior Liquidity Facility Provider and any arranger under any Super-Senior Liquidity Facility Agreement, in each case other than in respect of any Subordinated Liquidity Payments;

(d) *fourth, pro rata and pari passu*, according to the respective amounts thereof, in or towards:

   (i) satisfaction of all amounts of interest, underwriting and commitment commissions and costs and expenses payable under any Authorized Credit Facility (other than the Hedging Agreements (as to which paragraph (iii) below applies) and any Super-Senior Liquidity Facility) on the relevant Payment Date applying, where relevant, any Interest Reserve Amount (as defined below) previously reserved in a Pre-Funding Ledger in respect of the relevant Authorized Credit Facility;

   (ii) if the relevant Payment Date is not a Payment Date under any Authorized Credit Facility, reserving of all amounts of interest, underwriting and commitment commissions and costs and expenses required to be reserved under that Authorized Credit Facility on that Payment Date which shall be reflected in the Pre-Funding Ledger for that Authorized Credit Facility (each a "**Interest Reserve Amount**"); and

   (iii) all amounts of accrued interest (including accrued interest on unpaid amounts) (if any) and all scheduled amounts payable to each Hedge Counterparty under any Hedging Agreement;

(e) *fifth, pro rata and pari passu*, according to the respective amounts thereof, in each case without double counting, in or towards:

(i) satisfaction of all scheduled amortization amounts due under any Authorized Credit Facility (other than the Hedging Agreements, the Initial Bank Facility and any Super-Senior Liquidity Facility) on the relevant Payment Date applying, where relevant, any Amortization Reserve Amount (as defined below) previously reserved in a Pre-Funding Ledger in respect of the relevant Authorized Credit Facility;

(ii) if the relevant Payment Date is not a Payment Date under any Authorized Credit Facility, reserving scheduled amortization amounts required to be reserved under that Authorized Credit Facility on that Payment Date which shall be reflected in the Pre-Funding Ledger for that Authorized Credit Facility (each a "**Amortization Reserve Amount**");

(iii) satisfaction of all amortization amounts (if any) due under the Initial Bank Facility on the relevant Payment Date provided that no amounts standing to the credit of the Debt Service Payment Account which are the proceeds of a utilisation under a Super-Senior Liquidity Facility shall be applied in satisfaction of such amounts under this paragraph (iii),

provided that if the making of any such repayment under paragraph (i) or (iii) would result in a payment becoming due to any Hedge Counterparty as a result of the operation of the overhedging provisions of the Hedging Policy, then (in relation to repayments under paragraph (i), only if and to the extent that the terms of the relevant Authorized Credit Facility expressly permit) the relevant amount to be applied under such Authorized Credit Facility (the "**Original Repayment Amount**") shall be reduced so that the aggregate of:

(A) the reduced payment amount for that Authorized Credit Facility Agreement; and

(B) any Hedging Termination Payments which would result from such reduced repayment to be made under that Authorized Credit Facility Agreement (each a "**Relevant Hedging Termination Payment**"),

is equal to the amount of the Original Repayment Amount allocated to that Authorized Credit Facility Agreement; and

(iv) satisfaction of any Relevant Hedging Termination Payment arising as a result of the operation of the overhedging provisions of the Hedging Policy in respect of the relevant Payment Date;

(f) *sixth, pro rata and pari passu* towards any other amounts due to any Secured Creditor under the Finance Documents, including (without limitation) any other principal amounts due under any Authorized Credit Facility and any other Hedge Termination Payments then due, in each case other than any amounts required to be applied in accordance with the Pro Rata Allocation Mechanic described above or in respect of any Subordinated Liquidity Payments;

(g) *seventh, pro rata and pari passu* towards Subordinated Liquidity Payments due under any Super-Senior Liquidity Facility Agreement; and

(h) *eighth*, any surplus (if any) shall be available to the Issuer to deal with (subject to compliance with the Finance Documents) as it sees fit.

***Maintenance of DSRF Required Amount***

Under the STID, the Issuer is required to use its reasonable endeavors for so long as there is Secured Debt outstanding which has been ascribed a rating of not less than investment grade by a Rating Agency to have (i) available to it a Super-Senior Liquidity Facility with one or more Acceptable Banks on substantially similar terms as the Debt Service Reserve Facility Agreement entered into on or about the Issue Date (with the exception of margin, tenor, commitments, commitment commissions, fees or any other term the absence of which or modification to is consistent with prevailing market practice for such facilities from time to time) and/or (ii) a funded reserve in a Debt Service Reserve Account, in an aggregate amount which is not less than the DSRF Required Amount.

***Hedging Policy***

Pursuant to the STID, the Issuer agrees to be bound by a hedging policy (the "**Hedging Policy**") the purpose of which is to limit the exposure of the Issuer to fluctuations in interest rates and currencies. The Hedging Policy will be reviewed from time to time by the Issuer and may be amended as appropriate including in order to reflect market practice, regulatory developments and good industry practice in accordance with the provisions of the STID.

The Issuer may enter into Treasury Transactions (which will rank no higher than *pari passu* with the Secured Debt, other than any Super-Senior Debt Service Reserve Facility) to manage risk inherent in its business or funding on a prudent basis and which shall include any pre-hedging and/or deal contingent Treasury Transactions (in each case if thought appropriate) but may not enter into Treasury Transactions for the purpose of speculation.

***Exchange Rate Risk Principles***

The Issuer shall manage its foreign exchange exposure in a manner considered by it (acting reasonably) to be prudent for a business of its nature (taking into account, without limitation, its revenues and the currency thereof).

***Interest Rate Risk Principles***

The Issuer will hedge the interest rate risk in relation to the total outstanding Relevant Debt to ensure that at any time a minimum of 70 per cent of the total outstanding Relevant Debt ("**Mandatory Hedging**"):

(a) is fixed rate; or

(b) effectively bears a fixed rate pursuant to a Hedging Agreement,

provided that (i) compliance for the Mandatory Hedging requirement shall only be required in respect of additional indebtedness from the date falling 90 days after the funding date of such Authorized Credit Facility and (ii) the Mandatory Hedging requirement above shall not apply during the period between a date on which the pricing notification in the form prescribed by the subscription agreement for the relevant bonds is sent to investors by the Relevant Issuer (a "**Bond Pricing Date**") and an issue date in respect of the relevant bonds to which that Bond Pricing Date relates to the extent that any Hedging Transactions have been terminated on or around that Bond Pricing Date in contemplation of that issue of bonds and the application of the proceeds thereof. Interest rate risk on floating rate liabilities will be hedged through instruments such as interest rate swaps or interest rate options in order to comply with the requirements set out in this paragraph.

The Issuer will ensure that no more than 110 per cent. of the total Relevant Debt: (i) is fixed rate or (ii) effectively bearing a fixed rate pursuant to a Hedging Agreement. In the event that the aggregate of the notional amounts under the Hedging Transactions and any pre-hedges exceeds an amount equal to the product of the total Relevant Debt and the relevant percentage provided above (after taking into account any Offsetting Transaction to which the Issuer is a party) (an "**Overhedged Position**"), then the Issuer must reduce the notional amount of one or more of the Hedging Transactions in accordance with the Hedging Policy set out in the STID within 30 days of becoming aware of the Overhedged Position.

The Issuer will, in addition, be permitted to enter into derivative instruments such as forward starting interest rate swap transactions in respect of Financial Indebtedness which is projected to be incurred within six months after the entry into of such Treasury Transactions (the "**Pre-hedges**"). Such Pre-hedges will not count towards, or be limited by references to, the Overhedged Position prior to the effective date of the relevant Pre-hedge.

***Principles relating to Hedge Counterparties***

A Hedge Counterparty may transfer its obligations under a Hedging Agreement to any person provided that:

(a) such person accedes to the relevant Transaction Documents in accordance with the STID;

(b) such transferee complies with the minimum rating requirement under the STID as at the date of such transfer; and

(c) such transfer is effected in accordance with any conditions of transfer contained in the relevant Hedging Agreement.

***Principles relating to Hedging Agreements***

All Hedging Agreements must be entered into (whether by way of novation or otherwise) in the form, as amended by the parties thereto, of an ISDA Master Agreement.

Notwithstanding any provision to the contrary in any Hedging Agreement, the Hedging Policy requires the Issuer and each Hedge Counterparty to agree that the Hedge Counterparty may only have a right to terminate the relevant Hedging Agreement:

(a) if a Standstill Period has ended otherwise than pursuant to a Standstill Remedy or if the Standstill Provisions no longer apply, upon the issue of an Acceleration Notice;

(b) if an Illegality, Tax Event, Tax Event Upon Merger or a Force Majeure Event (each as defined in the 2002 ISDA Master Agreement) has occurred in respect of that Hedging Agreement;

(c) subject to the provisions of the STID, if an event of default due to the insolvency has occurred and is continuing in relation to the Issuer;

(d) if the Issuer has not complied with the overhedging requirements within 30 days of becoming aware of an Overhead Position;

(e) if an additional termination event occurs pursuant to the amendments attached to Section (iii)(2) of the ISDA 2013 EMIR NFC Representation Protocol;

(f) with the agreement of the Issuer (unless a Standstill Period is continuing);

(g) if a Non-Payment Event of Default under a Hedging Agreement is continuing for a period of (i) during a Non-Dividend Event, 90 days or (ii) 10 Business Days at any other time;

(h) if an ISDA Benchmark Supplement occurs;

(i) on the occurrence of any mandatory break set out in the relevant Hedging Agreement;

(j) on the repayment or prepayment in full under the Initial Bank Facility Agreement which results in that Hedge Counterparty (or its Affiliate) ceasing to be a Lender;

(k) on or after the date on which all Secured Obligations (other than any Secured Obligations owed to any Hedge Counterparty) have been discharged in full and none of the relevant Secured Creditors (excluding any Hedge Counterparty) is under any further actual or contingent obligation to make advances or provide other financial accommodation under any of the Finance Documents; and

(l) if it cannot effect the partial novation of a Hedging Transaction (such portion of the relevant Hedging Transaction which has not been so novated, the "**Relevant Portion**") permit the Relevant Portion to be terminated following an inability to novate on or following the date of first utilisation under the Initial Bank Facility Agreement (being July 14, 2020), provided that such Hedge Counterparty may only terminate or close out the Relevant Portion.

**Security Documents**

The Security Documents entered into by the Issuer and regulated by the Security Trust and Intercreditor Deed comprise:

(a) a security interest agreement dated June 30, 2020 pursuant to which the Offshore Security Agent has been granted a first priority security interest governed by the laws of the Island of Jersey over all present and future bank accounts maintained by the Issuer in Jersey and all amounts standing to the credit of any such bank account from time to time;

(b) a security assignment agreement dated June 30, 2020 governed by the laws of the Emirate of Abu Dhabi and the federal laws of the United Arab Emirates pursuant to which the Issuer has assigned by way of security to the Onshore Security Agent all of its right, title, benefit and interest of the Issuer in and to, amongst other agreements, the Acquisition Agreement;

(c) a moveables security agreement dated June 30, 2020 governed by the laws of the Emirate of Abu Dhabi and the federal laws of the United Arab Emirates pursuant to which the Issuer has granted to the Onshore Security Agent a security interest in and to its present and future receivables under the contracts secured pursuant to the security assignment agreement;

(d) a pledge of shares dated July 22, 2020 governed by the laws of the Emirate of Abu Dhabi and the federal laws of the United Arab Emirates pursuant to the which the Issuer has pledged to the Onshore Security Agent its shareholding in AssetCo and all rights related to that shareholding;

(e) a security assignment agreement dated June 30, 2020 governed by the law of England pursuant to which the Issuer has assigned to the Offshore Security Agent its rights, benefit and interest in and to the Hedging Agreements.

The Security Document entered into by the Parent and regulated by the Security Trust and Intercreditor Deed comprises a security interest agreement dated June 30, 2020 pursuant to which the Offshore Security Agent has been granted a first priority security interest governed by the laws of the Island of Jersey over its shareholding in the Issuer and all related rights and all present and future obligations owed by the Issuer to the Parent under any loan agreement entered into from time to time between the Issuer and the Parent.

Each Security Document is expressed to secure all present and future obligations and liabilities (actual or contingent) of the Issuer to any Secured Creditor under each Finance Document.

In compliance with the requirements of the Shareholders' Agreement, each of the pledge of shares granted by the Issuer over its shares in AssetCo and the security interest granted by the Parent over its shares in the Issuer is subject to a right of first offer agreement dated June 30, 2020 (in respect of the shares in the Issuer) made between the Issuer, the Parent, ADNOC HoldCo, AssetCo, the Offshore Security Agent and the Onshore Security Agent and dated July 27, 2020 (in respect of the shares in AssetCo) made between the Issuer, ADNOC HoldCo, AssetCo and the Onshore Security Agent and, in each case, governed by the laws of the Emirate of Abu Dhabi and the federal laws of the United Arab Emirates, pursuant to which, amongst other things, the Onshore Security Agent agrees that, prior to any disposal of the shares the subject of the pledge or, as the case may be, the security interest agreement, upon any enforcement of that security, it shall first offer the shares to ADNOC HoldCo at the price and on materially the same terms and conditions as the Onshore Security Agent is proposing to dispose of the shares, which offer may be accepted by ADNOC HoldCo within 20 business days of the offer notice.

### Initial Bank Facility Agreement

The Issuer entered into an initial bank facilities agreement on June 23, 2020 (as amended and restated on 21 October 2020 and as may be further amended and restated from time to time) with the Lenders, among others, under which the Lenders agreed to make available a U.S.$ 7,960,000,000,000 term facility ("**Initial Bank Facility**") for the purposes of the Acquisition (the "**Initial Bank Facility Agreement**"). A partial prepayment of the Initial Bank Facility in the principal amount of U.S.$3,953,567,077 was made on November 5, 2020 using the net proceeds from the issuance of the Original Bonds. The remaining outstanding principal amoung under the Initial Bank Facility Agreement will be repaid in full from the proceeds of the Bonds.

### Original Bonds

#### *General*

On November 5, 2020, the Issuer issued the U.S.$1,100,000,000 1.750 per cent. Senior Secured Bonds due 2027 (the "**Series A Bonds**"), the U.S.$ 1,550,000,000 2.625 per cent. Senior Secured Bonds due 2036 (the "**Series B Bonds**") and U.S.$ 1,350,000,000 3.250 per cent. Senior Secured Bonds due 2040 (the "**Series C Bonds**", together with the Series A Bonds and the Series B Bonds, the "**Original Bonds**"). The proceeds received by the Issuer from the offering of the Original Bonds were used for (i) prepayment in part the Issuer's indebtedness under the Initial Bank Facility Agreement together with accrued and unpaid interest; (ii) payment of the termination amounts owing to the Hedge Counterparties on the early termination of all or a proportion of interest rate swaps under the Hedging Agreements; (iii) payment of fees, costs and expenses incurred in connection with the issue of the Original Bonds; and (iv) general corporate purposes.

#### *Ranking*

The Original Bonds constitute the Issuer's direct, secured, unsubordinated and unconditional obligations, and at all times rank *pari passu* and without any preference among themselves and with all of the Issuer's outstanding unsubordinated obligations, present and future, including the Bonds. The Original Bonds are not guaranteed by AssetCo, ADNOC or by any other person.

#### *Interest, Principal and Final Maturity*

The Series A Bonds bear interest from November 5, 2020 at a rate of 1.750% per annum, payable semi-annually in arrear on or around March 31 and September 30 of each year, beginning on March 31, 2021. Principal on the Series A Bonds is payable in semi-annual installments, pursuant to an amortization schedule, on March 31 and September 30 of each year, beginning on September 30, 2021. The Series A Bonds will mature on September 30, 2027.

The Series B Bonds bear interest from November 5, 2020 at a rate of 2.625% per annum, payable semi-annually in arrear on or around March 31 and September 30 of each year, beginning on March 31, 2021. Principal on the Series B Bonds is payable in semi-annual installments, pursuant to an amortization schedule, on March 31 and September 30 of each year, beginning on March 31, 2028. The Series B Bonds will mature on March 31, 2036.

The Series C Bonds bear interest from November 5, 2020 at a rate of 3.250% per annum, payable semi-annually in arrear on or around March 31 and September 30 of each year, beginning on March 31, 2021. Principal on the Series C Bonds is payable in semi-annual installments, pursuant to an amortization schedule, on March 31 and September 30 of each year, beginning on September 30, 2036. The Series C Bonds will mature on September 30, 2040.

#### *Scheduled Principal Repayments*

Unless redeemed early pursuant to the terms and conditions of the Original Bonds, principal on the Series A Bonds is repayable in semi-annual installments on the interest payment dates as follows in accordance with the Pre-Enforcement Priority of Payments:

| **Scheduled Payment Date** | **Per U.S.$1,000 of Original Principal Amount Payable** |
|---|---|
| | **(in U.S.$)** |
| March 31, 2021 | - |
| September 30, 2021 | 21.35 |

| Scheduled Payment Date | Per U.S.$1,000 of Original Principal Amount Payable |
|---|---:|
| March 31, 2022 | 86.63 |
| September 30, 2022 | 80.03 |
| March 31, 2023 | 82.62 |
| September 30, 2023 | 82.77 |
| March 31, 2024 | 85.40 |
| September 30, 2024 | 78.82 |
| March 31, 2025 | 80.67 |
| September 30, 2025 | 82.40 |
| March 31, 2026 | 84.97 |
| September 30, 2026 | 76.50 |
| March 31, 2027 | 78.90 |
| September 30, 2027 | 78.94 |

Unless redeemed early pursuant to the terms and conditions of the Original Bonds, principal on the Series B Bonds is repayable in semi-annual installments on the interest payment dates as follows in accordance with the Pre-Enforcement Priority of Payments:

| Scheduled Payment Date | Per U.S.$1,000 of Original Principal Amount Payable |
|---|---:|
| | **(in U.S.$)** |
| March 31, 2021 | - |
| September 30, 2021 | - |
| March 31, 2022 | - |
| September 30, 2022 | - |
| March 31, 2023 | - |
| September 30, 2023 | - |
| March 31, 2024 | - |
| September 30, 2024 | - |
| March 31, 2025 | - |
| September 30, 2025 | - |
| March 31, 2026 | - |
| September 30, 2026 | - |
| March 31, 2027 | - |
| September 30, 2027 | - |
| March 31, 2028 | 54.50 |
| September 30, 2028 | 54.56 |
| March 31, 2029 | 56.01 |
| September 30, 2029 | 55.10 |
| March 31, 2030 | 56.97 |
| September 30, 2030 | 57.03 |
| March 31, 2031 | 58.94 |
| September 30, 2031 | 60.41 |
| March 31, 2032 | 62.40 |
| September 30, 2032 | 62.77 |
| March 31, 2033 | 64.36 |
| September 30, 2033 | 56.55 |
| March 31, 2034 | 58.37 |
| September 30, 2034 | 57.95 |
| March 31, 2035 | 59.78 |
| September 30, 2035 | 61.20 |
| March 31, 2036 | 63.10 |

Unless redeemed early pursuant to the terms and conditions of the Original Bonds, principal on the Series C Bonds is repayable in semi-annual installments on the interest payment dates as follows in accordance with the Pre-Enforcement Priority of Payments:

| Scheduled Payment Date | Per U.S.$1,000 of Original Principal Amount Payable |
|---|---:|
| | **(in U.S.$)** |
| March 31, 2021 | - |
| September 30, 2021 | - |
| March 31, 2022 | - |
| September 30, 2022 | - |
| March 31, 2023 | - |

| Scheduled Payment Date | Per U.S.$1,000 of Original Principal Amount Payable |
|---|---|
| September 30, 2023 | - |
| March 31, 2024 | - |
| September 30, 2024 | - |
| March 31, 2025 | - |
| September 30, 2025 | - |
| March 31, 2026 | - |
| September 30, 2026 | - |
| March 31, 2027 | - |
| September 30, 2027 | - |
| March 31, 2028 | - |
| September 30, 2028 | - |
| March 31, 2029 | - |
| September 30, 2029 | - |
| March 31, 2030 | - |
| September 30, 2030 | - |
| March 31, 2031 | - |
| September 30, 2031 | - |
| March 31, 2032 | - |
| September 30, 2032 | - |
| March 31, 2033 | - |
| September 30, 2033 | - |
| March 31, 2034 | - |
| September 30, 2034 | - |
| March 31, 2035 | - |
| September 30, 2035 | - |
| March 31, 2036 | - |
| September 30, 2036 | 101.07 |
| March 31, 2037 | 103.82 |
| September 30, 2037 | 104.82 |
| March 31, 2038 | 108.29 |
| September 30, 2038 | 110.16 |
| March 31, 2039 | 113.75 |
| September 30, 2039 | 116.16 |
| March 31, 2040 | 119.88 |
| September 30, 2040 | 122.06 |

### *Pre-funding Requirements*

In this section, "**Original Bonds Quarter Date**" means March 31, June 30, September 30 and December 31 in each calendar year.

On each Original Bonds Quarter Date (which is not an interest payment date in respect of the Original Bonds), we are required, in accordance with the Pre-Enforcement Priority of Payments, to credit to the Pre-Funding Ledger in respect of the Series A Bonds on account of (i) accrued and unpaid interest on the Series A Bonds as at such Original Bonds Quarter Date and (ii) a proportion of the scheduled amortization payment falling due on the next following interest payment date with respect to the Series A Bonds the amounts indicated in the table below (based on the initial principal amount of the Series A Bonds) for each Original Bonds Quarter Date:

| Quarter Date | Accrued Interest (U.S.$) | Amortization payment (U.S.$) |
|---|---|---|
| December 31, 2020 | 2,994,444 | - |
| June 30, 2021 | 4,812,500 | 10,764,281 |
| December 31, 2021 | 4,709,760 | 45,435,744 |
| June 30, 2022 | 4,292,844 | 41,753,767 |
| December 31, 2022 | 3,907,699 | 43,318,438 |
| June 30, 2023 | 3,510,100 | 43,179,929 |
| December 31, 2023 | 3,111,774 | 44,770,587 |
| June 30, 2024 | 2,700,778 | 41,499,714 |
| December 31, 2024 | 2,321,465 | 42,275,720 |
| June 30, 2025 | 1,933,245 | 42,979,281 |
| December 31, 2025 | 1,536,703 | 44,526,457 |
| June 30, 2026 | 1,127,765 | 39,895,436 |

| Quarter Date | Accrued Interest (U.S.$) | Amortization payment (U.S.$) |
|---|---|---|
| December 31, 2026.............................. | 759,622 | 41,327,480 |
| June 30, 2027...................................... | 379,911 | 41,167,861 |

On each Original Bonds Quarter Date (which is not an interest payment date in respect of the Original Bonds), we are required, in accordance with the Pre-Enforcement Priority of Payments, to credit to the Pre-Funding Ledger in respect of the Series B Bonds on account of (i) accrued and unpaid interest on the Series B Bonds as at such Original Bonds Quarter Date and (ii) a proportion of the scheduled amortization payment falling due on the next following interest payment date with respect to the Series B Bonds the amounts indicated in the table below (based on the initial principal amount of the Series B Bonds) for each Original Bonds Quarter Date:

| Quarter Date | Accrued Interest (U.S.$) | Amortization payment (U.S.$) |
|---|---|---|
| December 31, 2020.............................. | 6,329,167 | - |
| June 30, 2021...................................... | 10,171,875 | - |
| December 31, 2021.............................. | 10,171,875 | - |
| June 30, 2022...................................... | 10,171,875 | - |
| December 31, 2022.............................. | 10,171,875 | - |
| June 30, 2023...................................... | 10,171,875 | - |
| December 31, 2023.............................. | 10,171,875 | - |
| June 30, 2024...................................... | 10,171,875 | - |
| December 31, 2024.............................. | 10,171,875 | - |
| June 30, 2025...................................... | 10,171,875 | - |
| December 31, 2025.............................. | 10,171,875 | - |
| June 30, 2026...................................... | 10,171,875 | - |
| December 31, 2026.............................. | 10,171,875 | - |
| June 30, 2027...................................... | 10,171,875 | - |
| December 31, 2027.............................. | 10,171,875 | 40,126,861 |
| June 30, 2028...................................... | 9,617,468 | 40,342,789 |
| December 31, 2028.............................. | 9,062,536 | 41,238,554 |
| June 30, 2029...................................... | 8,492,774 | 40,395,536 |
| December 31, 2029.............................. | 7,932,352 | 41,945,056 |
| June 30, 2030...................................... | 7,352,815 | 41,816,099 |
| December 31, 2030.............................. | 6,772,759 | 43,390,793 |
| June 30, 2031...................................... | 6,173,260 | 44,304,977 |
| December 31, 2031.............................. | 5,558,758 | 45,941,910 |
| June 30, 2032...................................... | 4,924,062 | 46,398,047 |
| December 31, 2032.............................. | 4,285,540 | 47,386,402 |
| June 30, 2033...................................... | 3,630,892 | 41,482,065 |
| December 31, 2033.............................. | 3,055,655 | 42,962,595 |
| June 30, 2034...................................... | 2,461,920 | 42,510,016 |
| December 31, 2034.............................. | 1,872,489 | 44,001,088 |
| June 30, 2035...................................... | 1,264,398 | 44,900,464 |
| December 31, 2035.............................. | 641,883 | 46,449,801 |

On each Original Bonds Quarter Date (which is not an interest payment date in respect of the Original Bonds), we are required, in accordance with the Pre-Enforcement Priority of Payments, to credit to the Pre-Funding Ledger in respect of the Series C Bonds on account of (i) accrued and unpaid interest on the Series C Bonds as at such Original Bonds Quarter Date and (ii) a proportion of the scheduled amortization payment falling due on the next following interest payment date with respect to the Series C Bonds the amounts indicated in the table below (based on the initial principal amount of the Series C Bonds) for each Original Bonds Quarter Date:

| Quarter Date | Accrued Interest (U.S.$) | Amortization payment (U.S.$) |
|---|---|---|
| December 31, 2020.............................. | 6,825,000 | - |
| June 30, 2021...................................... | 10,968,750 | - |
| December 31, 2021.............................. | 10,968,750 | - |
| June 30, 2022...................................... | 10,968,750 | - |

| Quarter Date | Accrued Interest (U.S.$) | Amortization payment (U.S.$) |
|---|---|---|
| December 31, 2022 | 10,968,750 | - |
| June 30, 2023 | 10,968,750 | - |
| December 31, 2023 | 10,968,750 | - |
| June 30, 2024 | 10,968,750 | - |
| December 31, 2024 | 10,968,750 | - |
| June 30, 2025 | 10,968,750 | - |
| December 31, 2025 | 10,968,750 | - |
| June 30, 2026 | 10,968,750 | - |
| December 31, 2026 | 10,968,750 | - |
| June 30, 2027 | 10,968,750 | - |
| December 31, 2027 | 10,968,750 | - |
| June 30, 2028 | 10,968,750 | - |
| December 31, 2028 | 10,968,750 | - |
| June 30, 2029 | 10,968,750 | - |
| December 31, 2029 | 10,968,750 | - |
| June 30, 2030 | 10,968,750 | - |
| December 31, 2030 | 10,968,750 | - |
| June 30, 2031 | 10,968,750 | - |
| December 31, 2031 | 10,968,750 | - |
| June 30, 2032 | 10,968,750 | - |
| December 31, 2032 | 10,968,750 | - |
| June 30, 2033 | 10,968,750 | - |
| December 31, 2033 | 10,968,750 | - |
| June 30, 2034 | 10,968,750 | - |
| December 31, 2034 | 10,968,750 | - |
| June 30, 2035 | 10,968,750 | - |
| December 31, 2035 | 10,968,750 | - |
| June 30, 2036 | 10,968,750 | 65,952,568 |
| December 31, 2036 | 9,860,112 | 67,502,412 |
| June 30, 2037 | 8,721,300 | 67,944,228 |
| December 31, 2037 | 7,571,593 | 70,415,620 |
| June 30, 2038 | 6,383,802 | 71,421,923 |
| December 31, 2038 | 5,175,504 | 73,975,777 |
| June 30, 2039 | 3,927,854 | 75,327,075 |
| December 31, 2039 | 2,653,746 | 77,977,275 |
| June 30, 2040 | 1,338,816 | 79,630,471 |

In the event of any redemption of the Original Bonds in part (other than by way of scheduled amortization pursuant to the terms and conditions of the Original Bonds), the amount indicated in the tables above for any Original Bonds Quarter Date which has yet to occur in respect of any series of the Original Bonds shall be reduced in the proportion that the amount applied in redemption of such series of the Original Bonds bears to the principal amount outstanding of such series of the Original Bonds immediately prior to such redemption.

***Weighted Average Life***

The weighted average life of the Series A Bonds, the Series B Bonds and the Series C Bonds is 4.05 years, 11.49 years and 17.98 years respectively.

***Record Date of the Original Bonds***

While the Original Bonds are in global form, the record date of the Original Bonds is the Clearing System Business Day immediately preceding the corresponding payment date; and while the Original Bonds are in definitive form, the fifteenth calendar day preceding the corresponding payment date. Clearing System Business Day means Monday to Friday inclusive except December 25 and January 1.

*Clearing information of the Original Bonds*

The Regulation S Series A Bonds have been accepted for clearance through the facilities of Euroclear and Clearstream with ISIN: XS2249740601, Common Code: 224974060, CFI: DAFNFR and FISN: GALAXY PIPELINE/1.75ASST BKD 202709. The Rule 144A Series A Bonds have been accepted for clearance through the facilities of DTC with ISIN: US36321PAA84, Common Code: 224948000, CUSIP number: 36321P AA8, CFI: DBFUGP and FISN: Galaxy Pipeline/1.75 Bd 20270930 Un.

The Regulation S Series B Bonds have been accepted for clearance through the facilities of Euroclear and Clearstream with ISIN: XS2249741245, Common Code: 224974124, CFI: DAFNFR and FISN: GALAXY PIPELINE/2.625ASST BKD 20360. The Rule 144A Series B Bonds have been accepted for clearance through the facilities of DTC with ISIN: US36321PAB67, Common Code: 224948352, CUSIP number: 36321P AB6, CFI: DBFUGP and FISN: Galaxy Pipeline/2.625 Bd 20360331 U.

The Regulation S Series C Bonds have been accepted for clearance through the facilities of Euroclear and Clearstream with ISIN: XS2249741674, Common Code: 224974167, CFI: DAFNFR and FISN: GALAXY PIPELINE/3.25ASST BKD 204009. The Rule 144A Series C Bonds have been accepted for clearance through the facilities of DTC with ISIN: US36321PAC41, Common Code: 224948441, CUSIP number: 36321P AC4, CFI: DBFUGP and FISN: Galaxy Pipeline/3.25 Bd 20400930 Un.

*Original Bond Documents*

The Original Bonds are constituted by the Principal Bond Trust Deed.

Except as disclosed above under the heading "*Interest, Principal and Final Maturity*", the terms and conditions of the Original Bonds, including covenants and bond events of default, are substantially similar to the Conditions of the Bonds.

**Debt Service Reserve Facility Agreement**

*General*

The Debt Service Reserve Facility Agreement provided by the DSR Facility Providers pursuant to the Debt Service Liquidity Facility Agreement will be the only Debt Service Reserve Facility in place as at the Issue Date.

Under the terms of the Debt Service Reserve Facility Agreement, the DSR Facility Providers grant a 5 year committed U.S. dollars revolving credit facility (available for drawing for an initial period of 364 days and with an initial longstop repayment date falling 5 years after the Original Closing Date which may be renewed annually for a further calendar year) in an aggregate principal amount equal to U.S.$320,000,000 ("**Total DSRF Commitments**") for the purpose of financing a DSRF Shortfall Amount.

Each DSR Facility Provider has acceded to the STID as a Secured Creditor with the DSR Facility Agent acting as its Secured Creditor Representative.

Upon occurrence of a DSRF Event of Default at any time thereafter whilst it is continuing, the DSR Facility Agent may (and, if so instructed by the Instructing Group, shall) by notice in writing to the Issuer (copied to the Offshore Security Agent) declare all the then outstanding drawings immediately due and payable and/or cancel the commitments of each DSR Facility Provider.

As at the date of this Offering Memorandum, the DSR Facility Providers are:

- Banco Santander, S.A.
- BNP Paribas Fortis SA/NV
- Citibank N.A., Jersey Branch
- Crédit Agricole Corporate and Investment Bank
- First Abu Dhabi Bank PJSC

- HSBC Bank Middle East Limited
- Mizuho Bank, Ltd.
- MUFG Bank, Ltd.
- Natixis
- Société Générale
- Standard Chartered Bank, Dubai Branch
- Sumitomo Mitsui Banking Corporation, DIFC Branch – Dubai

***Renewal***

The Issuer may, on any date falling not more than 60 days nor less than 30 days prior to the DSR Facility Renewal Date, by delivering a renewal request to the DSR Facility Agent, request each DSR Facility Provider to agree to extend the DSR Facility by extending:

(a) the Scheduled DSRF Termination Date for a further 364 days; and

(b) the DSRF Termination Date by a further calendar year.

If a DSR Facility Provider accepts the Renewal Request (a "**Renewing DSR Facility Provider**"), the DSR Facility Agent must deliver a renewal confirmation to the Issuer within 10 Business Days after the date of such Renewal Request. Upon delivery of the renewal confirmation, in respect of each Renewing DSR Facility Provider, the Scheduled DSRF Termination Date in respect of each Renewing DSR Facility Provider's commitments will be extended for the period specified in the Renewal Request, which must not be in excess of 364 days from the then current Scheduled DSRF Termination Date in respect of that DSR Facility Provider's commitments.

If any DSR Facility Provider does not accept a Renewal Request (such DSR Facility Provider, a "**Non-Renewing DSR Facility Provider**") (therefore producing a reduction in the Total DSRF Commitments, such amount being the "Shortfall"), the Issuer must notify the DSR Facility Agent accordingly and use commercially reasonable endeavors to:

(a) procure that one or more debt service reserve facility provider(s) having the Minimum Long Term Rating (each a "**Successor DSR Facility Provider**") accedes or accede to the Debt Service Reserve Facility Agreement with a view to remedying the Shortfall; and/or

(b) enter into a substitute debt service reserve facility in respect of the Shortfall with one or more substitute debt service reserve facility provider(s) having the Minimum Long Term Rating (each a "**Substitute DSR Facility Provider**") and the Offshore Security Agent on substantially the same terms as the Debt Service Reserve Facility Agreement (the "**Substitute DSR Facility Agreement**"); and/or

(c) procure that there is deposited an amount in a Debt Service Reserve Account which when aggregated with the amount of commitments procured under paragraph (a) and/or (b) above (as applicable) is not less than the Shortfall.

If the Issuer does not enter into a Substitute DSR Facility Agreement and/or find a Successor DSR Facility Provider and/or procure that there is deposited an amount in a Debt Service Reserve Account which, together, remedies the Shortfall on or prior to the fourth Business Day before the Scheduled DSRF Termination Date, the Issuer must deliver a DSRF Notice of Drawing in respect of each Non-Renewing DSR Facility Provider requesting such Non-Renewing DSR Facility Provider to deposit the full amount of its available commitment into the applicable DSRF Standby Account(s).

***Standby Drawing***

If at any time a DSR Facility Provider does not or ceases to have the Minimum Long Term Rating, then such DSR Facility Provider (the "**Affected DSR Facility Provider**") must notify the DSR Facility Agent, who shall notify the Issuer and the Offshore Security Agent in writing as soon as practicable but no later than five

Business Days after becoming aware of the occurrence of the foregoing. Upon the earlier of (i) the receipt by the Issuer of the notice of downgrade and (ii) the date upon which the Issuer becomes aware that it is entitled to receive such not notice of downgrade (the "**Downgrade Date**"), the Issuer must use commercially reasonable endeavors to:

(a) find a Substitute DSR Facility Provider, which shall have the Minimum Long Term Rating and which shall accede to the STID; and/or

(b) find a Successor DSR Facility Provider, which shall have the Minimum Long Term Rating and which shall accede to the STID; and/or

(c) secure an increase in commitments from one or more existing DSR Facility Provider(s); and/or

(d) procure that there is deposited an amount in a Debt Service Reserve Account,

which, in the aggregate, results in substitute and/or successor commitments, increases in commitments and/or deposits in a Debt Service Reserve Account in an aggregate amount of not less that the commitment of the Affected DSR Facility Provider, in each case, on or prior to the 30th Business Day after the Downgrade Date.

If the Issuer does not find such a Substitute DSR Facility Provider or Successor DSR Facility Provider or secure such increase in commitments from one or more existing DSR Facility Provider(s) with commitments which are in aggregate at least equal to the Commitment of the Affected DSR Facility Provider and/or procure that the requisite amount is deposited in a Debt Service Reserve Account (as applicable) prior to the 30th Business Day after the Downgrade Date, the Issuer must deliver a notice of drawing in respect of the relevant DSR Facility Provider in an amount equal to its available commitment as a Standby Drawing. On the making of a Standby Drawing, the Issuer shall immediately credit such amount to the DSRF Standby Account.

***Governing law***

The Debt Service Reserve Facility Agreement and any non-contractual obligations arising out of, or in connection with it, are governed by English law.

***Definitions***

For the purpose of this section "*Summary of Certain Finance Documents*":

"**Available Funds**" means, on any Payment Date, the aggregate of all funds standing to the credit of the Debt Service Payment Account on such Payment Date.

"**Debt Service Reserve Account**" means any account opened by the Issuer on or after the first date on which Permitted Additional Financial Indebtedness is incurred to support the Issuer's scheduled payment obligations under any Authorized Credit Facility (other than a Super-Senior Liquidity Facility) (each a "**DSRA Finance Document**"):

(a) with an Acceptable Bank;

(b) from which no withdrawals may be made by the Issuer except as permitted pursuant to this Deed and the relevant DSRA Finance Documents;

(c) the amount credited to which does not exceed, when aggregated with the amount available under any Super-Senior Liquidity Facility in respect of which the relevant DSRA Finance Documents are a Supported Authorized Credit Facility, an amount equal to the interest and commitment or commission payments and payments of principal that are part of the scheduled amortization (excluding any final payment of scheduled amortization on the final maturity date) and the net payments under Hedging Agreements for a period of 12 months in respect of the relevant DSRA Finance Documents; and

(d) which is subject to Security in favor of the Offshore Security Agent as security for the relevant DSRA Liabilities.

"**DSRF Event of Default**" means each of the following events in relation to the Issuer:

(a) the Issuer fails to pay any sum due from it under the Debt Service Reserve Facility Agreement or any other DSRF Finance Document at the time, in the currency and in the manner specified therein unless payment is made within five Business Days;

(b) an insolvency event in respect of the Issuer; or

(c) the delivery of an Acceleration Notice.

"**DSRF Finance Documents**" means (i) Debt Service Reserve Facility Agreement, (ii) the STID, (iii) any other Common Document, (iv) any fee letter, any notice of drawing, any assignment agreement, any accession certificate, any increase confirmation, any transfer certificate, any renewal request, any renewal confirmation (each in connection with and delivered under the Debt Service Reserve Facility Agreement) and (v) any other document designated as such upon agreement by the DSR Facility Agent and the Issuer.

"**DSRF Required Amount**" means, in respect of any Quarter Date and without double counting, an amount equal to the aggregate of:

(a) interest and commitment or commission payments under any Authorized Credit Facility for the two following Financial Quarters; and

(b) payments of principal that are part of the scheduled amortization under any Authorized Credit Facility (excluding (i) the repayment from time to time of any drawings under an Authorized Credit Facility that constitutes a revolving facility (including by way of rollover loans), (ii) any payments of principal on a final maturity date in connection with any non amortizing Authorized Credit Facility and (iii) any amortization payments (if any) under the Initial Bank Facility Agreement); and

(c) net payments under the Hedging Agreements (other than accretion payments, payments on any break or final termination payments under any Hedging Agreements),

in each case, scheduled to fall due for payment in the following two Financial Quarters (calculated on a rolling basis on each Quarter Date).

"**DSRF Shortfall**" means, with respect to any Payment Date and as determined by the Issuer, the amount of Available Funds, after taking into account funds available for drawing from any Debt Service Reserve Account, is less than the aggregate amount payable to or reserved for any of the Secured Creditors on such Payment Date pursuant to paragraphs (a) – (e) of the Pre Enforcement Priority of Payments but excluding:

(a) any unscheduled payments of principal or bullet final repayments under an Authorized Credit Facility (including any amortization payments under the Initial Bank Facility Agreement);

(b) any payments of make whole, premia or other similar payments;

(c) any non-recurring fees, indemnity, gross up or similar payments;

(d) any termination payments arising under any Hedging Agreement; and

(e) any Subordinated Liquidity Payments.

"**DSRF Shortfall Amount**" means, with respect to any Payment Date, the amount certified by the Issuer to the DSR Facility Agent be the amount of any DSRF Shortfall in respect of that Payment Date.

"**DSRF Standby Account**" means the reserve account to be opened, if required, in the name of the Issuer and held at:

(a) the applicable DSR Facility Provider in respect of whom the Standby Drawing has been made; or

(b) if the applicable DSR Facility Provider does not have the Minimum Long Term Rating, such bank or financial institution having the Minimum Long Term Rating as may be selected by the Issuer in its discretion.

"**DSRF Termination Date**" means the earliest of:

(a) the date on which all amounts due in respect of any Rated Secured Debt have been repaid or discharged in full;

(b) the date on which all of the Secured Obligations have been discharged in full and none of the relevant Secured Creditors are under any further actual or contingent obligation to make advances or provide other financial accommodation under any of the Finance Documents;

(c) the date on which the Debt Service Reserve Facility is terminated under clause 15 (*DSR Facility Events of Default*) of the Debt Service Reserve Facility Agreement; and

(d) the fifth anniversary of the Original Closing Date or any renewal of the Debt Service Reserve Facility Agreement in accordance with clause 2.3 (*Renewal*) of the Debt Service Reserve Facility Agreement.

"**Instructing Group**" means those DSR Facility Providers whose commitments aggregate 66⅔ per cent. or more of the Total DSRF Commitments (or, if the Total DSRF Commitments have been reduced to zero, aggregated 66⅔ per cent. or more of the Total DSRF Commitments immediately prior to that reduction).

"**Minimum Long Term Rating**" means at least two of:

(a) A- or higher by S&P;

(b) A- or higher by Fitch; and

(c) A3 or higher by Moody's,

or such lower rating as may be agreed between the Rating Agencies which are then ascribing a Rating on any of the Secured Debt, provided that any such lower rating would not lead to any downgrade of the then current Rating ascribed by the Rating Agencies on any of such Secured Debt.

"**Original Closing Date**" means November 5, 2020.

"**Payment Date**" means, in respect of an Authorized Credit Facility, each date on which a payment is made or is scheduled to be made by the Issuer in respect of any obligations or liability under such Authorized Credit Facility and which forms part of the calculation of the DSRF Required Amount.

"**Rated Secured Debt**" means any Secured Debt which has a Rating.

"**Rating**" means any rating ascribed by any Rating Agency appointed by the Issuer from time to time to provide a rating in respect of any Secured Debt.

"**Scheduled DSRF Termination Date**" means subject to any extension made clause 2.3 (Renewal) of the Debt Service Reserve Facility Agreement, the date that falls 364 days after the Original Closing Date.

"**Standby Drawing**" means a drawing made under this Agreement as a result of:

(a) a downgrade of a DSR Facility Provider below the Minimum Long Term Rating in accordance with paragraph (c) of clause 4 (Standby Drawing) of the Debt Service Reserve Facility Agreement; or

(b) the relevant DSR Facility Provider failing to renew its commitment the Issuer failing to deliver a renewal request pursuant to clause 2.3 (Renewal) of the Debt Service Reserve Facility Agreement.

**Hedging Agreements**

We have entered into certain Hedging Agreements to hedge our exposure to interest rate risk under the Initial Bank Facility Agreement in accordance with the Hedging Policy. The Hedging Agreements will be terminated in full, concurrently with the prepayment in full of the principal amount outstanding under the Initial Bank Facility Agreement from the proceeds of the issue of the Bonds.

## OVERVIEW OF THE UNITED ARAB EMIRATES AND ABU DHABI

### Introduction

The Pipelines are of strategic importance to Abu Dhabi and the United Arab Emirates and play a critical role in the Abu Dhabi energy sector as all of Abu Dhabi's current gas production flows through them and they supply a large part of the UAE's and Abu Dhabi's gas demand which is critical for Abu Dhabi's industrial output, power generation and facilitating LNG export. The Government of Abu Dhabi is the 100% owner of ADNOC. In addition, ADNOC, indirectly through its 100% interest in ADNOC Infrastructure, has a 80% shareholding in ADNOC HoldCo which has a 51% shareholding in AssetCo. Accordingly, this section provides an overview of the United Arab Emirates and Abu Dhabi and focuses on the economy of Abu Dhabi.

### The United Arab Emirates

The United Arab Emirates is a federation of seven Emirates. Formerly known as the Trucial States, they were a British protectorate until they achieved independence in December 1971 when six of the seven Emirates merged to form the United Arab Emirates (with Ras-al-Khaimah joining in February 1972). Each Emirate has a local government headed by the Ruler of the Emirate. The Government of the United Arab Emirates is headed by the President. The federal budget is principally funded by Abu Dhabi.

The federation is governed by the Supreme Council of the Rulers, which consists of the Rulers of the seven Emirates. The Supreme Council elects from its own membership the President and the Vice President (for renewable five-year terms). H.H. Sheikh Zayed bin Sultan Al Nahyan, the late Ruler of Abu Dhabi, held the position of President from 1971 until his death in November 2004. During his long presidency, H.H. Sheikh Zayed bin Sultan Al Nahyan oversaw substantial investment in the infrastructure of the United Arab Emirates, which transformed the country. Following his death, his son, H.H. Sheikh Khalifa bin Zayed Al Nahyan, took over as Ruler of Abu Dhabi and was elected as President of the United Arab Emirates.

As of December 31, 2019, the United Arab Emirates had the world's sixth largest proven crude oil reserves and seventh largest proven natural gas reserves according to OPEC data. The United Arab Emirates has a more diversified economy than most of the other countries in the GCC region and the Government of the United Arab Emirates is proactively implementing measures to further diversify the United Arab Emirates' economy away from oil.

On May 26, 2019, Moody's affirmed the United Arab Emirates' long-term credit rating of Aa2, confirming its stable outlook. The rating affirmation was supported by (i) Moody's assumption of unconditional support from Abu Dhabi (Aa2 stable) to the federal government; and (ii) strong credit fundamentals including very high fiscal strength, with a broadly balanced budget and negligible or very low federal government debt, high wealth levels and robust institutions. The United Arab Emirates is rated Aa2 with stable outlook as of the date of this Offering Memorandum. The United Arab Emirates is not rated by the other rating agencies.

In May 2014, the MSCI Emerging Markets Index upgraded the United Arab Emirates to an "emerging market" economy (compared to the previous classification of "**frontier market**").

### Abu Dhabi

#### *Introduction*

Abu Dhabi is the largest of the seven Emirates, and the city of Abu Dhabi is also the capital of the United Arab Emirates. Abu Dhabi is one of the world's major producers of oil, which was first discovered in Abu Dhabi in 1958. The first export shipments of crude oil were made from the Jebel Dhanna terminal in December 1963.

Abu Dhabi, with crude oil reserves estimated to be approximately 92 billion barrels, has approximately 94% of the UAE's total reserves and approximately 7% of the proven world oil reserves as at December 31, 2019. As of December 31, 2019, the United Arab Emirates had the world's sixth largest proven crude oil reserves and seventh largest proven natural gas reserves according to OPEC data. At the current rate of production (around 3.0 million b/d), Abu Dhabi's oil reserves are expected to last in excess of 80 years. At December 31, 2019, the UAE's natural gas reserves were estimated by OPEC at 6,091 billion standard cubic meters, making them the world's seventh largest reserves after Russia, Iran, Qatar, the United States, Turkmenistan and Saudi Arabia. The largest reserves, approximately 95% of the UAE's total, are located in Abu Dhabi, with the rest shared by other emirates. Total natural gas production in Abu Dhabi was 7,578 million standard cubic feet per day in 2014, 8,311 million in 2015, 8,732 million in 2016, 8,821 million in 2017 and 9,150 million in 2018.

While the oil and gas industry plays an important role in the economy of Abu Dhabi, the Government of Abu Dhabi has adopted a long-term plan aimed at diversifying the economic base and increasing the contribution of non-oil activities to economic growth in Abu Dhabi. Such diversification is regarded as essential by the Government of Abu Dhabi for the balanced and sustainable future growth of the economy of Abu Dhabi.

***Population***

The most recent UAE census for which data has been published was conducted in 2005. Censuses in individual emirates, including Abu Dhabi in 2011, have subsequently been undertaken. All Abu Dhabi population figures set out below for 2010 and subsequent years are estimates based on historic data, including the unpublished census results. The most recent estimate of population for the UAE as a whole was made by the UAE Federal Competitiveness and Statistics Authority (the "**FCSA**"), which estimated the registered resident population of the UAE to be approximately 9.3 million as at December 31, 2017 of that year. The most recent public estimate of population in Abu Dhabi was made by the Statistics Centre – Abu Dhabi (the "**SCAD**"), which estimated the usual resident population of Abu Dhabi to be approximately 2.9 million as at June 30, 2016. These estimates are subject to revision when a new census result becomes available.

The populations of both the United Arab Emirates and Abu Dhabi have grown significantly since 1985 as the Emirates have developed. The table below illustrates this growth since 1985, using census data for each 1985, 1995 and 2005.

| | **1985** | **1995** | **2005** | **2010** | **2018** |
|---|---|---|---|---|---|
| Abu Dhabi population............ | 566,036 | 942,463 | 1,399,484 | 2,094,480 | 2,908,173[(1)] |
| Total UAE population............ | 1,379,303 | 2,411,041 | 4,106,427 | 8,264,070 | 9,366,829 |

Notes:
(1) SCAD estimates as at 30 June 2016.
Sources: SCAD (Abu Dhabi population figures) and FCSA (UAE population figures).

Since 2005, Abu Dhabi's population has grown by 108% to 2,908,173 according to SCAD's estimates as at June 30, 2016. In 2016, based on the SCAD mid-year estimates, Abu Dhabi had a predominantly young population with 0.9% being 65 years old and above and 16.6% being under the age of 15. The population mix as of mid-year 2016 was estimated by the SCAD to have comprised 19% United Arab Emirates nationals and 81% non-United Arab Emirates nationals.

***Credit Ratings***

On May 26, 2019, Moody's affirmed the Government of Abu Dhabi's long-term ratings at Aa2. The outlook remains stable. Reasons cited for the stable outlook include Moody's expectations that the sovereign's fiscal strength will remain high with low government debt and vast sovereign assets. Additionally, prospects for a medium-term increase in economic activity and revenue from the hydrocarbon sectors and reforms aimed at developing the non-oil sector also support the ratings.

On March 26, 2020, S&P affirmed the Government of Abu Dhabi's foreign and local currency sovereign credit ratings at AA long-term with a stable outlook and A-1+ short-term with a stable outlook. Reasons cited for the ratings affirmation include Abu Dhabi's strong fiscal and external positions. The stable outlook on Abu Dhabi reflects S&P's expectation that economic growth will gradually pick up and that the country's fiscal position will remain strong over the next two years, although structural and institutional weaknesses will likely persist.

On October 29, 2020, Fitch Ratings Ltd. affirmed the Government of Abu Dhabi's long-term foreign and local currency issuer default ratings at AA with a stable outlook. Reasons cited for the ratings affirmation include Abu Dhabi's strong fiscal and external metrics and high GDP per capita, counterbalanced by high dependence on hydrocarbons, an economic policy framework still under development and relatively weak governance indicators.

***Revenue***

The Government of Abu Dhabi's revenue consists of: (a) petroleum royalties and tax revenue; (b) department collections revenue; and (c) capital revenue.

The table below shows the percentage distribution of the Government of Abu Dhabi's revenue for each of the years indicated.

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019* |
|---|---|---|---|---|---|---|
| | *(in percentage)* | | | | | |
| Petroleum royalties and tax revenue | 91.0 | 61.1 | 28.8 | 47.0 | 56.1 | 52.6 |
| Department collections revenue | 7.9 | 14.4 | 7.5 | 6.8 | 3.9 | 7.4 |
| Capital revenue | 1.1 | 24.4 | 63.7 | 46.2 | 40.1 | 39.9 |
| **Total revenue** | **100** | **100** | **100** | **100** | **100** | **100** |

Source: SCAD

* *Preliminary estimates*

### *Gross Domestic Product*

*Nominal GDP*

Abu Dhabi's nominal GDP grew in each year from 2012 to 2014. Since 2015, its nominal GDP has been decreasing, with its nominal GDP decreasing to approximately AED 778,501 million in 2015, a decrease of 18.9% compared with 2014. According to SCAD, in 2016, Abu Dhabi's nominal GDP was AED 760,396 million, representing a decrease of 2.3% compared with 2015. This decrease mainly reflects substantially lower oil prices since 2015, which were offset in part in 2016 by increased production. Abu Dhabi's nominal GDP grew by 7.0% in 2017 and by 14.4% in 2018, in each case compared to the prior year, principally reflecting recovering oil prices.

Abu Dhabi's nominal GDP per capita, which was approximately AED 261,000 in 2016 (based on the latest available SCAD population estimate which was made as at June 30, 2016), is among the highest in the world. The oil and gas industry continues to be the major sector of Abu Dhabi's economy and contributed 40.4% to nominal GDP in 2018.

In the first quarter of 2019, the preliminary estimate of Abu Dhabi's seasonally adjusted nominal GDP was AED 227,290 million, 3.7% higher than in the same quarter of 2018 and 6.3% lower than in the fourth quarter of 2018. Abu Dhabi's nominal GDP, particularly the hydrocarbon component, demonstrates significant volatility on a quarterly basis.

Abu Dhabi's GDP is generated principally by the hydrocarbon sector (mining and quarrying), which contributed 50.6% of Abu Dhabi's nominal GDP in 2014, 35.1% in 2015, 31.7% in 2016, 34.1% in 2017, 41.7% in 2018 and 40.8% in 2019. The contribution of the hydrocarbon sector in nominal terms is materially affected by the prevailing level of oil prices.

The table below shows Abu Dhabi's nominal GDP, its annual percentage change, the United Arab Emirates' nominal GDP and the percentage contribution of Abu Dhabi's nominal GDP to the United Arab Emirates' nominal GDP for each of the years indicated.

| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019(1) |
|---|---|---|---|---|---|---|
| | **(AED millions, except percentages)** | | | | | |
| Abu Dhabi nominal GDP | 960,146 | 778,501 | 760,396 | 813,623 | 932,441 | 915,250 |
| Percentage change in Abu Dhabi nominal GDP | 3.0 | (18.9) | (2.3) | 7.0 | 14.6 | (1.8) |
| UAE nominal GDP | 1,480,521 | 1,315,251 | 1,311,248 | 1,387,107 | 1,521,072 | 1,546,645 |
| Abu Dhabi as a percentage of UAE | 64.9 | 59.2 | 58.0 | 58.7 | 61.2 | 59.2 |

Notes:

(1) Preliminary estimates.

Sources: SCAD (for Abu Dhabi nominal GDP) and FCSA (for UAE nominal GDP only)

### *Principal Sectors of the Economy*

*Overview*

While there has been a decline in the contribution of the oil industry to Abu Dhabi's economy in recent years due to lower oil prices, the mining and quarrying sector (including crude oil and natural gas) remains the single most significant contributor to Abu Dhabi's nominal GDP, contributing 50.6% of Abu Dhabi's nominal GDP in 2014, 35.1% in 2015, 31.7% in 2016, 34.1% in 2017, 41.7% in 2018 and 40.8% in 2019. The contribution of the hydrocarbon sector in nominal terms is materially affected by the prevailing level of oil prices. Outside the hydrocarbon sector, the principal contributors to Abu Dhabi's nominal GDP in each of 2014, 2015, 2016, 2017, 2018 and 2019 have been:

(a) construction (which accounted for 9.4% of Abu Dhabi's nominal GDP in 2019);

(b) financial and insurance activities (which accounted for 7.7% of Abu Dhabi's nominal GDP in 2019);

(c) public administration and defense, compulsory social security (which accounted for 7.0% of Abu Dhabi's nominal GDP in 2019);

(d) manufacturing (which accounted for 6.3% of Abu Dhabi's nominal GDP in 2019);

(e) wholesale and retail trade, repair of motor vehicles and motorcycles (which accounted for 5.2% of Abu Dhabi's nominal GDP in 2019); and

(f) real estate activities (which accounted for 4.2% of Abu Dhabi's nominal GDP in 2019).

Together, these non-hydrocarbon sectors accounted for 33.5% of nominal GDP in 2014, 44.0% in 2015, 47.1% in 2016, 45.4% in 2017, 41.1% in 2018 and 39.8% in 2019.

The following table shows Abu Dhabi's nominal GDP by economic activity and by percentage contribution, and the year on year growth rate, for each of the years indicated.

| Sector | 2014 (AED millions) | 2014 (%) | 2015 (AED millions) | 2015 (%) | 2016 (AED millions) | 2016 (%) | 2017 (AED millions) | 2017 (%) | 2018 (AED millions) | 2018 (%) | 2019[1] (AED millions) | 2019[1] (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agriculture, forestry and fishing | 5,517 | 0.6 | 5,699 | 0.7 | 5,932 | 0.8 | 6,454 | 0.8 | 6,612 | 0.7 | 6,727 | 0.7 |
| Mining and quarrying (includes crude oil and natural gas) | 485,469 | 50.6 | 273,078 | 35.1 | 241,148 | 31.7 | 277,067 | 34.1 | 388,541 | 41.7 | 373,297 | 40.8 |
| Manufacturing | 51,900 | 5.4 | 50,324 | 6.5 | 49,842 | 6.6 | 54,500 | 6.7 | 58,916 | 6.3 | 57,699 | 6.3 |
| Electricity, gas and water supply; waste management activities | 23,765 | 2.5 | 29,831 | 3.8 | 30,524 | 4.0 | 35,154 | 4.3 | 36,964 | 4.0 | 38,660 | 4.2 |
| Construction | 83,812 | 8.7 | 88,782 | 11.4 | 85,306 | 11.2 | 84,845 | 10.4 | 88,085 | 9.4 | 85,693 | 9.4 |
| Wholesale and retail trade; repair of motor vehicles and motorcycles | 37,187 | 3.9 | 41,038 | 5.3 | 47,671 | 6.3 | 47,052 | 5.8 | 48,225 | 5.2 | 47,184 | 5.2 |
| Transportation and storage | 36,166 | 3.8 | 37,065 | 4.8 | 27,624 | 3.6 | 25,852 | 3.2 | 26,193 | 2.8 | 26,311 | 2.9 |
| Accommodation and food service activities | 9,013 | 0.9 | 9,244 | 1.2 | 9,828 | 1.3 | 10,209 | 1.3 | 10,634 | 1.1 | 10,836 | 1.2 |
| Information and communication | 20,643 | 2.1 | 21,293 | 2.7 | 22,261 | 2.9 | 23,826 | 2.9 | 24,188 | 2.6 | 25,193 | 2.8 |
| Financial and insurance activities | 61,331 | 6.4 | 68,555 | 8.8 | 73,244 | 9.6 | 74,547 | 9.2 | 70,814 | 7.6 | 70,470 | 7.7 |
| Real estate activities | 35,972 | 3.7 | 41,177 | 5.3 | 46,814 | 6.2 | 47,020 | 5.8 | 38,834 | 4.2 | 38,415 | 4.2 |
| Professional, scientific and technical activities | 18,545 | 1.9 | 19,016 | 2.4 | 19,467 | 2.6 | 18,931 | 2.3 | 20,530 | 2.2 | 20,782 | 2.3 |
| Administrative and support service activities | 10,173 | 1.1 | 10,811 | 1.4 | 12,047 | 1.6 | 11,833 | 1.5 | 12,040 | 1.3 | 12,317 | 1.3 |
| Public administration and defence, compulsory social security | 51,620 | 5.4 | 52,383 | 6.7 | 55,309 | 7.3 | 61,358 | 7.5 | 65,181 | 7.0 | 64,489 | 7.0 |
| Education | 11,463 | 1.2 | 11,719 | 1.5 | 13,214 | 1.7 | 14,185 | 1.7 | 14,411 | 1.5 | 14,638 | 1.6 |
| Human health and social work activities | 11,224 | 1.2 | 11,604 | 1.5 | 12,560 | 1.7 | 12,500 | 1.5 | 13,437 | 1.4 | 13,730 | 1.5 |
| Arts, recreation and other service activities | 2,294 | 0.2 | 2,381 | 0.3 | 2,563 | 0.3 | 2,717 | 0.3 | 2,693 | 0.3 | 2,775 | 0.3 |
| Activities of households as employers | 4,052 | 0.4 | 4,502 | 0.6 | 5,042 | 0.7 | 5,573 | 0.7 | 6,142 | 0.7 | 6,034 | 0.7 |
| **Total nominal GDP** | **960,146** | **100.0** | **778,501** | **100.0** | **760,396** | **100.0** | **813,623** | **100.0** | **932,441** | **100.0** | **915,250** | **100.0** |

Notes:

(1) Preliminary estimates.

Source: SCAD

*Oil and Gas*

The hydrocarbon sector contributed 50.6% of Abu Dhabi's nominal GDP in 2014, 35.1% in 2015, 31.7% in 2016, 34.1% in 2017 and 40.4% in 2018. Real GDP growth in the hydrocarbon sector was 0.5% in 2014, 4.4% in 2015, 2.7% in 2016, minus 2.9% in 2017 and 3.4% in 2018 and the compound annual growth rate was 1.85% between 2014 and 2018. Changes in the rates of growth of the hydrocarbon sector principally reflect oil and gas production increases over the period as adjusted by the GDP deflator for the year concerned, which is calculated by weighting inflation in different sectors of the economy.

During 2019, the UAE had the world's sixth largest proven crude oil and conventional gas reserves. Abu Dhabi represents 95% of the total reserves of the UAE with crude oil reserves of 100 billion barrels, and approximately 94% of the UAE's conventional gas reserves, with 256,000 billion standard cubic feet, and its recoverable unconventional gas resources were estimated to be 160,000 billion standard cubic feet. At the current Field Sustainable Oil Production Rate (FSOPR) Abu Dhabi's oil reserves are expected to last in excess of 80 years. In terms of production capacity, Abu Dhabi's onshore facilities currently exceed its offshore facilities. Total raw gas production in Abu Dhabi reached approximately 10 billion standard cubic feet per day in 2019.

*Oil*

According to the OPEC Annual Statistical Bulletin 2020, Abu Dhabi had approximately 94% of the UAE's total crude oil reserves and approximately 7% of the proven world oil reserves as at 31 December 2019. As of December 31, 2019, the United Arab Emirates had the world's sixth largest proven crude oil reserves according to OPEC data. At the current rate of production (around 3.0 million b/d), Abu Dhabi's oil reserves are expected to last in excess of 80 years. In terms of production capacity, Abu Dhabi's onshore facilities currently exceed its offshore facilities.

Abu Dhabi's oil is considered light, with gravities in the 34 to 40 degree American Petroleum Institute gravity range. Murban, a blend from the onshore fields, is its major export crude and is its representative crude stream in the OPEC reference basket. Virtually all of Abu Dhabi's crude oil is exported to Asia.

***Financial and Insurance Activities***

The financial and insurance activities sector (which principally reflects the activities of banks) contributed 6.4% to Abu Dhabi's nominal GDP in 2014, 8.8% in 2015, 9.6% in 2016, 9.2% in 2017 and 8.4% in 2018. In real terms, this sector grew by 19.1% in 2014, by 10.1% in 2015, by 4.6% in 2016, by 2.6% in 2017 and by 0.9% in 2018 and the compound annual growth rate was 4.51% between 2014 and 2018. The relatively high rates of growth in 2014 and 2015 principally reflected the effect of generally good economic conditions in those years on Abu Dhabi's banking sector.

Following two significant bank mergers, there are now two principal banking groups and one Islamic bank operating in Abu Dhabi, being the First Abu Dhabi Bank (a merger between National Bank of Abu Dhabi and First Gulf Bank, which was completed in April 2017), Abu Dhabi Commercial Bank (which merged with Union National Bank and acquired Al Hilal Bank in May 2019) and Abu Dhabi Islamic Bank. These banks provide a full range of banking services.

***Inflation***

The tables below show the consumer price index ("**CPI**") and the percentage change, year on year, of consumer prices in Abu Dhabi for each of the years indicated.

| | **2014** | **2015** | **2016** | **2017** | **2018** | **2019** |
|---|---|---|---|---|---|---|
| Consumer price index (2014 = 100) | 100.0 | 104.3 | 106.4 | 108.1 | 111.6 | 110.7 |
| Consumer prices **(percentage change, year on year)** | 3.2 | 4.3 | 2.0 | 1.6 | 3.3 | (0.8) |

Source: SCAD

The table below shows the principal components of the Abu Dhabi CPI in each of the years 2014 to 2019, the percentage change year on year and the index weighting of each component.

| | Change (1) (%) | | | | | | Index Weight | |
|---|---|---|---|---|---|---|---|---|
| | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2014(2) | From 2015(3) |
| Food and beverages | 2.5 | 1.8 | (0.1) | 1.2 | 2.5 | (2.1) | 16.1 | 12.3 |
| Tobacco | 3.3 | 1.3 | 2.6 | 25.7 | 65.4 | 3.5 | 0.3 | 0.2 |
| Clothing and footwear | 0.9 | (0.2) | 0.9 | (1.1) | 20.8 | (2.3) | 9.8 | 5.4 |
| Housing, water, electricity, gas and other fuels | 4.0 | 10.2 | 5.6 | 1.6 | (3.6) | (3.7) | 37.9 | 31.2 |
| Fixtures and fittings, household equipment, and routine household maintenance | 11.1 | 1.2 | (0.3) | 1.1 | 5.2 | 2.7 | 4.8 | 7.2 |
| Health | (0.1) | (0.3) | 3.8 | 6.9 | (0.1) | 0.0 | 0.8 | 1.6 |
| Transportation | 0.0 | 0.6 | (1.7) | 4.3 | 8.4 | (5.3) | 9.7 | 14.7 |
| Communication | (0.1) | (1.0) | (3.2) | (1.4) | 2.6 | 1.1 | 7.7 | 5.0 |
| Recreation and culture | 2.7 | 1.5 | (1.2) | (5.6) | 12.5 | 24.6 | 2.4 | 4.8 |
| Education | 4.5 | 5.1 | 3.0 | 1.0 | 4.7 | 0.8 | 2.6 | 6.9 |
| Hotels and restaurants | 4.7 | 2.9 | 3.9 | (1.6) | 6.1 | 1.7 | 3.4 | 3.8 |
| Miscellaneous goods and services | 5.4 | 2.2 | 2.4 | 6.4 | 4.5 | 0.4 | 4.6 | 7.0 |

Notes:

(1) All data based on 2014=100.

(2) 2007 base year.

(3) 2014 base year.

***Employment and Wages***

Based on SCAD estimates for 2018, the labor force (comprising the employed and unemployed population from age 15 and above, both nationals and non-nationals) in Abu Dhabi comprised 65.2% of the total population and 79.0% of the population aged 15 and above. The unemployment rate in Abu Dhabi was estimated at 5.2% of the labor force in 2018.

The principal sectors for employment in Abu Dhabi in 2018 were activities of households as employers, undifferentiated goods and services (at 15.7% of the employed population), construction (at 15.1%), manufacturing (at 8.8%), public administration and defense, compulsory social security (at 7.1%), wholesale and retail trade, repair of motor vehicles and motorcycles (at 6.2%) and mining and quarrying (at 2.6%).

One of the key challenges for the emirate is the creation of jobs for nationals, supported by initiatives to educate and motivate young Emiratis to join the workforce and, in particular, the private sector. The government is supporting the private sector by initiating educational and training programs as well as schemes to identify deficiencies among public sector workers with a view to providing appropriate retraining. Specifically, in the education arena, the government is outsourcing the management of schools to private operators and initiating partnerships with internationally respected universities and schools with a view to increasing the quality of education offered. It is also a requirement for companies in the UAE to maintain defined proportions of Emirati employees in their workforce (known as Emiratization).

Unemployment in Abu Dhabi, based on labor force surveys, is low with the SCAD estimating unemployment rates (comprising those persons registered as unemployed divided by the total labor force) of 3.4% in 2014, 3.7% in 2015, 4.4 per cent in 2016, 5.0% in 2017 and 5.2% in 2018.

Unemployment benefits are payable to nationals only and the responsibility for the payment lies with the federal government.

The Abu Dhabi Retirement Benefits and Pension Fund (the "**Pension Fund**") was created in June 2000 to provide pensions to all nationals employed in the public, semi-government and the private sector in Abu Dhabi. The Pension Fund provides a percentage of the average basic salary of the final three years of employment, plus the last pensionable allowance as required by law, which ranges from 48% after 15 years employment to 80% after 25 years employment. Monthly contributions are made to the pension fund both by employers (at a rate of 15%) and by employees (at a rate of 5%) based on the employee's monthly pensionable salary. The government contributes an additional sum of 6% of the insured's pensionable salary.

The net asset value of the Pension Fund was AED 58.7 billion at December 31, 2018. As at the same date, the Pension Fund had an actuarial liability of AED 127.9 billion and an unfunded liability of AED 69.2 billion.

Separate social security provision is made for all members of the military and the police force and this provision is funded by Abu Dhabi through the contributions it makes to the federal government budget in this respect.

Non-nationals are not entitled to pensions but are legally entitled to end-of-service benefits based on the length of service and in accordance with the terms of their employment contracts.

The Thiqa Health Insurance Program was launched in Abu Dhabi in May 2008 as part of the implementation of Abu Dhabi Health Insurance Law No. 23 of 2005 and is provided by the National Health Insurance Company, DAMAN. The Thiqa Health Insurance Program covers all UAE nationals working and residing in Abu Dhabi. The Abu Dhabi government funds the costs of the programme to the extent that it is provided free to UAE nationals in Abu Dhabi. Non-nationals are required to take out health insurance which is paid for by their employers.

***Infrastructure***

*Roads and Highways*

Abu Dhabi has an extensive network of roads connecting it with Saudi Arabia in the west, the Sultanate of Oman in the east and Dubai in the north.

As part of the "Plan Abu Dhabi 2030 – Urban Structure Framework Plan", the Government of Abu Dhabi envisages an integrated transport system for the city of Abu Dhabi, utilizing and extending the existing regular grid of boulevards running through the city with a view to distributing traffic evenly and more efficiently through the core. New freeways will be constructed where necessary, including new connections between Saadiyat Island and the airport and connecting Al Reem and Saadiyat Islands to Al Raha Beach. In addition, feasibility studies are being conducted in relation to a possible high speed rail line linking the central station with Abu Dhabi International Airport and, ultimately, Dubai and a freight line connecting Khalifa Port, the airport and Jebel Ali with other GCC countries. Consideration is also being given to two metro lines and surface light rail to minimize the need for walking and improved streetscapes to maximize pedestrian safety and comfort. Further, a network of ferry routes utilizing the waterways surrounding the new island developments is planned.

*Ports and Airports*

Khalifa Port is Abu Dhabi's main general cargo port and it handles all of Abu Dhabi's container traffic. It is the first semi-automated container port in the MENA region and one of the most technologically advanced ports in the world, capable of accommodating the largest ships currently built. Dredging and reclamation work commenced on the project in April 2008 and the port was officially inaugurated in December 2012. Khalifa Port was constructed on a reclaimed island located halfway between the cities of Abu Dhabi and Dubai. It is owned by Abu Dhabi Ports and operated by Abu Dhabi Terminals. Upon completion, Khalifa Port took over all of the existing container traffic operations of Zayed Port, which is the oldest commercial port in Abu Dhabi. Zayed Port has expanded its status as a premier regional hub to encompass cruise tourism as well as general and bulk cargo. Terminals at Jebel Dhanna, Fujairah and Das and Zirku islands handle a significant proportion of Abu Dhabi's crude oil and gas exports.

Khalifa Port currently has an annual handling capacity of 2.5 million 20-foot equivalent units ("**TEU**") and twelve million tons of general cargo. Upon completion of all the phases of Khalifa Port, Khalifa Port's annual handling capacity is expected to increase to fifteen million TEUs and 35 million tons of general cargo. Khalifa Port's infrastructure includes a four-km long quay wall, 20 shipping lanes and 52 automated stacking cranes. In 2016, Khalifa Port was named the second fastest growing port in the world.

Since its establishment in 2006, Abu Dhabi Airports has had overall responsibility for the redevelopment of Abu Dhabi's aviation infrastructure. Abu Dhabi Airports owns and operates five airports: Abu Dhabi International Airport, Al Ain International Airport, Al Bateen Executive Airport, Delma Island Airport and Sir Bani Yas Island Airport.

Abu Dhabi International Airport is the second largest airport in the United Arab Emirates. In 2016, it served over 24 million passengers, a 5.1% increase compared with 2015.

Abu Dhabi Airports is undertaking a multi-billion dirham project to develop the new 742,000 square meter Midfield Terminal Building. This project is expected to nearly double the Abu Dhabi International Airport's capacity, to 45 million, when completed.

*Telecommunications*

The United Arab Emirates has a well-developed, technologically-advanced telecommunications infrastructure and has a high mobile telephone penetration rate. The primary United Arab Emirates service providers for national and international fixed-line network, mobile telephony, internet access and cable television services are Emirates Telecommunications Corporation ("**Etisalat**"), which has been in operation since 1976 and Emirates Integrated Telecommunications Company ("**EITC**"), which operates under the brand name "du" and which was formed in 2006 as a result of the Government of the United Arab Emirates' initiative to end the monopoly of Etisalat. As of December 31, 2016, EITC was owned 39.56% by Emirates Investment Authority, 19.75% by Mubadala Investment Company ("**Mubadala**"), 19.5% by Emirates International Telecommunications Company LLC and 21.19% by other shareholders holding less than 5% of EITC's share capital each.

According to the Telecommunications Regulatory Authority, as at March 2019 there were approximately 2.3 million fixed lines (including ISDN fixed lines) in operation in the UAE, with 19.2 million active mobile subscribers (216% penetration) and 3.0 million broadband internet subscribers. No separate statistics are available for Abu Dhabi.

***Privatization***

One of the key strategies of the Government of Abu Dhabi is to raise productivity in the economy, including through privatization and public private partnerships. On July 10, 2017, ADNOC announced that it is considering an initial public offering of minority stakes of some of its services businesses. It is expected that this would support the growth and expansion of the United Arab Emirate's private sector and equity capital markets and will allow the public, and other investors, to invest alongside ADNOC and benefit from the future growth of these assets.

***Foreign Direct Investment***

The Government of Abu Dhabi has taken initiatives to establish favorable conditions and enhance investor confidence in Abu Dhabi's economy. These include a transparent tax structure, with a supporting judicial system, investment encouraging business legislation and the establishment of industrial and free zones.

The total value of foreign direct investment ("**FDI**") in Abu Dhabi at the end of 2018 was AED 101,253 million compared to AED 99,837 million at the end of 2017, AED 100,887 million at the end of 2016, AED 88,095 million at the end of 2015 and AED 81,112 million at the end of 2014. FDI grew at rates of 12.8% in 2014, 8.6% in 2015, 14.5% in 2016, minus 1.0% in 2017 and 1.4% in 2018.

The table below shows the stock of FDI in Abu Dhabi by economic activity for each of the years indicated.

| | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| | (AED millions) | | | | |
| Real estate and business services(1) | 23,513 | 23,793 | 27,954 | 29,139 | 30,278 |
| Manufacturing industries | 15,502 | 17,204 | 18,113 | 20,062 | 16,927 |
| Financial institutions and insurance | 12,731 | 13,338 | 10,497 | 10,609 | 9,006 |
| Mining and quarrying | 7,045 | 8,354 | 17,414 | 17,492 | 20,918 |
| Electricity, gas and water | 8,279 | 10,190 | 9,929 | 9,792 | 13,847 |
| Transport, storage and communication | 1,850 | 3,523 | 1,246 | 2,070 | 1,218 |
| Professional, scientific and technical | 3,015 | 3,198 | 4,327 | 2,460 | 3,721 |
| Construction | 7,281 | 6,379 | 8,010 | 5,404 | 3,006 |
| Other(2) | 1,897 | 2,117 | 3,396 | 2,811 | 2,333 |
| **Total** | **81,112** | **88,095** | **100,887** | **99,837** | **101,253** |

Notes:

(1) Almost entirely comprises real estate sales to non-residents

(2) Comprising wholesale, retail trade and repairing services; accommodation and food services; information and communication; administrative and support services; education; health; and arts, recreation and other services

Source: SCAD

In 2018, the sectors with the largest value of FDI in Abu Dhabi were real estate and business services (which almost entirely comprises real estate sales to non-residents) at 28.7%, manufacturing industries at 20.3%; and mining and quarrying (including crude oil and natural gas) at 16.9% The fastest growing of the sectors listed in the table above between 2014 and 2018 were mining and quarrying; transport, storage and communication; and manufacturing industries, with compound annual growth rates over the period of 25.9%, 8.3% and 8.3%, respectively.

The table below shows the flows of FDI in Abu Dhabi by economic activity for each of the years indicated.

| | 2014 | 2015 | 2016 | 2017 | 2018 |
|---|---|---|---|---|---|
| | (AED millions) | | | | |
| Real estate and business services(1) | (86) | 280 | 4,161 | 1,185 | 1,140 |
| Manufacturing industries | 2,459 | 1,702 | 909 | 1,949 | (3,135) |
| Financial institutions and insurance | 2,594 | 607 | (2,841) | 113 | (1,603) |
| Mining and quarrying | (222) | 1,309 | 9,060 | 78 | 3,426 |
| Electricity, gas and water | 1,375 | 1,911 | (261) | (138) | 4,056 |
| Transport, storage and communication | (142) | (1,674) | (2,277) | 823 | (852) |
| Professional, scientific and technical | 1,233 | 182 | 1,130 | (1,868) | 1,261 |
| Construction | 1,390 | (902) | (1,632) | (2,607) | (2,398) |
| Other(2) | 581 | 220 | 1,279 | (585) | (479) |
| **Total** | **9,181** | **6,983** | **12,792** | **(1,050)** | **1,416** |

Notes:

(1) Almost entirely comprises real estate sales to non-residents

(2) Comprising wholesale, retail trade and repairing services; accommodation and food services; information and communication; administrative and support services; education; health; and arts, recreation and other services

Source: SCAD

In 2018, the sectors with the largest value of FDI flows in Abu Dhabi were manufacturing industries at 25.2%, real estate at 18.9%; and construction at 11.0%

The table below shows the percentage distribution of FDI in Abu Dhabi by region for each of the years indicated. Data for 2018 is not currently available.

| | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|
| | | (per cent.) | | |
| GCC countries | 3.5 | 3.6 | 2.8 | 3.4 |
| Other Arab countries | 8.2 | 7.3 | 8.0 | 6.1 |
| Other Asian countries | 9.8 | 12.5 | 12.5 | 13.9 |
| European countries | 40.7 | 38.8 | 42.1 | 38.8 |
| North America | 7.3 | 9.3 | 6.7 | 7.6 |
| Latin America | 0.1 | — | 0.1 | (0.1) |
| Other(1) | 30.3 | 28.4 | 27.9 | 30.3 |
| **Total** | **100.0** | **100.0** | **100.0** | **100.0** |

Notes:

(1) Almost entirely comprises real estate sales to non-residents

Source: SCAD

Excluding real estate sales to non-residents (which are classified as other), European countries are the principal source of FDI in Abu Dhabi, accounting for 38.8% of the FDI stock at December 31, 2017. In Europe, the major source countries are Austria, France, the United Kingdom, The Netherlands and Germany. On the same basis, the GCC and other Arab countries accounted for 9.5 cent. of the stock of FDI at December 31, 2017 while other Asian countries accounted for 13.9% of FDI stock at December 31, 2017. There is a large percentage of FDI from other countries (30.3% at December 31, 2017), principally reflecting the fact that for the geographical presentation real estate sales to non-residents are all counted as other.

Total portfolio investments in Abu Dhabi consisting of investments by non-residents in equity securities and investments by non-residents in debt securities amounted to AED 127,580 million in 2017, AED 131,354 million in 2016, AED 87,895 million in 2015 and AED 57,283 million in 2014. Portfolio investments are concentrated in the financial institutions and insurance sector.

Other investments by non-residents (principally comprising loans, bank deposits and other non-equity and non-debt securities investments) amounted to AED 263,607 million in 2017, AED 227,290 million in 2016, AED 177,111 million in 2015 and AED 160,364 million in 2014. The vast majority of other investments are in the financial institutions and insurance sector.

***Free Zones***

There are many incentives for foreign corporate entities to set up in one of the free zones in Abu Dhabi. Foreign corporate entities can freely operate in the free zones and free zone entities can be 100% foreign-owned, unlike entities registered elsewhere in the United Arab Emirates which are required to have various degrees of local participation. Free zone entities are exempt from paying corporate tax and individuals are exempt from paying income tax. In addition, 100% of capital and profits can be repatriated and there are no import and export taxes.

ZonesCorp, the Government of Abu Dhabi-backed entity that creates, operates and manages free zones, was established in 2004. ZonesCorp offers a broad selection of readily available industrial land in several prime locations with fast and efficient connections to transportation networks and uninterrupted supply of utilities delivered at globally competitive prices. Other services offered by ZonesCorp include the fast tracking of government approvals and licenses, the fast issuance or renewal of visas and work permits and affordable and convenient labor accommodation. ZonesCorp has been establishing and developing industrial cities with a view to attracting multinational and national operations and investors. ZonesCorp provides infrastructure and services that offer investors a business-friendly environment with a view to attracting and promoting industries that are knowledge, energy and capital intensive in nature. The principal free zones managed by ZonesCorp are the Industrial City of Abu Dhabi ("**ICAD**") and an industrial city in the city of Al Ain, each as briefly described below. In addition, one other free zone has been established at Masdar City, the Abu Dhabi Global Market is a financial free zone and an industrial zone is located at Khalifa Port.

*Industrial City of Abu Dhabi*

ICAD is located in Mussafah, 30 kilometers from the city of Abu Dhabi and 25 kilometers from Abu Dhabi International Airport. ICAD is being established in a number of phases.

Key sectors positioning themselves in ICAD include basic metals, building products and construction materials, oil and gas services, agriculture and food processing, paper and wood products, automotive industries, logistics services, high-tech industries, financial services, pharmaceutical and medical companies, polymers, and chemical and petrochemical industries. The ICAD facilities include hotels, a cultural center, banks, shopping malls and health centers as well as a residential area for factory workers.

*Al Ain Industrial City*

Al Ain industrial city is conveniently located close to the city of Al Ain and strategically located midway between the cities of Abu Dhabi and Dubai. Al Ain industrial city caters to light manufacturing industries such as paper and wood, textiles, small scale service and repair workshops. Al Ain industrial city also caters to heavy industries such as chemical and plastic projects. Future expansion plans also include new components such as retail and leisure facilities.

*Masdar City*

Masdar City is a free zone and investment zone that offers its tenants an attractive package of incentives, including permission for 100% foreign ownership, 100% exemption from corporate and personal income taxes and 0% import tariffs. Masdar City is currently home to over 400 companies and, as part of its expansion plan, aims to grow its tenant base nearly four-fold by 2020, and to expand the net leasable area available within the free zone by around a third every year within the same time frame.

*Abu Dhabi Global Market*

The Abu Dhabi Global Market was established pursuant to Abu Dhabi Law No. (4) of 2013 as a financial free zone in Abu Dhabi, with its own civil and commercial laws.

*Khalifa Industrial Zone*

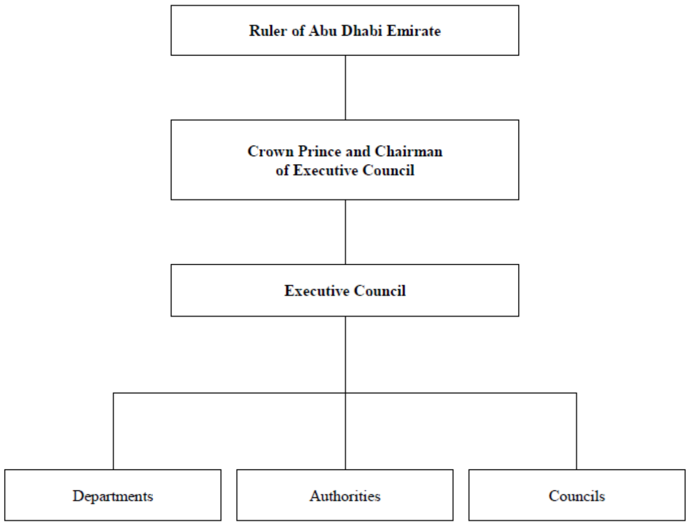
The Khalifa Industrial Zone Abu Dhabi ("**KIZAD**") is a trade, logistics and industrial hub which is fully integrated with Khalifa Port. KIZAD offers free zone and non-free zone solutions for land leasing, pre-built warehouses and free zone offices.

***Government of Abu Dhabi***

Executive authority in Abu Dhabi is derived from the Ruler, H.H. Sheikh Khalifa bin Zayed Al Nahyan and the Crown Prince, H.H. Sheikh Mohamed bin Zayed Al Nahyan. The Crown Prince is also the chairman of the Executive Council, which is the principal executive authority below the Ruler and the Crown Prince. The Executive Council currently comprises eighteen members.

Departments, authorities and councils are under the authority of the Executive Council. Some of the key departments, authorities and councils include the Department of Finance, the Department of Economic Development, the Department of Transport, the Department of Municipalities and Transport, the Department of Health, the Abu Dhabi Investment Authority ("**ADIA**"), the Department of Culture and Tourism, the Abu Dhabi Food Control Authority, the Abu Dhabi Investment Council ("**ADIC**") and the Abu Dhabi Council for Economic Development.

The chart below summarizes the structure of the Government of Abu Dhabi.




The Government of Abu Dhabi owns or has significant shareholdings in a number of companies. The most important companies wholly owned by the Government of Abu Dhabi are:

(a) ADNOC, which manages all aspects of the emirate's oil and gas industry;

(b) Mubadala Investment Company ("**Mubadala**"), which was formed in early 2017 and is the development and investment company leading the government's economic diversification strategy;

(c) ADIA and ADIC, which are the vehicles through which the government has historically invested its surplus hydrocarbon revenues. In 2018, ADIC was restructured to become part of Mubadala;

(d) Abu Dhabi Developmental Holding Company, which was rebranded as ADQ ("**ADQ**") in March 2020 and is mandated to owning and overseeing a portfolio of development-related enterprises in various sectors in Abu Dhabi;

(e) Abu Dhabi National Energy Company, branded as TAQA, majority shares of which is owned by ADQ and is one of the largest utility companies in the Europe, Middle East and Africa region following the completion of its merger with Abu Dhabi Power Corporation in July 2020;

(f) General Holding Corporation ("**Senaat**"), which is owned by ADQ and is an industrial investment holding company with holdings in companies operating in the metals, oil and gas services, construction and building materials and food and beverage manufacturing sectors which operates under the brand name Senaat;

(g) Abu Dhabi Ports Company PJSC, which is owned by ADQ and owns, manages and operates 11 ports and terminals in the UAE and Guinea; and

(h) Etihad Airways PJSC ("**Etihad**"), the national airline of the UAE and a key facilitator of the government's tourism strategy.

***Abu Dhabi's Economic Strategy***

The Government of Abu Dhabi's development strategy is articulated in the Abu Dhabi Policy Agenda 2007–2008 (the "**Policy Agenda**") and the Abu Dhabi Economic Vision 2030 (the "**2030 Economic Vision**"). Drawing on the Policy Agenda, the 2030 Economic Vision sets forth a road map for developing the Government's strategy for economic development over the period to 2030.

The Policy Agenda establishes broad, long-term policy goals to drive economic, social and geopolitical/governance change in Abu Dhabi. The pillars of the Policy Agenda are economic development, social and human resources development, infrastructure development and environment sustainability and optimization of the operations of the Government of Abu Dhabi.

Based on the principles set out in the Policy Agenda, in January 2009, the Government of Abu Dhabi announced a long- term vision to turn the emirate into a knowledge-based economy and reduce its dependence on the oil sector. The 2030 Economic Vision was designed as a comprehensive plan to diversify the emirate's economy and grow the contribution of the non-oil sector significantly by 2030. It examined the then current economic environment in Abu Dhabi and identified key areas for improvement in order to achieve the goals laid out in the Policy Agenda. The 2030 Economic Vision identified two underlying economic policy priorities: the need to build a sustainable economy and the need to ensure that social and regional development is balanced to bring the benefits of economic growth and well-being to the entire population of the emirate. For both of these economic policy priorities, a number of specific core economic objectives have been identified. These include enhancing competitiveness, productivity and diversification which is intended to reduce the volatility of growth; enlarging the enterprise base by encouraging entrepreneurs, small enterprises and foreign direct investment; and enabling the development of new national champion enterprises to act as economic anchors. In addition, to ensure that social and regional development reaches all sections of society, the 2030 Economic Vision envisaged action to enable the emirate's youth to enter the workforce, to maximize the participation of women and to continue to attract skilled labor from abroad.

The 2030 Economic Vision aims to achieve its goals by focusing resources on 12 sectors to drive Abu Dhabi's future growth. These sectors are:

- oil and gas;
- petrochemicals;
- metals;
- aviation, aerospace and defense;
- tourism;
- telecommunication services;
- financial services;
- education;
- healthcare equipment and services;
- pharmaceuticals, biotechnology and life sciences;
- transportation, trade and logistics; and
- media.

The 2030 Economic Vision seeks to grow Abu Dhabi's GDP significantly. This growth is not expected to be consistent throughout the period as different economic cycles and the fluctuation in oil prices will mean that rates of growth will vary from time to time and such variations may be material from one economic period to another. The Government of Abu Dhabi also intends to foster non-oil GDP growth. These economic gains are expected to be achieved with the support of a sound monetary and fiscal policy designed to support Abu Dhabi's businesses in increasingly competitive global markets. However, no assurance can be given that these economic gains will be achieved as anticipated or at all.

The 2030 Economic Vision is also intended to evolve as the Government of Abu Dhabi assesses the completion of the its goals and the adapts the objectives from time to time in line with its economic policy priorities and core economic objectives.

The principal vehicles for implementing the Policy Agenda and the 2030 Economic Vision are the Government of Abu Dhabi's wholly owned companies including, in particular Mubadala. The Government of Abu Dhabi believes that the use of wholly-owned companies to implement its strategy has multiple benefits, including higher levels of accountability as the companies are required to adopt high corporate governance standards, cost effectiveness as the companies have been able to raise significant funds from the private sector and significant knowledge transfer and employment opportunities for UAE nationals from the joint ventures entered into by these companies with foreign partner companies. These companies are making significant investments, including in international oil and gas assets, the aluminum and steel industries, the aerospace industry, alternative energy development, the development of healthcare and education facilities, logistics, financial and other services and information, communications and technology.

***International Relations***

The foreign policy of the United Arab Emirates is based on a set of guiding principles, laid down by the country's first President, H.H. Sheikh Zayed bin Sultan Al Nahyan.

The United Arab Emirates participates in a number of multilateral aid-giving institutions, including the International Bank for Reconstruction and Development, the International Development Association, the IMF and regional bodies such as the OPEC Fund for International Development, the Arab Bank for Economic Development in Africa, the Arab Gulf Program for Development, the Arab Monetary Fund and the Islamic Development Bank. In addition, the United Arab Emirates is a member of various other international organizations, including, the GCC, the Arab League, OPEC, the Organization of Arab Petroleum Exporting Countries, the Gas Exporting Countries Forum, the Organization of Islamic Cooperation, the United Nations, the World Health Organization and the World Trade Organization.

The United Arab Emirates has an ongoing dispute with the Islamic Republic of Iran. Since 1971, the three Arabian Gulf islands of Abu Musa and Greater and Lesser Tunb have been occupied by the Islamic Republic of Iran. The United Arab Emirates is claiming sovereignty over them and is seeking to resolve the dispute through negotiation.

The United Arab Emirates has ongoing discussions with the Kingdom of Saudi Arabia over border issues. It is seeking, through negotiation, to resolve issues related to the 1974 provisional and, as yet, unratified, agreement with Saudi Arabia on the border between the two countries, which the United Arab Emirates believes should be substantially amended. In addition, the United Arab Emirates is involved in discussions with the governments of Saudi Arabia and the State of Qatar relating to a maritime corridor which the State of Qatar has purported to grant to Saudi Arabia, from within the State of Qatar's own maritime waters, which crosses part of the route of the gas pipeline between the United Arab Emirates and the State of Qatar constructed by Dolphin Energy Limited. The United Arab Emirates believes that this grant is in breach of pre-existing agreements between the United Arab Emirates and the State of Qatar. The United Arab Emirates is also a member of a military coalition formed in December 2015 to combat Islamic extremism and, in particular, the group known as Islamic State.

## CERTAIN TAX CONSIDERATIONS

### Certain U.S. Federal Income Tax Considerations

The following is a discussion of certain U.S. federal income tax considerations related to the purchase, ownership and disposition of the Bonds, but does not purport to be a complete analysis of all potential tax effects. This discussion is limited to consequences relevant to a U.S. holder (as defined below) except for the discussion of FATCA (as defined under "—*Foreign Account Tax Compliance Act*"), and does not address the effects of any U.S. federal tax laws other than U.S. federal income tax laws (such as estate and gift tax laws) or any state, local or non-U.S. tax laws. This discussion is based upon the U.S. Internal Revenue Code of 1986, as amended (the "**Code**"), Treasury regulations issued thereunder (the "**Treasury Regulations**"), and judicial and administrative interpretations thereof, each as in effect on the date hereof, and all of which are subject to change, possibly with retroactive effect. No rulings from the U.S. Internal Revenue Service (the "**IRS**") have been or are expected to be sought with respect to the matters discussed below. There can be no assurance that the IRS will not take a different position concerning the tax consequences of the purchase, ownership or disposition of the Bonds or that any such position would not be sustained.

This discussion does not address all of the U.S. federal income tax consequences that may be relevant to a holder in light of such holder's particular circumstances, including the impact of the unearned income Medicare contribution tax, or to holders subject to special rules, such as certain financial institutions, U.S. expatriates, insurance companies, individual retirement accounts, dealers in securities or currencies, traders in securities, U.S. holders whose functional currency is not the U.S. dollar, tax-exempt entities, regulated investment companies, real estate investment trusts, partnerships or other pass through entities and investors in such entities, persons liable for alternative minimum tax, U.S. holders that are resident in or have a permanent establishment in a jurisdiction outside the United States, persons holding the Bonds as part of a "straddle," "hedge," "conversion transaction" or other integrated transaction, entities covered by the anti-inversion rules, and persons subject to special tax accounting rules as a result of any item of gross income with respect to the Bonds being taken into account in an applicable financial statement. In addition, this discussion is limited to persons who purchase the Bonds for cash at original issue and at their "issue price" (i.e. the first price at which a substantial amount of the Bonds is sold to the public for cash, excluding sales to bond houses, brokers or similar persons or organizations acting in the capacity of underwriters, placement agents or wholesalers) and who hold the Bonds as capital assets within the meaning of Section 1221 of the Code (generally for investment).

For purposes of this discussion, a "**U.S. holder**" is a beneficial owner of a Bond that is, for U.S. federal income tax purposes, (i) an individual who is a citizen or resident of the United States; (ii) a corporation or any entity taxable as a corporation for U.S. federal income tax purposes created or organized in or under the laws of the United States, any state thereof or the District of Columbia; (iii) any estate the income of which is subject to U.S. federal income taxation regardless of its source; or (iv) any trust if a court within the United States is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have the authority to control all substantial decisions of the trust, or if a valid election is in place to treat the trust as a U.S. person.

If any entity or arrangement treated as a partnership for U.S. federal income tax purposes holds the Bonds, the U.S. tax treatment of a partner in the partnership generally will depend upon the status of the partner and the activities of the partnership. A partnership considering an investment in the Bonds, and partners in such a partnership, should consult their tax advisors regarding the U.S. federal income tax consequences of the purchase, ownership and disposition of the Bonds.

**Prospective purchasers of the Bonds should consult their tax advisors concerning the tax consequences of holding Bonds in light of their particular circumstances, including the application of the U.S. federal income tax considerations discussed below, as well as the application of other federal, state, local, non-U.S. or other tax laws.**

#### *Payments of Stated Interest*

Payments of stated interest on the Bonds generally will be includible in the gross income of a U.S. holder as ordinary income at the time that such payments are received or accrued, in accordance with such U.S. holder's method of accounting for U.S. federal income tax purposes.

***Foreign Tax Credit***

Stated interest income on a Bond generally will constitute foreign source income and generally will be considered "passive category income" in computing the foreign tax credit allowable to U.S. holders under U.S. federal income tax laws. Any non-U.S. withholding tax paid by or on behalf of a U.S. holder at the rate applicable to such holder may be eligible for foreign tax credits (or deduction in lieu of such credits) for U.S. federal income tax purposes, subject to applicable limitations (including holding period and at risk rules). There are significant complex limitations on a U.S. holder's ability to claim foreign tax credits. U.S. holders should consult their tax advisors regarding the creditability or deductibility of any withholding taxes.

***Amortization Payments***

Payments on a Bond which constitute scheduled amortization payments (excluding a portion allocable to payments of qualified stated interest previously accrued) generally will be treated as a payment of principal. A U.S. holder generally will not recognize any gain or loss with respect to such payments. Instead, such payment will reduce the U.S. holder's adjusted tax basis in the Bond.

***Sale, Exchange, Retirement, Redemption or Other Taxable Disposition of Bonds***

Upon the sale, exchange, retirement, redemption or other taxable disposition of a Bond, a U.S. holder generally will recognize gain or loss equal to the difference, if any, between the amount realized upon such disposition (less any amount equal to any accrued but unpaid stated interest, which will be taxable as interest income as discussed above to the extent not previously included in income by the U.S. holder) and such U.S. holder's adjusted tax basis in the Bond.

A U.S. holder's adjusted tax basis in a Bond will, in general, be the cost of such Bond to such U.S. holder, decreased by any payments received by such U.S. holder with respect to the Bond (including the scheduled amortization payments) other than payments of qualified stated interest.

Any gain or loss recognized upon the sale, exchange, retirement, redemption or other taxable disposition of a Bond generally will be U.S. source gain or loss and generally will be capital gain or loss. Capital gains of non-corporate U.S. holders (including individuals) derived in respect of capital assets held for more than one year are generally eligible for reduced rates of taxation. The deductibility of capital losses is subject to limitations.

***Information Reporting and Backup Withholding***

In general, information reporting requirements may apply to payments of stated interest on the Bonds and to the proceeds of the sale or other disposition (including a retirement or redemption) of a Bond paid to a U.S. holder unless such U.S. holder is an exempt recipient, and, when required, provides evidence of such exemption. Backup withholding may apply to such payments if the U.S. holder fails to provide a correct taxpayer identification number or a certification that it is not subject to backup withholding, or otherwise fails to comply with the applicable requirements of the backup withholding rules.

Backup withholding is not an additional tax and any amounts withheld under the backup withholding rules may be allowed as a credit or refund against a U.S. holder's U.S. federal income tax liability provided the required information is timely furnished to the IRS.

***Tax Return Disclosure Requirements***

U.S. holders who are individuals and who own "specified foreign financial assets" with an aggregate value in excess of certain minimum thresholds at any time during the tax year generally are required to file an information report (IRS Form 8938) with respect to such assets with their tax returns. If a U.S. holder does not file a required IRS Form 8938, such holder may be subject to substantial penalties and the statute of limitations on the assessment and collection of all U.S. federal income taxes of such holder for the related tax year may not close before the date which is three years after the date on which such report is filed. The Bonds (or any offshore account through which the Bonds are held) generally will be subject to these reporting rules, unless the Bonds are held in an account at certain financial institutions. Under certain circumstances, an entity may be treated as an individual for purposes of these rules.

U.S. holders are urged to consult their tax advisors regarding the application of the foregoing disclosure requirements to their ownership of the Bonds, including the significant penalties for non-compliance.

***Foreign Account Tax Compliance Act***

Pursuant to Sections 1471 through 1474 of the Code (provisions commonly known as "**FATCA**") and subject to the proposed regulations discussed below, a "foreign financial institution" may be required to withhold U.S. tax on certain "foreign passthru payments" to the extent such payments are treated as attributable to certain U.S. source payments. Obligations issued on or prior to the date that is six months after applicable final regulations defining foreign passthru payments are published in the Federal Register generally would be "grandfathered" unless materially modified after such date. Accordingly, if the Issuer is treated as a foreign financial institution, FATCA could apply to payments on the Bonds only if there is a significant modification of the Bonds for U.S. federal income tax purposes after the expiration of this grandfathering period. Under proposed regulations, any withholding on foreign passthru payments on the Bonds that are not otherwise grandfathered would apply to passthru payments made on or after the date that is two years after the date of publication in the Federal Register of applicable final regulations defining foreign passthru payments. Taxpayers generally may rely on these proposed regulations until final regulations are issued. Non-U.S. governments have entered into agreements with the United States (and additional non-U.S. governments are expected to enter into such agreements) to implement FATCA in a manner that alters the rules described herein. Holders should consult their own tax advisors on how these rules may apply to their investment in the Bonds. In the event any withholding under FATCA is imposed with respect to any payments on the Bonds, there will be no additional amounts payable to compensate for the withheld amount.

THE DISCUSSION ABOVE IS A GENERAL SUMMARY. IT DOES NOT COVER ALL TAX MATTERS THAT MAY BE OF IMPORTANCE TO A PARTICULAR INVESTOR. EACH PROSPECTIVE INVESTOR IS URGED TO CONSULT ITS OWN TAX ADVISOR ABOUT THE TAX CONSEQUENCES TO IT OF AN INVESTMENT IN THE BONDS IN LIGHT OF THE INVESTOR'S OWN CIRCUMSTANCES.

**United Arab Emirates Taxation**

There are no withholding taxes in UAE that would apply to payments such as interest or dividends made by a UAE entity to another entity or person (resident or non-resident).

The UAE has implemented a value added tax ("VAT") regime. VAT is chargeable on supply of most goods and services at the rate of 5% for mainland UAE and free zones, unless the supply of goods or services is zero rated or exempt.

There is currently in force in the Emirates of Abu Dhabi and Dubai legislation establishing a general corporate taxation regime (the Abu Dhabi Income Tax Decree 1965 (as amended) and the Dubai Income Tax Decree 1969 (as amended)). The regime is, however, not enforced, save in respect of local and foreign companies active in the hydrocarbon industry (other than companies wholly-owned by the state), some related service industries and branches of foreign banks operating in the United Arab Emirates. It is not known whether the legislation will or will not be enforced more generally or within other industry sectors in the future. Under current legislation, there is no requirement for withholding or deduction for or on account of United Arab Emirates, Abu Dhabi or Dubai taxation in respect of payments of principal or interest on the Bonds.

The constitution of the United Arab Emirates specifically reserves to the Government of the United Arab Emirates the right to raise taxes on a federal basis for the purpose of funding its budget; it is not known whether this right will be exercised in the future.

The United Arab Emirates has entered into double taxation arrangements with approximately 115 countries.

**Jersey Taxation**

The following summary of the anticipated treatment of the Issuer (other than residents of Jersey) is based on Jersey taxation law and practice as they are understood to apply at the date of this document and is subject to changes in Jersey taxation law and practice after such date. It does not constitute legal or tax advice and does not address all aspects of Jersey taxation law and practice. Prospective investors in the Bonds should consult their professional advisers on the implications of acquiring, buying, selling or otherwise disposing of the Bonds under the law of any jurisdiction in which they may be liable to taxation.

***Taxation of the Issuer***

Under Article 123C of the Income Tax (Jersey) Law 1961, as amended, and on the basis that the Issuer is solely tax resident in Jersey, the Issuer (being neither a financial services company nor a specified utility company, each as defined in the Income Tax (Jersey) Law 1961), will be subject to Jersey income tax at the rate of zero per cent. Payments in respect of the Bonds may be paid by the Issuer without withholding or deduction for or on account of Jersey income tax and holders of Bonds (other than residents of Jersey) will not be subject to any tax in Jersey in respect of the holding, sale or other disposition of such Bonds.

***Stamp duty***

In Jersey, no stamp duty is levied on the issue or transfer of the Bonds except that stamp duty is payable on Jersey grants of probate and letters of administration, which will generally be required to transfer the Bonds on the death of a holder of such Bonds where such Bonds are situated in Jersey. In the case of a grant of probate or letters of administration, stamp duty is levied according to the size of the estate (wherever situated in respect of a holder of Bonds domiciled in Jersey, or situated in Jersey in respect of a holder of Bonds domiciled outside Jersey) and is payable on a sliding scale at a rate of up to 0.75% of such estate and such duty is capped at £100,000. Where the Bonds are in registered form and the register is not maintained in Jersey such Bonds should not be considered to be situated in Jersey for these purposes.

Jersey does not otherwise levy taxes upon capital, inheritances, capital gains or gifts nor are there other estate duties.

***Economic Substance***

The Taxation (Companies – Economic Substance) (Jersey) Law 2019 (including as amended pursuant to the Taxation (Companies – Economic Substance) (Amendment) (Jersey) Law 2019) (the "**Substance Law**") is effective for financial periods beginning on or after January 1, 2019. The Substance Law addresses the concerns of the EU Code of Conduct Group (Business Taxation) regarding economic substance raised as part of the BEPS project. On March 12, 2019, the EU Council placed Jersey on the 'White List' recognizing it as being cooperative and having fulfilled its commitments given in 2017 to addressing the economic substance concerns raised by the Code of Conduct Group.

The Substance Law requires that a Jersey tax resident company conducting relevant activities from which it receives gross income must satisfy the economic substance tests set out in the Substance Law. The relevant activities within the scope of the Substance Law include acting as an equity holding company, financing and leasing activities and acting as a headquarters company.

The Substance Law provides progressive sanctions for non-compliance including financial penalties, disclosure and striking off from the Register of Companies in Jersey.

It is intended that the Issuer is managed and controlled in Jersey and therefore will be deemed to be resident for taxation purposes in Jersey. However, the Issuer is not carrying out a relevant activity and accordingly, the Substance Law will not apply to the Issuer.

**Information Reporting**

Information relating to the Bonds, their holders and beneficial owners may be required to be provided to tax authorities in certain circumstances pursuant to domestic or international reporting and transparency regimes. This may include (but is not limited to) information relating to the value of the Bonds, amounts paid or credited with respect to the Bonds, details of the holders or beneficial owners of the Bonds. In certain circumstances, the information obtained by a tax authority may be provided to tax authorities in other countries.

## CERTAIN ERISA CONSIDERATIONS

The following is a summary of certain considerations associated with the purchase of the Bonds (including an interest in the Bonds) by employee benefit plans that are subject to Title I of ERISA, plans, individual retirement accounts and other plans and arrangements that are subject to Section 4975 of the Code or provisions under any other U.S. or non-U.S. federal, state or local laws or regulations that are similar to such provisions of ERISA or the Code ("**Similar Laws**"), and entities whose underlying assets are considered to include "plan assets" within the meaning of 29 C.F.R. Section 2510.3-101 (as modified by Section 3(42) of ERISA) of the assets any such plan, account or arrangement (each, a "**Plan**").

### General Fiduciary Matters

ERISA and the Code impose certain duties of persons who are fiduciaries of a Plan subject to Title I of ERISA or Section 4975 of the Code (an "**ERISA Plan**") and prohibit certain transactions involving the assets of an ERISA Plan and its fiduciaries or other interested parties. Under ERISA and the Code, any person who exercises any discretionary authority or control over the administration of such an ERISA Plan or the management or disposition of the assets of such an ERISA Plan, or who renders investment advice for a fee or other compensation to such an ERISA Plan, is generally considered to be a fiduciary of the ERISA Plan.

In considering an investment in the Bonds of a portion of any assets of any Plan, a Plan fiduciary should determine whether the investment is in accordance with the applicable provisions of ERISA, the Code or any Similar Law relating to a fiduciary's duties to the Plan, and should consider the fiduciary standards of ERISA in the context of the ERISA Plan's particular circumstances before authorizing an investment in the Bonds. Accordingly, among other factors, the fiduciary should consider whether the investment would satisfy the prudence and diversification requirements of ERISA and would be consistent with the documents and instruments governing the ERISA Plan, and whether the investment would involve a prohibited transaction under Section 406 of ERISA or Section 4975 of the Code.

Each ERISA Plan should consider the fact that none of the Issuer, the Initial Purchasers or any of their respective affiliates, agents or employees (the "**Transaction Parties**") is acting, or will act, as a fiduciary to any ERISA Plan with respect to the decision to invest in the Bonds. The Transaction Parties are not undertaking to provide impartial investment advice or advice based on any particular investment need, or to give advice in a fiduciary capacity, with respect to the decision to purchase or hold the Bonds. All communications, correspondence and materials from the Transaction Parties with respect to the Bonds are intended to be general in nature and are not directed at any specific purchaser of the Bonds, and do not constitute advice regarding the advisability of investment in the Bonds for any specific purchaser. The decision to purchase and hold the Bonds must be made solely by each prospective ERISA Plan purchaser on an arm's length basis.

### Prohibited Transaction Issues

Section 406 of ERISA and Section 4975 of the Code prohibit ERISA Plans from engaging in certain transactions involving "plan assets" of such ERISA Plans with persons who are "parties in interest" under Section 3(14) of ERISA or "disqualified persons" under Section 4975 of the Code (collectively, "**Parties in Interest**") with respect to the Plan. A violation of these prohibited transaction rules may result in civil penalties or other liabilities under ERISA and/or an excise tax under Section 4975 of the Code for those persons, unless exemptive relief is available under an applicable statutory, regulatory or administrative exemption.

Certain Plans and entities that are (or whose assets constitute the assets of) governmental plans (as defined in Section 3(32) of ERISA), certain church plans (as defined in Section 3(33) of ERISA) and foreign plans (as described in Section 4(b)(4) of ERISA) that are not subject to the requirements of Title I of ERISA or Section 4975 of the Code may nevertheless be subject to Similar Laws that include similar requirements. Fiduciaries of any such Plans should consult with their counsel before purchasing any Bonds (including any interest in a Bond).

The acquisition or holding of the Bonds by a Plan with respect to which we or a dealer or certain of our or its affiliates is or becomes a Party in Interest may constitute or result in a prohibited transaction under ERISA or Section 4975 of the Code, unless those Bonds are acquired and held pursuant to and in accordance with an applicable exemption. Section 408(b)(17) of ERISA and Section 4975(d)(20) of the Code provide an exemption for the purchase and sale of securities where neither the issuer nor any of its affiliates has or exercises any discretionary authority or control or renders any investment advice with respect to the assets of the Plan involved in the transaction and the Plan pays no more and receives no less than "adequate consideration" in connection with the transaction. The U.S. Department of Labor has also issued five prohibited transaction class exemptions, or “**PTCEs**”, that may provide exemptive relief if required for direct or indirect prohibited transactions that may arise from the purchase or holding of the Bonds. These exemptions are:

- PTCE 84-14, an exemption for certain transactions determined or effected by independent qualified professional asset managers;
- PTCE 90-1, an exemption for certain transactions involving insurance company pooled separate accounts;
- PTCE 91-38, an exemption for certain transactions involving bank collective investment funds;
- PTCE 95-60, an exemption for transactions involving life insurance company general accounts; and
- PTCE 96-23, an exemption for plan asset transactions managed by in-house asset managers.

Each of these PTCEs contains conditions and limitations on its application. Thus, the fiduciaries of a Plan that is considering acquiring and/or holding the Bonds in reliance of any of these, or any other, PTCEs should carefully review the conditions and limitations of the PTCE and consult with their counsel to confirm that it is applicable. There can be no assurance that any of these statutory or class exemptions will be available with respect to transactions involving the Bonds, or that all of the conditions of any such exemptions or any other exemption will be satisfied.

Because of the foregoing, the Bonds (including any interest in a Bond) should not be purchased or held by any person investing “plan assets” of any Plan, unless such purchase and holding will not constitute a non-exempt prohibited transaction under ERISA and the Code or similar violation of any applicable Similar Laws.

**Representation**

Accordingly, each purchaser or transferee of the Bonds (or any interest therein) will be deemed to have represented and warranted by its acquisition and holding of the Bonds (or any interest therein) that (A) either (1) it is not a Plan and is not acquiring or holding the Bonds (or any interest therein) on behalf of or with the assets of any Plan, or (2) its acquisition and holding of the Bonds (or any interest therein) will not give rise to a non-exempt prohibited transaction under Section 406 of ERISA or Section 4975 of the Code, or, a violation of the provisions of any applicable Similar Law and (B) if the purchaser or transferee is a Plan, (1) none of the Transaction Parties has provided any investment recommendation or investment advice to the Plan, or any fiduciary or other person investing on behalf of the Plan or who otherwise has discretion or control over the investment and management of “plan assets” (“**Plan Fiduciary**”), on which either the Plan or its Plan Fiduciary has relied in connection with the decision to invest in the Bonds (or any interest therein), (2) the Transaction Parties are not otherwise acting as a “fiduciary”, as that term is defined in Section 3(21) of ERISA or Section 4975(e)(3) of the Code, to the Plan or its Plan Fiduciary in connection with the Plan’s investment in the Bonds (or any interest therein) and (3) the Plan Fiduciary is exercising its own independent judgment in evaluating the transaction.

The foregoing discussion is general in nature and is not intended to be all-inclusive. Due to the complexity of these rules and the penalties that may be imposed upon persons involved in non-exempt prohibited transactions, it is particularly important that fiduciaries or other persons considering purchasing Bonds on behalf of or with the assets of any Plan consult with their counsel regarding the potential applicability of ERISA or Section 4975 of the Code to such investment, and the availability of exemptive relief under any of the PTCEs listed above, the service provider exemption or any other applicable exemption, or the potential consequences of any acquisition or holding of Bonds under Similar Laws, as applicable.

Each purchaser and transferee of the Bonds (or any interest therein) has exclusive responsibility for ensuring that its purchase, holding and subsequent disposition of the Bonds does not violate the fiduciary or prohibited transaction rules of ERISA, the Code or any applicable Similar Laws. The provision of this Offering Memorandum and the sale of any Bonds (including any interest therein) to any Plan is in no respect a recommendation or representation by any of the Transaction Parties that such an investment meets all relevant legal requirements with respect to investments by Plans generally or any particular Plan, or that such an investment is appropriate for Plans generally or any particular Plan. Plans investing in the Bonds (or any interest therein) should consult and rely on their own counsel and advisers as to whether an investment in the Bonds is suitable for the Plan.

## CREATION AND ENFORCEMENT OF SECURITY AND SECURITY IN INSOLVENCY AND LIMITATIONS ON THE VALIDITY AND ENFORCEABILITY OF THE SECURITY INTERESTS

**Jersey Insolvency Laws**

*The Issuer and the Parent are incorporated in Jersey and are subject to Jersey insolvency laws which may pose particular risks for Bondholders with respect to the enforcement of the collateral.*

The Issuer and the Parent are incorporated under the laws of Jersey. Consequently, in the event of an insolvency of the Issuer or the Parent insolvency proceedings may be initiated in Jersey. There are two principal regimes for corporate insolvency in Jersey: "désastre" and winding up (including just and equitable winding up and creditors' winding up). The principal type of insolvency procedure available to creditors under Jersey law is the application for an Act of the Royal Court of Jersey (the "**Royal Court**") under the Bankruptcy (Désastre) (Jersey) Law 1990, as amended (the "**Jersey Bankruptcy Law**") declaring the property of a debtor to be "en désastre" (a "**declaration**"). On a declaration of "désastre", title and possession of the property of the debtor vest automatically in the Viscount, an official of the Royal Court (the "**Viscount**"). With effect from the date of declaration, a creditor has no other remedy against the property or person of the debtor, and may not commence or, except with the consent of the Viscount or the Royal Court, continue any legal proceedings to recover the debt. With effect from the date of declaration, a secured party may, however, without the consent of the Viscount and without an order of the Royal Court, exercise any power of enforcement it may have under Part 7 (Enforcement of Security Interests) of the Security Interests (Jersey) Law 2012 (the "**2012 Law**"). To the extent that the proceeds of such enforcement are insufficient to discharge liabilities owed, that secured party has no other remedy against the property or person of the debtor, and may not commence any legal proceedings or, except with the consent of the Viscount or the Royal Court, continue any legal proceedings to recover the balance of the debt.

Additionally, the shareholders of a Jersey company (but not its creditors) can instigate a winding up of an insolvent company, which is known as a "creditors' winding up" pursuant to Chapter 4 of Part 21 of the Companies (Jersey) Law 1991, as amended (the "**Jersey Companies Law**"). On a creditors' winding up, a liquidator is nominated by the shareholders. The creditors may approve such a liquidator or apply to appoint a different liquidator. The liquidator will stand in the shoes of the directors and administer the winding up, gather assets, make appropriate disposals of assets, settle claims and distribute assets as appropriate. After the commencement of the winding up, no action can be taken or continued against the company except with the leave of the Royal Court. The shareholders must give creditors 14 days' notice of the meeting to commence the creditors' winding up. After the commencement of the creditors' winding up, a secured party may, however, without the sanction of a liquidator and without an order of the Royal Court, exercise any power of enforcement it may have under Part 7 (Enforcement of Security Interests) of the 2012 Law. To the extent that the proceeds of such enforcement are insufficient to discharge liabilities owed, the secured party has no other remedy against the company without leave of the Royal Court. The corporate state and capacity of the company continues until the end of the winding up procedure, when the company is dissolved.

The Jersey Companies Law requires a creditor of a company (subject to appeal) to be bound by an arrangement entered into by the company and its creditors immediately before or in the course of its winding up if (among other things) three quarters in number and value of the creditors acceded to the arrangement.

*Compromises and arrangements with creditors*

Although not an insolvency proceeding, under Article 125 of the Jersey Companies Law the Royal Court may sanction a compromise or arrangement (a "**scheme of arrangement**") between a Jersey company and its creditors or shareholders (or a class of either of them). The Royal Court may, on application of the company (or a creditor or shareholder or, if the company is being wound up, a liquidator) order a meeting to be called at which the proposed scheme of arrangement must be agreed to by a majority in number representing:

- 75% in value of the creditors (or class of creditors); or
- 75% of the voting rights of the shareholders (or class of shareholders),

as the case may be, present and voting either in person or by proxy before the Royal Court considers the sanction of the scheme of arrangement. If the requisite majority of creditors or shareholders (or of the relevant class of either of them) agree to the scheme of arrangement and, following such agreement, the Royal Court sanctions the scheme of arrangement, the scheme of arrangement is binding on all creditors or shareholders (or on the relevant class of either of them) and on the company (or any liquidator and contributories of the company if the company is being wound up).

*Transactions at an undervalue*

Under Article 17 of the Jersey Bankruptcy Law and Article 176 of the Jersey Companies Law, the Royal Court may, on the application of the Viscount (in the case of a company whose property has been declared “en désastre”) or liquidator (in the case of a creditors’ winding up, a procedure which is instigated by shareholders not creditors), set aside a transaction (including any guarantee or security interest) entered into by a company with any person (the “**other party**”) at an undervalue. There is a five-year look-back period from the date of commencement of the winding up or declaration of “désastre” during which transactions are susceptible to examination pursuant to this rule (the “**relevant time**”). The Jersey Bankruptcy Law and Jersey Companies Law contain detailed provisions, including (without limitation) those that define what constitutes a transaction at an undervalue, the operation of the relevant time and the effect of entering into such a transaction with a person connected with the company or with an associate of the company.

*Preferences*

Under Article 17A of the Jersey Bankruptcy Law and Article 176A of the Jersey Companies Law, the Royal Court may, on the application of the Viscount (in the case of a company whose property has been declared "en désastre") or liquidator (in the case of a creditors' winding up), set aside a preference (including any guarantee or security interest) given by the company to any person (the "other party"). There is a 12-month look-back period from the date of commencement of the winding up or declaration of "désastre" during which transactions are susceptible to examination pursuant to this rule (the "relevant time"). The Jersey Bankruptcy Law and Jersey Companies Law contain detailed provisions, including (without limitation) those that define what constitutes a preference, the operation of the relevant time and the effect of entering into a preference with a person connected with the company or with an associate of the company.

*Extortionate transactions, onerous property, disclaimer and customary law fraudulent dispositions*

Under Article 17C of the Jersey Bankruptcy Law and Article 179 of the Jersey Companies Law, the Royal Court may, on the application of the Viscount (in the case of a company whose property has been declared "en désastre") or liquidator (in the case of a creditors' winding up), set aside a transaction providing credit to the debtor company which is or was extortionate. There is a three-year look-back period from the date of commencement of the winding up or declaration of "désastre" during which transactions are susceptible to examination pursuant to this rule. The Jersey Bankruptcy Law and Jersey Companies Law contain detailed provisions, including (without limitation) those that define what constitutes a transaction which is extortionate.

Under Article 15 of the Jersey Bankruptcy Law, the Viscount may within six months following the date of the declaration of "désastre" and under Article 171 of the Jersey Companies Law, a liquidator may within six months following the commencement of a creditors' winding up, disclaim any onerous property of the company. "Onerous property" is defined to include any moveable property, a contract lease or other immoveable property if it is situated outside of Jersey that is unsaleable or not readily saleable or is such that it might give rise to a liability to pay money or perform any other onerous act, and includes an unprofitable contract.

A disclaimer operates to determine, as of the date it is made, the rights, interests and liabilities of the company/debtor in or in respect of the property disclaimed and discharges the company/Viscount from all liability in respect of the property as of the date of the commencement of the creditors' winding up/from the date of the declaration but shall not, except so far as is necessary for the purpose of releasing the company/debtor from liability, affect the rights or liabilities of any other person. A person sustaining loss or damage as a result of a disclaimer is deemed to be a creditor of the company to the extent of the loss or damage and shall have standing as a creditor in the "désastre" or creditors' winding up. The Jersey Bankruptcy Law and Jersey Companies Law contain detailed provisions, including (without limitation) in relation to the power to disclaim onerous property.

In addition to the Jersey statutory provisions referred to above, there are certain principles of Jersey customary law (for example, a Pauline action) under which dispositions of assets with the intention of defeating creditors' claims may be set aside.

*Enforcement of security and security in insolvency*

Under the laws of Jersey, a person incorporated, resident or domiciled in Jersey is deemed to have capacity to grant security governed by foreign law over property situated outside Jersey, but to the extent that any floating charge or other security interest governed by a foreign law is expressed to apply to any asset, property and undertaking of a person incorporated, resident or domiciled in Jersey such floating charge or other security interest is not likely to be held valid and enforceable by the Jersey courts in respect of Jersey situs assets.

The Insolvency Act 1986 (either as originally enacted or as amended, including by the provisions of the Enterprise Act 2002) does not apply in Jersey and receivers, administrative receivers and administrators are not part of the laws of Jersey. Accordingly, the Jersey courts may not recognize the powers of an administrator, administrative receiver or other receiver appointed in respect of Jersey situs assets.

The Royal Court (in its inherent jurisdiction) may, however, under Article 49(1) of the Jersey Bankruptcy Law assist the courts of prescribed countries and territories and, applying general principles of comity, assist the courts in other jurisdictions, in all matters relating to the insolvency of any person to the extent that the Royal Court thinks fit. Further, in doing so, the Royal Court may have regard to the UNCITRAL model law, even though the model law has not been (and is unlikely to be) implemented as a separate law in Jersey.

If insolvency proceedings have been commenced in another jurisdiction in relation to the company, the nature and extent of the cooperation from Jersey is likely to depend on the nature of the requesting country's insolvency regime.

In the case of both statutory and non-statutory requests for assistance, it should be noted that the UNCITRAL provisions will not automatically be followed as this is a matter for the discretion of the Royal Court. The Royal Court's position may also not be in accordance with the EU Insolvency Regulation. Jersey does not form part of the European Community for the purposes of implementation of its directions. Accordingly, the EU Insolvency Regulation does not apply as a matter of Jersey domestic law and the automatic test of centre of main interests does not apply.

**Overview of Creation and Enforceability of Security Interests in Jersey**

The following is a summary of certain aspects of Jersey law related to the creation and enforcement of security governed by Jersey law.

This is not a complete summary of currently applicable Jersey law and prospective Bondholders should consult their own professional advisers.

**Creation of Security Interests**

Under Jersey law, security over Jersey situs assets is created in accordance with the provisions of Jersey law. Security over intangible moveable property situated in Jersey may only be created, (perfected and enforced) pursuant to the 2012 Law which came into full force and effect on January 2, 2014 (save for certain excluded transactions). The shares of the Issuer and receivables due from the Issuer are secured pursuant to a Jersey law governed security interest agreement prepared in accordance with the 2012 Law (the "**Parent Security Interest Agreement**") and the Issuer has entered into a security interest agreement prepared in accordance with the 2012 Law creating security over any Jersey bank accounts.

**Priority**

*General rules on priority*

The 2012 Law contains certain general rules on priority which apply where the 2012 Law provides no other way of determining priority and which state, amongst others things, that:

- A perfected security interest has priority over an unperfected security interest in the same collateral.
- Priority among perfected security interests in the same collateral is determined by the order in which they were perfected, whether by registration, possession or control or otherwise under the 2012 Law.
- Priority among unperfected security interests in the same collateral is determined by the order in which they attached.
- When a security interest is transferred, it maintains the same priority that it had immediately before the transfer.

- A security agreement may provide that the secured obligations include further advances, so that the priority of the original security is maintained for such further advances.

*Priority for security interests created by way of the secured party taking control of collateral*

There are certain exceptions to the general rules on priority. In particular, special rules apply in respect of deposit accounts, securities or custody accounts and certificated investment securities, where security can attach and be perfected by control, which confers priority.

**Enforceability of Security Interests and Limitations on the Validity and Enforceability of the Security Interests**

*Effect of grantor's bankruptcy*

The 2012 Law provides that the grantor becoming bankrupt (as defined in Article 8 of the Interpretation (Jersey) Law 1954), or the grantor or its property becoming subject, whether in Jersey or elsewhere, to any other insolvency proceedings, will not affect the power of a secured party to appropriate or sell, or otherwise act in relation to, collateral under the 2012 Law. However, a security interest is void as against the Viscount or a liquidator and the grantor's creditors unless the security interest is perfected before the grantor becomes bankrupt.

*Other enforcement considerations*

Enforcement of a security interest against a Jersey company may be limited by bankruptcy, insolvency, liquidation, dissolution, re-organization or other laws of general application relating to or affecting the rights of creditors and laws in relation to transactions at an undervalue, preferences, extortionate credit transactions, disclaimer of onerous property and fraudulent dispositions also apply in Jersey (as detailed above) but insolvency or bankruptcy alone will not render a perfected security interest invalid or non-binding on the parties thereto or any liquidator of a Jersey company or the Viscount in a désastre of a Jersey company's property.

The 2012 Law provides that a secured party may enforce security over intangible movable assets by way of sale or appropriation of the collateral or proceeds. In addition, a secured party may take certain ancillary actions including any bespoke enforcement powers included in a security agreement to the extent not in conflict with the 2012 Law. More than one enforcement option can be taken, and taking one or more of the enforcement options specified above does not preclude the exercise of other rights of a secured party. The power of enforcement is exercisable once an event of default has occurred and written notice specifying the event of default has been served on the grantor by the secured party.

If enforcement is by way of sale or appropriation, the secured party must give the grantor 14 days' prior written notice. Importantly, the grantor may agree in writing to waive its right to notice of appropriation or sale and it is usual to include such a waiver in the security agreement. The secured party is obliged on sale or appropriation, to give at least 14 days' prior written notice to: (i) any person who 21 days before the sale or appropriation has a registered security interest in the collateral; and (ii) any person other than the grantor who has an interest in the collateral and has not, less than 21 days before the sale or appropriation given the secured party notice of that interest unless, in each case, the secured party and such person have otherwise agreed in writing. There are specific carve-outs from the obligation to give notice of sale. On exercising the power of enforcement by appropriation or sale, the secured party must: (i) take all commercially reasonable steps to determine or, in the case of a sale, obtain the fair market value of the collateral, as at the time of the relevant appropriation or sale; (ii) act in a commercially reasonable manner in relation to the appropriation or sale; and (iii) (in the case of a sale only) enter into any agreement for or in relation to the sale only on commercially reasonable terms. The duty of the secured party is owed to the grantor and also to any other person to whom the secured party was required to give notice of sale or appropriation (whether or not they have agreed in writing to waive the notice requirements).

If, in exercising its powers of enforcement, a secured party appropriates or sells collateral, it must, within 14 days after the day on which the collateral is appropriated or sold, give certain persons (being the grantor (subject to it having waived this requirement), any person with a registered subordinate security interest and certain persons claiming an interest in the collateral) a written statement of account setting out certain information in relation to that appropriation or sale. If a secured party has sold or appropriated the collateral and the net value or proceeds of appropriation or sale (as appropriate) of the collateral exceeds the amount of the debt owed to the secured party, the secured party shall pay the amount of any resulting surplus in the following order: (i) in payment, in due order of priority, to any person who has a subordinate security interest in the collateral and has registered a financing statement over that security interest (where the registration remained effective immediately before the appropriation or sale); (ii) in payment to any other person (other than the grantor) who has given the secured party notice that that person claims an interest in the collateral and in respect of which the secured party is satisfied that that person has a legally enforceable interest in the collateral; and (iii) as to the balance (if any) in payment to the relevant debtor grantor. Alternatively, the secured party may discharge its obligation above with respect to any surplus by paying that amount into the Royal Court. The surplus may then only be paid out on the order of the Jersey court on application by a person entitled to the surplus.

*Right of First Offer Agreement*

The exercise of the power of enforcement and other rights by the Offshore Security Agent under the Parent Security Interest Agreement is subject to a right of first offer agreement with ADNOC HoldCo. For more information, please see "*Risk Factors – Risks Relating to Enforcement – There are limitations on the creation, perfection and enforcement of security interests that could affect the Bondholders' rights.*"

## PLAN OF DISTRIBUTION

We have entered into an agreement with the Initial Purchasers dated February 10, 2021 in relation to the Bonds (the "**Series D and E Subscription Agreement**"), under the terms and conditions of which each of the Initial Purchasers (other than Samba Financial Group) severally and not jointly agrees to subscribe and pay for, or to procure subscribers and payment for the Bonds. The Initial Purchasers are Citigroup Global Markets Limited of Citigroup Centre, Canada Square, Canary Wharf, London E14 5LB; HSBC Bank plc of 8 Canada Square, London E14 5HQ, United Kingdom; Mizuho International plc of Mizuho House, 30 Old Bailey, London EC4M 7AU, United Kingdom; First Abu Dhabi Bank PJSC of FAB Building, Khalifa Business Park – Al Qurm District, P.O. Box 6316, Abu Dhabi, United Arab Emirates; Santander Investment Securities Inc. of 45 E 53rd Street, 5th Floor, New York, NY 10022; SMBC Nikko Capital Markets Limited of One New Change, London, EC4M 9AF, United Kingdom; Société Générale of 29, boulevard Haussmann, 75009 Paris, France; Abu Dhabi Commercial Bank PJSC of PO Box 939, Abu Dhabi, United Arab Emirates; BNP Paribas of 16, boulevard des Italiens, 75009 Paris, France; Crédit Agricole Corporate and Investment Bank of 12, place des Etats-Unis, CS 70052, 92547 Montrouge Cedex, France; Emirates NBD Bank PJSC of PO Box 777, Dubai, United Arab Emirates; MUFG Securities EMEA plc of Ropemaker Place, 25 Ropemaker Street, London EC2Y 9AJ, United Kingdom; Natixis Securities Americas LLC of 1251 Avenue of the Americas, 4th Floor, New York, NY, USA 10020; Samba Financial Group of Umm Suqeim 2, Jumeriah Beach Road, P.O.Box 6038, Dubai, United Arab Emirates; Standard Chartered Bank of 7th Floor Building One, Gate Precinct, Dubai International Financial Centre, P.O. Box 999, Dubai, United Arab Emirates; CaixaBank S.A. of Calle Pintor Sorolla 2-4, Valencia 46002, Spain; and DBS Bank Ltd. of 12 Marina Boulevard, Level 42, DBS Asia Central, Marina Bay Financial Centre Tower 3, Singapore 018982. The obligations of the Initial Purchasers under the Series D and E Subscription Agreement, including their agreement to purchase the Bonds from us, are several and not joint. If an Initial Purchaser defaults, the Series D and E Subscription Agreement provides that the commitments of the non-defaulting Initial Purchasers may be increased or the Series D and E Subscription Agreement may be terminated.

We have agreed to indemnify the Initial Purchasers against certain liabilities, including liabilities under the Securities Act, or to contribute to payments the Initial Purchasers may be required to make in respect of those liabilities.

The Initial Purchasers are offering the Bonds, subject to prior sale, when, as and if issued to and accepted by them, subject to approval of legal matters by their counsel, including the validity of the Bonds, and other conditions contained in the Series D and E Subscription Agreement, such as the receipt by the Initial Purchasers of officer's certificates and legal opinions. The Initial Purchasers reserve the right to withdraw, cancel or modify offers to investors and to reject orders in whole or in part.

Bonds sold by the Initial Purchasers outside the United States to investors that are not U.S. persons or persons acquiring for the account or benefit of U.S. persons in accordance with Regulation S and Bonds sold by the Initial Purchasers inside the United States through their respective selling agents to QIBs in reliance on Rule 144A that are also Qualified Purchasers will initially be offered at the initial offering price set forth on the cover page of this Offering Memorandum (the "**Bond Offering Price**"). If all the Bonds are not sold at the Bond Offering Price, the Initial Purchasers may change the offering price and other selling terms.

CaixaBank S.A. is not a broker dealer registered with the U.S. Securities and Exchange Commission nor has an agreement with a registered broker dealer for such purposes. Hence, CaixaBank S.A. will not make sales of any Bonds in the U.S. or to U.S. persons and will be only participating on the Regulation S tranche of the transaction.

Persons who purchase Bonds from the Initial Purchasers may be required to pay stamp duty, taxes and other charges in accordance with the laws and practice of the country of purchase in addition to the Bond Offering Price.

The Bonds are a new issue of securities, and there is currently no established trading market for the Bonds. In addition, the Bonds are subject to certain restrictions on resale and transfer as described under "*Transfer Restrictions*." Although application has been made through our listing agent to Euronext Dublin for the Bonds to be admitted to the Official List and to trading on the Global Exchange Market, we can provide no assurance that the Bonds will be approved for listing or that such listing will be maintained.

We have been advised by the Initial Purchasers, that:

(a) the Initial Purchasers propose to resell the Rule 144A Bonds only to QIBs in the United States in reliance on Rule 144A that are also Qualified Purchasers; and

(b) the Initial Purchasers propose to resell the Regulation S Bonds outside the United States in offshore transactions to investors that are not U.S. persons or persons acquiring for the account or benefit of U.S. persons in compliance with Regulation S and in accordance with applicable law.

The offering price for the Bonds and the underwriting discount are the same for the Regulation S Bonds and the Rule 144A Bonds. Any offer or sale of the Bonds in reliance on Rule 144A will be made by broker-dealers who are registered as such under the U.S. Exchange Act. Terms used above have the meanings given to them by Regulation S and Rule 144A.

Each Initial Purchaser offering Bonds has acknowledged and agreed that, except as permitted by the Series D and E Subscription Agreement, it will not offer or sell the Bonds:

(a) as part of its distribution at any time; or

(b) otherwise until 40 days after the latest of the commencement of the offering and the original issue date of the Bonds, if within the United States or to, or for the account or benefit of, U.S. Persons, and that it will send to each dealer to which it sells Bonds during the restricted period a confirmation or other notice setting forth the restrictions on offers and sales of the Bonds in the United States or to, or for the account or benefit of, U.S. Persons.

In addition, until the expiration of 40 days after the commencement of the offering, an offer or sale of such Bonds within the United States by a dealer that is not participating in this offering of the Bonds may violate the registration requirements of the Securities Act if such offer or sale is made otherwise than in accordance with Rule 144A or pursuant to another exemption from registration under the Securities Act.

The Initial Purchasers have advised us that they intend to make a market in the Bonds as permitted by applicable law. The Initial Purchasers are not obligated, however, to make a market in the Bonds, and any market-making activity may be discontinued at any time at the sole discretion of the Initial Purchasers without notice. In addition, any such market-making activity will be subject to the limits imposed by applicable law. Accordingly, we cannot assure you that any market for the Bonds will develop, that it will be liquid if it does develop, or that you will be able to sell any Bonds at a particular time or at a price which will be favorable to you. See "*Risk Factors—Risks Relating to the Bonds—There can be no assurance that an active market for the Bonds will develop or be maintained*."

In connection with this offering, the Stabilizing Manager or any person acting for it may over-allot the Bonds or effect transactions with a view to supporting the market price of the Bonds at a level higher than that which might otherwise prevail. However, there is no assurance that the Stabilizing Manager will undertake stabilization action. Any stabilization action may begin on or after the date on which adequate public disclosure of the terms of the offering is made and, if begun, may be ended at any time, but it must end no later than 30 days after the date on which the Issuer received the proceeds of the issue, or no later than 60 days after the date of the allotment of the Bonds, whichever is earlier. Any stabilization action over-allotment will be conducted by the Stabilizing Manager in accordance with all applicable laws, regulations and rules.

Delivery of the Bonds will be made against payment on the Bonds on or about February 18, 2021, which will be the seventh business day following the date of pricing of the Bonds (such settlement being referred to as "**T+7**"). Under Rule 15(c)6-1 under the U.S. Exchange Act, trades in the secondary market generally are required to settle in two business days unless the parties to any such trade expressly agree otherwise. Accordingly, purchasers who wish to trade the Bonds on the date of pricing or the next succeeding four business days will be required, by virtue of the fact that the Bonds initially will settle in T+7, to specify an alternate settlement cycle at the time of any such trade to prevent failed settlement. Purchasers of the Bonds who wish to trade the Bonds on the date of pricing or the next succeeding two business days should consult their own advisers.

The Bonds have not been and will not be registered under the Securities Act and may not be offered, sold or delivered within the United States to, or for the account or benefit of, a U.S. Person except to a QIB in reliance on Rule 144A that is also a Qualified Purchaser. In addition, each purchaser of the Bonds taking delivery in the form of an interest in a Rule 144A Bond will be deemed to represent and warrant that it and each of the accounts, if any, for which it is purchasing an interest in such Rule 144A Bond is a QIB that is also a Qualified Purchaser and is not:

(a) a dealer of the type described in paragraph (a)(1)(ii) of Rule 144A unless it owns and invests on a discretionary basis not less than U.S.$25 million in securities of issuers that are not affiliated to it;

(b) a participant-directed employee plan, such as a 401(k) plan, or any other type of plan referred to in paragraph (a)(1)(i)(D) or (a)(1)(i)(E) of Rule 144A, or a trust fund referred to in paragraph (a)(1)(i)(F) of Rule 144A that holds the assets of such a plan, unless investment decisions with respect to the plan are made solely by the fiduciary, trustee or sponsor of such plan; or

(c) formed for the purpose of investing in the Issuer.

Each Initial Purchaser has represented and agreed that it will not offer, sell or deliver any of the Bonds in any jurisdiction outside the United States except under circumstances that will result in compliance with the applicable laws thereof, and that no action has been taken to permit a public offering in any jurisdiction outside the United States where action would be required for such purpose.

The Initial Purchasers and/or their respective affiliates and parent companies are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, principal investment, hedging, financing and brokerage activities. The Initial Purchasers and/or their respective affiliates and parent companies have in the past, and may in the future, perform commercial banking, investment banking and advisory services for us from time to time for which they have received, or may receive in the future, customary fees and reimbursement of expenses and may, from time to time, engage in transactions with and perform services for us in the ordinary course of their business for which they may receive customary fees and reimbursement of expenses. First Abu Dhabi Bank PJSC is an affiliate of the Issuer and an Initial Purchaser, and in the ordinary course of their various business activities, the Initial Purchasers and/or their respective affiliates and parent companies may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities) and financial instruments (which may include bank loans and/or credit default swaps) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve our securities and instruments of the Issuer or its affiliates. In the ordinary course of their various business activities, the Initial Purchasers and/or their respective affiliates and parent companies may prepare and distribute independent research reports, including market reports, relating to the Issuer and/or its affiliates.

**Other Activities and Relationships**

If the Initial Purchasers or their respective affiliates have a lending relationship with the Issuer, they routinely hedge their credit exposure to the Issuer consistent with their customary risk management policies. Typically, the Initial Purchasers and their respective affiliates would hedge such exposure by entering into transactions which consist of either the purchase of credit default swaps or the creation of short positions in the Issuer's securities, including potentially the Bonds offered hereby. Any such short positions could adversely affect future trading prices of the Bonds offered hereby. The Initial Purchasers and their respective affiliates may also make investment recommendations and publish or express independent research views in respect of such securities or financial instruments and may hold, or recommend to clients that they acquire, long and short positions in such securities and instruments.

Banco Santander, S.A.; BNP Paribas Fortis SA/NV; Citibank N.A., Jersey Branch; Crédit Agricole Corporate and Investment Bank; First Abu Dhabi Bank PJSC; HSBC Bank Middle East Limited; Mizuho Bank, Ltd.; MUFG Bank, Ltd.; Natixis; Société Générale; Standard Chartered Bank, Dubai Branch; and Sumitomo Mitsui Banking Corporation, DIFC Branch – Dubai are the DSR Facility Providers under the Debt Service Reserve Facility Agreement and First Abu Dhabi Bank PJSC serves as the DSR Facility Agent thereunder.

**Selling Restrictions**

***Abu Dhabi Global Market***

Each Initial Purchaser has represented, warranted and agreed that it has not offered and will not offer the Bonds to any person in the Abu Dhabi Global Market unless such offer is:

(a) an "Exempt Offer" in accordance with the Market Rules (MKT) of the FSRA; and

(b) made only to persons who meet the Professional Client criteria set out in Rule 2.4 of the Conduct of Business Rulebook (COBS) of the FSRA.

***Canada***

Each Initial Purchaser has acknowledged that the Bonds may be sold only to purchasers in Canada purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 *Prospectus Exemptions* or subsection 73.3(1) of the *Securities Act* (Ontario), and are permitted clients, as defined in National Instrument 31-103 *Registration Requirements, Exemptions and Ongoing Registrant Obligations*. Any resale of the Bonds must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this Offering Memorandum (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 *Underwriting Conflicts* ("**NI 33-105**"), the Initial Purchasers are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

***Dubai International Financial Centre***

Each Initial Purchaser has represented, warranted and agreed that it has not offered and will not offer the Bonds to any person in the Dubai International Financial Centre unless such offer is:

(a) an "Exempt Offer" in accordance with the Markets Rules (MKT) Module of the DFSA Rulebook; and

(b) made only to persons who meet the Professional Client criteria set out in Rule 2.3.3 of the Conduct of Business (COB) Module of the DFSA Rulebook.

***European Economic Area***

Each of the Initial Purchasers and the Issuer has represented and agreed that it has not offered, sold or otherwise made available and will not offer, sell or otherwise make available any Bonds to any retail investor in the EEA. For the purposes of this provision:

(a) the expression "**retail investor**" means a person who is one (or more) of the following:

    (i) a retail client as defined in point (11) of Article 4(1) of Directive 2014/65/EU (as amended, "**MiFID II**"); or

    (ii) a customer within the meaning of directive (EU) 2016/97 (known as the Insurance Distribution Directive) as amended, where that customer would not qualify as a professional client as defined in point (10) of Article 4(1) of MiFID II; or

    (iii) not a qualified investor as defined in the Prospectus Regulation;

(b) the expression "**offer**" includes the communication in any form and by any means of sufficient information on the terms of the offer and the Bonds to be offered so as to enable an investor to decide to purchase or subscribe the Bonds; and

(c) the expression "**Prospectus Regulation**" means Regulation (EU) 2017/1129.

***Hong Kong***

Each Initial Purchaser has represented and agreed that:

(a) it has not offered or sold and will not offer or sell in Hong Kong, by means of any document, any Bonds other than:

(ii) to "professional investors" within the meaning of the Securities and Futures Ordinance (Cap. 571) of Hong Kong (the "**SFO**") and any rules made under the SFO; or

(iii) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong (the "**Ordinance**") or which do not constitute an offer to the public within the meaning of the Ordinance; and

(b) it has not issued or had in its possession for the purposes of issue, and will not issue or have in its possession for the purposes of issue, whether in Hong Kong or elsewhere, any advertisement, invitation or document relating to the Bonds, which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the laws of Hong Kong) other than with respect to the Bonds which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made under the SFO.

***Israel***

This Offering Memorandum does not constitute a prospectus under the Israeli Securities Law, 5728-1968, or the Securities Law, and has not been filed with or approved by the Israel Securities Authority. In the State of Israel, this document is being distributed only to, and is directed only at, and any offer of the securities hereunder is directed only at, investors listed in the first addendum, or the Addendum, to the Securities Law, consisting primarily of joint investment in trust funds, provident funds, insurance companies, banks, portfolio managers, investment advisors, members of the Tel Aviv Stock Exchange, underwriters, venture capital funds, entities with equity in excess of NIS 50 million and "qualified individuals," each as defined in the Addendum (as it may be amended from time to time), collectively referred to as qualified investors (in each case purchasing for their own account or, where permitted under the Addendum, for the accounts of their clients who are investors listed in the Addendum). Qualified investors will be required to submit written confirmation that they fall within the scope of the Addendum, are aware of the meaning of same and agree to it.

***Italy***

The offering of the Bonds has not been registered with the Commissione Nazionale per le Società e la Borsa ("**CONSOB**") pursuant to Italian securities legislation. Each Initial Purchaser has acknowledged that any offer, sale or delivery of the Bonds or distribution of copies of this Offering Memorandum or any other document relating to the Bonds in the Republic of Italy will be effected in accordance with all Italian securities, tax and exchange control and other applicable laws and regulation.

Any such offer, sale or delivery of the Bonds or distribution of copies of this Offering Memorandum or any other document relating to the Bonds in the Republic of Italy must be:

(a) made by an investment firm, bank or financial intermediary permitted to conduct such activities in the Republic of Italy in accordance with Legislative Decree No. 58 of 24 February 1998, CONSOB Regulation No. 20307 of 15 February 2018 and Legislative Decree No. 385 of 1 September 1993 (in each case as amended from time to time) and any other applicable laws and regulations; and

(b) in compliance with Article 129 of Legislative Decree No. 385 of 1 September 1993, as amended, pursuant to which the Bank of Italy may request information on the issue or the offer of securities in the Republic of Italy and the relevant implementing guidelines of the Bank of Italy issued on 25 August 2015 (as amended on 10 August 2016); and

(c) in compliance with any other applicable laws and regulations or requirement imposed by CONSOB or any other Italian authority.

***Kingdom of Bahrain***

Each Initial Purchaser has represented and agreed that it has not offered or sold, and will not offer or sell, any Bonds in the Kingdom of Bahrain except on a private placement basis to persons in the Kingdom of Bahrain who are "**accredited investors**".

For this purpose, an "**accredited investors**" means:

(a) an individual holding financial assets (either singly or jointly with a spouse) of U.S.$1,000,000 or more excluding that person's principal place of residence;

(b) a company, partnership, trust or other commercial undertaking which has financial assets available for investment of not less than U.S.$1,000,000; or

(c) a government, supranational organization, central bank or other national monetary authority or a state organization whose main activity is to invest in financial instruments (such as a state pension fund).

***Kingdom of Saudi Arabia***

No action has been or will be taken in the Kingdom of Saudi Arabia that would permit a public offering of the Bonds. Any investor in the Kingdom of Saudi Arabia or who is a Saudi person (a "**Saudi Investor**") who acquires the Bonds pursuant to any offering should note that the offer of the Bonds is a private placement under Article 8(a)(1) of the "Rules on the Offer of Securities and Continuing Obligations" as issued by the Board of the Capital Market Authority pursuant to its resolution number 3-123-2017 dated 9/4/1439H (corresponding to December 27, 2017) as amended by resolution number 1-104-2019 dated 01/02/1441H (corresponding to September 30, 2019) (the "**Rules on the Offer of Securities and Continuing Obligations**"), through a person authorized by the Capital Market Authority to carry on the securities activity of arranging and following a notification to the Capital Market Authority under Article 11 of the Rules on the Offer of Securities and Continuing Obligations.

The Bonds may thus not be advertised, offered or sold to any person in the Kingdom of Saudi Arabia other than to "Sophisticated Investors" under Article 9 of the Rules on the Offer of Securities and Continuing Obligations. Each Initial Purchaser has represented and agreed that any offer of the Bonds by it (or any of its affiliates) to a Saudi Investor will be made in compliance with Articles 9 and 12 of the Rules on the Offer of Securities and Continuing Obligations.

Each offer of the Bonds shall not therefore constitute a "public offer", an "exempt offer" or a "parallel market offer" pursuant to the Rules on the Offer of Securities and Continuing Obligations, but is subject to the restrictions on secondary market activity under Article 15 of the Rules on the Offer of Securities and Continuing Obligations. Any Saudi Investor who has acquired the Bonds pursuant to a private placement under Article 9 of the Rules on the Offer of Securities and Continuing Obligations may not offer or sell those Bonds to any person except in accordance with Article 15 of the Rules on the Offer of Securities and Continuing Obligations which is summarized as follows:

(d) A person (referred to as a "**transferor**") who has acquired the Bonds pursuant to a private placement may not offer or sell such Bonds to any person (referred to as a "**transferee**") unless the offer or sale is made through an authorized person and where one of the following requirements is met:

   (i) the price to be paid for the Bonds in any one transaction is equal to or exceeds SAR 1 million or an equivalent amount;

   (ii) the Bonds are offered or sold to a sophisticated investor; or

   (iii) the Bonds are being offered or sold in such other circumstances as the Capital Market Authority may prescribe for these purposes.

(e) If the requirement in subparagraph (i) of paragraph (a) above cannot be fulfilled because the price of the Bonds being offered or sold to the transferee has declined since the date of the original private placement, the transferor may offer or sell such Bonds to the transferee if their purchase price during the period of the original private placement was equal to or exceeded SAR 1 million or an equivalent amount.

(f) If the requirement in paragraph (b) above cannot be fulfilled, a transferor may offer or sell the Bonds if he sells his entire holding of such Bonds to one transferee.

(g) The provisions of paragraphs (a), (b) and (c) above shall apply to all subsequent transferees of such Bonds.

The restrictions in Article 15 of the Rules on the Offer of Securities and Continuing Obligations shall cease to apply upon approval of listing on the Saudi Stock Exchange (Tadawul) of Bonds of the same class as the Bonds that are subject to such restrictions.

***Kuwait***

Each Initial Purchaser has represented and agreed that the Bonds have not been and will not be offered, marketed and/or sold by it in Kuwait, except through a licensed person duly authorized to undertake such activity pursuant to Law No. 7 of 2010 Concerning the Establishment of the Capital Markets Authority and the Regulating of Securities Activities and its executive bylaws (each as amended) (the "**CML Rules**") and unless all necessary approvals from the Capital Markets Authority pursuant to the CML Rules, together with the various resolutions, regulations, directives and instructions issued pursuant thereto or in connection therewith (regardless of nomenclature or type), or any other applicable law or regulation in Kuwait, have been given in respect of the offering, marketing and/or sale of the Bonds. The Bonds may not be offered onshore in Kuwait except to Professional Clients as defined in the CML Rules.

***Malaysia***

Each of the Initial Purchasers has acknowledged that:

(a) no approval from the Securities Commission Malaysia ("**SC**") is or will be obtained and/or no lodgment to the SC under the Lodge and Launch Framework issued by the SC has been or will be made for the offering of the Bonds on the basis that the Bonds will be issued and offered exclusively to persons outside Malaysia; and

(b) this Offering Memorandum has not been registered as a prospectus with the SC under the Capital Markets and Services Act 2007 of Malaysia; and

(c) the Bonds may not be offered, sold, transferred or otherwise disposed of, directly or indirectly, nor may any document or other material in connection therewith be distributed, to a person in Malaysia except by way of a secondary transaction of the Bonds which does not involve retail investors, and a prospectus has not been issued.

***Singapore***

Each Initial Purchaser has acknowledged that this Offering Memorandum has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, each Initial Purchaser has represented and agreed that it has not offered or sold any Bonds or caused the Bonds to be made the subject of an invitation for subscription or purchase and will not offer or sell any Bonds or cause the Bonds to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, nor will it circulate or distribute, this Offering Memorandum or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the Bonds, whether directly or indirectly, to any person in Singapore other than (i) to an institutional investor (as defined in Section 4A of the Securities and Futures Act (Chapter 289) of Singapore, as modified or amended from time to time (the "**SFA**")) pursuant to Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275 of the SFA), or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where Bonds are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(a) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more of individuals, each of whom is an accredited investor; or

(b) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the Bonds pursuant to an offer made under Section 275 of the SFA except:

(i) to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(ii) where no consideration is or will be given for the transfer;

(iii) where the transfer is by operation of law;

(iv) as specified in Section 276(7) of the SFA; or

(v) as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018.

***South Korea***

The Bonds have not been and will not be registered under the Financial Investment Services and Capital Markets Act of Korea. Each of the Initial Purchasers has represented and agreed that it has not offered, sold or delivered and will not offer, sell or deliver, directly or indirectly, any Bonds in Korea or to, or for the account or benefit of, any Korean resident (as such term is defined in the Foreign Exchange Transaction Law of Korea), except as otherwise permitted under applicable Korean laws and regulations.

***Switzerland***

The offering of the Bonds in Switzerland is exempt from the requirement to prepare and publish a prospectus under the Swiss Financial Services Act ("**FinSA**") because the Bonds have a minimum denomination of CHF 100,000 (or equivalent in another currency) or more. This Offering Memorandum does not constitute a prospectus pursuant to the FinSA, and no such prospectus has been or will be prepared for or in connection with the offering of the Bonds.

***Taiwan***

The Bonds have not been and will not be registered or filed with, or approved by, the Financial Supervisory Commission of Taiwan and/or other regulatory authority or agency of Taiwan pursuant to relevant securities laws and regulations of Taiwan and may not be issued, offered or sold within Taiwan through a public offering or in circumstances which constitute an offer within the meaning of the Securities and Exchange Act of Taiwan that requires a registration, filing or approval of the Financial Supervisory Commission of Taiwan and/or other regulatory authority or agency of Taiwan.

***United Arab Emirates (excluding the Dubai International Financial Centre and the Abu Dhabi Global Market)***

Each Initial Purchaser has represented, warranted and agreed that the Bonds have not been and will not be offered, sold or publicly promoted or advertised by it in the United Arab Emirates (excluding the Dubai International Financial Centre and the Abu Dhabi Global Market) other than in compliance with any laws applicable in the United Arab Emirates governing the issue, offering and sale of securities.

***United Kingdom***

Each of the Initial Purchasers has represented and agreed that it has not offered, sold or otherwise made available and will not offer, sell or otherwise make available any Bonds to any retail investor in the United Kingdom. For the purposes of this provision:

(a) the expression "**retail investor**" means a person who is one (or more) of the following:

(i) a retail client, as defined in point (8) of Article 2 of Regulation (EU) No 2017/565 as it forms part of domestic law by virtue of the EUWA; or

(ii) a customer within the meaning of the provisions of the FSMA and any rules or regulations made under the FSMA to implement Directive (EU) 2016/97, where that customer would not qualify as a professional client, as defined in point (8) of Article 2(1) of Regulation (EU) No 600/2014 as it forms part of domestic law by virtue of the EUWA; or

(iii) not a qualified investor as defined in Article 2 of the UK Prospectus Regulation; and

(b) the expression an "**offer**" includes the communication in any form and by any means of sufficient information on the terms of the offer and the Bonds to be offered so as to enable an investor to decide to purchase or subscribe for the Bonds.

Each of the Initial Purchasers has represented and agreed that:

(a) it has only communicated or caused to be communicated and will only communicate or cause to be communicated an invitation or inducement to engage in investment activity (within the meaning of section 21 of FSMA) received by it in connection with the issue or sale of any Bonds in circumstances in which section 21(1) of the FSMA does not apply to the Issuer; and

(b) it has complied and will comply with all applicable provisions of FSMA with respect to anything done by it in relation to the Bonds in, from or otherwise involving the United Kingdom.

***United States***

The Bonds have not been and will not be registered under the Securities Act nor any state securities law and may not be offered or sold within the United States or to, or for the account or benefit of, U.S. Persons except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act. Accordingly, the Bonds are being offered, sold and issued (i) only to QIBs in the United States in reliance on Rule 144A that are also Qualified Purchasers and (ii) outside the United States in offshore transactions to investors that are not U.S. persons or persons acquiring for the account or benefit of U.S. persons in compliance with Regulation S and in accordance with applicable law.

Each Initial Purchaser has represented, warranted and agreed that it has not offered or sold and that it will not offer or sell, any Bonds constituting part of its allotment within the United States. Accordingly, neither it, its affiliates, nor any person acting on its or their behalf has engaged or will engage in any directed selling efforts with respect to any Bonds. Terms used in this paragraph have the meanings given to them by Regulation S.

In addition, until 40 days after the commencement of the offering of the Bonds, an offer or sale of Bonds within the United States by any Initial Purchaser (whether or not participating in the offering of the Bonds) may violate the registration requirements of the Securities Act if such offer or sale is made otherwise than pursuant to Rule 144A.

**General**

Each Initial Purchaser has represented, warranted and agreed that it will (to the best of its knowledge and belief) comply with all applicable securities laws and regulations in force in any jurisdiction in which it purchases, offers, sells or delivers any Bonds or possesses or distributes this Offering Memorandum and will obtain any consent, approval or permission required by it for the purchase, offer, sale or delivery by it of Bonds under the laws and regulations in force in any jurisdiction to which it is subject or in which it makes such purchases, offers, sales or deliveries and neither the Issuer nor any of the Initial Purchasers shall have any responsibility therefor.

Neither the Issuer nor any of the Initial Purchasers represents that Bonds may at any time lawfully be sold in compliance with any applicable registration or other requirements in any jurisdiction, or pursuant to any exemption available thereunder, or assumes any responsibility for facilitating any such sale. Persons into whose possession this Offering Memorandum or any Bonds may come must inform themselves about, and observe any applicable restrictions on the distribution of, this Offering Memorandum and the offering and sale of Bonds.

## TRANSFER RESTRICTIONS

*Because of the following restrictions, purchasers are advised to consult legal counsel prior to making any offer, resale, pledge or other transfer of the Bonds. Purchasers of the Bonds represented by an interest in a Regulation S Bond are advised that such interests are not transferable to U.S. Persons at any time except in accordance with the following restrictions.*

The Bonds have not been registered under the Securities Act and may not be offered or sold in the United States or to, or for the account or benefit of, U.S. Persons except pursuant to an exemption from, or in a transaction not subject to, the registration requirements of the Securities Act. Accordingly, the Bonds may only be offered and sold:

(a) in the United States to persons who are QIBs that are also Qualified Purchasers; and

(b) outside the United States to purchasers who are not U.S. Persons or persons acquiring for the account or benefit of U.S. persons in reliance upon Regulation S.

Each purchaser of any of the Bonds, by accepting the Bonds, acknowledges, represents and agrees with the Initial Purchasers and us as follows:

(a) The Bonds have not been registered under the Securities Act, or the securities laws of any state of the United States, are "restricted securities" within the meaning of Rule 144 and, unless registered under the Securities Act, may not be offered, sold or otherwise transferred unless in compliance with the registration requirements of the Securities Act or any other applicable securities laws or pursuant to exemptions from registration under the Securities Act and applicable state and other securities laws.

(b) The purchaser is:

  (i) a "qualified institutional buyer" as defined in Rule 144A and also a Qualified Purchaser who is aware that the sale to it is being made in reliance on Rule 144A and who is acquiring the Bonds for its own account or for the account of a person who is a qualified institutional buyer that is also a Qualified Purchaser; or

  (ii) not a U.S. Person or a person acquiring for the account or benefit of U.S. person and is acquiring the Bonds in an offshore transaction outside the United States complying with the provisions of Regulation S.

(c) The purchaser has not relied on the Initial Purchasers or any person affiliated with the Initial Purchasers in connection with its investigation of the accuracy of the information contained in this Offering Memorandum or any additional information or in connection with its investment decision. The purchaser acknowledges that neither the Initial Purchasers, nor any person representing the Initial Purchasers, has made any representation to it with respect to either us or the offering of the Bonds. The Initial Purchasers reserve the right to reject any offer to purchase, in whole or in part, for any reason. The purchaser had access to such financial and other information concerning us, ADNOC Onshore, ADNOC and the Bonds as such purchaser has deemed necessary in connection with his/her decision to purchase any of the Bonds, including an opportunity to ask questions of, and request information from, us and the Initial Purchasers.

(d) The purchaser is purchasing the Bonds for its own account, or for one or more investor accounts for which it is acting as fiduciary or agent, in each case for investment, and not with a view to, or for offer or sale in connection with, any distribution in violation of the Securities Act.

(e) Each purchaser of any Bonds understands that the Bonds are being offered only in a transaction not involving any public offering within the meaning of the Securities Act and that unless otherwise agreed by us, (1) if it should offer, resell, pledge or otherwise transfer the Bonds, the Bonds may be offered, resold, pledged or transferred, only: (A) to us; (B) for so long as the securities are eligible for resale pursuant to Rule 144A, in the United States to a person whom the seller reasonably believes is a QIB that is also a Qualified Purchaser and to whom notice is given that the offer, resale, pledge or transfer is being made in reliance on Rule 144A; (C) outside the United States pursuant to offers and sales to purchasers who are not U.S. Persons or persons acquiring for the account or benefit of U.S. persons in an offshore transaction meeting the requirements of Regulation S; (D) pursuant to another available exemption from registration under the Securities Act; or (E) pursuant to a registration statement that has been declared effective under the Securities Act subject to our and the Bond Trustee's, registrar's or transfer agent's right prior to any such reoffer, sale or transfer (i) in the case of paragraph (d), to require the delivery of an opinion of counsel, certification and/or other information satisfactory to each of them, and (ii) in each of the foregoing cases, to require that a certificate of transfer in the form set forth in the Bond Trust Deed is completed and delivered by the transferor to the trustee and (2) each subsequent purchaser of the Bonds is required to notify any purchaser of any Bonds of the resale restrictions referred to in (i) above and to deliver to the transferee (other than a transferee who is a QIB that is also a Qualified Purchaser) prior to sale a copy of the Transfer Restrictions hereinafter set forth (copies of which may be obtained from the Bond Trustee). The purchaser understands that transfers of the Bonds will be registered only if the Bonds are transferred in accordance with such transfer restrictions.

(f) Each purchaser of any Bonds understands that such Bonds, unless otherwise agreed by us in compliance with applicable law, will bear a legend to the following effect:

**THIS BOND HAS NOT BEEN AND WILL NOT BE REGISTERED UNDER THE U.S. SECURITIES ACT OF 1933, AS AMENDED (THE "U.S. SECURITIES ACT"), OR OTHER SECURITIES LAWS OF ANY STATE OR OTHER JURISDICTION. NEITHER THIS BOND NOR ANY INTEREST OR PARTICIPATION HEREIN MAY BE OFFERED, SOLD, ASSIGNED, TRANSFERRED, PLEDGED, ENCUMBERED OR OTHERWISE DISPOSED OF IN THE ABSENCE OF SUCH REGISTRATION UNLESS THE TRANSACTION IS EXEMPT FROM, OR NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE U.S. SECURITIES ACT.**

**THE HOLDER OF THIS BOND BY ITS ACCEPTANCE HEREOF (1) REPRESENTS THAT (A) IT IS A "QUALIFIED INSTITUTIONAL BUYER" (AS DEFINED IN RULE 144A UNDER THE U.S. SECURITIES ACT) THAT IS ALSO A "QUALIFIED PURCHASER" (AS DEFINED IN SECTION 2(a)(51) OF, AND THE RULES AND REGULATIONS THEREUNDER, THE U.S. INVESTMENT COMPANY ACT OF 1940, AS AMENDED (THE "INVESTMENT COMPANY ACT")) (OR A TRANSFEREE THEREOF THAT IS IDENTIFIED IN RULES 3C-5 AND 3C-6 UNDER THE INVESTMENT COMPANY ACT), OR (B) IT IS NOT A U.S. PERSON OR A PERSON ACQUIRING FOR THE ACCOUNT OR BENEFIT OF U.S. PERSONS AND IS ACQUIRING THIS BOND IN AN "OFFSHORE TRANSACTION" PURSUANT TO RULE 904 OF REGULATION S UNDER THE U.S. SECURITIES ACT, (2) AGREES THAT IT WILL NOT, ON ITS OWN BEHALF AND ON BEHALF OF ANY INVESTOR FOR WHICH IT HAS PURCHASED SECURITIES TO, PRIOR TO (X) THE DATE WHICH IS, IN THE CASE OF RULE 144A GLOBAL BONDS, ONE YEAR AND IN THE CASE OF REGULATION S GLOBAL BONDS, FORTY (40) CALENDAR DAYS AFTER THE LATER OF THE ORIGINAL ISSUE DATE HEREOF (OR OF ANY PREDECESSOR OF THIS BOND) OR THE LAST DAY ON WHICH THE ISSUER OR ANY AFFILIATE OF THE ISSUER WERE THE OWNERS OF THIS BOND (OR ANY PREDECESSOR OF THIS BOND) AND (Y) SUCH LATER DATE, IF ANY, AS MAY BE REQUIRED BY APPLICABLE LAW, OFFER, SELL OR OTHERWISE TRANSFER THIS BOND EXCEPT (A) TO THE ISSUER, (B) PURSUANT TO A REGISTRATION STATEMENT WHICH HAS BEEN DECLARED EFFECTIVE UNDER THE U.S. SECURITIES ACT, (C) FOR SO LONG AS THE BONDS ARE ELIGIBLE FOR RESALE PURSUANT TO RULE 144A UNDER THE U.S. SECURITIES ACT, TO A PERSON IT REASONABLY BELIEVES IS BOTH A "QUALIFIED INSTITUTIONAL BUYER" AS DEFINED IN RULE 144A UNDER THE U.S. SECURITIES ACT AND A "QUALIFIED PURCHASER" (AS DEFINED IN SECTION 2(a)(51) OF, AND THE RULES AND REGULATIONS THEREUNDER, THE INVESTMENT COMPANY ACT) (OR A TRANSFEREE THEREOF THAT IS IDENTIFIED IN RULES 3c-5 OR 3c-6 UNDER THE INVESTMENT COMPANY ACT) THAT PURCHASES FOR ITS OWN ACCOUNT OR FOR THE ACCOUNT OF A QUALIFIED INSTITUTIONAL BUYER WHO IS ALSO A QUALIFIED PURCHASER TO WHOM NOTICE IS GIVEN THAT THE TRANSFER IS BEING MADE IN RELIANCE ON RULE 144A UNDER THE U.S. SECURITIES ACT, (D) PURSUANT TO OFFERS AND SALES TO INVESTORS THAT ARE NOT U.S. PERSONS OR PERSONS ACQUIRING FOR THE ACCOUNT OR BENEFIT OF U.S. PERSONS THAT OCCUR OUTSIDE THE UNITED STATES IN COMPLIANCE WITH REGULATION S UNDER THE U.S. SECURITIES ACT OR (E) PURSUANT TO ANY OTHER AVAILABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF THE U.S. SECURITIES ACT, (3) AGREES THAT IT WILL GIVE TO EACH PERSON TO WHOM THIS BOND IS TRANSFERRED A NOTICE SUBSTANTIALLY TO THE EFFECT OF THIS LEGEND; SUBJECT IN EACH OF THE FOREGOING CASES TO ANY REQUIREMENT OF LAW THAT THE DISPOSITION OF ITS PROPERTY OR THE PROPERTY OF**

**SUCH INVESTOR ACCOUNT OR ACCOUNTS BE AT ALL TIMES WITHIN ITS OR THEIR CONTROL AND IN COMPLIANCE WITH ANY APPLICABLE STATE SECURITIES LAWS AND ANY APPLICABLE LOCAL LAWS AND REGULATIONS AND FURTHER SUBJECT TO THE ISSUER'S AND THE BOND TRUSTEE'S RIGHTS PRIOR TO ANY SUCH OFFER, SALE OR TRANSFER (I) PURSUANT TO CLAUSES (D) AND (E) TO REQUIRE THE DELIVERY OF AN OPINION OF COUNSEL, CERTIFICATION AND/OR OTHER INFORMATION SATISFACTORY TO EACH OF THEM AND (II) IN EACH OF THE FOREGOING CASES, TO REQUIRE THAT A CERTIFICATE OF TRANSFER IN THE FORM APPEARING ON THE OTHER SIDE OF THIS BOND IS COMPLETED AND DELIVERED BY THE TRANSFEROR TO THE BOND TRUSTEE AND (4) AGREES THAT IT WILL GIVE TO EACH PERSON TO WHOM THIS BOND IS TRANSFERRED A NOTICE SUBSTANTIALLY TO THE EFFECT OF THIS LEGEND.**

(a) If it is a purchaser in a sale that occurs outside the United States within the meaning of Regulation S, it acknowledges that until the expiration of the 40-day distribution compliance period within the meaning of Rule 903 of Regulation S, any offer or sale of the Bonds will not be made by it to a U.S. Person or for the account or benefit of a U.S. Person within the meaning of Rule 902(k) of the Securities Act.

(b) The purchaser or transferee acknowledges that (I) either (1) it is not a Plan and is not acquiring or holding the Bonds (or any interest therein) on behalf of or with the assets of any Plan, or (2) its acquisition and holding of the Bonds (or any interest therein by it do) will not give rise to a non-exempt prohibited transaction under Section 406 of ERISA or Section 4975 of the Code, or, a violation of the provisions of any applicable Similar Law and (II) if the purchaser or transferee is a Plan, (1) none of the Transaction Parties has provided any investment recommendation or investment advice to the Plan or its Plan Fiduciary, on which either the Plan or its Plan Fiduciary has relied in connection with the decision to invest in the Bonds (or any interest therein), (2) the Transaction Parties are not otherwise acting as a "fiduciary", as that term is defined in Section 3(21) of ERISA or Section 4975(e)(3) of the Code, to the Plan or its Plan Fiduciary in connection with the Plan's investment in the Bonds (or any interest therein) and (3) the Plan Fiduciary is exercising its own independent judgment in evaluating the transaction. See "*Certain ERISA Considerations*."

(c) The purchaser acknowledges that the foregoing restrictions apply to holders of beneficial interests in the Bonds, as well as Bondholders.

(d) The purchaser acknowledges that neither the Bond Trustee, nor the registrar, nor the transfer agent will be required to accept for registration of transfer any Bonds acquired by the purchaser, except upon presentation of evidence satisfactory to us and the Bond Trustee that the restrictions set forth herein have been complied with.

(e) The purchaser acknowledges that we, the Bond Trustee, the registrar, the transfer agent, the Initial Purchasers and others will rely upon the truth and accuracy of the foregoing acknowledgements, representations and agreements and agrees that if any of the acknowledgments, representations or agreements deemed to have been made by its purchase of the Bonds are no longer accurate, it will promptly notify us, the Bond Trustee, the registrar, the transfer agent and the Initial Purchasers. If it is acquiring the Bonds as a fiduciary or agent for one or more investor accounts, it represents that is has sole investment discretion with respect to each of those accounts and it has full power to make the foregoing acknowledgments, representation and agreements on behalf of each of those accounts.

Further, by acquiring the Bonds, each purchaser will be deemed to have further represented and agreed as follows:

(a) You and each account for which you are purchasing:

  (i) are not a broker-dealer that owns and invests on a discretionary basis less than U.S.$25 million in securities of unaffiliated issuers;

  (ii) are not a participant-directed employee plan, such as a 401(k) plan, as referred to in paragraph (a)(1)(i)(D) or (a)(1)(i)(E) of Rule 144A, or a trust fund referred to in paragraph (a)(1)(i)(F) of Rule 144A that holds the assets of such a plan; and

(iii) will hold and transfer at least the minimum denomination of U.S.$200,000 of Bonds and will not sell participation interests in any Bonds.

(b) You were not formed for the purpose of investing in us except where the beneficial owners of the purchaser are QIBs that are also Qualified Purchasers.

(c) You acknowledge that we may receive a list of participants holding positions in the Bonds from one or more book-entry depositaries.

(d) You will not transfer the Bonds or beneficial interests therein except to a transferee who meets the requirements described in this "*Notice to U.S. Investors*" and agree not to subsequently transfer the Bonds or any beneficial interest therein except in accordance with the transfer restrictions described in "*Transfer Restrictions*."

(e) You are not investing and will not invest 40% or more of your total assets in the Bonds.

(f) Your shareholders, partners or other holders of equity or beneficial interests are not able to decide individually whether or not to participate, or to determine the extent of their participation, in your investment in us, and you are not a defined contribution or other similar benefit plan that allows participants to determine whether or how much will be invested in investments on their behalf.

(g) The certificates evidencing the Bonds will bear a legend as described in "*Transfer Restrictions*," unless we determine otherwise in compliance with applicable law.

(h) You understand and acknowledge that this Offering Memorandum is personal to you and does not constitute an offer to any other person or to the public generally to subscribe for or otherwise acquire the Bonds offered hereby.

(i) You are not purchasing the Bonds with a view to any public resale or distribution thereof.

(j) You are aware that in connection with the purchase of the Bonds:

(i) neither we nor the Initial Purchasers are acting as a fiduciary or financial or investment adviser for you;

(ii) you are not relying (for purposes of making any investment decision or otherwise) upon any of our advice, counsel or representations (whether written or oral) or that of the Initial Purchasers other than, in our case, in a current offering memorandum for such Bonds; and

(iii) neither we nor the Initial Purchasers have given to you (directly or indirectly through any other person) any assurance, guarantee, or representation whatsoever as to the expected or projected success, profitability, return, performance, result, effect, consequence, or benefit including legal, regulatory, tax, business, investment, financial, accounting and other advisers to the extent you have deemed necessary, and you made your own investment decisions based upon your own judgment and upon any advice from such advisers as you deemed necessary and not upon any view expressed by us or any Initial Purchaser.

(k) You have the legal power, authority and right to purchase the Bonds offered hereby.

(l) You understand that an investment in the Bonds involves certain risks, including the risk of loss of all or a substantial part of its investment under certain circumstances. You have had access to such financial and other information concerning us and the Bonds as you deemed necessary or appropriate in order to make an informed investment decision with respect to your purchase of the Bonds. You have sufficient knowledge and experience in financial and business matters to be capable of evaluating the merits and risks of investing in and holding the Bonds.

(m) You understand that there is no market for the Bonds and there is no assurance that such a market will develop. The Initial Purchasers are not under any obligation to make a market for the Bonds and, to the extent that such market making is commenced by the Initial Purchasers, it may be discontinued at any time, and there is no assurance that a secondary trading market for the Bonds will develop and the purchaser must be able to bear the risks of holding the Bonds until their maturity.

(n) You understand that the Bonds have not been approved or disapproved by the SEC, or any other regulatory authority, nor have they passed upon the adequacy or accuracy of this Offering Memorandum.

(o) You are aware that we, the registrar (in the event that Definitive Bonds are issued), the Initial Purchasers and their affiliates, and others will rely upon the truth and accuracy of the foregoing acknowledgements, representations and agreements. If you are acquiring any Bonds for the account of one or more persons each of whom is also a U.S. Person who is a QIB that is also a Qualified Purchaser, you represent that you have sole investment discretion with respect to each such account and that you have full power to make the foregoing acknowledgements, representations and agreements on behalf of each such account.

(p) You understand that any sale or transfer of the Bonds (or beneficial interests therein) to a person that does not comply with the requirements set forth in paragraphs (a) through (r) above will be null and void *ab initio* and not honored by us.

**Non-Permitted Holder**

If any U.S. person that is not both a QIB and a Qualified Purchaser becomes the holder or beneficial owner of an interest in any Note (any such person a "**Non-Permitted Holder**"), the Issuer shall, promptly after discovery that such person is a Non-Permitted Holder, send notice to such Non-Permitted Holder demanding that such Non-Permitted Holder transfer its interest to a person that is not a Non-Permitted Holder within 30 days after the date of such notice. If such Non-Permitted Holder fails to so transfer its Bonds, the Issuer shall have the right, without further notice to the Non-Permitted Holder, to sell such Bonds or interest in such Bonds to a purchaser selected by the Issuer that is not a Non-Permitted Holder on such terms as the Issuer may choose. The Issuer may select the purchaser by soliciting one or more bids from one or more brokers or other market professionals that regularly deal in securities similar to the Bonds and selling such Bonds to the highest such bidder. However, the Issuer may select a purchaser by any other means determined by it in its sole discretion.

Each Bondholder, as applicable, the Non-Permitted Holder and each other person in the chain of title from the holder to the Non-Permitted Holder, by its acceptance of an interest in the Bonds agrees to cooperate with the Issuer and the Transfer Agent to effect such transfers. The proceeds of such sale, net of any commissions, expenses and taxes due in connection with such sale shall be remitted to the Non-Permitted Holder. The terms and conditions of any sale shall be determined in the sole discretion of the Issuer, and the Issuer shall not be liable to any person having an interest in the Bonds sold as a result of any such sale or the exercise of such discretion.

**Legends**

Unless we determine otherwise in accordance with applicable law, we will not remove the legend described in "*Transfer Restrictions*" from the Bonds.

## LISTING AND GENERAL INFORMATION

### Listing

Application has been made to Euronext Dublin for the Bonds to be listed on the Official List and to be admitted to trading on the Global Exchange Market. It is expected that such admission will become effective on or about February 18, 2021. We will use our reasonable efforts to maintain such listing as long as the Bonds are outstanding.

The Issuer's LEI number is 549300L82YB0C6JQIC26.

Arthur Cox Listing Services Limited is acting solely in its capacity as listing agent for us in relation to the Bonds and is not itself seeking admission of the Bonds to the Official List or to trading on the Global Exchange Market.

For so long as the Bonds are listed on the Official List, electronic or printed copies of the following documents will be made available at the registered office of the Principal Paying Agent and at our registered office located at 2nd Floor Sir Walter Raleigh House, 48-50 Esplanade, St Helier, Jersey JE2 3QB:

(a) a copy of this Offering Memorandum (which includes the Independent Technical Due Diligence Report, the Wood Mackenzie Industry Report, the Issuer Financial Statements and the AssetCo Financial Statements as annexed hereto and a summary of the Model Auditor's conclusion and scope of work with regards to the Financial Model as extracted from the Model Auditor Report);

(b) our organizational documents, including the contract of establishment;

(c) our most recent audited financial statements;

(d) the Bond Trust Deed;

(e) the Agency Agreement;

(f) the Debt Service Reserve Facility Agreement;

(g) the Security Trust and Intercreditor Deed; and

(h) the security documents relating to the Bonds.

The issuance of the Bonds offered hereby was authorized by the Board of Directors of the Issuer on February 8, 2021.

We have not been involved in any governmental, legal or arbitration proceedings that may have, or has had during the twelve months preceding the date of this Offering Memorandum, a significant effect on our financial position or profitability nor, so far as we are aware, is any such proceeding pending or threatened.

As of the date of this Offering Memorandum, our most recent audited financial statements available were as of December 31, 2020 and for the period from May 26, 2020 to December 31, 2020. Except as disclosed in this Offering Memorandum, there has been no significant or material adverse change in our financial or trading position since December 31, 2020. Except as disclosed in this Offering Memorandum, there has been no significant or material adverse change in our prospects since December 31, 2020.

The Bond Trustee is Citicorp Trustee Company Limited and its principal office is at Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Principal Paying Agent and the Transfer Agent is Citibank, N.A., London Branch and its registered office is at Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Bond Trustee will be acting in its capacity of trustee for the Bondholders and will provide such services to the Bondholders as described in the Bond Trust Deed.

### Clearing Information

The Regulation S Series D Bonds have been accepted for clearance through the facilities of Euroclear and Clearstream, Luxembourg with ISIN: XS2300185613 and Common Code: 2300185613. The Rule 144A Series D Bonds have been accepted for clearance through the facilities of DTC with ISIN: US36321PAD24, Common Code: 230032629 and CUSIP number: 36321P AD2.

The Regulation S Series E Bonds have been accepted for clearance through the facilities of Euroclear and Clearstream, Luxembourg with ISIN: XS2300197030 and Common Code: 2300197030. The Rule 144A Series E Bonds have been accepted for clearance through the facilities of DTC with ISIN: US36321PAE07, Common Code: 230032556 and CUSIP number: 36321P AE0.

## INDEPENDENT AUDITORS

The financial statements of the Issuer (i) for the period from May 26, 2020 (i.e. the date of incorporation of the Issuer) to July 31, 2020 and (ii) for the period from August 1, 2020 to December 31, 2020 have been audited by Ernst & Young, Chartered Accountants, Ireland, as stated in their reports (in the case of (i), incorporated by reference in this Offering Memorandum and filed with Euronext Dublin and, in the case of (ii), included elsewhere in the Offering Memorandum).

The financial statements of AssetCo for the period from May 4, 2020 (i.e. the date of incorporation of AssetCo) to December 31, 2020, included in the Offering Memorandum, have been audited by Deloitte & Touche (M.E.), as stated in their report appearing herein.

## LEGAL MATTERS

Certain legal matters in respect of English law and United States securities law will be passed upon for the Issuer by its counsel, Latham & Watkins (London) LLP.

Certain legal matters in respect of English law and United States securities law will be passed upon for the Initial Purchasers by their counsel, Clifford Chance LLP.

Certain legal matters in respect of United Arab Emirates law will be passed upon for the Issuer by its counsel, Al Tamimi & Company.

Certain legal matters in respect of Jersey law will be passed upon for the Issuer by its counsel, Maples and Calder (Jersey) LLP.

Certain legal matters in respect Jersey law will be passed upon for the Initial Purchasers by their counsel, Carey Olsen LLP.

## INDEPENDENT CONSULTANTS

### Independent Technical Due Diligence Report

The Independent Technical Due Diligence Report, which comprises the Original Independent Technical Due Diligence Report dated March 15, 2020 and attached as "*Annex B1: Original Independent Technical Due Diligence Report*" and the Independent Technical Due Diligence Report Addendum dated February 5, 2021 and attached as "*Annex B2: Independent Technical Due Diligence Report Addendum*", has been prepared by Ryder Scott Company, L.P. (the "**Technical Adviser**") at the request of the Issuer and is included herein in reliance upon the authority of such firm as an international consulting firm that provides technical and environmental consulting services to the energy and process industries. The Technical Adviser has no material interest in the Issuer. The Technical Adviser's business address is 1100 Louisiana, Suite 4600, Houston, Texas 77002-5235. The Technical Adviser is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1937. Prior to becoming an officer, the Technical Adviser requires that staff engineers and geoscientists have received professional accreditation in the form of a registered or certified professional engineer's license or a registered or certified professional geoscientist's license, or the equivalent thereof, from an appropriate governmental authority or a recognized self-regulating professional organization. See the Independent Technical Due Diligence Report at "*Annex B1: Original Independent Technical Due Diligence Report*" and "*Annex B2: Independent Technical Due Diligence Report Addendum*" for further details.

The Independent Technical Due Diligence Report, as provided in "*Annex B1: Original Independent Technical Due Diligence Report*" and "*Annex B2: Independent Technical Due Diligence Report Addendum*", is included in the form and context in which it is included with the consent of the Technical Adviser.

The report should be read in its entirety by all prospective purchasers of the Bonds for the information contained therein with respect to us and the related matters discussed therein and any reference to or summary of any such report is qualified by reference to such report.

### Wood Mackenzie Industry Report

The Wood Mackenzie Industry Report, which comprises the Original Wood Mackenzie Industry Report dated October 14, 2020 and attached as "*Annex C1: Original Wood Mackenzie Industry Report*" and the Wood Mackenzie Industry Report Addendum dated February 5, 2021 and attached as "*Annex C2: Wood Mackenzie Industry Report Addendum*", has been prepared by Wood Mackenzie Limited ("**Wood Mackenzie**") at the request of the Issuer and is included herein in reliance upon the authority of such firm as a global energy, chemicals, renewables, metals and mining research and consultancy firm with an international reputation for supplying comprehensive data, written analysis and consultancy advice. Wood Mackenzie has no material interest in the Issuer. Wood Mackenzie's business address in London is 5th Floor, 1 Finsbury Square, London EC2A 1AE, UK. Wood Mackenzie is well known throughout the energy industry for its detailed understanding of the key issues that affect the business (for both companies and shareholders) and the assets that underpin the performance of companies. Its competence ranges from the wellhead to the consumer. It also has expert regional consultants who are in regular contact with the key decision makers in every important energy producing and consuming country, and through detailed analysis understand the issues that they face. Its upstream coverage is underpinned by field-by-field coverage in more than 120 countries. Wood Mackenzie been covering the Middle East and North Africa in their upstream research services for over fifteen years. See the Wood Mackenzie Industry Report at "*Annex C1: Original Wood Mackenzie Industry Report*" and "*Annex C2: Wood Mackenzie Industry Report Addendum*" for further details.

The Wood Mackenzie Industry Report, as provided in "*Annex C1: Original Wood Mackenzie Industry Report*" and "*Annex C2: Wood Mackenzie Industry Report Addendum*", is included in the form and context in which it is included with the consent of Wood Mackenzie.

The report should be read in its entirety by all prospective purchasers of the Bonds for the information contained therein with respect to us and the related matters discussed therein and any reference to or summary of any such report is qualified by reference to such report.

### Model Auditor Report

The Model Auditor Report has been prepared by Mazars LLP (the "**Model Auditor**") at the request of the Issuer and a summary of its conclusion with regards to the Financial Model has been included herein in reliance upon the authority of such firm as an international advisory and accountancy group. The Model Auditor has no material interest in the Issuer. The Model Auditor's business address is Tower Bridge House, St Katharine's Way, London E1W 1DD. The Model Auditor is an international, integrated and independent organization, specializing in audit, accountancy, tax, legal (where permitted under applicable country laws) and advisory services. See "*Summary of the Financial Model*" for further details on the summary of the Model Auditor's conclusion and scope of work with regards to the Financial Model.

The providers of the Independent Technical Due Diligence Report, the Wood Mackenzie Report and the Model Auditor Report have not specifically factored in the impact of COVID-19 when preparing these reports and making their conclusions. Although the lock-downs imposed in response to the COVID-19 pandemic may result in reduced consumer and industrial consumption which could result in reduced energy consumption levels which could potentially impact the revenues of the Pipelines, the risk of reduced demand from ADNOC for any or all of the Chargeable Throughput through the Pipelines does not affect its payment obligations pursuant to the MVC under the U&O Agreement. See "*Risk Factors—The recent COVID-19 pandemic and its operational and economic effects remain highly uncertain and may have a material adverse effect on AssetCo's business, financial condition, results of operations, and ability to repay our debt (including the Bonds)*".

## INDEX TO FINANCIAL STATEMENTS

**Index to Financial Statements**

# Galaxy Pipeline Assets Bidco Limited

*Company Number 131580*

Report of Directors and Financial Statements

For the financial period from 1 August 2020 to 31 December 2020

# Galaxy Pipeline Assets Bidco Limited

*Contents*

# Galaxy Pipeline Assets Bidco Limited

## Company Information

| | |
|---|---|
| **Directors** | Cleveland Stewart<br>Robert Lucas<br>Felipe Ortiz<br>Marco Bartolini<br>Camille Depoutot<br>Gregg Myers<br>Charles Thomazi<br>Martin Catchpole<br>Wooshick Kim |
| **Corporate Administrator** | Maples Fiduciary Services (Jersey) Limited<br>2nd Floor Sir Walter Raleigh House<br>48-50 Esplanade St Helier<br>JE2 3QB<br>Jersey |
| **Company Secretary** | Maples Company Secretary (Jersey) Limited<br>2nd Floor Sir Walter Raleigh House<br>48-50 Esplanade St Helier<br>JE2 3QB<br>Jersey |
| **Solicitor** | Maples and Calder (Jersey) LLP<br>2nd Floor Sir Walter Raleigh House<br>48-50 Esplanade St Helier<br>JE2 3QB<br>Jersey |
| **Registered office** | 2nd Floor Sir Walter Raleigh House, 48-50 Esplanade St Helier, JE2 3QB, Jersey |
| **Banker** | HSBC Bank PLC<br>9 Canada Square<br>London<br>E145HQ<br>United Kingdom |
| **Auditor** | Ernst & Young<br>Chartered Accountants<br>Harcourt Centre, Harcourt Street<br>Dublin 2<br>D02 YA40<br>Ireland |

# Galaxy Pipeline Assets Bidco Limited

## Report of Directors

The Directors present the audited financial statements of Galaxy Pipeline Assets Bidco Limited (the "Company") for the financial period from 1 August 2020 to 31 December 2020.

**Incorporation**

The Company was incorporated in Jersey on 26 May 2020.

**Principal activities**

The Company's principal activity is to hold investment on behalf of Galaxy Pipeline Assets Holdco Limited (the "Parent Company") and to obtain external financing.

The authorised share capital of the Company is USD5,000,000,000 divided into 5,000,000,000 shares of a par value of USD 1.00 each. The Company issued 2 shares at par on the date of incorporation to Maples Nominees (Jersey) No.1 Limited. On 1 June 2020, Maples Nominees (Jersey) No.1 Limited transferred all its shares to Galaxy Pipeline Assets Holdco Limited. On 13 July 2020, the Company issued additional 1,979,221,355 shares at par to Galaxy Pipeline Assets Holdco Limited to partly finance the investment in ADNOC Gas Pipeline Assets LLC.

On 23 June 2020, the Company entered into an Initial Bank Facilities Agreement (the "Loans Facility") with various banks. The total commitment under the Loans Facility was USD7,960,000,000 and is repayable after 24 months after the Loans Facility closing date subject to 12 months extension at the option of the Company. On 14 July 2020, the Company drew the USD7,960,000,000 to finance the equity investment in ADNOC Gas Pipeline Assets LLC which represents, in total, 47.7% of the entire issued share capital of ADNOC Gas Pipeline Assets LLC. On 03 November 2020, the Company refinanced portion of the Loans Facility by issuing the following senior secured bonds (the "Bonds") which were subsequently listed on the Global Exchange Market ("GEM") of the Euronext Dublin:

| **Series** | **Currency** | **Maturity Date** | **Principal (USD)** |
|---|---|---|---|
| A | USD | 30-Sept-2027 | 1,100,000,000 |
| B | USD | 31-Mar-2036 | 1,550,000,000 |
| C | USD | 30-Sept-2040 | 1,350,000,000 |
| Total | | | **4,000,000,000** |

The Company used the proceeds from issuance of the above Bonds to repay principal amounting to US$3,953,567,077 on the Loans Facility of which US$2,323,726,000 was paid directly to the Loans facility agent.

**Results and dividend**

The profit for the financial period, after taxation, amounted to USD370,805,704 (26 May to 31 July 2020 : loss after tax of USD171,530,068).

**Principal risks and uncertainties**

The Company, in the course of its business activities, is exposed to various risks including credit risk, market risk, liquidity risk and operational risk.

**Principal risks and uncertainties (continued)**

Credit risk is the risk of financial loss to the Company if a customer or counterparty to a financial instrument held by the Company fails to meet its contractual obligations.

Market risk is the risk that changes in market prices, such as foreign exchange rates and interest rates will affect the Company's income or the value of its holding of financial instruments.

Liquidity risk is the risk that the Company will not be able to meet its financial obligations as they fall due.

Operational risk is the risk of indirect or direct loss arising from a wide variety of causes associated with the Company's operations. The Company's objective is to manage operational risk and does so primarily by outsourcing all administration functions to a professional service provider. The Company was incorporated with the purpose of engaging in those activities outlined in the Report of Directors. All corporate administration functions are outsourced to Maples Fiduciary Services (Jersey) Limited.

The COVID-19 outbreak has developed rapidly in 2020, with a significant number of infections. Measures to prevent transmission of the virus include limiting the movement of people, temporarily closing businesses, and cancelling events, etc. This has adversely affected economic activities across the world. Governments and central banks worldwide are responding to this crisis with aid packages and further quantitative easing. At the date of this report the depth and length of this crisis is unknown. The Company is actively monitoring its financial position including market and economic turbulence that has arisen because of the COVID-19 outbreak.

The most significant risks that the Company faces are market risk, credit risk and operational risk. Separately all service providers have invoked their business continuity plans and are actively reporting to management. The Company continues to actively manage the situation as it unfolds so that it is prepared to take additional actions to mitigate the impact.

A more detailed discussion of the risks the Company is exposed to is set out in Note 17.

**Directors**

The Directors who held office during the period and subsequently at the date of this report were as follows:

Cleveland Stewart
Robert Lucas
Felipe Ortiz
Marco Bartolini
Camille Depoutot
Gregg Myers
Charles Thomazi
Martin Catchpole
Wooshick Kim

None of the Directors or Secretary who held office on 31 December 2020 held any shares, debentures, warrants or options in the Company or any group Company at that date, or during the period. Two of the current Directors are employees of the Corporate Administrator and as such had an interest in the Corporate Administration fees in their capacity as Directors.

# Galaxy Pipeline Assets Bidco Limited

## Report of Directors (continued)

**Company secretary**

The Company Secretary who held office during the period and subsequently at the date of this report was as follows:

Maples Company Secretary (Jersey) Limited

**Registered office**

The Company's registered office is at 2nd Floor Sir Walter Raleigh House, 48-50 Esplanade St Helier, JE2 3QB, Jersey.

**Going concern**

The Company's financial statements for the financial period ended 31 December 2020 have been prepared on a going concern basis. The Directors anticipate that the investment in associate will continue to generate enough cash flow on an ongoing basis to meet the Company's liabilities as they fall due. The Directors have also considered the impact of COVID-19 on the ability of the Company to continue as a going concern. The Directors anticipated that there might be negative impact on the performance of the Company in the future but the Company is still expected to operate at least 12 months from the date of approval of these financial statements due to the following reasons:

- The Company is expected to generate profit in the future based on the performance of ADNOC Gas Pipeline Assets LLC.
- The financial liability is due more than 12 months from date of approval of financial statements.
- The Company believe they will have appropriate access to the Capital Markets to access funding, as necessary.

For these reasons, the Directors believe that the going concern basis is appropriate.

**Independent Auditor**
Ernst & Young has been appointed as auditors and have indicated theirwillingness to continue in office.

**Subsequent events**

The Directors intend to make dividend distributions amounting to USD169,274,421.

There were no other subsequent events identified up to the date of approval of the financial statements which would require adjustment to, or disclosure in, the financial statements.

This report was approved by the Board of Directors and signed on behalf of the Board.

Robert Lucas

**Martin Catchpole**
*Director*

**Robert Lucas**
*Director*

Date: 26 January 2021

# Galaxy Pipeline Assets Bidco Limited

## Statement of Directors' Responsibilities

The Directors are responsible for preparing the Directors' Report and the financial statements in accordance with applicable law and regulations.

Jersey Company law requires the directors to prepare financial statements for each financial period in accordance with any generally accepted accounting principles. The financial statements of the company are required by law to give a true and fair view of the state of affairs of the company at the period end and of the profit or loss of the company for the period then ended. In preparing these financial statements, the directors should:

- select suitable accounting policies and then apply them consistently;
- make judgments and estimates that are reasonable and prudent;
- specify which generally accepted accounting principles have been adopted in their preparation; and
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the company will continue in business.

The directors are responsible for keeping accounting records which are sufficient to show and explain its transactions and are such as to disclose with reasonable accuracy at any time the financial position of the company and enable them to ensure that the financial statements prepared by the company comply with the requirements of the Companies (Jersey) Law 1991. They are also responsible for safeguarding the assets of the company and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

Robert Lucas

**Martin Catchpole**
*Director*

**Robert Lucas**
*Director*

Date: 26 January 2021

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**INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF GALAXY PIPELINE ASSETS BIDCO LIMITED**

## Opinion

We have audited the financial statements of Galaxy Pipeline Assets BidCo Limited (the "company") for the period ended 31 December 2020 which comprise the Statement of Comprehensive Income, the Statement of Financial Position, the Statement of Changes in Equity, the Statement of Cash Flows and the related notes 1 to 21, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and International Financial Reporting Standards as adopted by the European Union.

In our opinion, the financial statements:

- give a true and fair view of the state of the company's affairs as at 31 December 2020 and of its profit for the period then ended;
- have been properly prepared in accordance with International Financial Reporting Standards as adopted by the European Union; and
- have been properly prepared in accordance with the requirements of the Companies (Jersey) Law 1991.

## Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the company in accordance with the ethical requirements that are relevant to our audit of the financial statements, including the UK FRC's Ethical Standard as applied to listed entities and we have fulfilled our other ethical responsibilities in accordance with these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

## Conclusions relating to going concern

In auditing the financial statements, we have concluded that the directors' use of the going concern basis of accounting in the preparation of the financial statements is appropriate. Our evaluation of the directors' assessment of the company's ability to continue to adopt the going concern basis of accounting included corroborating the inputs used in their assessment through an independent review of the financial statements of the underlying associate and inspection of the agreements that support the company's claim over the revenue generated by the associate.

Based on the work we have performed, we have not identified any material uncertainties relating to events or conditions that, individually or collectively, may cast significant doubt on the company's ability to continue as a going concern for a period of at least twelve months from when the financial statements are authorised for issue.

Our responsibilities and the responsibilities of the directors with respect to going concern are described in the relevant sections of this report. However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the Company's ability to continue as a going concern.

# INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF GALAXY PIPELINE ASSETS BIDCO LIMITED (Continued)

## Overview of our audit approach

| | |
|---|---|
| Key audit matters | • Management override of controls over the calculation and recording of Share of Net Profit in Associate Using Equity Method. |
| Materiality | • Overall materiality of USD19,792,214 which represents 1% of Equity excluding retained earnings. |

## An overview of the scope of our audit

### Tailoring the scope

Our assessment of audit risk, our evaluation of materiality and our allocation of performance materiality determine our audit scope for the company. This enables us to form an opinion on the financial statements. We take into account size, risk profile, the organisation of the company and effectiveness of controls, including controls and changes in the business environment when assessing the level of work to be performed. All audit work was performed directly by the audit engagement team.

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## Key audit matters

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) that we identified. These matters included those which had the greatest effect on: the overall audit strategy, the allocation of resources in the audit; and directing the efforts of the engagement team. These matters were addressed in the context of our audit of the financial statements as a whole, and in our opinion thereon, and we do not provide a separate opinion on these matters.

| Risk | Our response to the risk | Key observations communicated to the Audit Committee |
|---|---|---|
| **Management override of controls over the calculation and recording of Share of Net Profit in Associate Using Equity Method.**<br><br>Share of net profit of associate accounted for using the equity method:<br><br>31 December 2020: USD209,958,599 (31 July 2020: USD46,404,208)<br><br>Investment in an associate:<br><br>31 December 2020: USD9,926,869,008 (31 July 2020: USD9,924,691,173)<br><br>Refer to the; Accounting policies (note 3(c)) (page 20); and Note 6 and 9 of the Financial Statements (page 24 and 25)<br><br>The audit team have determined that Share of net profit of associate accounted for using the equity method is a key audit matter. The measurement of share of net profit in associate accounted for using the equity method is a key driver of the company's performance and net asset value.<br><br>There is a risk that revenue may not be valued correctly. The nature and size of the balance and its importance to the Company are such that we have identified this as a key audit matter. | • Assessed the appropriateness of policies governing the accounting treatment and measurement of share of net profit in the associate.<br><br>• Obtained an understanding, evaluate and test the design effectiveness of key controls over the measurement of the share of net profit in the associate including appropriate governance procedures and management review.<br><br>• Reviewed the signed financial statements of the associate.<br><br>• Inspection of the agreements that support the company's claim over the revenue generated by the associate.<br><br>• Reviewed the mathematical accuracy of the share of revenue entitled to the company. | Our planned audit procedures were completed, and no material exceptions were noted. |

**INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF GALAXY PIPELINE ASSETS BIDCO LIMITED (Continued)**

## Our application of materiality

We apply the concept of materiality in planning and performing the audit, in evaluating the effect of identified misstatements on the audit and in forming our audit opinion.

**Materiality**
The magnitude of an omission or misstatement that, individually or in the aggregate, could reasonably be expected to influence the economic decisions of the users of the financial statements. Materiality provides a basis for determining the nature and extent of our audit procedures.

We determined materiality for the company to be USD19,792,214 (31 July 2021: USD18,076,913), which is 1% (31 July 2020: 1%) of Equity excluding retained earnings (31 July 2020: Total Equity including retained deficit). We believe that Equity is the most appropriate basis as the Shareholders of the Company are the key users of the financial statements, whose expectation will be to assess the profitability of the entity.

During the course of our audit, we reassessed initial materiality and did not change the basis or percentages used.

**Performance materiality**
The application of materiality at the individual account or balance level. It is set at an amount to reduce to an appropriately low level the probability that the aggregate of uncorrected and undetected misstatements exceeds materiality.

On the basis of our risk assessments, together with our assessment of the company's overall control environment, our judgement was that performance materiality was 50% (31 July 2020: 50%) of our planning materiality, namely USD9,896,107 (31 July 2020: USD9,038,456). We have set performance materiality at this percentage due to it being a first-year audit.

**Reporting threshold**
An amount below which identified misstatements are considered as being clearly trivial.

We agreed with the Board of Directors that we would report to them all uncorrected audit differences in excess of USD989,611 (31 July 2020: USD903,846), which is set at 5% of planning materiality, as well as differences below that threshold that, in our view, warranted reporting on qualitative grounds.

We evaluate any uncorrected misstatements against both the quantitative measures of materiality discussed above and in light of other relevant qualitative considerations in forming our opinion.

## Other information

The other information comprises the information included in the Report of Directors and Statement of Directors' Responsibilities set out on pages 3 to 6, other than the financial statements and our auditor's report thereon. The directors are responsible for the other information contained within the annual report.

Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in this report, we do not express any form of assurance conclusion thereon.

## Other information (continued)

Our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the course of the audit or otherwise appears to be materially misstated. If we identify such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in the financial statements themselves. If, based on the work we have performed, we conclude that there is a material misstatement of the other information, we are required to report that fact.

We have nothing to report in this regard.

## Matters on which we are required to report by exception

We have nothing to report in respect of the following matters in relation to which the Companies (Jersey) Law 1991 requires us to report to you if, in our opinion:

- proper accounting records have not been kept by the company, or proper returns adequate for our audit have not been received from branches not visited by us; or
- the financial statements are not in agreement with the company's accounting records and returns; or
- we have not received all the information and explanations we require for our audit

## Responsibilities of directors

As explained more fully in the directors' responsibilities statement set out on page 6, the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the company or to cease operations, or have no realistic alternative but to do so.

## Auditor's responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

### Explanation as to what extent the audit was considered capable of detecting irregularities, including fraud

Irregularities, including fraud, are instances of non-compliance with laws and regulations. We design procedures in line with our responsibilities, outlined below, to detect irregularities, including fraud. The risk of not detecting a material misstatement due to fraud is higher than the risk of not detecting one resulting from error, as fraud may involve deliberate concealment by, for example, forgery or intentional misrepresentations, or through collusion. The extent to which our procedures are capable of detecting irregularities, including fraud is detailed below.

**INDEPENDENT AUDITOR'S REPORT TO THE MEMBERS OF GALAXY PIPELINE ASSETS BIDCO LIMITED (Continued)**

**Explanation as to what extent the audit was considered capable of detecting irregularities, including fraud (continued)**

However, the primary responsibility for the prevention and detection of fraud rests with both those charged with governance of the company and management.

- We obtained an understanding of the legal and regulatory frameworks that are applicable to the company and determined that the most significant are Companies (Jersey) Law 1991 and International Financial Reporting Standards ("IFRS") as adopted by the EU;
- We understood how Galaxy Pipeline Assets BidCo Limited is complying with those frameworks by inquiring with management as to the procedures in place for ensuring compliance with the frameworks;
- We assessed the susceptibility of the company's financial statements to material misstatement, including how fraud might occur by understanding the processes of the company and identifying the key measures of the Company's performance (Share of net profit in associate);
- Based on this understanding we designed our audit procedures to identify non-compliance with such laws and regulations. Our procedures involved involving IFRS technical reviewers to assist with the review of the compliance of the company's financial statements IFRS as adopted by the EU. We also sought local Jersey assistance in relation to the aspects of the Companies (Jersey) Law 1991 that impact the preparation and presentation of financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the Financial Reporting Council's website at https://www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

## Use of our report

This report is made solely to the company's members, as a body, in accordance with Article 113A of the Companies (Jersey) Law 1991. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

***Ramakrishnan Ramanathan***
**For and on behalf of**
**Ernst & Young Chartered Accountants**
**Dublin**
**26 January 2021**

## Statement of Comprehensive Income

*For the financial period from 1 August 2020 to 31 December 2020*

| | Note | Period from 1 August 2020 to 31 December 2020 USD | Period from 26 May 2020 to 31 July 2020 USD |
|---|---|---|---|
| **Income** | | | |
| Share of net profit of associate accounted for using the equity method | *6,9* | 209,958,599 | 46,404,208 |
| Net gain on derivatives | *13* | 248,132,334 | - |
| Other income | | - | 253,422 |
| | | 458,090,933 | 46,657,630 |
| **Expenses** | | | |
| Interest expense | *7,12* | (85,774,581) | (8,424,193) |
| Net loss on derivatives | *13* | - | (209,007,306) |
| Administrative expenses | *8* | (1,510,648) | (756,199) |
| | | (87,285,229) | (218,187,698) |
| **Profit / (Loss) before taxation** | | **370,805,704** | **(171,530,068)** |
| Tax expense | *5* | - | - |
| **Profit / (Loss) after taxation** | | **370,805,704** | **(171,530,068)** |
| Other comprehensive income | | - | - |
| **Total comprehensive income / (loss) for the period** | | **370,805,704** | **(171,530,068)** |

The results above are from continuing operations.

The accompanying notes form part of these financial statements.

# Galaxy Pipeline Assets Bidco Limited

## Statement of Financial Position

*As at 31 December 2020*

| | Note | 31 December 2020 USD | 31 July 2020 USD |
|---|---|---|---|
| **Non - current assets** | | | |
| Investment in an associate | *9* | 9,926,869,008 | 9,924,691,173 |
| Derivative financial instruments | *13* | 42,988,296 | - |
| | | **9,969,857,304** | **9,924,691,173** |
| **Current assets** | | | |
| Other assets | *10* | 614,065 | 120,000 |
| Cash and cash equivalents | *11* | 186,822,232 | 4,122,008 |
| | | **187,436,297** | **4,242,008** |
| **Total assets** | | **10,157,293,601** | **9,928,933,181** |
| **Non-current liabilities** | | | |
| Financial liabilities held at amortised cost | *12* | (7,962,018,435) | (7,903,774,953) |
| Derivative financial instruments | *13* | - | (209,007,306) |
| | | (7,962,018,435) | (8,112,782,259) |
| **Current liabilities** | | | |
| Interest payable | *7* | (16,725,347) | (4,827,240) |
| Other payables | *14* | (52,826) | (3,632,393) |
| | | (16,778,173) | (8,459,633) |
| **Total liabilities** | | **(7,978,796,608)** | **(8,121,241,892)** |
| **Equity** | | | |
| Called up share capital | *15* | (1,979,221,357) | (1,979,221,357) |
| Retained (income) / deficit | | (199,275,636) | 171,530,068 |
| **Total equity** | | **(2,178,496,993)** | **(1,807,691,289)** |
| **Total liabilities and equity** | | **(10,157,293,601)** | **(9,928,933,181)** |

The accompanying notes form part of these financial statements.

This report was approved by the Board of Directors and signed on behalf of the Board:

**Martin Catchpole**
*Director*

Robert Lucas

**Robert Lucas**
*Director*

Date: 26 January 2021

## Statement of Changes in Equity

*For the financial period from 1 August 2020 to 31 December 2020*

| | **Share capital** | **Retained income / (deficit)** | **Total equity** |
|---|---|---|---|
| | **USD** | **USD** | **USD** |
| Balance at 1 August 2020 | 1,979,221,357 | (171,530,068) | 1,807,691,289 |
| Profit for the period | - | 370,805,704 | 370,805,704 |
| Other comprehensive income | - | - | - |
| Total comprehensive income for the period | - | 370,805,704 | 370,805,704 |
| Balance at 31 December 2020 | **1,979,221,357** | **199,275,636** | **2,178,496,993** |

| | **Share capital** | **Retained (deficit)** | **Total equity** |
|---|---|---|---|
| | **USD** | **USD** | **USD** |
| Balance at incorporation | - | - | - |
| Issue of share capital | 1,979,221,357 | - | 1,979,221,357 |
| Loss for the period | - | (171,530,068) | (171,530,068) |
| Other comprehensive income | - | - | - |
| Total comprehensive loss for the period | - | (171,530,068) | (171,530,068) |
| Balance at 31 July 2020 | **1,979,221,357** | **(171,530,068)** | **1,807,691,289** |

The accompanying notes form part of these financial statements.

# Galaxy Pipeline Assets Bidco Limited

## Statement of Cash Flows

*For the financial period from 1 August 2020 to 31 December 2020*

| | Note | Period from 1 August 2020 to 31 December 2020 USD | Period from 26 May 2020 to 31 July 2020 USD |
|---|---|---|---|
| **Cash flows from operating activities:** | | | |
| Profit/(loss) before taxation | | 370,805,704 | (171,530,068) |
| Adjustments for: | | | |
| Share of net profit of associate accounted for using the equity method | *6,9* | (209,958,599) | (46,404,208) |
| Interest expense | *7,12* | 51,420,700 | 4,827,240 |
| Amortisation of transaction cost on financial liabilities at amortised cost | *7,12* | 34,353,881 | 3,596,953 |
| Net gain or (loss) on derivatives | *13* | (248,132,334) | 209,007,306 |
| Increase in other assets | *10* | (494,065) | (120,000) |
| (Decrease) / Increase in other payables | *14* | (3,579,567) | 3,632,393 |
| **Net cash (used in) from operating activities** | | **(5,584,280)** | **3,009,616** |
| | | | |
| **Cash flow used in investment activities** | | | |
| Investment in associate | *9* | **-** | (9,878,286,965) |
| Proceeds from derivative settlement | *13* | 6,035,000 | - |
| Dividends received | *9* | 207,780,764 | - |
| **Net cash from / (used in) investment activities** | | **213,815,764** | **(9,878,286,965)** |
| | | | |
| **Cash flows from financing activities** | | | |
| Issue of ordinary shares | *15* | - | 1,979,221,357 |
| Proceeds from issuance of loans | *12* | - | 7,960,000,000 |
| Repayment of loans | *12* | (3,953,567,077) | - |
| Proceeds from issuance of bonds | *12* | 4,000,000,000 | - |
| Transaction cost related to issuance of loans and bonds | *12* | (22,543,322) | (59,882,000) |
| Interest paid on loans | | (39,522,593) | - |
| Swap payments | *13* | (9,898,268) | - |
| **Net cash (used in) / from financing activities** | | **(25,531,260)** | **9,879,399,357** |
| | | | |
| **Net increase in cash and cash equivalents** | | 182,700,224 | 4,122,008 |
| Cash and cash equivalents at beginning of the period | | 4,122,008 | - |
| **Cash and cash equivalents at end of the period** | *11* | **186,822,232** | **4,122,008** |

The accompanying notes form part of these financial statements.

## 1. General information

**Company background**

The Company was incorporated in Jersey on 26 May 2020. The Company's principal activity is to hold investment on behalf of the parent entity and to obtain external financing.

The authorised share capital of the Company is USD5,000,000,000 divided into 5,000,000,000 shares of a par value of USD 1.00 each. . The Company issued 2 shares at par on the date of incorporation. On 13 July 2020, the Company issued additional 1,979,221,355 shares at par to partly finance the investment on ADNOC Gas Pipeline Assets LLC.

On 23 June 2020, the Company entered into an Initial Bank Facilities Agreement ("the Loans Facility") with various banks. The total commitment under the Loans Facility was USD7,960,000,000 and is repayable after 24 months after the Loans Facility closing date subject to extension. On 14 July 2020, the Company drew the USD7,960,000,000 to finance the equity investment in ADNOC Gas Pipeline Assets LLC which represents, in total, 47.7% of the entire issued share capital of ADNOC Gas Pipeline Assets LLC. On 03 November 2020, the Company refinanced portion of the Loans Facility by issuing the following senior secured bonds (the "Bonds") which were subsequently listed on the GEM of the Euronext Dublin:

| Series | Currency | Maturity Date | Principal (USD) |
|---|---|---|---|
| A | USD | 30-Sept-2027 | 1,100,000,000 |
| B | USD | 31-Mar-2036 | 1,550,000,000 |
| C | USD | 30-Sept-2040 | 1,350,000,000 |
| Total | | | **4,000,000,000** |

The Company used the proceeds from issuance of the above Bonds to repay principal amounting to US$3,953,567,077 on the Loans Facility.

## 2. Basis of preparation

### (a) Statement of compliance

These financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRSs") as adopted by the European Union ("EU").

The financial statements have been prepared on a going concern basis.

The Company's first accounting period was from 26 May 2020 (date of incorporation) up to 31 July 2020. The first set of accounts were prepared to meet the listing requirements on ("GEM") of the Euronext Dublin. Subsequent to this, the Company will prepare the accounts every 31 December in line with the accounting period set out in the memorandum and articles of association. Due to the difference in the accounting periods, the amounts presented are not entirely comparable.

### (b) Basis of measurement

The financial statements have been prepared on the historical cost basis except for derivatives, which are carried at fair value.

## 2. Basis of preparation (continued)

### (c) Functional and presentation currency

These financial statements are presented in USD, the functional currency of the Company. Functional currency is the currency of the primary economic environment in which the entity operates. The Directors of the Company believe that USD most faithfully represents the economic effects of underlying transactions, events and conditions as the loans and share capital issued by the Company are denominated in USD.

### (d) Use of judgements and estimates

The preparation of the financial statements requires management to make judgments, estimates and assumptions that may affect the application of accounting policies and the reported amounts of assets, liabilities, income and expenses. Actual results may differ from these estimates. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised and in any future periods affected.

**Key sources of estimation uncertainty**

The following are the key assumptions concerning the future and other key sources of estimation uncertainty at the reporting date that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial.

*Fair value of derivatives*

The fair value of derivative financial instruments is obtained from the swap counterparties that use their proprietary valuation model that takes into account the notional amount, maturity date and any early redemption clause. The valuation includes assumptions that are mainly based on market conditions existing at the end of each reporting period. The carrying value of the derivatives are disclosed in Note 13.

### (e) Accounting standards, amendments and interpretations

**New standards, amendments and interpretations**

The Company has adopted all accounting standards applicable to the Company and effective as to incorporation date.

**New standards, amendments and interpretations not yet adopted**

*Amendments to IFRS 9, IAS 39, IFRS 7, IFRS 4 and IFRS 16 Interest Rate Benchmark Reform – Phase 2 (issued on 27 August 2020, effective from 1 January 2021)*

The Phase 2 amendments provide practical relief from certain requirements in the standards to ease adoption of alternative interest rate benchmarks. These reliefs relate to modifications of financial instruments, lease contracts or hedge relationships when a benchmark interest rate in a contract is replaced with a new alternative benchmark rate. The Phase 2 amendments also require disclosure of the effect of interest rate benchmark reform on an entity’s financial instruments and risk management strategy

**2. Basis of preparation (continued)**

**(e) Accounting standards, amendments and interpretations (continued)**

**New standards, amendments and interpretations not yet adopted (continued)**

This amendment does will not impact the balance of the Company. However, the replacement of the USD LIBOR as basis for the variable floating rate financial instruments will impact future interest cash flows. The financial impact cannot be quantified as at 31 December 2020.

Apart from above, a number of new standards and amendments to standards and interpretations are effective for annual periods beginning on or after 1 January 2021, and have not been applied in preparing these financial statements. None of these standards are expected to have a significant effect on the financial statements of the Company.

**3. Accounting policies**

**(a) Foreign currency transactions**

Transactions in foreign currencies are translated to the functional currency of the Company at exchange rates at the dates of the transactions. Monetary assets and liabilities denominated in foreign currencies at the reporting date are retranslated to the functional currency at the exchange rate at that date.

The foreign currency gain or loss on monetary items is the difference between amortised cost in the functional currency at the beginning of the period, adjusted for effective interest and payments during the period and the amortised cost in foreign currency translated at the exchange rate at the end of the period.

Non-monetary assets and liabilities denominated in foreign currencies that are measured at fair value are retranslated to the functional currency at the exchange rate at the date that the fair value was determined.

Foreign currency differences arising on retranslation or settlement of foreign denominated balances are recognised in the Statement of Comprehensive Income.

**(b) Taxation**

Tax is recognised in the profit and loss account, except that a charge attributable to an item of income and expense recognised as other comprehensive income or to an item recognised directly in equity is also recognised in other comprehensive income or directly in equity respectively.

The current income tax charge is calculated on the basis of tax rates and laws that have been enacted or substantively enacted by the reporting date in the countries where the company operates and generates income.

**(c) Investment in an associate**

Associates are those entities in which the Company has significant influence, but not control or joint control, over the financial and operating policies.

**3. Accounting policies (continued)**

**(c) Investment in an associate (continued)**

The Company's investment in associate is accounted for using the equity method. Under the equity method, the investment in an associate is initially recognised at cost plus transaction costs. Transaction cost includes all costs directly attributable to the acquisition of the investment. Subsequently, the carrying amount of the investment is adjusted to recognise the Company's share of the post-acquisition profits or losses of the associate in profit or loss, and the Company's share of movements in other comprehensive income of the associate in other comprehensive income. Dividends received or receivable from the associate is recognised as a reduction in the carrying amount of the investment.

After application of the equity method, the Company determines whether it is necessary to recognise an impairment loss on its investment in its associate. At each reporting date, the Company determines whether there is objective evidence that the investment in the associate is impaired. If there is such evidence, the Company calculates the amount of impairment as the difference between the recoverable amount of the investment in associate and its carrying value, and then recognises the loss in the Statement of Comprehensive Income.

Upon loss of significant influence over the associate, the Company measures and recognises any retained investment at its fair value. Any difference between the carrying amount of the investment in associate upon loss of significant influence and the fair value of the retained investment and proceeds from disposal is recognised in profit or loss.

**(d) Financial instruments**

The financial instruments held by the Company include the following:

- Financial assets; and
- Financial liabilities.

**Classification**

In accordance with IFRS 9, the Company classifies its financial assets and financial liabilities at initial recognition into the categories of financial assets and financial liabilities discussed below.

In applying that classification, a financial asset or financial liability is considered to be held for trading if:

a) It is acquired or incurred principally for the purpose of selling or repurchasing it in the near term; or
b) On initial recognition, it is part of a portfolio of identified financial instruments that are managed together and for which, there is evidence of a recent actual pattern of short-term profit-taking; or
c) It is a derivative (except for a derivative that is a financial guarantee contract or a designated and effective hedging instrument).

*Financial assets*

The Company classifies its financial assets as subsequently measured at amortised cost or measured at fair value through profit or loss on the basis of both:

- The entity's business model for managing the financial assets; and
- The contractual cash flow characteristics of the financial asset.

**3. Accounting policies (continued)**

**d) Financial instruments (continued)**

**Classification (continued)**

*Financial assets measured at amortised cost*
A debt instrument is measured at amortised cost if it is held within a business model whose objective is to hold financial assets in order to collect contractual cash flows and its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding. The Company includes in this category cash and cash equivalents and receivables.

*Financial assets measured at fair value through profit or loss (FVTPL)*
Under IFRS 9, a financial asset is measured at fair value through profit or loss if:

a) Its contractual terms do not give rise to cash flows on specified dates that are solely payments of principal and interest (SPPI) on the principal amount outstanding; or
b) It is not held within a business model whose objective is either to collect contractual cash flows, or to both collect contractual cash flows and sell; or
c) At initial recognition, it is irrevocably designated as measured at FVTPL when doing so eliminates or significantly reduces a measurement or recognition inconsistency that would otherwise arise from measuring assets or liabilities or recognising the gains and losses on them on different bases.

The Company includes in this category its derivative financial instruments in asset position.

*Financial liabilities*

*Financial liabilities measured at FVTPL*
A financial liability is classified as at FVTPL if it is classified as held-for-trading, it is a derivative or it is designated as such on initial recognition. The Company includes in this category derivative contracts in a liability position.

*Financial liabilities measured at amortised cost*
The Company's financial liabilities at amortised cost include interest payable, other payables, bonds and loans.

**Recognition**

The Company recognises a financial asset or a financial liability when it becomes a party to the contractual provisions of the instrument.

Purchases or sales of financial assets that require delivery of assets within the time frame generally established by regulation or convention in the market place (regular way trades) are recognised on the trade date, i.e., the date that the Company commits to purchase or sell the asset.

**Initial measurement**

Financial assets and financial liabilities at FVTPL are recorded in the statement of financial position at fair value. All transaction costs for such instruments are recognised directly in profit or loss.

Financial assets and liabilities (other than those classified as at FVTPL) are measured initially at their fair value plus or minus any directly attributable incremental costs of acquisition or issue.

**3. Accounting policies (continued)**

**d) Financial instruments (continued)**

**Subsequent measurement**

After initial measurement, the Company measures financial instruments which are classified as at FVTPL, at fair value. Subsequent changes in the fair value of those financial instruments are recorded in net change in fair value of financial assets and liabilities at FVTPL in the Statement of Comprehensive Income. Interest earned or paid on these instruments is recorded separately in interest income or expense in the Statement of Comprehensive Income.

Derivatives are subsequently re-measured at fair value. Gains and losses arising from changes in the fair value of derivatives are included in the Statement of Comprehensive Income in the financial period in which they arise. Fair value is determined by the swap counterparties.

Financial assets and liabilities, other than those classified as at FVTPL, are measured at amortised cost using the effective interest method. Gains and losses are recognised in profit or loss when the assets and liabilities are derecognised, as well as through the amortisation process.

**Derecognition**

A financial asset (or, where applicable, a part of a financial asset or a part of a group of similar financial assets) is derecognised where the rights to receive cash flows from the asset have expired, or the Company has transferred its rights to receive cash flows from the asset, or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a pass-through arrangement and the Company has:

a) Transferred substantially all of the risks and rewards of the asset; or
b) Neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

When the Company has transferred its right to receive cash flows from an asset (or has entered into a pass-through arrangement), and has neither transferred nor retained substantially all of the risks and rewards of the asset nor transferred control of the asset, the asset is recognised to the extent of the Company's continuing involvement in the asset. In that case, the Company also recognises an associated liability. The transferred asset and the associated liability are measured on a basis that reflects the rights and obligations that the Company has retained.

The Company derecognises a financial liability when the obligation under the liability is discharged, cancelled or expired. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as the derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognised in the statement of profit or loss.

In the current year, the Company refinanced a portion of the Loans Facility by issuing the senior secured bonds. The Company derecognised the refinanced portion of the Loans Facility including the related unamortised transaction cost. The unamortised transaction cost relating to derecognised portion of the Loans Facility is included in the Statement of Comprehensive Income under Interest Expense.

**3. Accounting policies (continued)**

**(d) Financial instruments (continued)**

**Offsetting**

Financial assets and liabilities are offset and the net amount presented in the Statement of Financial Position when, and only when, the Company has a legal right to offset the amounts and intends either to settle on a net basis or to realise the asset and settle the liability simultaneously. Income and expenses are presented on a net basis only when permitted by the accounting standards, or for gains and losses arising from a group of similar transactions.

**(e) Cash and cash equivalents**

Cash and cash equivalents includes cash in hand, deposits held at call with banks, other short-term highly liquid investments with original maturities of three months or less and bank overdrafts.

**(f) Share capital**

Ordinary shares are classified as equity. Incremental costs directly attributable to the issue of new ordinary shares or options are shown in equity as a deduction, net of tax, from the proceeds.

**(g) Interest expense**

Interest expense includes interest on the financial liabilities which is recognised in the Statement of Comprehensive Income using the effective interest rate method, and amortisation of loan transaction cost which is amortised over the life of the loan using the effective interest rate method.

**(h) Income and expenses**

All other income and expenses are accounted for on an accruals basis.

**4. Determination of fair value**

The determination of fair value for financial assets and financial liabilities for which there is no observable market price requires the use of valuation techniques. For financial instruments that trade infrequently and have little price transparency, fair value is less objective, and requires varying degrees of judgement depending on liquidity, concentration, uncertainty of market factors, pricing assumptions and other risks affecting the specific instrument.

***Fair value measurement principles***

The Company’s financial instrument carried at fair value include interest rate swaps.

The fair value of the interest rate swaps is determined by reference to the swap counterparty valuation. The interest rate swap is valued by projecting the future cash flows for each payment date using the contracted interest rate. The cash flows are discounted to the valuation date using a discount factor interpolated off a zero coupon yield curve of the respective currency.

**5. Tax expense**

The Company is subject to Jersey income taxation at 0%.

## 6. Share of net profit of associate accounted for using the equity method

| | 1 August 2020 to 31 December 2020 USD | 26 May to 31 July 2020 USD |
|---|---|---|
| Share of net profit of associate accounted for using the equity method | 209,958,599 | 46,404,208 |
| | **209,958,599** | **46,404,208** |

## 7. Interest expense

| | 1 August 2020 to 31 December 2020 USD | 26 May to 31 July 2020 USD |
|---|---|---|
| Interest expense | (51,420,700) | (4,827,240) |
| Amortisation of transaction cost on financial liabilities at amortised cost | (34,353,881) | (3,596,953) |
| | **(85,774,581)** | **(8,424,193)** |

Interest payable outstanding at period end amounted to USD16,725,347 (July 2020: USD4,827,240) .

## 8. Administrative expenses

| | 1 August 2020 to 31 December 2020 USD | 26 May to 31 July 2020 USD |
|---|---|---|
| Professional and legal fees | - | (695,978) |
| Corporate administration fees | (127,461) | (23,385) |
| Rating fees | (615,840) | - |
| Other expenses | (721,902) | (4,567) |
| Audit fees | (45,445) | (32,269) |
| | **(1,510,648)** | **(756,199)** |

The Company is administered by the Corporate Administrator and has no employees. The Corporate Administrator provides two directors to the Company as part of its service under the corporate service agreement. See Note 19 for details. The Directors did not receive any remuneration during the period.

## 9. Investment in an associate

| | 1 August 2020 to 31 December 2020 USD | 26 May to 31 July 2020 USD |
|---|---|---|
| At the beginning of the period | 9,924,691,173 | - |
| Additions during the period | - | 9,878,286,965 |
| Share of net profit of associate accounted for using the equity method | 209,958,599 | 46,404,208 |
| Dividend distribution received | (207,780,764) | - |
| At the end of the period | 9,926,869,008 | 9,924,691,173 |

**9. Investment in an associate (continued)**

The Company holds 47.7% of the share capital of ADNOC Gas Pipeline Assets LLC, a company incorporated in the Emirate of Abu Dhabi. ADNOC Gas Pipeline Assets LLC holds a lease over 38 gas pipelines in the United Arab Emirates.

The table below provides the summarised financial information of ADNOC Gas Pipeline Assets LLC as at 31 December 2020 (audited) and 31 July 2020 (unaudited) prepared under IFRS.

| **Balance sheet** | **31 December 2020 USD** | **31 July 2020 USD** |
|---|---|---|
| Assets | | |
| Non-current assets | | |
| Financial assets | 20,809,786,025 | 20,805,257,297 |
| Current assets | | |
| Other receivables | 2,723 | 2,723 |
| Cash | 140,000 | - |
| Total assets | 20,809,928,748 | 20,805,260,020 |
| | | |
| Liabilities | | |
| Current liabilities | 115,000 | 11,962 |
| | | |
| Equity | | |
| Share capital | 20,707,964,602 | 20,707,964,601 |
| Retained earnings | 101,849,146 | 97,283,457 |
| Total equity | 20,809,813,748 | 20,805,248,058 |
| | | |
| Total liabilities and equity | 20,809,928,748 | 20,805,260,020 |
| | | |
| Company share in the net equity of the associate | 47.7% | 47.7% |
| | 9,926,281,158 | 9,924,103,323 |
| Translation difference at the date of acquisition | 587,850 | 587,850 |
| Investment in an associate | 9,926,869,008 | 9,924,691,173 |

| **Income Statement** | **31 August 2020 to 31 December 2020 USD** | **23 June 2020 to 31 July 2020 USD** |
|---|---|---|
| Finance income | 440,267,813 | 97,295,419 |
| Administrative expenses | (103,038) | (11,962) |
| Net income | 440,164,775 | 97,283,457 |
| | | |
| % of shares held | 47.7% | 47.7% |
| Company's share of the net profit of associate | 209,958,599 | 46,404,209 |

During the period, the Company received dividends from the associate amounting to USD207,780,764 (period ended July 2020 : nil).

In the opinion of the Directors, the shares in the Company's associate are worth at least the amounts at which they are stated above with no indication of impairment. Therefore, no impairment recorded.

## 10. Other assets

| | 31 December 2020 USD | 31 July 2020 USD |
|---|---|---|
| Prepayments | 614,065 | - |
| Receivables from a third party | - | 120,000 |
| | **614,065** | **120,000** |

## 11. Cash and cash equivalents

| | 31 December 2020 USD | 31 July 2020 USD |
|---|---|---|
| Cash at bank | 186,822,232 | 4,122,008 |
| | 186,822,232 | 4,122,008 |

As at 31 December 2020, the bank accounts are held with HSBC Bank PLC. Refer to note 17(b) for credit risk disclosure relating to cash and cash equivalents.

## 12. Financial liabilities at amortised cost

| | 31 December 2020 USD | 31 July 2020 USD |
|---|---|---|
| Loans | (3,984,210,475) | (7,903,774,953) |
| Bonds | (3,977,807,960) | - |
| | (7,962,018,435) | (7,903,774,953) |

Movement in financial liabilities at amortised cost

| *31 December 2020* | Loans USD | Bonds USD | Total USD |
|---|---|---|---|
| *Principal* | | | |
| At the beginning of the period | (7,960,000,000) | - | (7,960,000,000) |
| Additions during the period | - | (4,000,000,000) | (4,000,000,000) |
| Repayments during the period | 3,953,567,077 | - | 3,953,567,077 |
| As at end of the period | (4,006,432,923) | (4,000,000,000) | (8,006,432,923) |
| *Capitalised transaction cost* | | | |
| At the beginning of the period | 56,225,047 | - | 56,225,047 |
| Additions during the period | 53,760 | 22,489,562 | 22,543,322 |
| Amortisation during the period | (34,056,359) | (297,522) | (34,353,881) |
| | 22,222,448 | 22,192,040 | 44,414,488 |
| Financial liabilities at amortised cost, net | (3,984,210,475) | (3,977,807,960) | (7,962,018,435) |

## 12. Financial liabilities at amortised cost (continued)

| *31 July 2020* | Loans<br>USD | Bonds<br>USD | Total<br>USD |
|---|---|---|---|
| *Principal* | | | |
| At the beginning of the period | - | - | - |
| Additions during the period | (7,960,000,000) | - | (7,960,000,000) |
| As at end of the period | (7,960,000,000) | - | (7,960,000,000) |
| *Capitalised transaction cost* | | | |
| At the beginning of the period | - | - | - |
| Additions during the period | 59,822,000 | - | 59,822,000 |
| Amortisation during the period | (3,596,953) | - | (3,596,953) |
| | 56,225,047 | | 56,225,047 |
| Financial liabilities at amortised cost, net | (7,903,774,953) | - | (7,903,774,953) |

On 23 June 2020, the Company entered into an Initial Bank Facilities Agreement ("the Loans Facility") with various banks. The total commitment under the Loans Facility was USD7,960,000,000 and is repayable after 24 months after the Loans Facility closing date subject to 12 months extension at the option of the Company. The Loans Facility bears variable interest based on US LIBOR plus spread of 0.95% per annum for the first 12 months, 1.30% per annum after 12 months up to 24 months, 1.6% per annum after 24 months up to 30 months and 2.0% after 30 months. The interest is payable on a quarterly basis.

On 14 July 2020, the Company drew down the USD7,960,000,000 to finance the investment on ADNOC Gas Pipeline Assets LLC.

On 03 November 2020, the Company refinanced portion of the Loans Facility by issuing the following senior secured bonds (the "Bonds") which were subsequently listed on the GEM of the Euronext Dublin:

| Series | Currency | Interest rate | Maturity Date | Principal (USD) |
|---|---|---|---|---|
| A | USD | 1.75% | 30-Sept-2027 | 1,100,000,000 |
| B | USD | 2.63% | 31-Mar-2036 | 1,550,000,000 |
| C | USD | 3.25% | 30-Sept-2040 | 1,350,000,000 |
| Total | | | | **4,000,000,000** |

The Company used the proceeds from issuance of the above Bonds to repay principal amounting to US$3,953,567,077 on the Loans Facility of which US$2,323,726,000 was paid directly to the Loans facility agent.

Interest on Bonds is payable on semi-annual basis every 31 March and 30 September each year commencing on 31 March 2021.

## 13. Derivative financial instruments

| | 31 December 2020<br>USD | 31 July 2020<br>USD |
|---|---|---|
| Interest rate swaps | 42,988,296 | (209,007,306) |
| | 42,988,296 | (209,007,306) |

**13. Derivative financial instruments (continued)**

The Company uses derivative financial instruments to economically hedge its risks associated primarily with interest rates and does not designate any derivative as a hedging instrument for hedge accounting purposes.

In July 2020, the Company entered into pay fixed receive floating interest rate swaps to mitigate the interest rate exposure arising on its Loans Facility, which bears floating interest rate based on US LIBOR.

Below are the details of the interest rate swap at the date of inception and at 31 July 2020:

| Currency | Notional Amount | Maturity date | Description |
|---|---|---|---|
| USD | 5,434,000,000 | 28 September 2040 | Pay fixed/received floating |
| USD | 2,526,000,000 | 30 September 2040 | Pay fixed/received floating |

The swaps cover approximately 100% of the variable loan principal outstanding. The fixed interest rate payable on the swap is 0.87%, and the variable rate on both the swap and the loans for the first interest period is 0.33%.

The swap contracts require settlement of net interest receivable or payable every 90 days (with the exception of the first settlement which is an extended period and aligns with the Loans Facility). The settlement dates coincide with the dates on which interest is payable on the underlying loans.

In November 2020, the Company partially paid the Loans Facility. As a result, the Company pre-terminated the hedges related to paid portion of the Loans Facility. The net gain on the pre-terminated hedges was USD 6,035,000.

The details of the derivatives as at 31 December 2020 are as follow:

| Currency | Notional Amount | Maturity date | Description |
|---|---|---|---|
| USD | 2,654,130,548 | 28 September 2040 | Pay fixed/received floating |
| USD | 1,305,869,452 | 30 September 2040 | Pay fixed/received floating |

The table below shows the fair value movement on the Company's derivatives:

| | **31 December 2020 USD** | **31 July 2020 USD** |
|---|---|---|
| Net fair value gain / (loss) during the period - unrealised | 251,995,602 | (209,007,306) |
| Swap payments | (9,898,268) | - |
| Gain on pre-terminated swaps | 6,035,000 | - |
| Total | 248,132,334 | (209,007,306) |

The fair value movement of the derivatives is included under "Net gain / (loss) on derivatives" in the Statement of Comprehensive Income.

**14. Other payables**

| | 31 December 2020 USD | 31 July 2020 USD |
|---|---|---|
| Legal and professional fees payable | - | (3,577,000) |
| Other accruals | (52,826) | (55,393) |
| | (52,826) | (3,632,393) |

Legal and professional fees are non-interest bearing and are payable on demand.

**15. Share capital**

| | 31 December 2020 USD | 31 July 2020 USD |
|---|---|---|
| **Authorised** | | |
| 5,000,000,000 ordinary shares of USD1 each | 5,000,000,000 | 5,000,000,000 |
| | 5,000,000,000 | 5,000,000,000 |
| **Allotted, called up and fully paid** | | |
| 1,979,221,357 ordinary shares of USD1 each | 1,979,221,357 | 1,979,221,357 |
| | 1,979,221,357 | 1,979,221,357 |

All of the Company's shares are subscribed and held by Galaxy Pipeline Assets Holdco Limited. 1,979,221,357 ordinary shares were issued at USD1 each.

**16. Ownership of the Company**

The Company is a wholly owned subsidiary of Galaxy Pipeline Assets Holdco Limited, its immediate and ultimate parent. Galaxy Pipeline Assets Holdco Limited is a limited liability company incorporated in Jersey.

**17. Financial risk and capital management**

**Financial risk management**

The Directors have overall responsibility for the establishment and oversight of the Company's risk management framework.

The Company has exposure to the following risks from its use of financial instruments:

- Market risk;
- Credit risk;
- Liquidity risk; and
- Operational risk.

**17. Financial risk and capital management (continued)**

**Financial risk management (continued)**

This note presents information about the Company's exposure to each of the above risks, the Company's objectives, policies and processes for measuring and managing risk and the Company's management of capital.

**a) Market risk**

Market risk is the risk that the fair values or future cash flows of a financial instrument will fluctuate because of changes in market prices. Market risk comprises of 3 types of risk:

- Interest rate risk
- Currency risk
- Other price risk

i. Interest rate risk

Interest rate risk is the risk that the fair value of future cash flows of a financial instrument will fluctuate because of changes in market interest rates. Longer term obligations are usually more sensitive to interest rate changes.

At the reporting date, the interest rate risk profile of the Company's financial instruments is as follows:

| **31 December 2020** | **Floating rate (USD)** | **Fixed rate (USD)** | **Non-interest bearing (USD)** | **Total (USD)** |
|---|---|---|---|---|
| Other assets | - | - | 614,065 | 614,065 |
| Cash and cash equivalents | 186,822,232 | - | - | 186,822,232 |
| Total assets | 186,822,232 | - | 614,065 | 187,436,297 |
| Financial liabilities held at amortised cost | (3,984,210,475) | (3,977,807,960) | - | (7,962,018,435) |
| Interest payable | - | - | (16,725,347) | (16,725,347) |
| Other payable | - | - | (52,826) | (52,826) |
| Total liabilities | (3,984,210,475) | (3,977,807,960) | (16,778,173) | (7,978,796,608) |
| **Net exposure** | **(3,797,988,243)** | **(3,977,807,960)** | **(16,164,108)** | **(7,791,960,311)** |

**17. Financial risk and capital management (continued)**

**a) Market risk (continued)**

i. Interest rate risk (continued)

| **31 July 2020** | **Floating rate (USD)** | **Fixed rate (USD)** | **Non-interest bearing (USD)** | **Total (USD)** |
|---|---|---|---|---|
| Receivables | - | - | 120,000 | 120,000 |
| Cash and cash equivalents | 4,122,008 | - | - | 4,122,008 |
| Total assets | 4,122,008 | - | 120,000 | 4,242,008 |
| Financial liabilities held at amortised cost | (7,903,774,953) | - | - | (7,903,774,953) |
| Interest payable | - | - | (4,827,240) | (4,827,240) |
| Other payable | - | - | (3,632,393) | (3,632,393) |
| Total liabilities | (7,903,774,953) | - | (8,459,633) | (7,912,234,586) |
| **Net exposure** | **(7,899,652,945)** | **-** | **(8,339,633)** | **(7,907,992,578)** |

As at 31 December 2020, the Company held variable rate Loan Facilities based on US LIBOR. To mitigate the interest rate risk arising from variable rate Loan Facilities, the Company entered into pay fixed receive floating interest rate swaps with various derivative counterparty banks. The receive floating interest on the interest rate swaps effectively offsets the floating interest rate on the Loan Facilities.

*Sensitivity analysis*
The sensitivity analysis below has been determined based on the Company's exposure to interest rates for interest bearing assets and liabilities at the reporting date and the stipulated change taking place at the beginning of the financial year and held constant throughout the reporting year in the case of instruments that have floating rates.

A 100 basis point increase or decrease represents management's assessment of a reasonable possible change in interest rates.

If interest rates had been 100 basis points higher and all other variables were held constant, the annual interest expense on the financial liabilities at amortised cost would have increased by USD40,064,329 (31 July 2020: USD79,600,000) whereas annual interest received on interest rate swap would have increased by USD40,064,329 (31 July 2020: USD79,600,000). As the Company placed a hedge on the full principal amount of the floating interest rate Loan Facilities, the interest rate risk exposure is reduced to minimal level.

If interest rates had been 100 basis points higher and all other variables were held constant, the annual interest income on the cash and cash equivalents have increased by USD1,868,222. No sensitivity analysis is performed for cash and cash equivalents as at 31 July 2020 as the Company’s interest rate risk exposure is not material.

## 17. Financial risk and capital management (continued)

### a) Market risk (continued)

ii. Currency risk

Currency risk is the risk which arises due to the assets and liabilities of the Company held in foreign currencies, which will be affected by fluctuations in foreign exchange rates.

The Company did not hold any foreign currency denominated financial assets or liabilities as at 31 December 2020 and 31 July 2020.

iii. Other price risk

Price risk is the risk that the value of financial instruments will fluctuate as a result of changes in market prices (other than those arising from interest rate risk or currency risk), whether caused by factors specific to an individual investment, its Company or all factors affecting all instruments traded in the market.

Other price risks may include risks such as equity price risk, commodity price risk, prepayment risk (i.e. the risk that one party to a financial asset will incur a financial loss because the other party repays earlier or later than expected), and residual value risk.

The Company is not exposed to other price risk as at 31 December 2020 and 31 July 2020.

### b) Credit risk

Credit risk is the risk of financial loss to the Company if a Counterparty to a financial instrument fails to meet its contractual obligations and arises principally from the Company's assets. The Company's principal financial assets are cash and cash equivalents and derivative financial instruments, which represents the Company's maximum exposure to credit risk.

| | **31 December 2020 USD** | **31 July 2020 USD** |
|---|---|---|
| Cash and cash equivalents | 186,222,232 | 4,122,008 |
| Derivative financial instruments | 42,988,296 | - |
| Other receivables | - | 120,000 |
| | **229,210,528** | **4,242,008** |

The Company's cash and cash equivalents comprise bank accounts held with HSBC Bank PLC. The credit rating of HSBC Bank PLC based on S&P was A-1.

The Company's derivative financial instruments are held with the same counterparty banks providing loan to the Company under the Loans Facility. These counterparty banks are reputable and have good credit standing.

**17. Financial risk and capital management (continued)**

**c) Liquidity risk**

Liquidity risk is the risk that the Company will encounter difficulty in meeting the obligations associated with its financial liabilities that are settled by delivering cash or another financial asset and thus, the Company will not be able to meet its financial obligations as they fall due.

The following are the contractual maturities of financial assets and liabilities including undiscounted interest payments and excluding the impact of netting agreements:

| **31 December 2020** | **Carrying amount (USD)** | **Gross contractual cash flows (USD)** | **Less than one year (USD)** | **Between one to five years (USD)** | **More than five years (USD)** |
|---|---|---|---|---|---|
| Financial liabilities at amortised cost | (7,962,018,435) | (9,691,783,701) | (149,355,042) | (4,420,838,590) | (5,121,590,069) |
| Interest payable | (16,725,347) | (16,725,347) | (16,725,347) | - | - |
| Other payables | (52,826) | (52,826) | (52,826) | - | - |
| | **(7,978,796,608)** | **(9,708,561,874)** | **(166,133,215)** | **(4,420,838,590)** | **(5,121,590,069)** |

| **31 July 2020** | **Carrying amount (USD)** | **Gross contractual cash flows (USD)** | **Less than one year (USD)** | **Between one to five years (USD)** | **More than five years (USD)** |
|---|---|---|---|---|---|
| Financial liabilities at amortised cost | (7,903,774,953) | (8,171,994,315) | (89,808,315) | (8,082,186,000) | - |
| Derivative financial liabilities | (209,007,306) | (211,220,841) | (44,451,840) | (164,560,141) | (2,208,860) |
| Interest payable | (4,827,240) | (4,827,240) | (4,827,240) | - | - |
| Other payables | (3,632,393) | (3,623,393) | (3,623,393) | - | - |
| | **(8,121,241,892)** | **(8,391,665,789)** | **(142,710,788)** | **(8,246,746,141)** | **(2,208,860)** |

ADNOC Gas Pipeline Assets LLC holds a lease over 38 gas pipelines in the United Arab Emirates. The Company will share from the net profits of ADNOC Gas Pipeline Assets LLC having owned 47.7% of the latter's total issued shares. The profit generated from ADNOC Gas Pipeline Assets LLC will be used to pay the Company's liabilities as they fall due.

**d) Operational risk**

Operational risk is the risk of direct or indirect loss arising from a wide variety of causes associated with the Company's processes, personnel and infrastructure, and from external factors other than credit, market and liquidity risks such as those arising from legal and regulatory requirements and generally accepted standards of corporate behaviour.

Operational risk arises from all of the Company's operations. The Company was incorporated with the purpose of engaging in those activities outlined in note 1. All management and administration functions are outsourced to Maples Fiduciary Services (Jersey) Limited.

## 17. Financial risk and capital management (continued)

### d) Operational risk (continued)

The recent outbreak of the global novel coronavirus ("COVID-19") pandemic had a material adverse impact on the economies of many countries and has adversely affected global commercial activity. The rapid development and fluidity of this situation precludes any prediction as to its ultimate impact, but the COVID-19 crisis is expected to have a continuing and significant adverse effect on economic and market conditions and trigger a period of global economic slowdown. Such conditions (which may be across industries, sectors or geographies) may impact the Company's business operation and the operating performance of its investment in the near term.

### Capital management

For the purpose of the Company's capital management, capital includes issued capital, bonds and loan issued as disclosed in Note 15 and 12, respectively. The primary objective of the Company's capital management is to maximise the shareholder value.

The Company manages its capital structure and makes adjustments in light of changes in economic conditions and the requirements of the financial covenants. To maintain or adjust the capital structure, the Company may adjust the dividend payment to shareholders, return capital to shareholders or issue new shares. The Company is not subject to externally imposed capital requirement during the period.

## 18. Fair value

The fair value of a financial asset and financial liability is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.

The carrying amounts of all the Company's financial assets and financial liabilities at the reporting date approximated their fair values.

The Company's derivative financial instruments are carried at fair value on the Statement of financial position. The fair value of the financial instruments can be reliably determined within a reasonable range of estimates.

The Company's financial instruments carried at fair value are analysed below by valuation method. The different levels have been defined as follows:

- Level 1: Quoted market price in an active market for an identical instrument.
- Level 2: Valuation techniques based on observable inputs. This category includes instruments valued using: quoted market prices in active markets for similar instruments; quoted prices for similar instruments in markets that are considered less than active; or other valuation techniques where all significant inputs are directly or indirectly observable from market data.
- Level 3: Valuation techniques using significant unobservable inputs. This category includes all instruments where the valuation technique includes inputs not based on observable data and the unobservable inputs could have a significant effect on the instrument's valuation. This category includes instruments that are valued based on quoted prices for similar instruments where significant unobservable adjustments or assumptions are required to reflect differences between the instruments.

## 18. Fair value (continued)

The following table provides the fair value measurement hierarchy of the Company's instruments carried at fair value.

*Fair value hierarchy for assets and liabilities measured at fair value*

| 31 December 2020 | Level 1 (USD) | Level 2 (USD) | Level 3 (USD) | Total (USD) |
|---|---|---|---|---|
| Derivatives financial assets | - | 42,988,296 | - | 42,988,296 |
| **Total** | **-** | 42,988,296 | - | 42,988,296 |

| 31 July 2020 | Level 1 (USD) | Level 2 (USD) | Level 3 (USD) | Total (USD) |
|---|---|---|---|---|
| Derivatives financial liabilities | - | (209,007,307) | - | (209,007,307) |
| **Total** | **-** | (209,007,307) | - | (209,007,307) |

The fair value of derivative financial instruments is obtained from the swap counterparties which uses its proprietary valuation model that takes into account the notional amount, maturity date and any early redemption clause. The valuation includes assumptions that are mainly based on market conditions existing at the end of each reporting period.

*Assets and liabilities not carried at fair value*
The fair value of the receivables, interest payable and other payable approximates their fair values given the short term nature of these financial instruments.

The financial liabilities held at amortised cost comprise loans and bonds issued by the Company. The loans bears floating interest rate which resets on a quarterly basis. The bonds were issued towards the end balance sheet date and the movement in the interest rates are not significant from the date of issue to the balance sheet date.

The fair value of the financial liabilities held at amortised cost approximates its carrying value.

There were no transfers between Level 1, Level 2 and Level 3 during the period.

## 19. Related party transactions

The Company considers the Company Secretary and the Corporate Administrator as related parties. The Board of Directors are responsible for the day-to-day management and administration of the Company. The Board is comprised of nine Directors, two of whom are employees of the Corporate Administrator.

During the period, the Company incurred fees of USD127,461 (31 July 2020: USD 4,567) related to the provision of corporate administration and company secretarial services provided by the Corporate Administrator and Company Secretary. There were no outstanding fees as at 31 December 2020.

**19. Related party transactions (continued)**

The Corporate Administrator provides Directors to the Company as part of its service under the corporate service agreement and as such the Directors had an interest in the Corporate Administration fees in their capacity as directors.

In July 2020, the Company issued 1,979,221,357 ordinary shares to Parent Company at par.

**20. Subsequent events**

The Directors intend to make dividend distributions amounting to USD169,274,421.

There were no subsequent events identified up to the date of approval of the financial statements which would require adjustment to, or disclosure in, the financial statements.

**21. Approval of the financial statements**

The financial statements were approved by the Board of Directors on 26 January 2021.

**ADNOC GAS PIPELINE ASSETS L.L.C.**

**Reports and financial statements for the period from 4 May 2020 (date of incorporation) to 31 December 2020**

**ADNOC GAS PIPELINE ASSETS L.L.C.**

**Reports and financial statements**
**for the period from 4 May 2020 (date of incorporation) to 31 December 2020**

## Directors' report
## for the period from 4 May 2020 (date of incorporation) to 31 December 2020

The Directors have the pleasure of submitting their report, together with the audited financial statements of ADNOC Gas Pipeline Assets L.L.C. ("the Company") for the period from 4 May 2020 (date of incorporation) to 31 December 2020.

### Principal activities

The principal activities of the Company are to lease ownership interest in certain pipelines, grant use and operations rights of such pipelines to Abu Dhabi National Oil Company ("ADNOC"), collect tariff payments in respect of such pipelines, procure certain administrative services and undertake any other business activities ancillary to the aforementioned activities.

### Results and appropriations

Income for the period was USD 537.6 million and profit for the period was USD 537.4 million.

### Release

The Directors release from liability the management and the external auditor in connection with their duties for the period from 4 May 2020 (date of incorporation) to 31 December 2020.

### Auditor

Deloitte & Touche (M.E.) have expressed their willingness to be re-appointed as auditor for the year ending 31 December 2021.

**On behalf of the Board of Directors**

____________________

**Date**: 14 January 2021

Deloitte.

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# INDEPENDENT AUDITOR'S REPORT TO THE BOARD OF DIRECTORS OF ADNOC GAS PIPELINE ASSETS L.L.C.

## REPORT ON THE FINANCIAL STATEMENTS

### Opinion

We have audited the financial statements of ADNOC Gas Pipeline Assets L.L.C. ("the Company"), which comprise the statement of financial position as at 31 December 2020, and the statement of profit or loss and other comprehensive income, statement of changes in equity and statement of cash flows for the period from 4 May 2020 (date of incorporation) to 31 December 2020, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Company as at 31 December 2020, and its financial performance and its cash flows for the period then ended in accordance with International Financial Reporting Standards (IFRSs) as issued by the International Accounting Standards Board.

### Basis for Opinion

We conducted our audit in accordance with International Standards on Auditing (ISAs). Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Company in accordance with the International Ethics Standards Board for Accountants' Code of Ethics for Professional Accountants (IESBA Code) together with the other ethical requirements that are relevant to our audit of the Company's Financial Statements in the United Arab Emirates, and we have fulfilled our other ethical responsibilities in accordance with these requirements and the IESBA Code. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

### Other Information

Management is responsible for the other information. The other information comprises the Directors' report which we obtained prior to the date of this auditor's report. The other information does not include the financial statements and our auditor's report thereon.

Our opinion on the financial statements does not cover the other information and we do not express any form of assurance or conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated.

If, based on the work we have performed on the other information that we obtained prior to the date of this auditor's report, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Deloitte.

**INDEPENDENT AUDITOR'S REPORT TO THE BOARD OF DIRECTORS OF ADNOC GAS PIPELINE ASSETS L.L.C. (CONTINUED)**

**Responsibilities of Management and Those Charged with Governance for the Financial Statements**

Management is responsible for the preparation and fair presentation of the financial statements in accordance with IFRSs and its preparation in compliance with the applicable provisions of the memorandum of association of the Company, and for such internal control as management determines is necessary to enable the preparation of financial statements that is free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Company's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Company or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Company's financial reporting process.

**Auditor's Responsibilities for the Audit of the Financial Statements**

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISAs, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risk, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than the one resulting from error, as fraud may involve collusion, forgery, intentional omission, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Company's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Company to cease to continue as a going concern.

Deloitte.

**INDEPENDENT AUDITOR'S REPORT TO THE BOARD OF DIRECTORS OF ADNOC GAS PIPELINE ASSETS L.L.C. (CONTINUED)**

**Auditor's Responsibilities for the Audit of the Financial Statements (continued)**

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

Deloitte & Touche (M.E.)

R. Padman

Rama Padmanabha Acharya
Registration Number 701
14 January 2021
Abu Dhabi,
United Arab Emirates

## Statement of financial position
## as at 31 December 2020

| | Notes | USD' 000 |
|---|---|---|
| **ASSETS** | | |
| **Non-current asset** | | |
| Financial asset | 5 | 20,809,786 |
| **Current assets** | | |
| Other receivable | 6 | 3 |
| Cash and cash equivalents | 7 | 140 |
| **Total current assets** | | 143 |
| **Total assets** | | 20,809,929 |
| **EQUITY AND LIABILITIES** | | |
| Share capital | 8 | 20,707,965 |
| Retained earnings | | 101,849 |
| **Total equity** | | 20,809,814 |
| **Current liabilities** | | |
| Accrued expenses | | 115 |
| **Total equity and liabilities** | | 20,809,929 |

**Chief Executive Officer** **Director**

The accompanying notes form an integral part of these financial statements.

**Statement of profit or loss and other comprehensive income**
**for the period from 4 May 2020 (date of incorporation) to 31 December 2020**

| | Note | USD' 000 |
|---|---|---|
| Financial income | 5 | 537,563 |
| General and administrative expenses | | (115) |
| **Profit and total comprehensive income for the period** | | **537,448** |

The accompanying notes form an integral part of these financial statements.

**Statement of changes in equity**
**for the period from 4 May 2020 (date of incorporation) to 31 December 2020**

| | Share capital USD' 000 | Retained earnings USD' 000 | Total equity USD' 000 |
|---|---|---|---|
| Balance at incorporation on 4 May 2020 | - | - | - |
| Share capital introduced | 3 | - | 3 |
| Issuance of additional share capital (note 8) | 20,707,962 | - | 20,707,962 |
| Profit for the period | - | 537,448 | 537,448 |
| Dividend paid | - | (435,599) | (435,599) |
| **Balance as at 31 December 2020** | **20,707,965** | **101,849** | **20,809,814** |

The accompanying notes form an integral part of these financial statements.

**Statement of cash flows**
**for the period from 4 May 2020 (date of incorporation) to 31 December 2020**

| | USD' 000 |
|---|---|
| **Operating activities** | |
| Profit for the period | **537,448** |
| Adjustments for: | |
| Finance income | **(537,563)** |
| **Net cash used in operating activities before movements in working capital** | **(115)** |
| Increase in accrued expense | **115** |
| Settlement of financial asset – tariff collections | **435,739** |
| **Net cash generated from operating activities** | **435,739** |
| **Financing activities** | |
| Dividend paid | **(435,599)** |
| **Net increase in cash and cash equivalents** | **140** |
| Cash and cash equivalents at the beginning of the period | **-** |
| **Cash and cash equivalents at the end of the period (note 7)** | **140** |

Significant non-cash investing and financing transactions that have been excluded from the statement of cash flows are as follows:

| | |
|---|---|
| Issuance of share capital (notes 1 and 8) | **20,707,962** |

The accompanying notes form an integral part of these financial statements.

**Notes to the financial statements**
**for the period from 4 May 2020 (date of incorporation) to 31 December 2020**

## 1 Introduction

ADNOC Gas Pipeline Assets – Sole Proprietorship L.L.C. was incorporated on 4 May 2020 and registered in the Emirate of Abu Dhabi with its principal place of business at P.O. Box 898, ADNOC Head Quarters Complex, Abu Dhabi, United Arab Emirates. At the date of incorporation the Company was a wholly-owned subsidiary of ADNOC Gas Pipelines Holdco LLC ("Holdco"), a company ultimately owned by Abu Dhabi National Oil Company ("ADNOC") through a wholly owned intermediate holding company, ADNOC Infrastructure LLC. The initial share capital of the Company was comprised of 10,000 ordinary shares of AED 1 (USD 0.2723) each, which was subsequently consolidated to 1 share with a nominal value of AED 10,000 (USD 2,723). The name of the Company was changed to ADNOC Gas Pipeline Assets L.L.C. (the "Company") on 15 July 2020.

The principal activities of the Company are to lease ownership interest in certain pipelines, grant use and operations rights of such pipelines to Abu Dhabi National Oil Company ("ADNOC"), collect tariff payments in respect of such pipelines, procure certain administrative services and undertake any other business activities ancillary to the aforementioned activities.

On 23 June 2020, the Company entered into a Pipelines Lease Agreement ("Lease Agreement") and Pipelines Use and Operations Agreement ("U&O Agreement") with ADNOC in relation to ADNOC's ownership interest in 38 onshore pipelines ("the Pipelines"). Under the Lease Agreement, ADNOC's ownership interest in the Pipelines has been leased to the Company for twenty years for a total consideration of USD 20,705,143 thousand to be paid upfront as a single lump sum. The payment of the consideration was satisfied by the Company allotting and issuing to ADNOC Gas Pipelines Holdco LLC 7,604,099 ordinary shares of AED 10,000 (USD 2,723) each in the share capital of the Company. The shares were issued subsequent to the increase in the share capital of the Company from 1 share with nominal value of AED 10,000 (USD 2,723) to 7,605,000 shares of AED 10,000 (USD 2,723) each.

Under the U&O Agreement, ADNOC retains the right to use, manage and operate the Pipelines for the transportation of gas. Accordingly, the Company agreed to grant ADNOC such rights of use, and to appoint ADNOC to manage and operate the Pipelines for a consideration for the payment of a tariff of USD 0.57 per MMBtu. This tariff is subject to a minimum volume commitment ("MVC") of 75% of baseline supply forecast stipulated in the U&O Agreement. ADNOC therefore became the sole custodian and controller of the pipelines leased to the Company under the Lease Agreement bearing the risk of loss of, and damage to, the pipelines.

Contemporaneously, ADNOC Gas Pipelines Holdco LLC entered into various share purchase agreements awarding respective shareholding interests in the Company to additional investors. Accordingly, the ownership of the Company is comprised as follows:

| Investors | Shareholding interests |
|---|---|
| ADNOC Gas Pipelines Holdco LLC | 51.0% |
| Galaxy Pipeline Assets Bidco Limited | 47.7% |
| NH Galaxy Pipeline Bidco Limited | 1.3% |

The effective date of completion of the above contracts was 16 July 2020. In addition on 15 October 2020, ADNOC Infrastructure LLC, a wholly owned subsidiary of ADNOC sold a 20% stake in ADNOC Gas Pipelines Holdco Limited to Galaxy II Investment Holding Limited. Despite the changes in shareholding interests aforementioned, the Company continues to be a subsidiary of ADNOC Gas Pipelines Holdco LLC as at the date of the statement of financial position.

In addition, ADNOC Gas Pipelines Holdco Limited also continues to be a subsidiary of ADNOC.

**Notes to the financial statements**
**for the period from 4 May 2020 (date of incorporation) to 31 December 2020 (continued)**

## 2 Application of new and revised International Financial Reporting Standards ("IFRSs")

### 2.1 New and amended IFRSs in issue but not yet effective and not early adopted

In the current period, the Company has applied the following amendments to IFRSs issued by the International Accounting Standards Board ("IASB") that are mandatorily effective for an accounting period that begins on or after 1 January 2020. The adoption of these amendments did not have a material impact on the financial statements.

- **Amendments to references to the Conceptual Framework in IFRS standards**
  Amendments to References to the Conceptual Framework in IFRS Standards related IFRS 2, IFRS 3, IFRS 6, IFRS 14, IAS 1, IAS 8, IAS 34, IAS 37, IAS 38, IFRIC 12, IFRIC 19, IFRIC 20, IFRIC 22, and SIC-32 to update those pronouncements with regard to references to and quotes from the framework or to indicate where they refer to a different version of the Conceptual Framework.

- **Definition of Business - amendments to IFRS 3**
  The amendments clarify that to be considered a business, an integrated set of activities and assets must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create output. IASB also clarify that a business can exist without including all of the inputs and processes needed to create outputs. That is, the inputs and processes applied to those inputs must have 'the ability to contribute to the creation of outputs' rather than 'the ability to create outputs'.

- **Definition of Material – amendments to IAS 1 and IAS 8; and**
  The new definition states that, 'Information is material if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity.'

- **Interest Rate Benchmark Reform – amendments to IFRS 9, IAS 39 and IFRS 7**
  The amendments in Interest Rate Benchmark Reform (Amendments to IFRS 9, IAS 39 and IFRS 7) clarify that entities would continue to apply certain hedge accounting requirements assuming that the interest rate benchmark on which the hedged cash flows and cash flows from the hedging instrument are based will not be altered as a result of interest rate benchmark

- **Covid-19-Related Rent Concessions – amendments to IFRS 16**
  The amendment provides lessees with an exemption from assessing whether a COVID-19-related rent concession is a lease modification. This is effective for periods beginning on or after 1 June 2020.

### 2.2 New and amended IFRSs in issue but not yet effective and not early adopted

The Company has not applied the following new and revised IFRS that have been issued but are not yet effective.

- Classification of Liabilities as Current or Non-Current – amendments to IAS 1 (effective from 1 January 2022);
- Property, Plant and Equipment – Proceeds before Intended Use – amendments to IAS 16 (effective from 1 January 2022);
- Onerous Contracts — Cost of Fulfilling a Contract – amendments to IAS 37 (effective from 1 January 2022);
- IFRS 17: Insurance Contracts (effective from 1 January 2021)

**Notes to the financial statements**
**for the period from 4 May 2020 (date of incorporation) to 31 December 2020 (continued)**

## 2 Application of new and revised International Financial Reporting Standards ("IFRSs") (continued)

### 2.2 New and amended IFRSs in issue but not yet effective and not early adopted (continued)

Management anticipates that these new standards will be adopted in the Company's financial statements as and when they are applicable. Management does not expect the adoption of the standards listed above to have a material impact on the Company's financial statements.

## 3 Summary of significant accounting policies

### 3.1 Statement of compliance

The financial statements have been prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board (IFRSs).

### 3.2 Basis of preparation

The financial statements have been prepared on the historical cost basis except that certain financial instruments are recorded at fair value. Historical cost is generally based on the fair value of the consideration given in exchange for assets.

These financial statements represent the first reporting period of the Company for the period from 4 May 2020 to 31 December 2020 (the "period"), hence comparative figures are not presented.

The principal accounting policies adopted are set out below.

**Foreign currencies**

For the purpose of these financial statements, United States Dollars (USD) is the functional and the presentation currency of the Company.

Transactions in currencies other than USD (foreign currencies) are recorded at the rates of exchange prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are retranslated at the rates prevailing at the end of each reporting period. Non-monetary items that are measured in terms of historical cost in a foreign currency are not retranslated.

Exchange differences are recognised in profit and loss in the period in which they arise.

## Notes to the financial statements
## for the period from 4 May 2020 (date of incorporation) to 31 December 2020 (continued)

### 3 Summary of significant accounting policies (continued)

**Financial instruments**

Financial assets and financial liabilities are recognised in the Company's statement of financial position when the Company becomes a party to the contractual provisions of the instrument.

Financial assets and financial liabilities are initially measured at fair value. Transaction costs that are directly attributable to the acquisition or issue of financial assets and financial liabilities (other than financial assets and financial liabilities at fair value through profit or loss) are added to or deducted from the fair value of the financial assets or financial liabilities, as appropriate, on initial recognition. Transaction costs directly attributable to the acquisition of financial assets or financial liabilities at fair value through profit or loss are recognised immediately in profit or loss.

**Financial assets**

All recognised financial assets are measured subsequently in their entirety at either amortised cost or fair value, depending on the classification of the financial assets.

*Impairment of financial assets*

The Company recognises a loss allowance for expected credit losses (ECL) on amounts due from a related party and cash and cash equivalents. The amount of expected credit losses is updated at each reporting date to reflect changes in credit risk since initial recognition of the respective financial instrument. Amounts due from a related party and cash and cash equivalents were immaterial at 31 December 2020 and accordingly no ECL provision was recorded.

*Derecognition of financial assets*

A financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) is primarily derecognised (i.e., removed from the Company's statement of financial position) when:

- The contractual rights to receive cash flows from the asset have expired; or
- The Company has transferred the asset and substantially all the risks and rewards of ownership of the asset.

When the Company has transferred its rights to receive cash flows from an asset or has entered into a pass-through arrangement, it evaluates if, and to what extent, it has retained the risks and rewards of ownership. When it has transferred the asset and has neither transferred nor retained substantially all of the risks and rewards of the asset, nor transferred control of the asset, the Company continues to recognise the transferred asset to the extent of its continuing involvement. In that case, the Company also recognises an associated liability. The transferred asset and the associated liability are measured on a basis that reflects the rights and obligations that the Company has retained. Continuing involvement that takes the form of a guarantee over the transferred asset is measured at the lower of the original carrying amount of the asset and the maximum amount of consideration that the Company could be required to repay.

## 3 Summary of significant accounting policies (continued)

**Financial instruments (continued)**

**Financial liabilities and equity instruments**

All financial liabilities are measured subsequently at amortised cost using the effective interest method.

The effective interest method is a method of calculating the amortised cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments (including all fees and points paid or received that form an integral part of the effective interest rate, transaction costs and other premiums or discounts) through the expected life of the financial liability, or (where appropriate) a shorter period, to the amortised cost of a financial liability.

*Derecognition of financial liabilities*

The Company derecognises financial liabilities when, and only when, the Company's obligations are discharged, cancelled or have expired. The difference between the carrying amount of the financial liability derecognised and the consideration paid and payable is recognised in profit or loss.

**Offsetting of financial instruments**

Financial assets and financial liabilities are offset and the net amount reported in the statement of financial position if there is a currently enforceable legal right to offset the recognised amounts and there is an intention to settle on a net basis, or to realise the assets and settle the liabilities simultaneously.

**Other revenues**

*Finance income*

Finance income is accrued on a time basis, by reference to the outstanding principal and at the effective interest rate applicable.

## 4 Critical judgments and key sources of estimation uncertainty

In the application of the Company's accounting policies, which are described in note 3 to these financial statements, management is required to make judgements, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and other factors that are considered to be relevant. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period, or in the period of the revision and future periods if the revision affects both current and future periods.

## 4 Critical judgments and key sources of estimation uncertainty (continued)

### Critical judgments in applying accounting policies

The following are the critical judgements that the management has made in the process of applying the Company's accounting policies and that have the most significant effect on the amounts recognised in the financial statements.

*Financial asset recognition and measurement*

Based on the contracts in place between ADNOC and the Company, management have determined that the U&O Agreement gives rise to a financial asset as opposed to property, plant and equipment. This is on the basis there will be a contractual right to receive cash from ADNOC and the Company does not control the underlying assets. Refer note 1 for further details.

The cash flows on the financial asset are not expected to be solely payments of interest and principal and as a result the financial asset is measured at fair value with gains and losses recognised in profit and loss.

*Classification of share capital*

In reaching a judgment as to whether the share capital should be classified as a financial liability or equity, management has considered the wide discretion of the Board of Directors of the Company to determine whether there exists a contractual obligation to make dividend payments to the shareholders. Management has concluded that the terms of the Shareholders' Agreement and the memorandum of association provide the Company with discretion over dividend payments. Accordingly, management has concluded that the share capital does not represent a contractual obligation on the Company to deliver cash and therefore should be classified as equity rather than as a financial liability within the financial statement.

### Key sources of estimation uncertainty

The key assumptions concerning the future and other key sources of estimation uncertainty at the end of reporting period that have a significant risk of causing a material adjustment to the carrying amount of assets and liabilities within the next financial year, is discussed below:

*Fair valuation of financial asset*

The fair value of the financial asset has been calculated at initial recognition assuming the following:

- A 20-year term from inception, to ensure that the value recognised (the fair value) equates to the value implied by the amount paid by the third party shareholders that acquired a non-controlling interest in the Company;
- Subsequent cash flows are based on management's model of future cash flows which are determined by the estimated volumes that are expected to flow through the Pipelines, subject to a minimum pay-out of 75% and a maximum pay-out of 100% of a predetermined baseline forecast ("Baseline Forecast") as envisaged in the U&O Agreement. Volumes in excess of the Baseline Forecast can be carried forward to future periods in which the tariffed supplies fall below the Baseline Forecast;
- Management estimate actual volumes will exceed the Baseline Forecast for the life of the U&O Agreement based on the fact that ADNOC have historically produced volumes higher than those contractually stipulated; and

**Notes to the financial statements**
**for the period from 4 May 2020 (date of incorporation) to 31 December 2020 (continued)**

## 4 Critical judgments and key sources of estimation uncertainty (continued)

**Key sources of estimation uncertainty (continued)**

*Fair valuation of financial asset (continued)*

- A discount rate of 5.17% was used to discount future cash flows assuming that the risk profile of the cash flows is also consistent throughout the term, to yield a value equal to the consideration being paid.

There have been no changes to these assumptions in calculating the fair value of the financial asset as at 31 December 2020.

Had the discount rate been higher or lower by 1%, the fair value of the financial asset as at 31 December 2020 would have been lower by USD 1,729,626 thousand or higher by USD 1,528,350 thousand respectively.

Although management do not consider a shortfall in the baseline forecast to be reasonably possible, had the forecast volume been lower than the Baseline Forecast by 10%, the fair value of the financial asset as at 31 December 2020 would have been lower by USD 2,080,979 thousand. An increase of 10% would have no impact on the fair value.

## 5 Financial asset measured at FVTPL

| | **USD'000** |
|---|---|
| Financial asset | **20,809,786** |

Financial asset relates to the right to the cash flows expected from the tariff based on the U&O Agreement. The fair value is determined by discounting future expected cash flows at a 5.17% discount rate. Future cash flows are based on management's estimate of volumes expected to flow through the pipelines.

The movement in the fair value of the financial asset is noted below:

| | **USD'000** |
|---|---|
| Balance as at 4 May 2020 (date of incorporation) | - |
| Recognised during the period (note 1) | **20,707,962** |
| Fair value measurement (recognised as finance income) | **537,563** |
| Settlement of financial asset – tariff collections | **(435,739)** |
| **Balance as at 31 December 2020** | **20,809,786** |

Further details on the fair value measurement are provided in note 9.

**Notes to the financial statements**
**for the period from 4 May 2020 (date of incorporation) to 31 December 2020**

## 6 Related parties

Related parties represent the Government of Abu Dhabi and related departments and institutions, associated companies, joint ventures, shareholders, directors, and key management personnel of the Company and those entities in which they have the ability to control and exercise significant influence in financial and operating decisions. As at 31 December 2020, the Company is party to certain contracts with ADNOC (refer to note 1).

The Company has a receivable balance of USD 3 thousand relating to the issuance of the initial share capital of the company at incorporation, to ADNOC Gas Pipelines Holdco LLC which was receivable at 31 December 2020.

Cash and cash equivalents are held with a local bank, which is owned by the Government of Abu Dhabi.

During the period, the Board of Directors proposed dividends amounting to USD 435.6 million in accordance with the Company's Memorandum of Associations and the Shareholders' Agreement.

All dividends are fully paid as at 31 December 2020.

## 7 Cash and cash equivalents

| | **USD'000** |
|---|---|
| Cash and cash equivalents | **140** |

Cash and cash equivalents are assessed to have low credit risk of default since these represent balances with banks that are highly regulated by the central banks of the respective countries. Accordingly, management of the Company estimates the loss allowance on balances with banks at the end of the reporting period at an amount equal to 12 month ECL. None of the balances with banks at the end of the reporting period are past due, and taking into account the historical default experience and the current credit ratings of the bank, the management of the Company have assessed that there is no impairment, and hence have not recorded any loss allowances on these balances.

## 8 Share capital

At inception, the Company was a wholly owned subsidiary of ADNOC Gas Pipelines Holdco LLC, a company ultimately owned by Abu Dhabi National Oil Company ("ADNOC"). The initial share capital of the Company was comprised of 10,000 ordinary shares of AED 1 (USD 0.2723) each, which was subsequently consolidated to 1 share with a nominal value of AED 10,000 (USD 2,723).

During the period and subsequent to the consolidation mentioned above, the registered capital of the Company was increased to AED 76,050,000 thousand (USD 20,707,965 thousand) divided into 7,605,000 shares with a par value of AED 10,000 (USD 2,723) each.

## 8 Share capital (continued)

All the shares have been subscribed, paid and distributed among the shareholders as follows:

| | Number of shares | Amount USD'000 | % of ownership |
|---|---|---|---|
| ADNOC Gas Pipelines HoldCo Sole Proprietorship LLC | 3,878,550 | 10,561,062 | 51.0% |
| Galaxy Pipeline Assets Bidco Limited | 3,627,585 | 9,877,699 | 47.7% |
| NH Galaxy Pipeline Bidco Limited | 98,865 | 269,204 | 1.3% |
| Authorised, issued and fully paid | **7,605,000** | **20,707,965** | **100%** |

## 9 Financial instruments

### Fair values

Management considers that the fair values of financial assets and financial liabilities in the financial statement approximate their carrying values at the reporting date.

### Fair value hierarchy

The Company uses the following hierarchy for determining and disclosing the fair value of financial instruments by valuation technique:

*Level 1:* Quoted (unadjusted) prices in active markets for identical assets or liabilities.

*Level 2:* Other techniques for which all inputs which have a significant effect on the recorded fair value are observable, either directly or indirectly.

*Level 3:* Techniques which use inputs which have a significant effect on the recorded fair value that are not based on observable market data.

| | USD'000 | Level 1 USD'000 | Level 2 USD'000 | Level 3 USD'000 |
|---|---|---|---|---|
| **31 December 2020** | | | | |
| **Financial asset measured at fair value** | | | | |
| Financial asset (note 5) | **20,809,786** | **-** | **-** | **20,809,786** |

There have been no transfers between categories within the fair value hierarchy during the period. The key assumptions and other key sources of estimation uncertainty affecting the fair value of the financial asset measured at fair value have been disclosed in note 4 to these financial statements.

## 9 Financial instruments (continued)

**Financial risk management objectives**

The Company is exposed to the following risks related to financial instruments- credit risk and liquidity risk. The risks are monitored by management on a continuous basis. Further, liquidity and credit risks are associated with ADNOC which is the parent company and due to their operations the liquidity and credit risk are assessed to be very low The Company does not enter into or trade financial instruments, investment in securities, including derivative financial instruments, for speculative or risk management purposes.

**Credit risk**

Credit risk refers to the risk that a counterparty will default on its contractual obligations resulting in financial loss to the Company, and arises principally from the credit risk associated with the financial asset measured at FVTPL. Management has determined that the expected credit loss on balances due from a related party and financial asset measured at FVTPL to be insignificant considering that these mainly relate to ADNOC and its group companies. Fitch Ratings has given ADNOC Group a standalone credit rating of AA+ and a long-term issuer default rating of AA with a stable outlook, in line with the sovereign rating of Abu Dhabi. All balances with banks represents the commercial banks in UAE. Balances with banks are assessed to have low credit risk of default since these banks are regulated by the Central Bank of the UAE.

**Liquidity risk**

Liquidity risk is the risk that the Company will be unable to meet its funding requirements. Ultimate responsibility for liquidity risk management rests with the management, which has built an appropriate liquidity risk management framework for the management of the Company’s short, medium and long-term funding and liquidity management requirements.

The Company’s objective is to maintain a balance between continuity of funding and flexibility through the use of cash from operations. Sufficient cash is bring generated through tariff collections and accordingly a portion of it is distributed to shareholders in the form dividends keeping the liquidity of the Company intact. As a result, the liquidity risk for the Company is assessed to be low.

## 10 COVID-19 impact

The rapid spread of the coronavirus disease (“Covid-19”) across the globe is causing disruptions to businesses and economic activity. This rapid spread lead to a macro-economic uncertainty with regards to prices and demand for oil, gas and products (along with the large associated volatility in commodity markets). The outbreak comes with unpredictable human and economic consequences and its evolution remains unknown at the date of issuance of these financial statements. Management does not expect the impact of Covid-19 to materially impact the future cash flows the Company expects to receive from the U&O Agreement with ADNOC. Management continues to monitor the situation as it evolves.

## 11 Approval of the Financial Statements

The financial statements were reviewed and recommended by the directors to the Shareholders for their approval on 14 January 2021.

## ANNEX A: GLOSSARY OF CERTAIN GENERAL TERMS

"**2012 Law**" means the Security Interests (Jersey) Law 2012.

"**2030 Economic Vision**" means the Abu Dhabi Economic Vision 2030 which, together with the Policy Agenda, articulates the Government of Abu Dhabi's development strategy.

"**Accession Memorandum**" means each memorandum to be entered into pursuant to clause 2 of the Security Trust and Intercreditor Deed and which is substantially in the form set out in Part 1 (*Form of Accession Memorandum (Additional Secured Creditors)*) of Schedule 1 (*Form of Accession Memoranda*) to the Security Trust and Intercreditor Deed.

"**Accounting Principles**" means IFRS as issued by the International Accounting Standards Board.

"**Acquisition**" means the acquisition by the Issuer of AssetCo Shares pursuant to the Acquisition Agreement.

"**Acquisition Agreement**" means the sale and purchase agreement dated on or about June 23, 2020 between, amongst others, ADNOC HoldCo as seller and the Issuer as purchaser in relation to the Acquisition.

"**Acquisition Documents**" means the Acquisition Agreement, the Share Transfer Agreement, the Escrow Agreement, and the Seller's Guarantee (as such terms are defined in the Acquisition Agreement (in its original form)).

"**ADIC**" means Abu Dhabi Investment Council.

"**ADMA-OPCO**" means the Abu Dhabi Marine Operating Company.

"**ADNOC**" means Abu Dhabi National Oil Company, a company duly established and existing under Law No. 7 of 1971 of Abu Dhabi with its principal place of business at P.O. Box 898, ADNOC Head Quarters Complex, Abu Dhabi, United Arab Emirates.

"**ADNOC Change of Control**" has the meaning given to it under paragraph 8(d) of *"Summary of Shareholders' Agreement – Disposal of shares in AssetCo*".

"**ADNOC HoldCo**" means ADNOC Gas Pipelines Holdco LLC, a company duly established and existing in the Emirate of Abu Dhabi with its principal place of business at P.O. Box 898, ADNOC Head Quarters Complex, Abu Dhabi, United Arab Emirates or, if applicable, any other person who acquires all of AssetCo Shares owned by ADNOC HoldCo and accedes to the Shareholders' Agreement as "**ADNOC HoldCo**" from time to time in accordance with the terms of the Shareholders' Agreement.

"**ADNOC HoldCo Material Breach**" means the occurrence of material breaches of certain provisions of the Shareholders' Agreement by ADNOC HoldCo or an ADNOC HoldCo group transferee.

"**ADNOC Infrastructure**" means ADNOC Infrastructure LLC.

"**ADNOC Onshore**" means Abu Dhabi Company for Onshore Petroleum Operations Limited.

"**ADQ**" means Abu Dhabi Developmental Holding Company, which was rebranded as ADQ.

"**Affiliate**" of any specified Person means any other Person, directly or indirectly controlling, controlled by, or under direct or indirect common control with, such specified Person. For purposes of this definition, "control" (including, with correlative meanings, the terms "controlling", "controlled by" and "under common control with"), as applied to any Person, means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of such Person, whether through the ownership of voting securities, by contract or otherwise, provided that ownership of 10 per cent. of the voting securities of any Person shall be deemed to be control. "Affiliate" shall include funds advised by the specific Person.

"**Agency**" means any agency, authority, central bank, department, committee, government, legislature, minister, ministry, official or public or statutory person (whether autonomous or not).

"**Agency Agreement**" means an agency agreement dated November 5, 2020 between the Issuer, Citibank, N.A, London Branch as Principal Paying Agent, Citibank, N.A, London Branch as Transfer Agent and

Citigroup Global Markets Europe AG as Registrar, as amended and restated by an amendment and restatement agreement dated on or about the Issue Date between the same parties .

"**Agents**" means the Principal Paying Agent, the Transfer Agent and the Registrar and any reference to an "**Agent**" is to any one of them.

"**Agreed Security Principles**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Al Yasat Petroleum**" means Al Yasat Petroleum Operations Company.

"**Allocated Amount**" has the meaning given to it in Condition 6.7 (*Mandatory Redemption for a Compulsory Transfer Event*).

"**Annual Financial Statements**" means the Issuer's audited annual financial statements for the most recent Financial Year, audited by the Auditors (and including their report) and prepared in accordance with Accounting Principles

"**Applicable Premium**" means, with respect to a Bond on any redemption date, an amount equal to the excess of (i) the sum of the present value of each remaining scheduled payment of interest (exclusive of interest accrued and unpaid to such redemption date) and scheduled payment of the then-outstanding principal amount of such Bond (exclusive of such redemption date), calculated using a discount rate equal to the Treasury Rate at such redemption date plus 50 basis points over (ii) the principal amount Outstanding of such Bond on such redemption date.

"**Applicable Tolerance Margin**" means the applicable uncertainty level percentage set out in the U&O Agreement.

"**Approved Accounting Firm**" means each of Deloitte & Touche LLP, Ernst and Young LLP, KPMG and PricewaterhouseCoopers LLP.

"**AssetCo**" means ADNOC Gas Pipeline Assets LLC, a company duly established and existing in the Emirate of Abu Dhabi, with registered office at PO Box 898, ADNOC Head Quarters Complex, Abu Dhabi, United Arab Emirates.

"**AssetCo Corporate Costs**" means certain limited corporate and administrative costs of AssetCo as described in the General Services Agreement.

"**AssetCo Financial Statements**" means the audited financial statements of AssetCo for the period from May 4, 2020 to December 31, 2020.

"**AssetCo Free Cash**" means, in respect of any period, Free Cash (as defined in the Shareholders' Agreement (in its original form)) for that period multiplied by the Relevant Percentage.

"**AssetCo MoA**" means the memorandum of association of AssetCo, as amended and restated from time to time (including the Amended and Restated MOA (as defined in the Acquisition Agreement)).

"**AssetCo Shares**" means the issued share capital of AssetCo.

"**Auditors**" means the auditors for the time being of the Issuer or, if they are unable or unwilling promptly to carry out any action requested of them under these Conditions, such other firm of accountants as may be nominated or approved in writing by the Bond Trustee for the purpose, provided that it shall not be obliged to nominate or appoint any such firm unless it shall have been indemnified and/or secured and/or prefunded to its satisfaction.

"**Authorization**" means an authorization, consent, approval, resolution, license, exemption, filing, notarization or registration.

"**Banking Act**" means Legislative Decree No. 385 of September 1, 1993

"**Baseline Gas Supply**" means the gas supply component of the Baseline Supply Forecast.

"**Baseline Supply Forecast**" means the baseline forecast of Tariffed Supply for all billing periods during the term, as set out in the U&O Agreement.

"**Baseline Supply Shortfall**" means the amount (in mmbtu), if any, by which the Baseline Supply Forecast for a relevant billing period is higher than Deemed Supply or the MVC for such billing period (whichever is higher).

"**Basic Term Modification**" has the meaning given to it in Condition 11.2 (*Meetings of Bondholders*).

"**Beneficial Owner**" means the actual purchaser of each Bond which is held within a Clearing System.

"**Billing Period Statement**" has the meaning given to it under paragraph 6(c) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**Board of Directors**" means, as to any Person, the board of directors or other equivalent executive body of such Person or any duly authorized committee thereof.

"**Bond Documents**" means:

(a) any Bonds;

(b) the First Supplemental Bond Trust Deed;

(c) the Agency Agreement; and

(d) Series D and E Subscription Agreement.

"**Bond Enforcement Notice**" means a notice delivered by the Bond Trustee in accordance with Condition 8.2 (*Delivery of Bond Enforcement Notice*) by which the Bond Trustee declares that all Bonds then outstanding shall immediately become due and repayable.

"**Bond Event of Default**" has the meaning given to it in Condition 8 (*Events of Default*).

"**Bond Offering Price**" means the initial offering price of the Bonds set forth on the cover page of this Offering Memorandum.

"**Bond Trust Deed**" means the Principal Bond Trust Deed as supplemented by the First Supplemental Bond Trust Deed.

"**Bond Truste**e" means Citicorp Trustee Company Limited.

"**Bonds**" means the Series D Bonds and the Series E Bonds.

"**Borouge**" means Abu Dhabi Polymers Company

"**Borrowings**" means, at any time and without double-counting, the aggregate outstanding principal, capital or nominal amount of any Financial Indebtedness of the Issuer other than any Financial Indebtedness under paragraph (d) of the definition thereof and any Subordinated Indebtedness.

"**Initial Bank Facility**" means a U.S.$7,960,000,000,000 term facility made available by the Lenders to the Issuer for the purposes of the Acquisition.

"**Initial Bank Facility Agreement**" means an initial bank facilities agreement dated June 23, 2020 (as amended and restated on October 21, 2020 and as may be further amended and restated from time to time) entered into between, among others, the Issuer, First Abu Dhabi Bank PJSC as the facility agent and the financial institutions listed therein as lenders, pursuant to which the Initial Bank Facility was made available by the Lenders to the Issuer.

"**Brookfield**" means Brookfield Asset Management.

"**Business Day**" means a day which is a day on which commercial banks and foreign exchange markets settle payments and are open for general business (including dealings in foreign exchange and foreign currency deposits) in Dublin, Jersey, London, Abu Dhabi and New York City.

"**Calibration Timeframe**" has the meaning given to it under paragraph 6(h)(ii) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**CAPEX**" has the meaning given to it under paragraph 7(a)(ii) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Payments*".

"**Capital Market Authority**" means the Capital Market Authority of the Kingdom of Saudi Arabia.

"**Carry Forward Supply Balance**" has the meaning given to it under paragraph 6(c)(iii) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**Carry Forward Supply Interest Adjustment**" has the meaning given to it under paragraph 6(c)(iii) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**Carry Over Tariff Adjustment**" has the meaning given to it under paragraph 6(c)(iv) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**CEO**" means the chief executive officer.

"**Chargeable Throughput**" means the calorific value (converted into mmbtu) of (i) the greater of: (a) the lesser of (x) the total throughput or deemed throughput (as applicable) of sales and injection gas, NGL and LNG, and (y) the Baseline Supply Forecast.

"**Clearing System Business Day**" means Monday to Friday inclusive except December 25 and January 1.

"**Clearing Systems**" means DTC, Euroclear or Clearstream, Luxembourg.

"**Clearstream, Luxembourg**" means Clearstream Banking S.A.

"**CMP Regulations 2018**" means the Securities and Futures (Capital Markets Products) Regulations 2018 of Singapore.

"**CNPC**" means China National Petroleum Corporation.

"**Code**" means the U.S. Internal Revenue Code of 1986, as amended.

"**Common Documents**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Company Segregated Amount**" means all amounts standing to the credit of the Shareholder Reserve Account in respect of the Issuer together with all interest accrued thereon.

"**Compliance Certificate**" means a certificate in which the Issuer periodically provides certain financial information and statements to the Bond Trustee as required under Condition 4.2 (*Compliance Certificate*).

"**Conditions**" means the terms and conditions of the Bonds.

"**CONSOB**" means Commissione Nazionale per le Società e la Borsa, the Italian Securities Exchange Commission.

"**CPI**" means consumer price index.

"**CRA Regulation**" means Regulation (EC) No. 462/2013 on Credit Rating Agencies.

"**Cure Period**" means the period within 12 months of the Underperformance Notice.

"**Current Supply Forecast**" has the meaning given to it under paragraph 6(c)(iii) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**Debt Service**" means, in respect of any Relevant Period, the aggregate of:

(a) Net Finance Charges for that Relevant Period; and

(b) the aggregate of all scheduled and mandatory repayments of principal in respect of Borrowings falling due in that Relevant Period but excluding:

    (i) any amounts falling due under any overdraft or revolving facility and which were available for simultaneous redrawing according to the terms of that facility;

    (ii) any mandatory prepayment made under the Senior Debt Documents; and

    (iii) any payments at final maturity of any Borrowings,

and so that no amount shall be included more than once.

"**Debt Service Payment Account**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Debt Service Reserve Facility**" means the debt service reserve facility agreement in the aggregate principal amount of U.S.$320,000,000 made available by the DSR Facility Provider to the Issuer pursuant to the Debt Service Reserve Facility Agreement.

"**Debt Service Reserve Facility Agreement**" means a debt service reserve facility agreement entered into on October 27, 2020 between, among others, the Issuer, the financial institutions listed therein as DSR Facility Providers and the DSR Facility Agent, pursuant to which the DSR Facility Providers agree to make available the Debt Service Reserve Facility to meet, amongst other things, any shortfalls in monies credited to the Debt Service Payment Account on any Interest Payment Date to meet scheduled payments of interest and principal on the Bonds.

"**Decision Commencement Date**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Types of Voting Categories*".

"**Decision Period**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Types of Voting Categories*".

"**Deemed Tariffed Supply**" has the meaning given to it under paragraph 6(c) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**Defeased Debt**" means any PP Notes or Bonds in respect of which the relevant Secured Creditors (or their respective Secured Creditor Representatives on their behalf) have notified the Issuer that they are unable to accept a prepayment of Relevant Debt to the extent that such prepayment is made without any applicable make-whole amounts or any PP Notes or Bonds for which the Issuer has exercised the defeasance provisions of the applicable indenture.

"**Definitive Registered Bonds**" means the Bonds in definitive registered form.

"**Determination Dissenting Creditors**" means the Qualifying Secured Creditors (acting through their Secured Creditor Representatives) representing at least 20 per cent. of the Qualifying Secured Debt who challenge the Issuer's determination of the voting category of a STID Proposal.

"**Determination Dissention Notice**" means a notice in writing delivered by the Offshore Security Agent to inform the Issuer that the Determination Dissenting Creditors disagree the determination of the voting category made in a STID Proposal.

"**DFSA**" means the Markets Rules (MKT Module) of the Dubai Financial Services Authority.

"**Direct Participants**" means accountholders who hold their interests in a global certificate directly through DTC, Euroclear or Clearstream, Luxembourg.

"**Disruption Event**" means either or both of:

(a) a material disruption to those payment or communications systems or to those financial markets which are, in each case, required to operate in order for payments to be made in connection with the Bonds which disruption is not caused by, and is beyond the control of, any of the Parties; or

(b) the occurrence of any other event which results in a disruption (of a technical or systems-related nature) to the treasury or payments operations of a Party preventing that, or any other Party:

(i) from performing its payment obligations under the Bonds; or

(ii) from communicating with other Parties in accordance with the Conditions,

and which (in either such case) is not caused by, and is beyond the control of, the Party whose operations are disrupted.

"**Distributor**" means any person subsequently offering, selling or recommending the Bonds.

"**Dividend Policy**" means the Dividend Policy as defined in, and set out in a schedule to, the Shareholders' Agreement (in its original form).

"**DSCR**" means, in respect of any Relevant Period, the ratio of (i) AssetCo Free Cash in respect of that Relevant Period less any Permitted Payments under paragraph (b) of the definition thereof made during that Relevant Period to (ii) Debt Service in respect of that Relevant Period.

"**DSR Facility Provider**" means Banco Santander, S.A.; BNP Paribas Fortis SA/NV; Citibank N.A., Jersey Branch; Crédit Agricole Corporate and Investment Bank; First Abu Dhabi Bank PJSC; HSBC Bank Middle East Limited; Mizuho Bank, Ltd.; MUFG Bank, Ltd.; Natixis; Société Générale; Standard Chartered Bank, Dubai Branch; and Sumitomo Mitsui Banking Corporation, DIFC Branch – Dubai.

"**DSRF Required Amount**" means, in respect of any Quarter Date and without double counting, an amount equal to the aggregate of:

(a) interest and commitment or commission payments under any Authorized Credit Facility; and

(b) payments of principal that are part of the scheduled amortization under any Authorized Credit Facility (excluding (i) the repayment from time to time of any drawings under an Authorized Credit Facility that constitutes a revolving facility (including by way of rollover loans); (ii) any payments of principal on a final maturity date in connection with any non-amortizing Authorized Credit Facility; and (iii) any amortization payments under the Initial Bank Facility Agreement); and

(c) net payments under the Hedging Agreements (other than accretion payments, payments on any break or final termination payments under any Hedging Agreements),

in each case, scheduled to fall due for payment in the following two Financial Quarters (calculated on a rolling basis on each Quarter Date).

"**DTC**" means The Depository Trust Company.

"**DTC Participants**" means the Participants who hold their interests through DTC.

"**DTC Rules**" means the rules, regulations and procedures creating and affecting DTC and its operations.

"**ECPs**" means eligible counterparties as defined in MiFID II.

"**EEA**" means European Economic Area.

"**EITC**" means Emirates Integrated Telecommunications Company

"**Eligible Person**" has the meaning given to that term in the Bond Trust Deed.

"**Entrenched Right Dissenting Creditors**" means the Secured Creditors (acting through their Secured Creditor Representatives) who challenge the Issuer's determination as to whether there is an Entrenched Right.

"**Entrenched Right Dissention Notice**" means a notice in writing delivered by the Security Agent informing the Issuer that the Entrenched Right Dissenting Creditor disagrees with the determination of whether a STID Proposal gives rise to an Entrenched Right affecting such Secured Creditor.

"**Entrenched Rights**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Environmental Protection Law**" means Law No. 24 of 1999 in the United Arab Emirates.

"**ERISA Plan**" means a Plan subject to Title I of ERISA or Section 4975 of the Code.

"**ESD**" means an emergency shutdown equipped by the Pipelines.

"**Estimated Invoice**" has the meaning given to it under paragraph 6(g) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**Etisalat**" means Emirates Telecommunications Corporation.

"**Euroclear**" means Euroclear Bank SA/NV.

"**Euronext Dublin**" means the Irish Stock Exchange plc, trading as Euronext Dublin.

"**European Union**" or the "**EU**" means the European Union.

"**EUWA**" means the European Union (Withdrawal) Act 2018 (as amended by the European Union (Withdrawal Agreement) Act 2020).

"**Exchange Act**" means the Securities Exchange Act of 1934, as amended.

"**Excluded Supply**" has the meaning given to it under paragraph 6(c) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**Export Amount**" has the meaning given to it under paragraph 7(b) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Payments*".

"**Export Volume Credit**" has the meaning given to it under paragraph 7(b) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Payments*".

"**Export Volumes Deficit**" has the meaning given to it under paragraph 7(b) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Payments*".

"**Extraordinary Resolution**" has the meaning given to it in the Bond Trust Deed.

"**Facility Agent**" means First Abu Dhabi Bank PJSC.

"**Fair Value**" has the meaning given to it under paragraph 9(d) of *"Summary of Shareholders' Agreement – Compulsory transfer events*".

"**FCSA**" means the UAE Federal Competitiveness and Statistics Authority.

"**FDI**" means foreign direct investment.

"**Final Billing Period Statement**" has the meaning given to it under paragraph 6(c) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**Finance Charges**" means, for any Relevant Period, the aggregate amount of the accrued interest, commission, fees, discounts, prepayment fees, premiums or charges and other finance payments (excluding any repayments or prepayments of principal, whether voluntary or mandatory and any associated hedge termination payments) in respect of Borrowings whether paid, payable, capitalized or required to be reserved (and not yet applied as the relevant payment) in accordance with the terms of any Finance Document by the Issuer in respect of that Relevant Period:

(a) excluding any such costs to the extent funded by a utilization under the Senior Debt Documents other than to the extent funded by utilization under the Debt Service Reserve Facility and any equivalent debt service reserve facilities available to the Issuer;

(b) including any commission, fees, discounts and other finance payments payable by (and deducting any such amounts payable to) the Issuer under any interest rate hedging arrangement;

(c) excluding any interest cost or expected return on plan assets in relation to any postemployment benefit schemes;

(d) excluding any Acquisition Costs;

(e) excluding capitalized and non-capitalized interest, fees, premiums or charges in respect of Financial Indebtedness subordinated to the Bonds in accordance with the Security Trust and Intercreditor Deed;

(f) taking no account of any unrealized gains or losses on any derivative instruments other than any derivative instruments which are accounted for on a hedge accounting basis; and

(g) excluding interest, fees, premiums or charges in respect of any Subordinated Indebtedness and, to the extent they constitute Borrowings, any New Shareholder Injections,

and so that no amount shall be added (or deducted) more than once.

"**Finance Documents**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Finance Lease**" means any lease or hire purchase contract, a liability under which would, in accordance with the Accounting Principles, be treated as a finance or capital lease.

"**Finance Party**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Financial Indebtedness**" means any indebtedness for or in respect of:

(a) moneys borrowed and debit balances at banks or other financial institutions;

(b) any amount raised by acceptance under any acceptance credit facility or bill discounting facility (or dematerialized equivalent);

(c) any amount raised pursuant to any note purchase facility or the issue of bonds, notes, debentures, loan stock or any similar instrument;

(d) any Treasury Transaction (and, when calculating the value of that Treasury Transaction, only the net marked to market value (or, if any actual amount is due as a result of the termination or close-out of that Treasury Transaction, the net value of that amount) shall be taken into account);

(e) any counter-indemnity obligation in respect of a guarantee, indemnity, bond, standby or documentary letter of credit or any other instrument issued by a bank or financial institution which liability would fall within one of the other paragraphs of this definition;

(f) any amount raised by the issue of shares which are redeemable (other than at the option of the issuer) prior to the latest final maturity date in respect of all Authorized Credit Facilities then outstanding;

(g) the amount of any liability in respect of any Finance Leases;

(h) receivables sold or discounted (other than any receivables to the extent that they are sold on a non-recourse basis);

(i) any amount of any liability under an advance or deferred purchase agreement if: (i) one of the primary reasons for entering into the agreement is to raise finance or to finance the acquisition or construction of the asset or service in question; or (ii) the agreement is in respect of the supply of assets or services and payment is due more than 180 days after the date of supply;

(j) any amount raised under any other transaction (including any forward sale or purchase, sale and saleback or sale and leaseback agreement) not referred to in any other paragraph of this definition, having the commercial effect of a borrowing and classified as such under Accounting Principles; and

(k) the amount of any liability in respect of any guarantee or indemnity for any of the items referred to in paragraphs (a) to (j) above,

in each case, without double counting.

"**Financial Promotion Order**" means the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, as amended.

"**Financial Quarter**" means each period commencing on the day after one Quarter Date and ending on the next Quarter Date.

"**Financial Services Act**" means Legislative Decree No. 58 of February 24, 1998 of the Republic of Italy.

"**First Supplemental Bond Trust Deed**" means the first supplemental bond trust deed dated on or about the Issue Date which will be supplemental to the Principal Bond Trust Deed and made between the Issuer and Citicorp Trustee Company Limited as the Bond Trustee in connection with the issuance of the Bonds.

"**Fitch**" means Fitch Ratings Ltd and its successors.

"**FSRA**" means the Financial Services Regulatory Authority of the Abu Dhabi Global Market.

"**Further Bonds**" has the meaning given to it in Condition 15.1 (*Additional Bonds*).

"**GASCO**" means Abu Dhabi Gas Industries Ltd.

"**GDP**" means gross domestic product

"**General Services Agreement**" means an agreement entered in to on June 23, 2020 by and between AssetCo and ADNOC regarding the provision of general business function services.

"**GIC**" means GIC Pte Ltd.

"**GIP**" means Global Infrastructure Partners.

"**Global Bond Certificates**" means the Regulation S Global Bond Certificate and the Rule 144A Global Bond Certificate.

"**Global Exchange Market**" means the Global Exchange Market of Euronext Dublin.

"**GS Energy**" means GS Energy Corporation.

"**GSA Effective Date**" means July 16, 2020.

"**Hedge Counterparties**" means Abu Dhabi Commercial Bank PJSC; Banco Santander S.A., London Branch; BNP Paribas S.A.; Citibank, N.A., London Branch; Crédit Agricole Corporate And Investment Bank; DBS Bank Ltd; Emirates NBD Bank PJSC; First Abu Dhabi Bank PJSC; HSBC Bank plc; Mizuho Capital Markets LLC; MUFG Securities EMEA plc; Natixis; SMBC Nikko Capital Markets Limited; Société Générale and Standard Chartered Bank.

"**Hedge Counterparty Entrenched Rights**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Types of Voting Categories*".

"**Hedging Agreements**" means the interest rate hedging agreements associated with the Initial Bank Facility Agreement entered into on or about the date of the Initial Bank Facility Agreement between the Issuer and the Hedge Counterparties.

"**Hedging Policy**" means the initial hedging policy applicable to the Issuer set out in schedule 4 (Hedging Policy) to the Security Trust and Intercreditor Deed.

"**Holder**" of a Bond means the Person in whose name such Bond is for the time being registered in the Register (or, in the case of a joint holding, the first named thereof) and "**Bondholder**" shall be construed accordingly.

"**Holding Company**" means, in relation to a person, any other person in respect of which it is a Subsidiary.

"**HSE**" means health, safety and environmental.

"**HSE Code**" means the ADNOC Health, Safety and Environment Code of Practice.

"**HSE Guidance**" means the ADNOC codes of practice and guidelines specifically applicable to matters of health, safety and environment.

"**ICAD**" means Industrial City of Abu Dhabi.

"**IEA**" means the International Energy Agency.

"**IFRS**" means international accounting standards within the meaning of IAS Regulation 1606/2002 to the extent applicable to the relevant financial statements.

"**IMF**" means the International Monetary Fund.

"**Independent Technical Due Diligence Report**" means an independent technical due diligence report dated March 15, 2020 together with the addendum dated February 5, 2021 prepared by Ryder Scott Company Petroleum Consultants.

"**Indirect Participants**" means accountholders who hold their interests in a global certificate indirectly through organizations which are Direct Participants therein.

"**Individual Certificate**" means an individual certificate issued to each Bondholder in respect of its registered holding of Bonds.

"**Issuer Financial Statements**" means the audited financial statements of the Issuer for the period from May 26, 2020 to July 31, 2020 and for the period from August 1, 2020 to December 31, 2020.

"**Initial Purchasers**" means Citigroup Global Markets Limited of Citigroup Centre, Canada Square, Canary Wharf, London E14 5LB; HSBC Bank plc of 8 Canada Square, London E14 5HQ, United Kingdom; Mizuho International plc of Mizuho House, 30 Old Bailey, London EC4M 7AU, United Kingdom; First Abu Dhabi Bank PJSC of FAB Building, Khalifa Business Park – Al Qurm District, P.O. Box 6316, Abu Dhabi, United Arab Emirates; Santander Investment Securities Inc. of 45 E 53rd Street, 5th Floor, New York, NY 10022; SMBC Nikko Capital Markets Limited of One New Change, London, EC4M 9AF, United Kingdom; Société Générale of 29, boulevard Haussmann, 75009 Paris, France; Abu Dhabi Commercial Bank PJSC of PO Box 939, Abu Dhabi, United Arab Emirates; BNP Paribas of 16, boulevard des Italiens, 75009 Paris, France; Crédit Agricole Corporate and Investment Bank of 12, place des Etats-Unis, CS 70052, 92547 Montrouge Cedex, France; Emirates NBD Bank PJSC of PO Box 777, Dubai, United Arab Emirates; MUFG Securities EMEA plc of Ropemaker Place, 25 Ropemaker Street, London EC2Y 9AJ, United Kingdom; Natixis Securities Americas LLC of 1251 Avenue of the Americas, 4th Floor, New York, NY, USA 10020; Samba Financial Group of Umm Suqeim 2, Jumeriah Beach Road, P.O.Box 6038, Dubai, United Arab Emirates; Standard Chartered Bank of 7th Floor Building One, Gate Precinct, Dubai International Financial Centre, P.O. Box 999, Dubai, United Arab Emirates; CaixaBank S.A. of Calle Pintor Sorolla 2-4, Valencia 46002, Spain; and DBS Bank Ltd. of 12 Marina Boulevard, Level 42, DBS Asia Central, Marina Bay Financial Centre Tower 3, Singapore 018982 .

"**Injection Pipelines**" the Pipelines used for injection.

"**Insurance Distribution Directive**" means Directive 2016/97/EU, as amended.

"**Intercreditor Arrangements**" means the intercreditor arrangements in respect of the Parent and Galaxy Pipeline Assets Bidco Limited as contained in the Security Trust and Intercreditor Deed.

"**Interest Payment Date**" has the meaning given to it in Condition 5 (*Interest*).

"**Interest Period**" has the meaning given to it in Condition 5 (*Interest*).

"**Investment Company Act**" means the U.S. Investment Company Act of 1940, as amended.

"**IRS**" means the U.S. Internal Revenue Service.

"**Issue Date**" means February 18, 2021.

"**Issuer**" means Galaxy Pipeline Assets Bidco Limited, a limited liability company incorporated and existing under the laws of Jersey, having its registered office at 2nd Floor Sir Walter Raleigh House, 48-50 Esplanade, St. Helier, Jersey, JE2 3QB with registration number 131580.

"**Jersey**" means the Bailiwick of Jersey.

"**Jersey Registrar**" means the Jersey Registrar of Companies.

"**JFSC**" means The Jersey Financial Services Commission.

"**KIZAD**" the Khalifa Industrial Zone Abu Dhabi.

"**KNOC**" means Korea National Oil Corporation.

"**LA Effective Date**" means the effective date of the Lease Agreement, being July 16, 2020.

"**Labor Law**" means Federal Law No. 8 of 1980, as amended.

"**Lease**" means the lease of 38 onshore natural gas and natural gas liquids pipelines from ADNOC to AssetCo under a lease agreement until June 30, 2040.

"**Lease Term**" means June 30, 2040.

"**Lenders**" means the financial institutions listed as lenders under the Initial Bank Facility Agreement.

"**LNG**" means Liquefied Natural Gas.

"**Mandatory Hedging**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Interest Rate Risk Principles*".

"**Material Adverse Effect**" means an event or circumstances which, taking into account all the circumstances, has a material adverse effect on:

(a) the business, assets or financial condition of the Issuer, provided that, for the avoidance of doubt, the occurrence or continuation of a Non-Dividend Event shall not constitute such an event or circumstance;

(b) the ability of the Issuer to perform its payment obligations under any of the Bonds (taking into account all resources available to it) provided that, for the avoidance of doubt, the occurrence or continuation of a Non-Dividend Event shall not constitute such an event or circumstance; or

(c) (x) the validity or enforceability of any Transaction Security granted pursuant to the Finance Documents in any way which is materially adverse to the interests of the Bondholders or (y) the rights and remedies of the Bondholders under the Bond Documents taken as a whole, and which in each case, if capable of remedy, is not remedied within 20 Business Days of the earlier of the (i) Bond Trustee notifying the Issuer of the relevant event or circumstance; and (ii) the Issuer becoming aware of the relevant event or circumstance.

"**MENA**" means the Middle East North Africa.

"**Metering Adjustment**" has the meaning given to it under paragraph 6(j) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**Metering Equipment**" has the meaning given to it under paragraph 6(i) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**MiFID II**" means Article 4(1) of Directive 2014/65/EU, as amended.

"**mmbtu**" means one million British Thermal Units.

"**Model Auditor**" means Mazars LLP.

"**Moody's**" means Moody's Investors Service Limited or any successor to its rating business.

"**Mubadala**" means Mubadala Investment Company.

"**MVC NPV**" has the meaning given to it under paragraph 9(d) of *"Summary of Shareholders' Agreement – Compulsory transfer events*".

"**Net Finance Charges**" means, for any Relevant Period, the Finance Charges for that Relevant Period after deducting any interest payable in that Relevant Period to the Issuer on any cash or Cash Equivalent Investment.

"**New Bonds**" has the meaning given to it in Condition 15.1 (*Additional Bonds*).

"**New Shareholder Injections**" means the aggregate amount (without double counting) subscribed for by the Parent for ordinary shares in the Issuer (including any share premium) or for subordinated loan notes or other subordinated debt instruments in the Issuer, provided that any subordination is on the terms of the Security Trust and Intercreditor Deed or otherwise on terms acceptable to the Bond Trustee.

"**New York Convention**" means The New York Convention on the Recognition and Enforcement of Foreign Arbitral Awards 1958.

"**NGL Pipelines**" means Natural Gas Liquids.

"**NH I&S**" means NH Investment & Securities Co., Ltd.

"**Non-Dividend Event**" means an amendment to the Dividend Policy by ADNOC HoldCo made in accordance with the Shareholders' Agreement following the adoption by the board of directors of ADNOC of a decision to suspend payments either by way of dividend, loan or similar payment (excluding, for the avoidance of doubt, royalties and taxes) to the government of Abu Dhabi in respect of any Financial Quarter which amendment results in (a) no amount being distributed by AssetCo to its shareholders in that Financial Quarter and any subsequent Financial Quarter during which such decision remains in place; or (b) an amount distributed by AssetCo to its shareholders in that Financial Quarter and any subsequent Financial Quarter during which such decision remains in place being less than the amount that would otherwise have been distributed by AssetCo to its shareholders in such Financial Quarters.

"**Non-Dividend Event End Date**" means, with respect to a Non-Dividend Event, the first date on which the Company Segregated Amount relating to that Non-Dividend Event is distributed by AssetCo to the Issuer.

"**OCI**" means OCI N.V.

"**Official List**" means the Official List of Euronext Dublin.

"**Offshore Security Agent**" means Citibank, N.A., London Branch.

"**Onshore Security Agent**" means Citibank, N.A., U.A.E. Branch.

"**OPEC**" means the Organization of the Petroleum Exporting Countries.

"**OPEX**" has the meaning given to it under paragraph 7(a)(ii) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Payments*".

"**Ordinance**" means the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong.

"**Original Bonds**" means the U.S.$1,100,000,000 1.750 per cent. Senior Secured Series A Bonds due 2027, the U.S.$ 1,550,000,000 2.625 per cent. Senior Secured Series B Bonds due 2036 and the U.S.$ 1,350,000,000 3.250 per cent. Senior Secured Series C Bonds due 2040 issued by the Issuer on November 5, 2020.

"**Original Bond Documents**" means:

(a) any Original Bonds;

(b) the Principal Bond Trust Deed;

(c) the Agency Agreement; and

(d) the Series A, B and C Subscription Agreement.

"**OTPPB**" means Ontario Teachers' Pension Plan Board.

"**Outstanding**" has the meaning given to it in the Bond Trust Deed.

"**Overhedged Position**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Interest Rate Risk Principles*".

"**Ownership Interest**" has the meaning given to it under paragraph 2(a) of *"Summary of Principal Project Documents – Pipelines Lease Agreement – Lease*".

"**Parallel Debt**" means any "parallel debt" obligations created in favor of the Security Agent pursuant to the Security Trust and Intercreditor Deed which mirrors the obligations of the Issuer owed to the Bondholders under or in connection with the Bond Trust Deed, as applicable.

"**Parent**" means Galaxy Pipeline Assets Holdco Limited.

"**Participants**" means Direct Participants and Indirect Participants.

"**Pension Fund**" means the Abu Dhabi Retirement Benefits and Pension Fund.

"**Perfection Requirements**" means the making or procuring of the appropriate registrations, filings, endorsements, annotations, notarizations, stampings and/or notifications of the Security Documents and/or the Security created or purported to be created thereunder (but without prejudice to the obligations of the Parent and the Issuer to comply with any applicable time periods required by law or by the Finance Documents for such registrations, filings, endorsements, annotations, notarizations, stampings or notifications).

"**Performance Standards**" has the meaning given to it under paragraph 3(a) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Responsibilities, Rights and Obligations of ADNOC*".

"**Permitted Financial Indebtedness**" means Financial Indebtedness:

(a) which is Permitted Additional Financial Indebtedness;

(b) arising under any of the Finance Documents;

(c) arising under the Acquisition Documents;

(d) which is Subordinated Indebtedness;

(e) arising under the Debt Service Reserve Facility or any successor or replacement facility in whole or in part thereto;

(f) arising under a Permitted Loan or a Permitted Guarantee or a Treasury Transaction permitted in accordance with Condition 4.9 (*Treasury Transactions*);

(g) arising under any netting or set-off arrangement entered into by the Issuer in the ordinary course of its banking arrangements to the extent permitted pursuant to the definition of Permitted Security;

(h) any Financial Indebtedness entered into with the prior written consent of the Bond Trustee (acting in accordance with the Bond Trust Deed); or

(i) not permitted by the preceding paragraphs or as a Permitted Transaction and the outstanding principal amount of which does not exceed U.S.$50,000,000 (or its equivalent in other currencies) in aggregate at any time.

"**Permitted Guarantee**" means:

(a) any guarantee or indemnity under or in respect of Permitted Financial Indebtedness (including customary guarantees and indemnities contained in mandate, engagement and commitment letters, facility agreements, purchase agreements and indentures in each case entered into in respect of or in contemplation of Permitted Financial Indebtedness);

(b) any guarantee or indemnity granted by the Issuer in an Acquisition Document;

(c) any guarantee given in respect of the netting or set-off arrangements permitted pursuant to paragraph (c) of the definition of Permitted Security;

(d) any indemnity or guarantee granted by the Issuer to AssetCo in respect of any withholding or other tax paid or payable by AssetCo on any dividend or other distribution by AssetCo to the Issuer;

(e) any guarantee entered into with the prior written consent of the Bond Trustee (acting in accordance with the Bond Trust Deed); or

(f) any guarantee not permitted by the preceding paragraphs or as a Permitted Transaction and the outstanding principal amount of which does not exceed U.S.$50,000,000 (or its equivalent in other currencies) in aggregate at any time.

"**Permitted Loan**" means:

(a) Financial Indebtedness which is referred to in the definition of, or otherwise constitutes, Permitted Financial Indebtedness;

(b) any loan which constitutes a Permitted Payment;

(c) any loan to AssetCo provided that to the extent the aggregate principal amount of all such loans exceeds U.S.$50,000,000 (or its equivalent in other currencies) at any time and subject to the Agreed Security Principles, the Issuer shall provide to the relevant Security Agent for the benefit of the Secured Creditors Security over its receivables in respect of such loans (in form and substance reasonably satisfactory to the relevant Security Agent);

(d) any loan entered into with the prior written consent of the Bond Trustee (acting in accordance with the Bond Trust Deed); or

(e) any loan not permitted by the preceding paragraphs so long as the aggregate amount of the Financial Indebtedness under any such loans does not exceed U.S.$5,000,000 (or its equivalent in other currencies) at any time.

"**Permitted Payment**" means any of the following:

(a) a Restricted Payment, provided that the Restricted Payment Condition is satisfied;

(b) payment by the Issuer:

  (i) of reasonable professional or legal fees (not referred to in sub-paragraphs (iii) or (iv) below) required to maintain its corporate existence, regulatory and, provided that they are on arm's length terms and reasonably incurred, administrative, operating and corporate overhead costs and expenses of the Sponsors or of Holding Companies of the Issuer of up to U.S.$5,000,000 (as increased each Financial Year in line with UK consumer price index) (or its equivalent in other currencies) in any Financial Year;

  (ii) in respect of Taxes, provided that such Taxes are attributable to the Issuer;

  (iii) to any of the Sponsors, Sponsor Affiliates or any advisor to any Sponsor for corporate finance, investment, M&A and transaction advice provided to the Issuer on bona fide arms' length commercial terms; and

(iv) of monitoring or advisory fees to the Sponsors, Sponsor Affiliates and directors'/managers' fees (or directors'/managers' costs and expenses, including customary salary, bonus and other benefits) which are attributable to the Issuer,

(v) provided that the aggregate of all such payments under sub-paragraphs (iii) and (iv) does not exceed U.S.$10,000,000 (as increased each Financial Year in line with UK consumer price index) (or its equivalent in other currencies) in any Financial Year;

(c) a payment which is a Permitted Transaction;

(d) (without double counting) any payment of Acquisition Costs;

(e) payment by the Issuer to any person out of monies that would otherwise be available to fund the making of a Restricted Payment (provided that the Restricted Payment Condition is satisfied) for any purpose which is not prohibited by the Finance Documents; or

(f) any other payment consented to or approved by the Bond Trustee (acting in accordance with the Bond Trust Deed).

"**Permitted Security**" means:

(a) any Transaction Security;

(b) any lien arising by operation of law in the ordinary course of day to day business and not as a result of any default or omission by the Parent or the Issuer;

(c) any netting or set-off arrangement entered into by the Issuer in the ordinary course of its banking arrangements for the purpose of netting its debit and credit balances;

(d) any payment or close-out netting or set-off arrangement pursuant to any Treasury Transaction not prohibited by these Conditions;

(e) any Security or Quasi-Security provided by the Issuer to a stock, trade or derivative exchange for the purpose of entering into any Treasury Transaction permitted in accordance with Condition 3.11 (Treasury Transactions) not entered into for speculative purposes;

(f) any Security arising under statute or by operation of law in favor of any government, state or local authority in respect of Taxes, assessments or government charges which are being contested by the Parent or the Issuer in good faith and where adequate reserves are being maintained in respect of such claims;

(g) any rights of set-off and combination of accounts or other customary Quasi-Security arising in favor of the account holding bank with whom the Issuer maintains a banking relationship in the ordinary course of business and granted as part of that bank's standard terms and conditions;

(h) any Security created in respect of any pre-judgment legal process or any judgment or judicial award relating to security for costs, where the relevant proceedings are being contested in good faith by the Parent or the Issuer by appropriate procedures and where adequate reserves are being maintained in respect of such claim;

(i) any Security or Quasi-Security arising over any bank accounts or custody accounts or other clearing banking facilities held by the Issuer with any bank or financial institution under the standard terms and conditions of such bank or financial institution;

(j) any Security constituting an escrow arrangement to which proceeds from any issue of any Permitted Additional Financial Indebtedness are subject;

(k) a right of set-off, banker's liens or the like arising by operation of law or by contract by virtue of the provision of any overdraft facility and like arrangements arising as a consequence of entering into arrangements on the standard terms of any bank providing an overdraft;

(l) any Security or Quasi-Security constituting an escrow arrangement for the purpose of the payment of the purchase price for the Acquisition as contemplated in accordance with the terms of the Acquisition Agreement;

(m) any other Security or Quasi-Security approved with the prior written consent of the Bond Trustee (acting in accordance with the Bond Trust Deed); or

(n) any Security or Quasi-Security securing indebtedness the outstanding principal amount of which (when aggregated with the outstanding principal amount of any other indebtedness which has the benefit of Security given by the Issuer other than any permitted under paragraphs (a) to (m) (inclusive) above) does not exceed in aggregate U.S.$50,000,000 (or its equivalent in other currencies).

"**Permitted Share Issue**" means an issue of:

(a) shares by the Issuer to the Parent, paid for in full in cash upon issue and which by their terms are not redeemable and where the newly-issued shares become subject to the Transaction Security as soon as is reasonably practicable thereafter on the same terms as the existing Transaction Security in respect of the shares in the Issuer; or

(b) shares by AssetCo to the Issuer, provided that, in each case, those shares become subject to the Transaction Security as soon as is reasonably practicable thereafter on the same terms as the existing Transaction Security in respect of AssetCo Shares.

"**Permitted Transaction**" means:

(a) any disposal required, Financial Indebtedness incurred, guarantee, indemnity or Security or Quasi-Security given, or other transaction arising, under the Finance Documents;

(b) transactions (other than (i) any sale, lease, license, transfer or other disposal and (ii) the granting or creation of Security or the incurring or permitting to subsist of Financial Indebtedness) conducted in the ordinary course of trading on arm's length terms; or

(c) any transaction consented to or approved by the Bond Trustee (acting in accordance with the Bond Trust Deed).

"**Person**" means any individual, corporation, partnership, joint venture, trust, unincorporated organization or government or any Agency or political subdivision thereof.

"**Pipelines**" means the 38 onshore natural gas and natural gas liquids pipelines leased by AssetCo from ADNOC under the Lease.

"**Plan**" means employee benefit plans that are subject to Title I of ERISA, plans, individual retirement accounts and other plans and arrangements that are subject to Section 4975 of the Code or provisions under any other U.S. or non-U.S. federal, state or local laws or regulations that are similar to such provisions of ERISA or the Code.

"**Policy Agenda**" means the Abu Dhabi Policy Agenda 2007–2008.

"**Post-Enforcement Priority of Payments**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Potential Bond Event of Default**" means any condition, event or act which, with the lapse of time and/or the issue, making or giving of any notice, certification, declaration, demand, determination and/or request and/or the taking of any similar action and/or the fulfilment of any similar condition, would constitute a Bond Event of Default.

"**Pre-Enforcement Priority of Payments**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Pre-Funding Required Amount**" means the aggregate of each Reserve Amount and Amortization Reserve Amount as defined in Schedule 6 of the Security Trust and Intercreditor Deed.

"**Pre-hedges**" means any derivative instruments such as forward starting interest rate swap transactions in respect of Financial Indebtedness which is projected to be incurred within six months after the entry into of such Treasury Transactions.

"**Prepayment Amount**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Pro Rata Allocation Mechanic*".

"**PRIIPs Regulation**" means Regulation (EU) No 1286/2014, as amended.

"**Principal Bond Trust Deed**" means the bond trust deed dated November 5, 2020 among the Issuer and Citicorp Trustee Company Limited in connection with the issuance of the Original Bonds.

"**Principal Obligations**" means the obligations of the Issuer owed to Bondholders under or in connection with the Bond Trust Deed, as applicable.

"**Principal Paying Agent**" means Citibank, N.A, London Branch.

"**Pro Forma AssetCo Tariff Sales**" means the revenues of AssetCo which sets out on a pro forma basis the tariff that would have been payable to AssetCo based on mmbtu throughput in respect of the Pipelines for each of the fiscal years 2018, 2019 and 2020, as if the Project Documents had been in effect throughout those periods.

"**Pro Rata Allocation Mechanic**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Proceedings**" has the meaning given to it under Condition 18.2 (*Jurisdiction*).

"**Project Documents**" means the General Services Agreement, the Lease Agreement and the U&O Agreement.

"**Prospectus Regulation**" means Regulation (EU) 2017/1129

"**PTCEs**" means prohibited transaction class exemptions issued by the U.S. Department of Labor.

"**QIBs**" means Qualified Institutional Buyers within the meaning of Rule 144A.

"**Qualified Purchaser**" means Qualified Purchasers within the meaning of section 2(a)(51) of, and rules 2a51-1, 2a51-2 and 2a51-3 under, the Investment Company Act of 1940.

"**Qualifying Secured Creditor Instruction Notice**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Qualifying Secured Creditor Instructions*"

"**Qualifying Secured Creditors**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Quarter Date**" means March 31, June 30, September 30 and December 31 in each calendar year.

"**Quarterly Management Accounts**" means the Issuer's unaudited management accounts for each Financial Quarter.

"**Quasi-Security**" has the meaning given to it in Condition 3.5(a) (*Negative Pledge*).

"**Rating**" means any rating ascribed by any Rating Agency appointed by the Issuer from time to time to provide a rating in respect of any Secured Debt.

"**Rating Agency**" means (1) each of Fitch and Moody's and (2) if any of Fitch or Moody's ceases to rate the Bonds or fails to make a rating of the Bonds publicly available for reasons outside of our control, a "nationally recognized statistical rating organization" within the meaning of Rule 15c3-1(c)(2)(vi)(F) under the U.S. Exchange Act, selected by us as a replacement agency for Fitch, Moody's or S&P, as the case may be.

"**Receiver**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Record Date**" has the meaning given to it in Condition 7.5 (*Record date*).

"**Refund Amount**" has the meaning given to it under "*Risk Factors – Risks Relating to Our Investment in AssetCo, AssetCo's Business and ADNOC – Our investment in AssetCo depends on ADNOC as the sole user of the Pipelines and its payments*".

"**Register**" means a register in respect of the Bonds maintained by the Registrar.

"**Registrar**" means Citigroup Global Markets Europe AG.

"**Regulation No. 20307**" means CONSOB Regulation No. 20307 of February 15, 2018

"**Regulation S**" means Regulation S under the Securities Act.

"**Regulation S Bonds**" means the Bonds offered and sold in reliance on Regulation S to non-U.S. persons.

"**Regulation S Global Bond Certificate**" means the Regulation S Bonds will be represented by the unrestricted global certificate.

"**Regulation S Individual Certificates**" means the individual Certificates issued with respect to the Regulation S Bonds.

"**Relevant AssetCo Shares**" has the meaning given to it in Condition 6.7 (*Mandatory Redemption for a Compulsory Transfer Event*).

"**Relevant Date**" means whichever is the later of (i) the date on which such payment first becomes due and (ii) if the full amount payable has not been received by the Principal Paying Agent and Transfer Agent or the Bond Trustee on or prior to such due date, the date on which, the full amount having been so received, notice to that effect shall have been given to the Bondholders.

"**Relevant Jurisdiction**" means, in relation to the Issuer, the Parent or AssetCo, as applicable:

(a) its jurisdiction of incorporation;

(b) any jurisdiction where any asset subject to or intended to be subject to the Transaction Security to be created by it is situated;

(c) any jurisdiction where it conducts its business; and

(d) any jurisdiction whose laws govern the perfection of any of the Security Documents entered into by it.

"**Relevant Metering Equipment**" has the meaning given to it under paragraph 6(i)(ii) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**Relevant Percentage**" means the percentage of AssetCo Shares held by the Issuer from time to time.

"**Relevant Period**" means each period of four consecutive Financial Quarters ending on a Quarter Date.

"**Relevant Portion**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Principles relating to Hedging Agreements*"

"**Relevant Prepayment Provision**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Pro Rata Allocation Mechanic*".

"**Rent**" has the meaning given to it under paragraph 3 of *"Summary of Principal Project Documents – Pipelines Lease Agreement – Rent*".

"**Restricted Global Certificate**" means a restricted global certificate representing a Rule 144A Bond.

"**Restricted Payment**" has the meaning given to it under Condition 3.12 (*Distributions and shareholder loans*).

"**Restricted Payment Condition**" means:

(a) no Bond Event of Default has occurred and is continuing or would occur as a result of the making of such Restricted Payment;

(b) no Non-Dividend Event has occurred and is continuing;

(c) unless the Restricted Payment is being made within 90 days of an Interest Payment Date, the amount standing to the credit of each Pre-Funding Ledger maintained by the Issuer in respect of the Debt Service Payment Account is not less than the Pre-Funding Required Amount for the Quarter Date immediately preceding such Restricted Payment;

(d) the Compliance Certificate most recently delivered pursuant to the Bond Trust Deed demonstrates that the DSCR was greater than or equal to 1.02:1; and

(e) the aggregate amount available under the Debt Service Reserve Facility, any equivalent debt service reserve facility available to the Issuer and the amount (if any) credited to the Debt Service Reserve Account is in aggregate at least equal to the DSRF Required Amount and no drawing is outstanding (other than a Standby Drawing) under the Debt Service Reserve Facility or any such equivalent debt service reserve facility.

"**Rule 144A**" means Rule 144A under the Securities Act.

"**Rule 144A Bonds**" means the Bonds initially offered and sold to persons who are "qualified institutional buyers" as defined in Rule 144A who are "qualified purchasers" as defined in Section 2(a)(51) under the U.S. Investment Company Act of 1940, as amended.

"**Rule 144A Global Bond Certificate**" means the Rule 144A Bonds will be represented by a restricted global certificate.

"**Rule 144A Individual Certificates**" means the individual Certificates issued with respect to Rule 144A Bonds.

"**S&P**" means S&P Global Ratings, a division of S&P Global Inc. or any successor to its rating agency business.

"**Sales Gas Pipelines**" means the Pipelines transporting Sales Gas.

"**SCA**" means the Securities and Commodities Authority of the United Arab Emirates.

"**SCAD**" means the Statistics Centre – Abu Dhabi.

"**Secured Creditor Entrenched Rights**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Types of Voting Categories*".

"**Secured Creditors**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Secured Debt**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Secured Obligations**" has the meaning given to that term in the Security Trust and Intercreditor Deed.

"**Securities Act**" means the U.S. Securities Act of 1933, as amended.

"**Security**" means a mortgage, charge, pledge, lien or other security interest securing any obligation of any person or any other agreement or arrangement having a similar effect.

"**Security Agent**" means the Onshore Security Agent and the Offshore Security Agent.

"**Security Document**" means:

(a) the Jersey law security interest agreement dated June 30, 2020 between the Parent and the Offshore Security Agent in respect of: (i) the shares in the Issuer; and (ii) any receivables under any subordinated indebtedness owed to the Parent by the Issuer;

(b) the Jersey law security interest agreement dated June 30, 2020 between the Issuer and the Offshore Security Agent in respect of bank accounts of the Issuer located in Jersey;

(c) the English law security assignment agreement dated June 30, 2020 between the Issuer and the Offshore Security Agent in respect of all of the Issuer's rights under the Hedging Agreements;

(d) the Abu Dhabi law moveables security agreement dated June 30, 2020 between the Issuer and the Onshore Security Agent in respect of any receivables under the Acquisition Agreement, the Escrow Agreement and the Seller's Guarantee (in each case as defined in the Acquisition Agreement) owed to the Issuer;

(e) the Abu Dhabi law security assignment agreement dated June 30, 2020 between the Issuer and the Onshore Security Agent in respect of the Issuer's rights (excluding the rights to any receivables that are payable) under the Acquisition Agreement, the Escrow Agreement and the Seller's Guarantee (in each case as defined in the Acquisition Agreement);

(f) the Abu Dhabi law share pledge agreement dated July 22, 2020 between the Issuer and the Onshore Security Agent in respect of the AssetCo Shares;

(g) a right of first offer agreement dated July 27, 2020 between, amongst others, the Issuer, the Onshore Security Agent and ADNOC HoldCo in respect of the AssetCo shares pledged by the Issuer;

(h) a right of first offer agreement dated June 30, 2020 between, amongst others, the Parent, the Offshore Security Agent and ADNOC HoldCo in respect of the shares in the Issuer pledged by the Parent; and

(i) any other document entered into by the Parent or the Issuer creating or expressed to create any Security Interests over all or any part of its assets in respect of the obligations of any of the Issuer under any of the Finance Documents.

"**Security Trust and Intercreditor Deed**" or "**STID**" means the security trust and intercreditor deed dated June 23, 2020 and made between, among others, the Parent, the Issuer, the Security Agents and First Abu Dhabi Bank PJSC, as amended and/or restated on or about the Issue Date.

"**Senaat**" means General Holding Corporation.

"**Senior Debt Documents**" means:

(a) the Common Documents;

(b) the Bond Documents;

(c) the Original Bond Documents;

(d) the Debt Service Reserve Facility Agreement and any successor to or replacement of such Debt Service Reserve Facility Agreement from time to time; and

(e) any agreement documenting an Authorized Credit Facility.

"**Series A, B and C Subscription Agreement**" means a subscription agreement entered into on October 28, 2020 between the Issuer and the initial purchasers named therein in relation to the Series A Bonds, the Series B Bonds and the Series C Bonds, pursuant to which the initial purchasers named therein agreed to subscribe for the Series A Bonds, the Series B Bonds and the Series C Bonds.

"**Series D and E Subscription Agreement**" means a subscription agreement entered into on February 10, 2021 between the Issuer and the Initial Purchasers in relation to the Series D Bonds and the Series E Bonds pursuant to which the Initial Purchasers agreed to subscribe for the Series D Bonds and the Series E Bonds.

"**Series D Bonds**" means the U.S.$1,750,000,000 2.16% Senior Secured Bonds due 2034 issued by the Issuer.

"**Series D Bonds Maturity Date**" means March 31, 2034.

"**Series E Bonds**" means the U.S.$2,170,000,000 2.94% Senior Secured Bonds due 2040 issued by the Issuer.

"**Series E Bonds Maturity Date**" means September 30, 2040.

"**Services**" has the meaning given to it under paragraph 2(a) of *"Summary of Principal Project Documents – General Services Agreement – Provision of the Services*".

"**SFA**" means the Securities and Futures Act (Chapter 289) of Singapore (as modified or amended from time to time)

"**SFO**" means the Securities and Futures Ordinance (Cap. 571) of Hong Kong.

"**SHA Effective Date**" means the effective date of the Shareholders' Agreement, being July 15, 2020.

"**Shareholder Change of Control**" has the meaning given to it under paragraph 9(a) of "*Summary of Shareholders' Agreement – Compulsory transfer events*".

"**Shareholder Insolvency Event**" has the meaning given to it under paragraph 9(a) of "*Summary of Shareholders' Agreement – Compulsory transfer events*".

"**Shareholder Material Breach**" has the meaning given to it under paragraph 9(a) of "*Summary of Shareholders' Agreement – Compulsory transfer events*".

"**Shareholder Reserve Account**" has the meaning given to it under paragraph 7(d) of "*Summary of Shareholders' Agreement – Distributions*".

"**Shareholder Sanctions Event**" has the meaning given to it under paragraph 9(a) of "*Summary of Shareholders' Agreement – Compulsory transfer events*".

"**Shareholders**" has the meaning given to it under *"Summary of Shareholders' Agreement*".

"**Shareholders' Agreement**" means the shareholders' agreement relating to AssetCo Shares entered into on or about June 23, 2020 (as the same may be amended, supplemented, restated and/or novated from time to time in accordance with its terms and these Conditions) between the Issuer and certain other shareholders of AssetCo.

"**Similar Laws**" means any U.S. or non-U.S. federal, state or local laws or regulations that are similar to the provisions of Title I of ERISA or Section 4975 of the Code.

"**SNAM**" means SNAM S.p.A.

"**SPC**" means Supreme Petroleum Council.

"**Sponsor**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Sponsor Affiliate**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**Stabilizing Manager**" means HSBC Bank plc.

"**Standstill Period**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Enforcement and Standstill*".

"**Standstill Remedy**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Enforcement and Standstill*".

"**STID Proposal**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Modifications, Consents and Waivers*".

"**STID Voting Request**" has the meaning given to it under "*Summary of Certain Finance Documents – Security Trust and Intercreditor Deed – Modifications, Consents and Waivers*".

"**Subordinated Indebtedness**" means any Financial Indebtedness made available to the Issuer by the Parent which is subordinated to the Bonds as Subordinated Liabilities under and as defined in the Security Trust and Intercreditor Deed or which is otherwise subordinated to the Bonds on terms reasonably satisfactory to the Bond Trustee and which, subject to the Agreed Security Principles, is subject to the Transaction Security.

"**Subsidiary**" means in relation to any company, corporation or partnership, another company, corporation or partnership:

(a) more than half the issued share capital of which is beneficially owned, directly or indirectly, by the first-mentioned company or corporation or partnership;

(b) which is controlled, directly or indirectly, by the first-mentioned company or corporation or partnership; or

(c) which is a Subsidiary of another Subsidiary of the first-mentioned company, corporation or partnership,

and for this purpose, a company or corporation or partnership shall be treated as being controlled by another if that other company or corporation or partnership is able to direct its affairs and/or to control the composition of its board of directors or equivalent body, and includes any subsidiary within the meaning of Articles 2 and 2A of the Companies (Jersey) Law 1991.

"**Substance Law**" means the Taxation (Companies – Economic Substance) (Jersey) Law 2019 (including as amended pursuant to the Taxation (Companies – Economic Substance) (Amendment) (Jersey) Law 2019).

"**Supplemental Invoice**" has the meaning given to it under paragraph 6(g) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**Tag-Along Right**" has the meaning given to it under paragraph 8(d) of *"Summary of Shareholders' Agreement – Disposal of shares in AssetCo*".

"**Tariff**" has the meaning given to it under paragraph 7(b) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Payments*".

"**Tariffed Supply**" has the meaning given to it under paragraph 6(c) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**Tax Event**" means the Issuer is or will become obliged to make any withholding or deduction for, or on account of, any Taxes, duties or charges of whatsoever nature from payments in respect of any Bonds.

"**Taxes**" means any taxes, duties, assessments or governmental charges of whatever nature imposed, levied, collected, withheld or assessed by or within the Relevant Jurisdiction of the Issuer or any authority therein or thereof having power to tax.

"**Technical Adviser**" means Ryder Scott Company, L.P..

"**TEU**" means 20-foot equivalent units.

"**Third Party Baselining Exercise**" has the meaning given to it under paragraph 6(k)(ii) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Planning and Measurement of Supply*".

"**Third Party Services**" has the meaning given to it under paragraph 2(a)(i) of *"Summary of Principal Project Documents – General Services Agreement – Provision of the Services*".

"**tpd**" means tonnes per day.

"**Transaction Documents**" means the Finance Documents, the Hedging Agreements, the Acquisition Documents, the Shareholders' Agreement, the Project Documents and the AssetCo MoA.

"**Transaction Parties**" means the Issuer, the Initial Purchasers or any of their respective affiliates, agents or employees.

"**Transaction Security**" means the Security created or expressed to be created in favor of the Security Agents pursuant to the Security Documents.

"**Transfer Agent**" means Citibank, N.A, London Branch.

"**Transfer Event**" has the meaning given to it in Condition 6.7 (*Mandatory Redemption for a Compulsory Transfer Event*).

"**Transfer Event Proceeds**" has the meaning given to it in Condition 6.7 (*Mandatory Redemption for a Compulsory Transfer Event*).

"**Treasury Rate**" means the yield to maturity at the time of computation of U.S. Treasury securities with a constant maturity most nearly equal to the period from the redemption date to the Series A Bonds Maturity Date, the Series B Bonds Maturity Date or the Series C Bonds Maturity Date (as applicable). The Issuer will obtain such yield to maturity from the information compiled and published in the most recent Federal Reserve Statistical Release H. 15(519) which has become publicly available at least two Business Days prior to the redemption date. If such Statistical Release is no longer published, the Issuer will use any publicly available source or similar market data. If the period from the redemption date to the Series A Bonds Maturity Date, the Series B Bonds Maturity Date or the Series C Bonds Maturity Date (as applicable) is not equal to the constant maturity of a U.S. Treasury security for which a weekly average yield is given, the Issuer will obtain the Treasury Rate by linear interpolation, calculated to the nearest one-twelfth of a year, from the weekly average yields of U.S. Treasury securities for which such yields are given. If the period from the redemption date to the Series A Bonds Maturity Date, the Series B Bonds Maturity Date or the Series C Bonds Maturity Date (as applicable) is less than one year, the Issuer will use the weekly average yield on actually traded U.S. Treasury securities adjusted to a constant maturity of one year to make such calculation.

"**Treasury Regulations**" means the treasury regulations issued under the Code.

"**Treasury Transaction**" has the meaning given to it in the Security Trust and Intercreditor Deed.

"**U&O Agreement**" means the pipelines uses and operation agreement, dated on or about June 23, 2020 between ADNOC and AssetCo.

"**U&O Effective Date**" the effective date of the U&O Agreement, being July 16, 2020.

"**UAE**" means the United Arab Emirates.

"**UK**" means the United Kingdom.

"**UK MiFIR**" means Regulation (EU) No 600/2014 as it forms part of domestic law of the UK by virtue of the EUWA.

"**UK MiFIR Product Governance Rules**" means the FCA Handbook Intervention and Product Governance Sourcebook.

"**UK PRIIPs Regulation**" means Regulation (EU) No 1286/2014 as it forms part of domestic law of the UK by virtue of the EUWA.

"**UK Prospectus Regulation**" means Regulation (EU) 2017/1129 as it forms part of domestic law of the UK by virtue of the EUWA.

"**Underperformance Notice**" has the meaning given to it under paragraph 1(c)(iv) of *"Summary of Principal Project Documents – Pipelines Use and Operation Agreement – Term"*.

"**United Arab Emirates Bankruptcy Law**" means the Federal Decree No. 9 of 2016 Concerning Bankruptcy of the United Arab Emirates.

"**Unrestricted Global Certificate**" means an unrestricted global certificate evidencing Regulation S Bonds.

"**VAT**" means value added tax.

"**Wood Mackenzie**" means Wood Mackenzie Limited.

## INDEX OF DEFINED TERMS

**ANNEX B1: ORIGINAL INDEPENDENT TECHNICAL DUE DILIGENCE REPORT**

# Galaxy Pipeline Assets Bidco Limited (“GalaxyCo”)

**Technical and HSE Due Diligence Study**
**Associated with Abu Dhabi National Oil Company (ADNOC) Certain Pipelines and Processing Plants in United Arab Emirates**

**As of**

**15 March, 2020**

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## 1 Executive Summary

The main objective of this study is to provide an independent assessment of selected Abu Dhabi National Oil Company (ADNOC) operated Sales Gas, injection, and NGL pipelines in the United Arab Emirates (UAE) from a technical and HSE (Health, Social, and Environmental) perspective to facilitate a debt offering for Galaxy Pipeline Assets Bidco Limited (referred herein as GalaxyCo). These are strategic assets at the heart of Abu Dhabi's goal of achieving gas self-sufficiency. Gas volumes included in the asset perimeter are sourced from a range of Abu Dhabi's critical associated and non-associated gas reservoirs. The Gas Processing Plants (GPP) that process gas from these reservoirs and feed them into these pipelines are not in the asset perimeter. However, the report includes a summary assessment of these GPP from a technical perspective focusing on reliability and availability of the plants in relation to flow assurance into the pipelines. ***Figure 1*** below shows the pipeline network flow schematic identifying with a number scheme the twelve (12) Sales Gas, fifteen (15) injection, and eleven (11) NGL pipelines in the perimeter, which amounts to a total of 38 pipelines in the asset perimeter and the related GPPs.

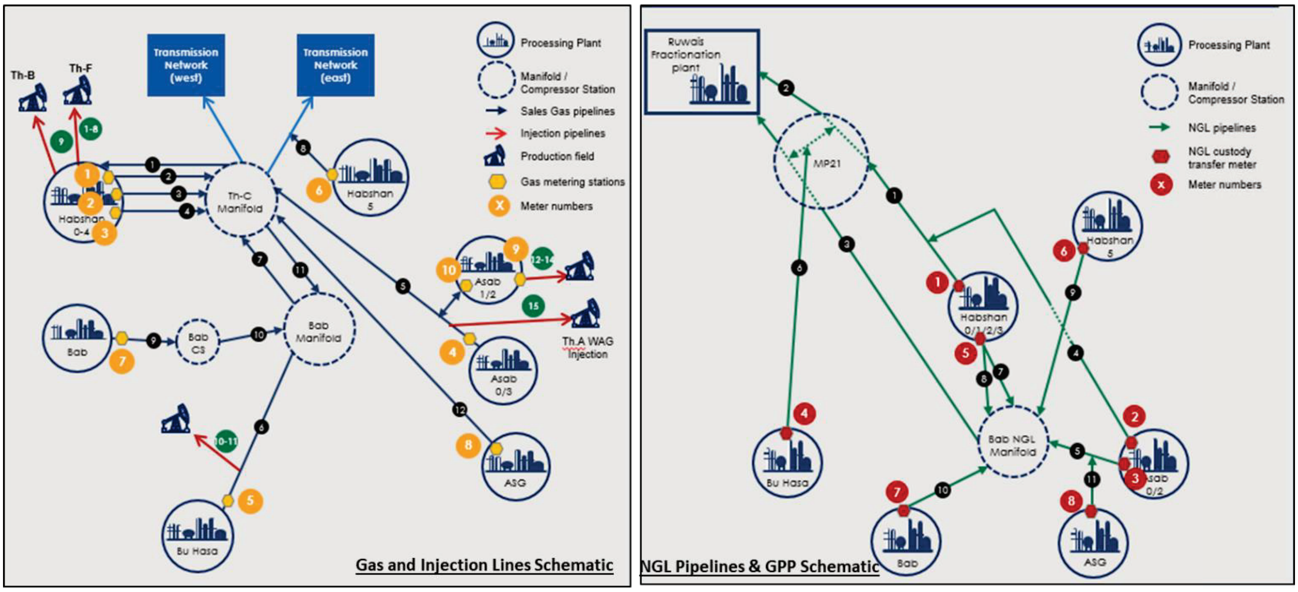


***Figure 1. ADNOC Pipeline Network - Flow Schematic***

ADNOC operates these pipeline assets under the Use and Operation (U&O) Agreement with ADNOC Gas Pipeline Assets LLC ("AssetCo"). GalaxyCo is a non-operating investor in the AssetCo. ADNOC fully retains all the operating risks and costs, such as CAPEX, OPEX, insurance, services, etc., relating to the pipelines.

This study is based on ADNOC's GMP (Gas Master Plan) forecasted rates that flow through these GPP to the pipelines. The GMP forecasted flow includes volumes for additional demand for ADNOC's natural gas in the country. Therefore, the contractually agreed Baseline Supply Forecast ("BSF") flowing through the pipelines is lower than the GMP. In addition, ADNOC has agreed to pay revenues to AssetCo for a Minimum Volume Commitment ("MVC"), set at 75% of the Baseline Supply Forecast. The MVC represents a robust ship-or-pay requirement with no exceptions, even if the pipelines are unavailable and during Force Majeure events. In summary, the study basis using ADNOC GMP is a conservative approach for the due diligence.

This study is to assess ADNOC's operations capability by reviewing the historical performance and future plans. The technical due diligence covers technical design, operations, condition, metering, capability to deliver planned production, future capital improvements, risk and mitigation, maintenance, and historical outages. The HSE discussion covers risks, detection and response, leak detection systems, management systems, maintenance, and applicable standards including International Finance Corporation (IFC) compliance in operations.

To achieve the study objectives, a team of specialists was deployed in Abu Dhabi for approximately two months from September to October 2019 to review the materials provided by ADNOC. ADNOC's personnel were also available for consultation and clarification during this period as well as subsequent clarifications via emails and virtual meetings on specific subjects until mid-March 2020.

ADNOC has operated pipelines in Abu Dhabi for over 50 years. ADNOC has proven capabilities to develop and maintain a safe operating system to transport associated production from its E&P operations. ADNOC has been partners with several of the world's largest oil and gas companies for over thirty (30) years including ExxonMobil, Shell and Total. Through these partnerships, ADNOC has been able to stay current with the latest international industry practice regarding operational and safety standards.

The pipeline designs we reviewed conformed to industry standards. ADNOC is a "self-regulated company" and there are no UAE regulations which govern the design and operations of pipelines. All specifications of design and operation follow ADNOC's DGS (Design General Specifications), which were derived from international standards. ADNOC has adhered to industry codes and standards for these pipelines. ADNOC also co-ordinates with the Abu Dhabi Department of Municipalities & Transport to agree on the pipeline routes and buffer zones required for the pipeline corridors. The pipe material grades for each pipeline are also consistent with industry standards. The pipeline diameters are properly sized to accommodate required throughput for each pipeline per ADNOC provided data. The gas pipelines have the capacity to deliver the planned production. ADNOC has plans in place for those pipelines that do not have sufficient capacity for the planned production at a certain point in the forecasted period. The minimum expectations of the design life are well defined. Any extension to the remaining life of pipelines is based on inspection results per the Integrity Management (IM) plan. Pipelines that do not have any inspection results use the 30-year design life as a baseline. The remaining lives are continuously updated based on inspection results of the Integrity Management (IM) plan. Once an inspection report is completed, it allows for calculation of remaining life based on degradation curves. Adhering to this IM is essential to continue safe pipeline asset operations.

ADNOC has a complete set of operating procedures in the field. They have established procedures for operating and maintaining systems, and their record of accomplishment reflects this. Their maintenance program includes monitoring for pipeline corrosion using inline inspection (ILI), cathodic protection (CP) measurements, leak detection systems, and preventative maintenance and repair programs. These plans, procedures and implementation are captured in the Pipeline Integrity Management System (PIMS). Operating procedures and effective communication with the technical / operating team ensures that pipeline operating parameters remain within the specified safety margins. PIMS is in place to extend the life of the pipelines. It is our opinion that ADNOC has developed industry-standard programs and systems for the maintenance and operation of these pipelines. ADNOC follows standard industry practice in operating, maintaining, abandoning and replacing their pipelines.

The condition review included examination of provided information for all pipelines related to the fitness for service (FFS) and remnant life assessment (RLA) reports defining the suitability for future operation (including remaining useful life). ADNOC follows a systematic and industry recognized integrity management process to ensure remaining life of the pipelines.

ADNOC has fit for purpose metering upstream and downstream at the end of the trunk lines. This allows for mass balance and to ensure proper flow distribution and metering is achieved. The flowrates are reported via SCADA system to the control room.

The capability to deliver planned production assessment was performed against ADNOC GMP, which is higher than BSF, whereas MVC is only 75% of BSF. A key consideration for the investors at GalaxyCo is to ensure that the MVC is met, the assessment provided herein is hence deemed as a conservative analysis.

The Sales Gas pipeline assessment indicates that the gas pipelines can deliver forecasted production and transportation of the gas as required. The scope of work included twelve (12) Sales Gas pipelines of varying design parameters. Some Sales Gas pipelines experience capacity constraints within the 2020 – 2040 timeframe, and ADNOC has plans and procedures to address these constraints.

The gas injection pipeline assessment indicates that the gas injection lines can deliver forecasted injection gas volumes as required. The scope of work included fifteen (15) injection gas pipelines with 3 distinct gas injection pipeline networks. The pipelines are generally in good condition except for Gas Injection Line #9, which is currently planned for replacement in 2021-2022.

The NGL pipeline assessment indicates that the NGL pipelines can deliver forecasted production volumes. The scope of work included eleven (11) NGL pipelines of varying ages, diameters, and lengths. These pipelines were found to fall within industry norms with regard to risk and mitigation plans, operational procedures, and maintenance.

For the Processing Plants with planned upgrades and expansions, based on the documentation we have reviewed, it is our opinion that these facilities will be capable of processing the future gas volumes.

Some portions of the pipeline network that were included in our study contain redundancy in case of a pipeline failure. The pipeline integrity management team stocks repair spares to quickly address pipeline repairs in the field.

At the time of writing this report, ADNOC has minimal plans for the existing future capital improvements of pipeline network. In general, an operator performs future capital improvements to reduce the operating cost (OPEX) and find avenues to increase production capacity of the system. In case of ADNOC, the OPEX is minimal and capacity is sufficient. ADNOC would fully replace the pipeline, if required, at the end of its life.

The capital improvement project is planned for GPP de-bottlenecking. These projects will follow the Value Assurance Process (VAP) set forth by ADNOC's Project Excellence group. This is a framework that has been put in place to manage and govern capital projects from their inception through to the operations stage. This process also makes sure that workflows and procedures are followed throughout the entire design, construction, start-up, and operation of assets. This mitigates and controls risks and is used to ensure that proper insurance coverage can and will be provided.

Risk and Mitigation of the pipeline is per the PIMS. ADNOC conducts yearly inspections of their pipelines network to determine the status of each pipeline. A traffic light status risk matrix is used to determine the severity of pipeline degradation. Per the risk matrix, ADNOC provides plans to make the necessary repairs.

The strategic plans provide a proactive approach to set schedules either for inspection and repairs, such as review of cathodic protection systems, in-line inspection (ILI) assessments, and eventual replacement based on remaining life assessments (RLA). For its maintenance administration, ADNOC uses a Computer Maintenance Management System (CMMS). The CMMS is used for asset data management, work order management, development of preventative maintenance plans, storing maintenance records, and managing inventories of spare parts. ADNOC also provided various information on their maintenance standards and processes.

ADNOC identifies their pipeline systems of critical importance for the safe operation, safety of the people, environment and to provide business continuity. Regarding major repairs or other issues that may require pipeline shutdowns, ADNOC states that they do not have specifically planned shutdowns for any of their pipelines. The opportunities provided by shutdowns/turnarounds at the source plants are used for any critical repair and rehabilitation work required to be completed on the pipelines. ADNOC has an EPRS (Emergency Pipeline Repair Service) plan and equipment in place to quickly address repairs.

The gas processing plants were also reviewed for their reliability and availability. Over the 5-year span of data, the average reliability was over 99% across the facilities, and the average availability was over 97%. From these values it was calculated that the average planned downtime for maintenance appears to be between 1 to 2 weeks yearly. This is considered to be in line with the industry norms. Major planned shutdowns due to periodic maintenance and project requirements significantly decreases availability for the specific year but ADNOC plans this extremely well among the various upstream and downstream operating divisions. The unplanned downtime varied from year-to-year and facility-to-facility but in general, it appears to be in the range of 1 day per year or less barring a few cases of longer downtimes.

Within Abu Dhabi, an Environmental Agency[1] and an Occupational Safety and Health Abu Dhabi organization[2] exist. These agencies are responsible for setting health, safety and environmental standards, goals and policies. Based on this structure, ADNOC has a set of Codes of Practice (COP) for HSE functions that are compliant with the top-level requirements. These COP standards are applied downward such that all ADNOC or its OPCO JVs (Operating Companies' Joint Ventures) operational procedures are to be compliant with the HSE COP. However, unlike many other countries where health, safety and environmental organizations have operational compliance enforcement branches, no separate regulatory agencies exist within Abu Dhabi that would impose fines or penalties for non-compliance on ADNOC. As such, based on discussion with ADNOC personnel, operational risk to GalaxyCo is believed to be negligible or non-existent.

As for the risk assessment, if the assets under consideration were to have a catastrophic failure (such as a complete pipeline separation), ADNOC would be able to isolate and shut down flow. Shut down would be accomplished with leak detection triggers, automatic pump trips, and isolation valves upstream of the assets. As such, any catastrophic releases from the assets under consideration should be adequately controlled and isolated with a significantly small chance that any release would not be contained within the boundaries of Abu Dhabi. Potential risk could come from catastrophic failure leading to loss of life or significant injury where the injured party/parties pursue litigation against the operating partners - including possible AssetCo partners. However, this risk is viewed as low because the project assets are only transport pipelines of natural gas and NGLs. In addition to the low probability of an incident, the pipelines under consideration are in relatively remote locations in desert conditions in Abu Dhabi.

[1] https://www.ead.ae
[2] https://www.oshad.ae

As part of this assessment, the ADNOC incident response plans for both pipelines and plants were reviewed. Based on a thorough review of ADNOC's incident response methods and capabilities, evidence exists of compliance with international standards and that proper procedures are in place to address releases as they occur. However, as noted earlier and per our understanding ADNOC or its OPCO JVs (Operating Companies Joint Ventures) are responsible for release containment and response such that GalaxyCo carries little to no HSE risk from gas releases.

We performed a detailed review of the ADNOC HSE Management System (HSEMS) as part of our assessment. The HSEMS is comprehensive. The corporate, top-level approach to HSE implementation is codified in a set of procedures named Codes of Practice (COP). The top-level COP is ADNOC-COPV1-01 Code of Practice on HSE Administration Systems. The ADNOC COPs are implemented by all operating companies including the OPCO JVs. The HSEMS covers all elements of a high-quality program including topics such as occupational safety, using hazards analyses in addressing risk along with Quantitative Risk Assessments (QRA), Control of Major Accident Hazards (COMAH), implementing Health Safety and Environmental Impact Assessments (HSEIA), asset integrity, waste management, and resource protection. Proper implementation of the HSEMS ensures environmental, safety and social risks are minimized. The ADNOC HSEMS and COPs are fully compliant with the IFC (International Finance Corporation) elements from policy through monitoring and review.

A thorough HSE review of the asset integrity process was performed with a comprehensive focus on inspections and maintenance. Based on our review, the overall system integrity appears well managed and processes are in place to ensure the overall integrity of the pipelines. Maintenance is primarily performed in response to findings from established risk-based inspections and a formal maintenance program outlined in the ADNOC Gas Processing Maintenance Standard. The current process has shown positive outcomes and has resulted in an overall positive status of the pipeline network with no overall loss of gas volume for an affected flow route at any given time.

ADNOC is "self-regulatory" regarding HSE matters, meaning, "ADNOC must comply with all relevant Abu Dhabi and UAE Federal Laws and that the monitoring of legal compliance will be carried out internally and ADNOC will not be subject to direct external regulatory scrutiny." We have performed a detailed review of the ADNOC HSE procedures and data provided. Based upon our understanding and review, the ADNOC HSE approach is consistent with UAE laws and regulations within the construct of its self-regulatory definition. ADNOC and the OPCOs maintain compliance with the applicable International Finance Corporation (IFC) guidelines and all evidence indicates that this practice will continue.

Based on a thorough review of the IFC Performance Standards and World Bank Performance Standards on Environmental and Social Sustainability, we believe ADNOC is in, and fully intends to maintain, full compliance with the related elements.

## 2 Scope and Review Process

### 2.1 Scope of Work

The main objective of the study and this report is to provide an independent assessment of Pipelines from a technical, and Health, Safety, and Environmental (HSE) perspective to facilitate a debt offering. In addition, the study covers a summary assessment of gas Processing Plants from a technical perspective focusing on availability and reliability of the plants as this can impact actual gas volumes transported. These pipelines and processing plants are operated by Abu Dhabi National Oil Company (ADNOC) in the United Arab Emirates (UAE).

The technical consultant tasks to accomplish the objectives of this study were the following:

- To undertake a technical due diligence review of the Pipelines and Processing Plants including as follows:
    - a technical review of the Pipelines to assess the general suitability of design to meet capacity objectives and their conformity to recognized industry standards plus applicable UAE regulations;
    - an operations review of the Pipelines to assess the operating and maintenance track record including compliance with safe operating practices as well as an opinion of the operator’s experience and capabilities;
    - a condition review of the Pipelines to assess the current integrity of the installed facilities plus their suitability for future operation including remaining useful life of the Pipelines and a review of any material construction or operating issues;
    - an assessment of the metering and control systems associated with the Pipelines, with a focus on their ability to accurately report volume flows and monitor the operations of the system;
    - an assessment of the Pipelines' and Processing Plants' capability to deliver and process the planned forecast production volumes and any minimum contracted volumes;
    - an analysis of planned future capital improvements to the Pipelines and Processing Plants;
    - an overview and analysis of key risks and mitigants associated with the Pipelines, presented in a risk matrix format;
    - review and comment on management systems and maintenance schedules;
    - a review of the location and quality of gas and NGL meters to estimate billable throughput;
    - an affirmation of the remaining useful life of the Pipelines and Processing Plants, and redundancy in existing network to support future production;
    - an analysis of historical, and any planned/unplanned outages on the Pipelines and Processing Plants that may affect the overall commitment to the gas or NGL Network; and
    - conduct due diligence of the Processing Plants ultimately contributing to the Sales Gas and NGL streams from ADNOC feed gas, including summary overview of the historical reliability and availability of the plants with commentary on system flexibility.

- Undertake a Health, Safety, and Environmental (HSE) due diligence review of all available, relevant documentation and information that describes the potential environmental and social risks and impacts of the Pipelines and Processing Plants as follows:

    - describe the components of Pipelines and Processing Plants that form part of the environmental and social due diligence based on the Applicable Standards (see below) for the purpose of meeting GalaxyCo’s financing requirements and, if necessary, rating agencies' ratings requirements;

    - assess the operator's issues detection and response system;

    - review and comment on management systems and maintenance schedules;

    - evaluate the environmental and social risks and residual (post-mitigation) impacts of the Pipelines and Processing Plants against the Applicable Standards; which are:

        - Laws, regulations and permits/approvals in the UAE pertaining to environmental and social issues (including any applicable international treaties);

        - International Finance Corporation Performance Standards;

        - The World Bank Group Sector-specific Environmental, Health and Safety Guidelines, as relevant; and

        - Any other environmental and social standards, guidelines, and policies required by GalaxyCo and potential Beneficiaries or the rating agencies, if required.

    - Relevant documentation and information which describe the environmental and social risks and impacts of the Pipelines and Processing Plants will include but will not be limited to any Environmental and Social Impact Assessment ("ESIA") reports, Environmental and Social Management Plans ("ESMP"), Environmental and Social Management System ("ESMS"), and any other relevant documentation prepared for the Pipelines and Processing Plants; and

    - All documentation and information identified by the Consultant in consultation with the Issuer as contemplated under the scope of work.

## 2.2 Consultant’s Review Process

The technical consultant team’s review process included collection of information from Abu Dhabi National Oil Company (ADNOC) in September 2019. The consultant team visited ADNOC offices for five (5) weeks at the end of September to October 2019 to collect additional data and interview ADNOC technical teams. The consultant team interviewed corporate representatives from ADNOC Gas Processing groups including, Operations, Gas Processing, HSE, Onshore Operations, Production Planning and Shipping, Integrity Management, Maintenance, Asset Integrity & Life Extension, and Integrity. The team made multiple rounds of data requests to ADNOC and interviewed ADNOC’s individuals throughout the process to obtain further clarifications, details, and additional data required to accurately perform the assessments.

Subsequent discussions in November and December 2019 for additional data and clarifications with ADNOC operations and technical team were over teleconferences and emails.

Additional data from ADNOC and discussions with ADNOC technical team took place throughout January 2020 until March 12, 2020 to obtain relevant confirmatory information.

# 3 <u>Asset Overview</u>

## 3.1 Introduction

The asset perimeter has twelve (12) Sales Gas, fifteen (15) injection, and eleven (11) NGL pipelines. These assets are critical to the Abu Dhabi energy ecosystem. These pipelines connect UAE's proven reserves (some of the largest in the world) to local offtakers and global energy markets. These are strategic assets at the heart of Abu Dhabi's goal of achieving gas self-sufficiency. Gas volumes included in the perimeter are sourced from a variety of Abu Dhabi's critical associated and non-associated gas reservoirs. The Gas Processing Plants (GPP) that process gas from these reservoirs and feed them into these pipelines are not in the asset perimeter. However, the report covers GPP from a technical perspective focusing on reliability and availability of the plants in relation to flow assurance into the pipelines.

ADNOC operates these pipeline assets under a 20-year U&O Agreement with ADNOC Gas Pipeline Assets LLC ("AssetCo"). GalaxyCo is a non-operating investor in AssetCo. ADNOC fully retains all the operating risks and costs, such as CAPEX, OPEX, insurance, services, etc., relating to the pipelines. In short, ADNOC has the sole responsibility for all operating and required capital expenditure at no expense to GalaxyCo or AssetCo.

The study basis is ADNOC's GMP (Gas Master Plan) forecasted rates that flow through the GPPs to the pipelines. Total demand for ADNOC's natural gas, from its Gas Master Plan, is higher than the contractually agreed Baseline Supply Forecast (BSF) flowing through the AssetCo. In addition, ADNOC has agreed to pay revenues for a Minimum Volume Commitment ("MVC"), set at 75% of the Baseline Supply Forecast ("BSF"). The MVC represents a robust ship-or-pay requirement with no exceptions, even if the pipelines are unavailable and during Force Majeure events.

In summary, the study basis using ADNOC GMP is a conservative approach for the due diligence. Furthermore, ADNOC pays for all the CAPEX, OPEX, and decommissioning costs to maintain targeted forecasts. The focus, therefore, is on ADNOC's operations capability of these assets.

## 3.2 Sales Gas Pipelines

The Abu Dhabi National Oil Company (ADNOC) owns and operates a large onshore network of Gas Processing Plants (GPPs) and associated pipelines within the UAE. The gas processing facilities that are tied into this system include Asab-0, Asab-2, Habshan-(0-4), Habshan-5, Bab, Bu Hasa and Shah-ASG (ADNOC Sour Gas). These facilities process the raw gas (unprocessed gas directly delivered from producing fields) by removing hydrogen sulfide ($H_2S$), carbon dioxide ($CO_2$), water vapor, and heavier hydrocarbon components. The gas pipeline system is then used to transport the processed gas (Sales Gas) from the gas processing plants to the Thamama-C manifold. From the Thamama-C manifold, the gas is distributed into the East and West Gas Networks. These gas networks are used for transmission of natural gas to the final consumers.

A simplified flow schematic outlining the Sales Gas network is shown below in ***Figure 2***.

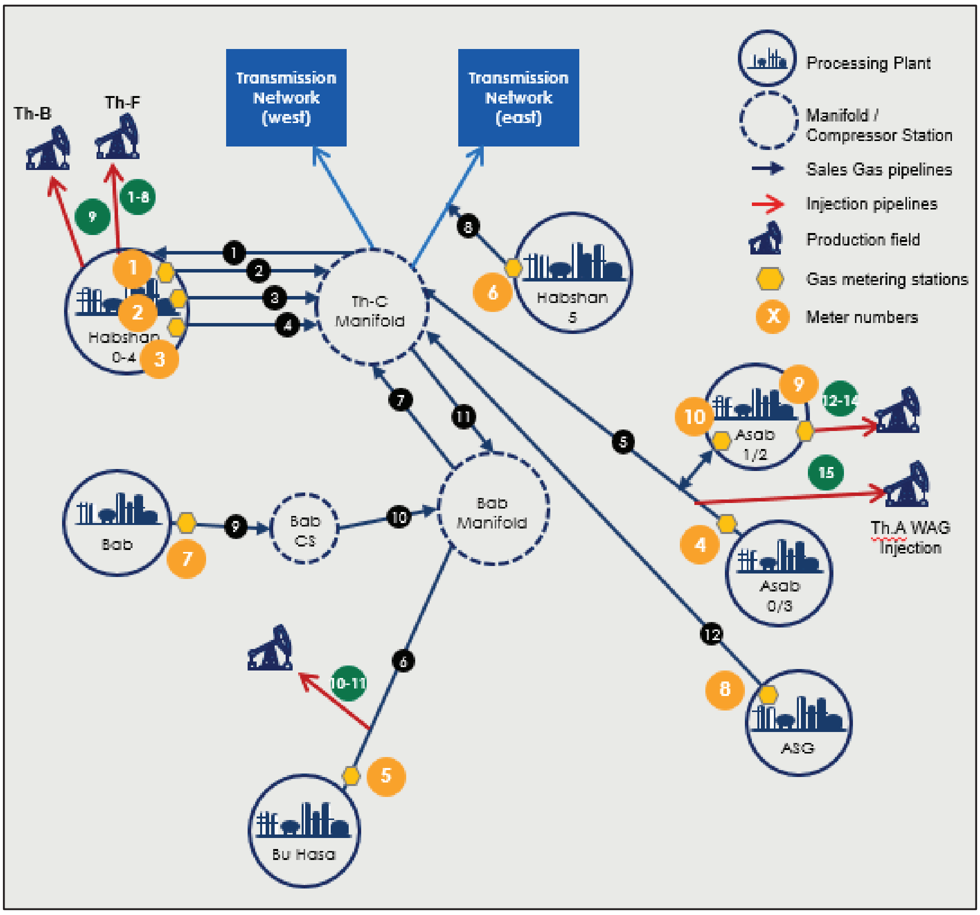


***Figure 2: ADNOC Sales Gas Network - Flow Schematic***

The Sales Gas lines that are an exception to taking gas to the consumer transmission networks are Gas Lines #1, #5, #6, #7, and #11. The details on each of these lines are as follows:

- Gas Line #1 takes residue gas from the Bu Hasa facility that has been routed through the Thamama-C manifold and directs it back to the Habshan-(0-4) complex for re-injection.
- Gas Line #5 can be operated bi-directionally and is used to move gas into the sales network or alternatively draw off the system for re-injection into the reservoir.
- Gas Lines #1, #6, and #7 are used to transport sour residue gas originating from the Bu Hasa facility. This gas is strictly used for re-injection and therefore does not require $H_2S$ removal.
- Gas Line #11 takes Sales Gas from the Thamama-C manifold and directs it back to the Bab manifold. This line ties into a Sales Gas pipeline transporting gas to Ruwais.

***Table 1*** provides a summary of the gas pipelines' characteristics.

| Line Number | Origin | Destination | Line Size [inch] | Length [km] | Year Commissioned | Current Asset Replacement Year | Maximum Required Capacity 2020-2040 [MMscfd] | Design Capacity [MMscfd] |
|---|---|---|---|---|---|---|---|---|
| 1 | Thamama-C manifold | Habshan-(0-4) | 20 | 1.0 | 1996 | 2026 | 251 | 270 |
| 2 | Habshan-(0-4) | Thamama-C manifold | 30 | 1.0 | 1996[3] | 2026 | 370 | 405 |
| 3 | Habshan-(0-4) | Thamama-C manifold | 42 | 1.0 | 1996 | 2026 | 1,062 | 1,162 |
| 4 | Habshan-(0-4) | Thamama-C manifold | 42 | 1.0 | 2001 | 2031 | 1,400 | 1,533 |
| 5 | Thamama-C manifold | Asab | 36 | 87.6 | 2011 | 2041 | 565 | 640 - **Note 1** |
| 6 | Bu Hasa | Bab manifold | 24 | 45.6 | 2015 | 2045 | 251 | 370 |
| 7 | Bab manifold | Thamama-C manifold | 24 | 4.4 | 2015 | 2045 | 251 | 298 |
| 8 | Habshan-5 | Transmission Network | 30 | 3.5 | 2012 | 2042 | 996 | 1,200 – **Note 2** |
| 9 | Bab plant | Bab compressor station | 16 | 2.6 | 2013 | 2043 | 90 | 106 |
| 10 | Bab compressor station | Bab manifold | 10 | 0.2 | 2013 | 2043 | 90 | 106 |
| 11 | Thamama-C manifold | Bab manifold | 30 | 4.5 | 1984 | 2022 | - | 405 |
| 12 | Shah ASG | Thamama-C manifold | 36 | 127.7 | 2015 | 2045 | 937 | 755 – **Note 3** |

***Table 1. Sales Gas Pipelines within Work Scope***

***Note 1*** – Gas Line #5 is capable of bi-directional flow. The rate given references flow from Asab to the Thamama-C manifold. If this line is flowing from Thamama-C to Asab, the flow rate is reduced to 357 MMscfd.
***Note 2*** – 896 MMscfd is the design capacity provided by ADNOC; however, re-analysis of the operating criteria show that line can flow up to 1,200 MMscfd. The re-analysis determined that the gas was clean and dry (free of solids & liquids) and could tolerate higher velocities and hence higher flow rates than normally allowed for in ADNOC design guidelines.
***Note 3*** – Original design capacity for this line was 656 MMscfd; however, a re-analysis of this pipeline indicates it can flow up to 755 MMscfd. The reanalysis confirmed that design capacity can be 140% of the original design capacity.

The pipelines vary in diameter from 10-inch to 42-inch and vary in length from 200 meters to 128 km. These lines are used to transport produced gas volumes within the ADNOC system. For purposes of the assessment herein, the pipelines can be broadly addressed as gas pipelines with the following nomenclature:

There are twelve (12) Sales Gas pipelines, which are as follows:

- Thamama-C manifold – Habshan-(0-4) pipeline (also referred herein as Gas Line #1). This 20" pipeline is approximately 1 km in length and was commissioned in 1996. This above ground line takes sour residue gas from the Thamama-C manifold and directs it back to the Habshan-(0-4) complex. The sour gas originates from the Bu Hasa gas processing facility, which does not have sweetening capabilities. This gas is used for re-injection purposes in the Habshan region (Thamama-F reservoir). The re-injection of gas is necessary for maintaining the reservoir's pressure.

- Habshan-(0-4) – Thamama-C manifold pipeline (also referred herein as Gas Line #2). This 30" pipeline is approximately 1 km in length and was commissioned in 1996. This above ground line transports lean gas, which consists mostly of methane, from the Habshan-(0-4) processing facility to the Thamama-C manifold for distribution.

- Habshan-(0-4) – Thamama-C manifold pipeline (also referred herein as Gas Line #3). This 42" pipeline is approximately 1 km in length and was commissioned in 1996. This above ground line transports lean gas from the Habshan-(0-4) processing facility to the Thamama-C manifold for distribution.

- Habshan-(0-4) – Thamama-C manifold pipeline (also referred herein as Gas Line #4). This 42" pipeline is approximately 1 km in length and was commissioned in 2001. This line transports lean gas from the Habshan-(0-4) processing facility to the Thamama-C manifold for distribution.

- Asab – Thamama-C manifold pipeline (also referred to herein as Gas Line #5). This 36" pipeline is approximately 87.6 km in length and was commissioned in 2011. This line transports lean gas from the Thamama-C manifold to the Asab area for re-injection. This line is bi-directional and can alternatively be used to export gas to the sales network upon demand.

- Bu Hasa – Bab manifold pipeline (also referred to herein as Gas Line #6). This 24" pipeline is approximately 45.6 km in length and was commissioned in 2015. The Bu Hasa processing facility does not include removal of $H_2S$ and therefore this line transports sour residue gas. This gas is used strictly for re-injection, which does not require $H_2S$ removal. A large portion of the gas is used for injection in the Bu Hasa area, while the remaining gas is sent to the Bab manifold where it continues on to Gas Line #7 for further transmission.

- Bab manifold – Thamama-C manifold (also referred to herein as Gas Line #7). This 24" pipeline is approximately 4.4 km in length and was commissioned in 2015. This line is used to transfer sour residue gas processed at the Bu Hasa processing plant to the Thamama-C manifold, where it then continues on to Gas Line #1.

- Habshan-5 – Transmission network (also referred to herein as Gas Line #8). This 30" pipeline is approximately 3.5 km in length and was commissioned in 2012. It is used to transfer lean gas from the Habshan-5 facility to a tie-in point approximately 13 km downstream of the Thamama-C manifold and into the East Sales Gas Network.

- Bab plant – Bab compressor station (also referred to herein as Gas Line #9). This 16" pipeline is approximately 2.6 km in length and was commissioned in 2013. It is used to transfer gas from the Bab plant to a compressor station just upstream of the Bab manifold.

- Bab compressor station – Bab manifold (also referred to herein as Gas Line #10). This 10" line is approximately 200 meters long and was commissioned in 2013. It is an above ground line that is used to transport compressed lean gas from the Bab compressor, into the Bab manifold. This gas is tied into a 30" header (outside of this project scope) where it is directed to Ruwais.

- Thamama-C manifold – Bab manifold (also referred to herein as Gas Line # 11). This 30” pipeline is approximately 4.5 km in length and was commissioned in 1984. This line is used to transfer Sales Gas from the Thamama-C manifold to the Bab Manifold. This line ties into a 30” header (outside of this project scope) where it is directed to Ruwais. This pipeline is used when demand for gas at Ruwais is high.

- Shah-ASG (ADNOC sour gas) – Thamama-C manifold (also referred to herein as Gas Line # 12). This 36” pipeline is approximately 127.7 km in length and was commissioned in 2015. It is used to transfer lean gas from the Shah-ASG processing plant, to the Thamama-C manifold for further distribution.

The Gas Master Plan provided by “ADNOC – Downstream” included lean gas production figures for the years 2020 through 2040. The lean gas figures are indicative of the gas volumes leaving the processing facilities. The indicative Sales Gas volumes used for capacity analysis were obtained by subtracting the injection volumes from the lean gas volumes for the analysis herein.

## 3.3 Injection Lines

In ADNOC’s operated large onshore network of Gas Processing Plants (GPPs) and associated pipelines, a portion of the produced and processed gas from the field is used for injection into the reservoirs and for lifting oil from producing wells. The injection gas is treated at the GPPs, where it is dehydrated (water vapor is removed), and heavier hydrocarbons are recovered. This process results in a lean, dry gas that can be used for injection. The remaining gas is treated at the GPPs similarly, but other contaminants such as $H_2S$ and $CO_2$ are removed to create a Sales Gas described in Section3.2.

The gas used for injection is further compressed after treatment at the GPPs. The gas injection serves to maintain high oil reservoir pressures, which in turn continues to displace oil to the producing wellbores. Gas injection is also used for condensate recovery. Additionally, some gas injection is also used for artificial lift purposes (also referred to as gas lift) in which the gas is injected into the annulus of oil producing wellbores and enters the production tubing by means of gas lift valves and assists in the lifting of the produced fluids to the surface.

The gas used for injection is transported from the GPPs to the oil fields through a gas injection pipeline network. The injection pipeline network consists of injection trunk lines (also herein referred to as Gas Injection Pipelines or Injection Lines), which transport large amounts of gas to sections of a field. From the Gas Injection Pipelines, gas is directed by smaller side branch lines to individual wells. These side branch lines carrying gas from the trunk lines to the individual wellheads are known as “injection flowlines”.

The oil and gas fields utilizing gas injection and/or gas lift are the Bab, Asab, and Bu Hasa fields. The Habshan 0-4 GPP provides the injection gas for the Bab field. The Asab-2 GPP provides the injection gas for the Asab field, and lastly the Bu Hasa GPP provides the injection gas for the Bu Hasa area. A summary of the injection gas trunk lines within this study is provided in ***Table 2.***

| | Field | Origin | Destination | Line Size [in] | Length [km] | Year Commissioned | Current Asset Replacement Year |
|---|---|---|---|---|---|---|---|
| 1 | Bab | Habshan-1 | Bab (North East) | 12 | 20.6 | 1995 | 2022 – 2035 |
| 2 | Bab | Habshan-1 | Bab (West) | 12 | 13.3 | 1995 | 2041 |
| 3 | Bab | Habshan-1 | Bab (South) | 12 | 14.7 | 1995 | 2065 |

| | Field | Origin | Destination | Line Size [in] | Length [km] | Year Commissioned | Current Asset Replacement Year |
|---|---|---|---|---|---|---|---|
| 4 | Bab | Habshan-1 | Bab (East) | 12 | 16.0 | 1995 | 2027 |
| 5 | Bab | Habshan-3 | Bab (North East) | 16 | 20.4 | 2006 | 2046 |
| 6 | Bab | Habshan-3 | Bab (West) | 16 | 19.3 | 2006 | 2046 |
| 7 | Bab | Habshan-3 | Bab (South) | 16 | 15.4 | 2006 | 2046 |
| 8 | Bab | Habshan-3 | Bab (East) | 16 | 13.6 | 2006 | 2046 |
| 9 | Bab | Habshan-1 | Bab (North East) | 12 | 20.3 | 1988/1995 | 2023 |
| 10 | Bu Hasa | Bu Hasa Valve Station 1 | Bu Hasa Compressor Station Train 1 | 12 | 2.0 | 1995 | 2030 |
| 11 | Bu Hasa | Bu Hasa Valve Station 1 | Bu Hasa Compressor Station Train 2 | 12 | 2.0 | 2005 | 2029 |
| 12 | Asab | Asab-1/2 | Asab (South West) | 14 | 11.4 | 2000 | 2045 |
| 13 | Asab | Asab-1/2 | Asab (Central) | 12 | 10.1 | 2000 | 2063 |
| 14 | Asab | Asab-1/2 | Asab (North East) | 12 | 13.9 | 2000 | 2036 |
| 15 | Asab | Asab-1/2 | Th. A WAG Inj. | 12 | 1.8 | 2002 | 2032 |

***Table 2. Injection Gas Trunk Lines within Work Scope***

A brief description of these gas injection lines per field is as follows:

<u>BAB FIELD (Gas Injection Lines #1-9)</u>

Habshan 0-4 gas processing plant (GPP) provides gas for injection into the Bab Field. This plant can be divided into various sub-facilities. The injection compressors, and therefore the starting point of the injection pipelines, are at the Habshan-1 (otherwise known as OGD-1) and Habshan-3 (OGD-III) areas of the plant. Within this scope there are a total of nine (9) injection trunk lines transporting gas form the Habshan 0-4 facility, five (5) from OGD-1 and four (4) from OGD-3.

Injection trunk line #9 is divided into two sections. The first section labelled “Inj. TL #9 Old” is the original trunk line and was commissioned in 1988. This portion of the line is 12” in diameter and 12 kilometers in length. The second portion of this line labelled as “Inj. TL #9 New” was commissioned in 1995 and is connected to the Old line and serves as an extension of the Old line. This section is 12” in diameter and 8.3 kilometers in length. The old segment of pipeline has undergone various repairs/upgrades and is nearing the end of its life. The old segment has also had its Maximum Allowable Operating Pressure (MAOP) de-rated due to its deteriorating condition; for this reason, it is scheduled to be replaced in 2021-2022 in the Bab Major Equipment Replacement Plan.

The far end of injection TL #9 (furthest from Habshan 0-4) terminates at an injection header manifold. This manifold connects TL #9 with two (2) additional injection pipelines known as the South East and North West injection trunk lines. These additional lines are not in the scope of the offer and they have not been in service since 2015; however, they could be restored to service for future injection or gas lift projects.

A flowsheet diagram of the injection lines can be found previously in ***Figure 2***, which also includes the Sales Gas network.

BU HASA FIELD (Gas Injection Lines #10 & #11)

The Bu Hasa field utilizes gas from the Bu Hasa gas processing plant for injection. The gas used for injection is taken from the Sales Gas pipeline located outside of the Bu Hasa gas facility. The 12-inch injection line takes gas from a Sales Gas line. The gas injection compressors are located on the downstream end of this injection line.

The take-off point is located at a nearby valve station along the Sales Gas Line #6. The two injection trunk lines that are part of this scope, both originate at the valve station and both terminate at a nearby compressor station.

The Bu Hasa compressor station takes the Sales Gas from lines TL #10 and #11 and compresses it to injection pressure. The gas is then distributed from the compressor station into eleven (11) injection headers, which transport gas to the Bu Hasa oil field. The injection headers have side branches, or “flowlines”, which transport gas to individual injection wells.

ASAB FIELD (Injection Lines #12-15)

The Asab injection lines #12, #13, and #14 receive gas for injection from the Asab-1/2 gas processing plant. Then, the Asab-0/3 facility can export gas by flowing to a nearby “lean gas compressor station” (LGCS). The gas is compressed at the LGCS station and flows toward the Asab-1/2 facility, eventually entering Sales Gas Line #5. Between the LGCS and the Asab-1/2 facility, a take-off point is available to redirect flow for injection. This take-off point is where injection line #15 starts. Injection line #15 directs gas to a facility for compression and injection. This facility is known as the Gas Injection Pilot Plant (GIPP).

Injection trunk line #15 originates at a tie-in point to a 20” gas pipeline (Asab-0/3 to Sales Gas #5) and terminates at the Gas Injection Pilot Plant (GIPP). This pipeline operates at a lower pressure (35 barg) to deliver gas to GIPP. The gas is further compressed at GIPP to be injected at wellheads at 340 barg. The wellhead area has Water Alternating Gas (WAG) injection and this entire system operates under the ADNOC Gas Processing (AGP) division.

The gas used for injection can be supplied from both the Asab-0/3 and Asab-1/2 facilities, as they are connected. However, injection trunk lines #12-14 originate at the Asab-1/2 facility. Injection trunk line #12 originates from Asab-1/2 and extends to the south, injection trunk line #13 originates from Asab-1/2 and extends towards the Asab-0/3 facility (central Asab region), and injection trunk line #14 extends to the north.

## 3.4 NGL Pipelines

ADNOC owns and operates an NGL (natural gas liquid) pipeline system that is used to transport NGL volumes. This scope of work includes eleven (11) NGL pipelines of varying ages, diameters and lengths. These lines are used to transport produced NGL volumes from several different NGL Plants to the Ruwais NGL Fractionation Plant for further processing. NGL processing facilities that are tied into this system include Asab-0, Asab-2, Habshan-0/1/2, Habshan-3, Habshan-5, Habshan-OAG, Bab, Bu Hasa and Shah-ASG. The NGL pipelines within this work scope are shown in ***Table 3***.

| Line Number | NGL Pipeline Network | Origin | Destination | Line Size [in] | Length [km] | Year Commissioned | Current Asset Replacement Year | Maximum Required Capacity 2020-2040 [TPD] | Design Capacity [TPD] |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | Habshan-3 | MP-21 | 20 | 37.3 | 2010 | 2040 | 16,765 | 18,152 |
| 2 | 2 | MP-21 | Ruwais | 24 | 67.7 | 2010 | 2040 | 16,765 | 23,691 |
| 3 | 1 | Bab manifold | Ruwais | 30 | 101.0 | 2010 | 2040 | 37,630 | 50,814 |
| 4 | 2 | Asab-2 | 921 receiver | 16 | 81.1 | 2010 | 2040 | 6,313 | 6,412 |
| 5 | 1 | Asab-0 | Bab manifold | 24 | 89.0 | 2010 | 2040 | 11,499 | 15,253 |
| 6 | 1 | Bu Hasa | MP-21 | 16 | 34.2 | 2010 | 2040 | 3,174 | 10,409 |
| 7 | 1 | Habshan-0/1/2 | Bab manifold | 10 | 6.3 | 1995 | 2027 | 5,800 | 6,473 |
| 8 | 1 | Habshan-OAG | Bab manifold | 12 | 4.5 | 2010 | 2037 | 9,000 | 10,223 |
| 9 | 1 | Habshan-5 | Bab manifold | 24 | 17.6 | 2012 | 2042 | 8,880 | 12,840 |
| 10 | 1 | Bab plant | Bab manifold | 8 | 0.2 | 2010 | **Note 2** | 803 | 1,736 |
| 11 | 1 | Shah ASG | Line #4 or #5 @ KP 31.3. | 16 | 68.5 | 2015 – **Note 1** | 2045 | 8,359 | 5,311 |

***Table 3. Summary of NGL Pipelines within Work Scope***

***Note 1*** *– Per ADNOC reported year commissioned and referenced in the Shah Gas Development (SGD) Project documents.*
***Note 2*** – Line #10 is an exception to the other lines. It is a part of the integrity management system; however, it is an above ground piping connection and not subject to the same reporting program as the other lines.

These eleven (11) pipelines vary in diameter from 8-inch to 24-inch and range in lengths from 200m to 101 km. For purposes of assessment herein, the pipelines can be broadly addressed as NGL pipelines with the following nomenclature:

**NGL Pipelines:** There are eleven (11) NGL pipelines. These pipelines are as follows:

- Habshan-3 – MP-21 pipeline (also referred herein as NGL Line #1). This 20” pipeline is approximately 37.3 km in length and was commissioned in 2010. The associated production comes from the NGL Plant Habshan-3, as well as production from Asab-2, which connects at KP 2.4, upstream of the MP-21 station at receiver 921. This line terminates at the MP-21 station.

- MP-21 – Ruwais pipeline (also referred to herein as NGL Line #2). This 24” pipeline is approximately 67.7 km in length and was commissioned in 2010. The associated production comes from the NGL Plants including Habshan-3, Asab-2, as well as some production from Bu Hasa. This line terminates at the Ruwais Fractionation Plant.

- Bab NGL manifold – Ruwais pipeline (also referred to herein as NGL Line #3). This 30” pipeline is approximately 101 km in length and was commissioned in 2010. The associated production comes from the NGL plants including Habshan-5, Habshan-0/1/2, Habshan-OAG, Asab-0, Shah-ASG and the Bu Hasa spillover. This line terminates at the Ruwais Fractionation Plant.

- Asab-2 – 921 receiver pipeline (also referred to herein as NGL Line #4). This 16” pipeline is approximately 81.1 km in length and was commissioned in 2010. The associated production comes from the NGL Plant Asab-2. There are two interconnects between this line and the Asab-0 – Bab manifold pipeline (Line #5) which could allow flow from Asab-0 Plant to enter at KP’s 7.7 and 31.3. This line terminates at KP 2.4 on the Habshan-3 – MP-21 pipeline (Line #1) at receiver 921, upstream of the MP-21 station.

- Asab-0 – Bab manifold pipeline (also referred to herein as NGL Line #5). This 24” pipeline is approximately 89 km in length and was commissioned in 2010. The associated production comes from the NGL Plant Asab-0. There are two interconnects between this line and the Asab-2 – 921 receiver pipeline (Line #4) which could allow flow from Asab-2 Plant to enter at KP’s 7.7 and 31.3. This line terminates at the Bab NGL manifold.

- Bu Hasa – MP-21 pipeline (also referred herein as NGL Line #6). This 16” pipeline is approximately 34.2 km in length and was commissioned in 2010. Associated production comes from the NGL plant Bu Hasa. This pipeline terminates at the MP-21 manifold and through the use of two control valves, production can be directed to either the 24” MP-21- Ruwais pipeline (Line #3), the 30” Bab manifold – Ruwais pipeline (Line #3) or split between both lines depending on the feed requirements at Ruwais.

- Habshan-0/1/2 – Bab manifold pipeline (also referred herein as NGL Line #7). This 10” pipeline is approximately 6.3 km in length and was commissioned in 1995. Associated production comes from the NGL plant Habshan-0/1/2. This pipeline terminates at the Bab NGL manifold.

- Habshan-OAG – Bab manifold pipeline (also referred herein as NGL Line #8). This 12” pipeline is approximately 4.5 km in length and was commissioned in 2010. Associated production comes from the NGL plant Habshan-OAG. This pipeline terminates at the Bab NGL manifold.

- Habshan-5 – Bab manifold pipeline (also referred herein as NGL Line #9). This 24” pipeline is approximately 17.6 km in length and was commissioned in 2012. Associated production comes from the NGL plant Habshan-5. This pipeline terminates at the Bab NGL manifold.

- Bab Plant – Bab manifold pipeline (also referred to herein as NGL Line #10). This 8” above ground piping connection is approximately 200 m long and was commissioned in 2010. Associated production comes from the Bab Plant. This pipeline terminates at the Bab NGL manifold.

- Shah-ASG – Asab-0 (also referred to herein as NGL Line #11). This 16” pipeline is approximately 68.5 km in length and terminates @ KP 31.3 on the Asab-0 pipeline (NGL #5). There is also interconnected piping here that would allow flow into Network 2, via NGL Line #4.

A simplified flow schematic outlining the NGL network and processing plants is shown in ***Figure 3.***

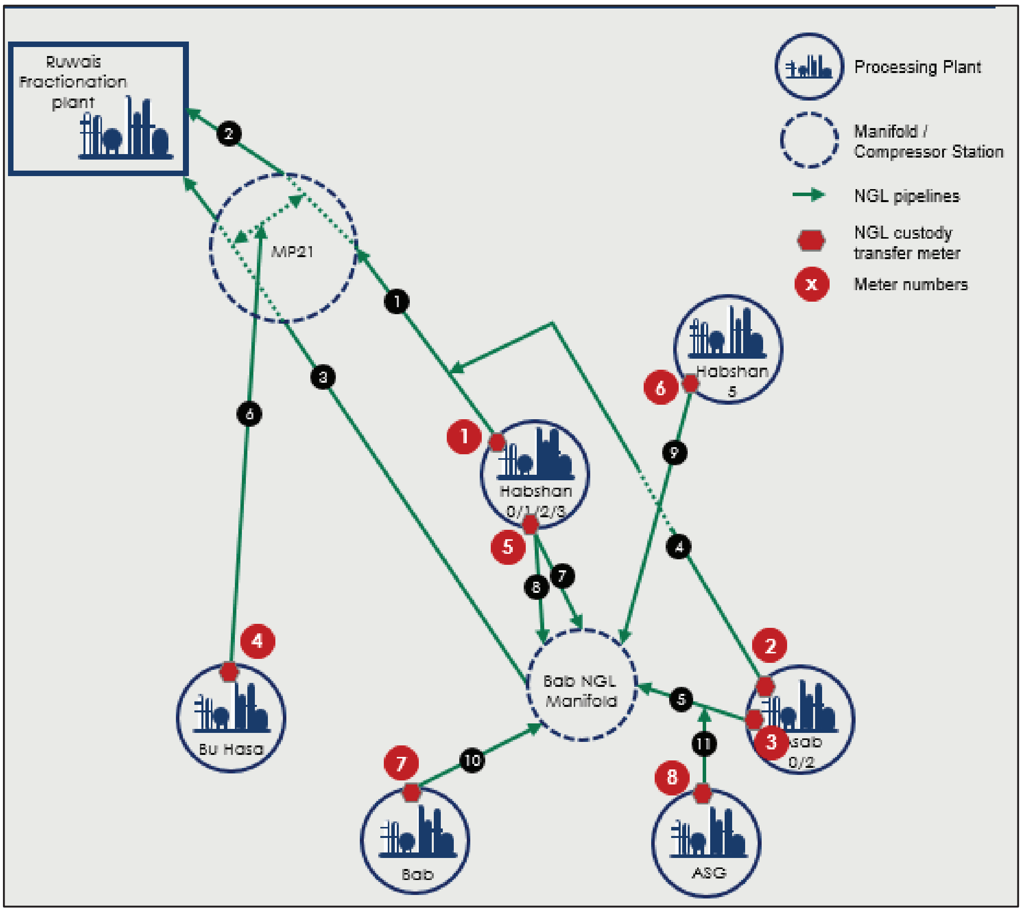


***Figure 3. ADNOC NGL Network and Processing Plants Flow Schematic***

NGL transportation through these lines is achieved through two interconnected pipeline networks, Network-1 and Network-2.

Network-1 transports NGL from various sources namely, Asab-0, Bab, Bu Hasa, Habshan-OAG, Habshan-0/1/2, Habshan-5 and Shah-ASG (ADNOC Sour Gas) to the Ruwais Facility via the MP-21 station.

Network-1 consists of the following NGL pipelines:

- NGL Line #3 - 30” Pipeline from Bab manifold to Ruwais (101 km)
- NGL Line #5 - 24” Pipeline from Asab-0 to Bab manifold (89 km)
- NGL Line #6 - 16” Pipeline from Bu Hasa to MP-21 (34.2 km)
- NGL Line #7 - 10” Pipeline from Habshan 0/1/2 to Bab manifold (6.3 km)
- NGL Line #8 - 12” Pipeline from Habshan OAG to Bab manifold (4.5 km)
- NGL Line #9 - 24” Pipeline from Habshan-5 to Bab manifold (17.6 km)
- NGL Line #10 - 8” Above ground piping connection from Bab Plant – Bab manifold (0.2 km)
- NGL Line #11 - 16” Pipeline from Shah-ASG to the 24” Asab-0 (Line #4) or the Asab-2 (Line #5) at kilometer point 31.3. (68.5 km)

Network-2 transports NGL from various sources namely Asab-2, Habshan-3 and Bu Hasa spillover at the MP-21 station, to the Ruwais Facility. Network-2 runs from Habshan-3 (Line #1) to MP-21 as a 20” line and then from MP-21 to Ruwais as a 24” line (Line #2). The 16” NGL pipeline from Asab-2 (Line #4) joins the Habshan-3 pipeline (Line #1) at the 921 receiver near Bab, which is located approximately 3 km from Habshan.

Network-2 consists of the following NGL pipelines:

- NGL Line #1 - 20” Pipeline from Habshan-3 to MP-21 (37.3 km)
- NGL Line #2 - 24” Pipeline from MP-21 to Ruwais (67.7 km)
- NGL Line #4 - 16” Pipeline from Asab-2 to the 921 receiver (81.1 km)

Interconnection between the two networks is available at the following two locations. Note that these connections are manual and normally closed.

1. Between the 24” Asab-0 pipeline (Line #5) and the 16” Asab-2 pipeline (Line #4) at Asab location (KP 7.7).
2. Between the 24” Asab-0 pipeline (Line #5) and the 16” Asab-2 pipeline (Line #4) at Asab location (KP 31.3), where the Shah-ASG pipeline (Line #11) connects.

In addition to the two connections, the 16” NGL line from Bu Hasa (Line #6) is tied into the NGL system at the MP-21 station. The piping connections here are arranged in such a manner that by using the two flow control valves provided, the Bu Hasa volumes can be split between the 24” NGL Line #2 to Ruwais (Network-2) and the 30” NGL Line #3 to Ruwais (Network-1). The requirement to mix Bu Hasa NGL into the different pipelines is driven by the processing objectives of the NGL fractionation trains at Ruwais. The spillover of NGL from the Bu Hasa pipeline allows the feed composition requirements of the fractionation facilities at the Ruwais facility to be satisfied. The volumes of Bu Hasa NGL routed into the pipelines is controlled from the Ruwais control room.

The Gas Master Plan provided by “ADNOC – Downstream” had NGL production figures for the years 2020 through 2040. This includes a baseline for ADNOC Gas Processing to produce up to 57,564 TPD in 2040. These rates were used as the basis for the capacity analysis.

### 3.5 Gas Processing Plants

ADNOC owns and operates a large set of gas processing plants (GPPs) and associated pipeline networks within the UAE. The GPPs are not part of the transaction scope, but were included at a high level in the report to assess plant availability, as this can have an impact on gas volumes. The GPPs receive both associated gas (AG) and non-associated gas (NAG) streams. Associated gas is natural gas that is produced in conjunction with oil (it is associated with oil production). Non-associated gas is natural gas that is produced from gas reservoirs with no associated oil production.

The produced gas streams are transported through gathering lines to the GPPs for treatment. To produce a sales quality gas, these facilities need to compress the gas to higher pressure, sweeten the gas by removing hydrogen sulfide ($H_2S$) and carbon dioxide ($CO_2$), dry the gas to remove water vapor, and strip the gas of heavier hydrocarbon components. The heavier hydrocarbons removed from the gas stream form a liquid phase called Natural Gas Liquids (NGLs).

The gas processing plants are connected into various pipeline networks to accommodate their product streams. The NGLs are collected into NGL pipeline networks and are transported to the Ruwais fractionation plant for further processing. A portion of the gas is used for re-injection and it is further compressed and transported through the injection trunk lines to the oil fields for distribution into injection wells. The remaining gas is connected into a Sales Gas pipeline network, which ultimately transports the gas to end consumers such as power generation facilities.

A brief summary of the gas processing plants is as follows:

Asab-0/3: Asab-0 receives associated gas (AG) from ADNOC Onshore and processes it to produce NGL and Sales Gas. If needed, the Asab-0/3 facility can divert a portion of its inlet raw gas to the Asab-1/2 processing facility. The NGL product from Asab-0/3 is transported by NGL pipeline #5 to Ruwais for fractionation. The Sales Gas from Asab-0/3 ties into Gas Line #5 where it can be used for re-injection at the Asab-1/2 facility, or it can proceed to the Thamama-C manifold for distribution to other facilities or into the Sales Gas network.

Asab-1/2: Asab-1 receives non-associated gas (NAG) for processing. The Asab-2 project was an expansion of Asab-1 in order to treat the gas from Asab-1 for re-injection purposes and to extract NGL with a maximum recovery of ethane. The NGL product from Asab-1/2 is transported by NGL Line #4 to Ruwais for fractionation. The lean gas from Asab-1/2 is normally used for re-injection to maintain reservoir pressure, but it can be exported on demand to the gas network through Sales Gas pipeline #5. This pipeline is bidirectional and may be used to transport gas back from the gas network for injection purposes.

Shah/ASG: Shah is a sour gas complex and processes gas that is high in $H_2S$ and $CO_2$ content. The NGL product from Shah is transported by NGL Line #11 to Ruwais for fractionation. The lean gas from Shah is transported by Gas Line #12 to the Thamama-C manifold for distribution to other facilities or to the Sales Gas network.

Bu Hasa: Bu Hasa is a processing facility that does not produce sweet gas (free of H2S and $CO_2$). The Bu Hasa facility has the ability to divert a portion of its inlet raw gas to Habshan-5 for processing. The NGL product from Bu Hasa is transported by NGL Line #6 to Mile Post 21 where the flow may be directed to either NGL Line #2 or #3 or split between the two; both of these pipelines lead to Ruwais for fractionation. The processed gas (residue gas) which is considered too sour for use by end consumers is transported in Gas Line #6. From this pipeline, a portion of the gas is re-injected in the Bu Hasa area. The remainder of the gas continues through to the Bab Gas manifold. From the Bab Gas manifold, the residue gas is transported to the Thamama C manifold through Gas Line #7. At the Thamama C manifold, the sour residue gas is diverted to Habshan through Gas Line #1. At Habshan, the gas is further compressed for re-injection into the Thamama B reservoir. Additional sweet gas volumes can be added by Habshan to meet the injection requirements of the Thamama B reservoir.

Bab: The Bab NGL Plant is a smaller facility. This facility processes associated gas to produce NGL and Sales Gas products. The Bab NGL Plant can divert a portion of its inlet raw gas to Habshan-(0-4) and/or to Habshan-5 facilities. The NGL product from Bab is transported through NGL Line #10 to the Bab NGL manifold where it is routed to Ruwais for fractionation. The Sales Gas product is transported through Gas Line #9 to the Bab Lean Gas Compressor Station. The gas is compressed and then flows through Gas Line #10 (above ground) to the Bab gas manifold. At the Bab gas manifold, the gas ties into a 30” header flowing toward Ruwais (this gas pipeline to Ruwais is outside the perimeter of the offer).

Habshan-(0-4): The Habshan-(0-4) Gas Plant is a large and complex facility comprised of many gas processing trains. The Habshan-(0-4) Plant can process gas from various sources and of various compositions in order to produce NGL and Sales Gas products. The raw inlet gas at the Habshan-(0-4) complex can be diverted to or from the Habshan-5 facility. The NGL product is transported through NGL Lines #1, #7, and #8 to Ruwais for fractionation. The lean gas is transported through Gas Lines #2, #3, and #4 (all above ground) to the Thamama-C manifold for distribution to other facilities or to the Sales Gas network. The Habshan-(0-4) facility also compresses and injects the sour residue gas coming from Bu Hasa. This gas comes from the Thamama-C manifold through Gas Line #1 (above ground).

Habshan-5: The Habshan-5 Gas Plant is a complex facility comprised of many gas processing trains. The Habshan-5 plant can process gas from various sources including from offshore production facilities in order to produce NGL and Sales Gas products. The raw inlet gas at the Habshan-5 facility can be diverted to or from the Habshan-(0-4) complex. The NGL product is transported through NGL Line #9 to Ruwais for fractionation. The Sales Gas product is transported through Gas Line #8 directly to the Sales Gas network (consumers’ network).

# 4 Technical Assessment

## 4.1 General Pipelines Summary

ADNOC pays for all the CAPEX, OPEX, and decommissioning costs to maintain targeted forecasts. The focus, therefore, is on ADNOC's operations capability of these assets. The pipeline assessment, which was based on information provided by ADNOC and interviews with key personnel, indicates that the gas and NGL pipelines can deliver forecasted production and transporting the gas products as required. Some of the pipelines do experience capacity constraints within the 2020-2040 timeframe and ADNOC has plans and procedures in place to address those constraints. It is our opinion that ADNOC has developed industry standard programs and systems for the maintenance of these pipelines.

ADNOC's risk and mitigation plans, throughput, availability and shutdown records were found to be consistent with industry standards and best practices. ADNOC has operated pipelines efficiently for over thirty (30) years and has proven capabilities to develop and maintain a safe operating system to transport natural gas products. The pipeline designs conform to industry standards. The pipelines are properly maintained using established integrity management systems. Operating procedures and effective communication within the technical / operating team, ensures that pipeline operating parameters remain within the specified safety margins.

## 4.2 Gas Pipelines

### 4.2.1 Technical Review

The objective of the technical review of the Sales Gas pipelines is to assess the general suitability of design to meet capacity objectives and their conformity to recognized industry standards plus applicable UAE regulations. ADNOC is the regulator for all HSE issues covering the ADNOC Group of companies.

During the assessment, it was identified with the onsite personnel in Abu Dhabi that there are currently no UAE regulations which govern the design and operations of pipelines and that ADNOC is a "self-regulated company". All specifications of design and operation follow the Company DGS (design general specifications) which have been derived from international standards. As such, this review is limited to compliance with the industry codes and standards. Overall, ADNOC has adhered to industry codes and standards for these pipelines. ADNOC also co-ordinates with the Abu Dhabi Department of Municipalities & Transport to agree on the pipeline routes and buffer zones required for the pipeline corridors.

A stand-alone design basis and alignment sheets were provided for only some of the Sales Gas pipelines. Subsequently, design information was gathered from many different sources, including project basis documents, drawing packages, integrity assessments, quantitative risk assessments and various other documentation. From this documentation, information such as pipe specifications, design details, design codes, material specifications, and design parameters were established. Information provided indicates that all the pipelines, except for Sales Gas lines #4 and #10, were designed to industry standard design code, ASME B31.8 – Gas Transmission and Gas Distribution Piping Systems. Sales Gas lines #4 and #10, being above ground piping, were designed to industry standard design code, ASME B31.3 – Process Piping Code.

The twelve (12) Sales Gas pipelines range in size from 10-inch to 42-inch. They are all designed to transport natural gas and vary in lengths from 200 meters to 128 kilometers. The pipeline diameters are properly sized to accommodate the designed throughput for each pipeline per ADNOC data provided. The pipe material grades for each pipeline are also consistent with industry standards.

All the Sales Gas pipelines utilize industry API Specification 5L carbon steel pipe, except for Line #10. Line #10 is an above ground piping connection and ASTM compliant piping was used. Only Sales Gas lines #5, #6, #7, #8 and #11 were explicitly specified as being NACE compliant within the documentation provided for this study.

ADNOC Gas Processing has provided documentation, which describes the required steps necessary to consider in their pipeline designs. From these documents it was clear that the required steps are clearly identified and that the minimum expectations of the design are well defined. Evidence that the minimum expectations have been met is required and reference material to develop this evidence is also provided.

A summary of design codes and materials utilized for the Sales Gas pipelines are shown in ***Table 4.***

| Line number | Nomenclature | Line Size [in] | Length [km] | Year Commissioned | Design Code | Pipe Grade |
|---|---|---|---|---|---|---|
| 1 | Thamama-C manifold – Habshan-(0-4) | 20 | 1.0 | 1996 | B31.8 | API 5L X60 |
| 2 | Habshan-(0-4) -Thamama-C manifold | 30 | 1.0 | 1996 | B31.8 | API 5L X60 |
| 3 | Habshan-(0-4) -Thamama-C manifold | 42 | 1.0 | 1996 | B31.8 | API 5L X60 |
| 4 | Habshan-(0-4) -Thamama-C manifold | 42 | 1.0 | 2001 | B31.3 | API 5L X60 |
| 5 | Asab – Thamama-C manifold | 36 | 87.6 | 2011 | B31.8 | API 5L X60 PSL2 (NACE) |
| 6 | Bu Hasa – Bab manifold | 24 | 45.6 | 2015 | B31.8 | API 5L X65 PSL2 (NACE) |
| 7 | Bab manifold – Thamama-C manifold | 24 | 4.4 | 2015 | B31.8 | API 5L X65 PSL2 (NACE) |
| 8 | Habshan-5 – Transmission Network | 30 | 3.5 | 2012 | B31.8 | API 5L X60 PSL2 (NACE) |
| 9 | Bab plant – Bab compressor station | 16 | 2.6 | 2013 | B31.8 | API 5L X52 |
| 10 | Bab compressor station – Bab manifold | 10 | 0.2 | 2013 | B31.3 | A-106 Gr. B |
| 11 | Thamama-C manifold – Bab manifold | 30 | 4.5 | 1984 | B31.8 | API 5L X52 (NACE) |
| 12 | Shah ASG – Thamama-C manifold | 36 | 127.7 | 2015 | B31.8 | API 5L X60 PSL2 |

***Table 4. Sales Gas Pipeline Original Design Code & Pipe Grade Parameters***

All the Sales Gas pipelines were designed, constructed, and installed for an intended 30-year design life. Once installed and operational, an integrity management (IM) plan can be used to extend the remaining life of a pipeline. Typically, an integrity management plan ensures proper maintenance and operations procedures to ensure the design life of the asset. ADNOC has implemented a rigorous IM plan per industry codes.

***Table 5*** summarizes the Sales Gas pipelines original design lives, years commissioned, and currently projected replacement years.

| Line number | Nomenclature | Initial Design Life [yrs] | Year Commissioned | Pipeline Age Jan. 2020 [yrs] | Current Asset Replacement Year | Current Remaining Life [yrs] |
|---|---|---|---|---|---|---|
| 1 | Thamama-C manifold – Habshan-(0-4) | 30 | 1996 | 24 | 2026 | 6 |
| 2 | Habshan-(0-4) -Thamama-C manifold | 30 | 1996 | 24 | 2026 | 6 |
| 3 | Habshan-(0-4) -Thamama-C manifold | 30 | 1996 | 24 | 2026 | 6 |

| Line number | Nomenclature | Initial Design Life [yrs] | Year Commissioned | Pipeline Age Jan. 2020 [yrs] | Current Asset Replacement Year | Current Remaining Life [yrs] |
|---|---|---|---|---|---|---|
| 4 | Habshan-(0-4) -Thamama-C manifold | 30 | 2001 | 19 | 2031 | 11 |
| 5 | Asab – Thamama-C manifold | 30 | 2011 | 9 | 2041 | 21 |
| 6 | Bu Hasa – Bab manifold | 30 | 2015 | 5 | 2045 | 25 |
| 7 | Bab manifold – Thamama-C manifold | 30 | 2015 | 5 | 2045 | 25 |
| 8 | Habshan-5 – Transmission Network | 30 | 2012 | 8 | 2042 | 22 |
| 9 | Bab plant – Bab compressor station | 30 | 2013 | 7 | 2043 | 23 |
| 10 | Bab compressor station – Bab manifold | 30 | 2013 | 7 | 2043 | 23 |
| 11 | Thamama-C manifold – Bab manifold | 30 | 1984 | 36 | 2022 | 2 |
| 12 | Shah ASG – Thamama-C manifold | 30 | 2015 | 5 | 2045 | 25 |

***Table 5. Asset Life of Sales Gas Pipelines***

Any extension to the remaining life of pipelines is based on inspection results per the IM plan. Pipelines that do not have any inspection results use the 30-year design life as a baseline. The remaining lives are continuously updated based on inspection results of the IM plan. Once an inspection report is completed, it allows for calculation of remaining life based on degradation curves. Adhering to this IM is essential to continue safe pipeline asset operations.

Sales Gas line #11, the oldest pipeline, commissioned in 1984, is an example of life extension. Its useful life has currently been extended by six (6) years and it is expected to last an additional two (2) more years, before requiring replacement in 2022. Many repairs on this line have helped mitigate the significant corrosion issues it is experiencing. In addition, it has had its maximum allowable operating pressure (MAOP) reduced to 51 barg, from its original design MAOP of 63.5 barg. Per a 2018 integrity report, if recommended repairs and a follow-up ILI are completed as recommended, its previous integrity assessment suggests it should have a useful life until 2022, for a total of 38 years. ADNOC provided excerpts from the 2019 repair plan that indicates the recommended repairs were being implemented in the field. The awaited follow-up ILI results will be used to confirm that the useful life of the pipeline extends until 2022 and a replacement plan and project will be initiated accordingly.

Sales Gas lines #1, #2 and #3 have all been in service for 24 years. These lines are above ground process piping, which in general is less susceptible to external corrosion issues as compared to underground lines that are buried in soil and immersed in water. Above ground lines are easier to monitor for the effects of corrosion, as external coatings can be visually inspected, and wall thickness monitoring is easier as the lines do not have to be exposed in order to complete verification work. Additionally, this makes any required remediation of corrosion simpler, as no ground disturbance is required.

Installation issues, changes in operating parameters from initial design conditions, process upsets and improper maintenance may potentially shorten the operational life of a pipeline. None of the information which was provided for the Sales Gas lines within this report’s scope suggests that any of them have had their life shortened from their original design life.

***Table 6*** presents a summary of corrosion coatings, cathodic protection, and leak detection systems (LDS) of the Sales Gas pipelines as provided.

| Line number | Nomenclature | Line Size [in] | Length [km] | Year Commissioned | Internal Corrosion Coating | External Corrosion Coating | Cathodic Protection (Y/N) | Leak Detection (Y/N) |
|---|---|---|---|---|---|---|---|---|
| 1 | Thamama-C manifold – Habshan-(0-4) | 20 | 1.0 | 1996 | None | Paint | No | No |
| 2 | Habshan-(0-4) -Thamama-C manifold | 30 | 1.0 | 1996 | None | Paint | No | No |
| 3 | Habshan-(0-4) -Thamama-C manifold | 42 | 1.0 | 1996 | None | Paint | No | No |
| 4 | Habshan-(0-4) -Thamama-C manifold | 42 | 1.0 | 2001 | None | Paint | No | No |
| 5 | Asab – Thamama-C manifold | 36 | 87.6 | 2011 | None | 3LPE | Yes | No – **Note 1** |
| 6 | Bu Hasa – Bab manifold | 24 | 45.6 | 2015 | Flow Coat 60-100 micron | 3LPE | Yes | Yes |
| 7 | Bab manifold – Thamama-C manifold | 24 | 4.4 | 2015 | Flow Coat 60-100 micron | 3LPE | Yes | Yes |
| 8 | Habshan-5 – Transmission Network | 30 | 3.5 | 2012 | None | 3LPE | Yes | Yes |
| 9 | Bab plant – Bab compressor station | 16 | 2.6 | 2013 | Epoxy | 3LPE | Yes | Yes |
| 10 | Bab compressor station – Bab manifold | 10 | 0.2 | 2013 | None | Paint | No | No |
| 11 | Thamama-C manifold – Bab manifold | 30 | 4.5 | 1984 | None | CTE | Yes | Yes |
| 12 | Shah ASG – Thamama-C manifold | 36 | 127.7 | 2015 | None | 3LPE | Yes | Yes |

***Table 6. Sales Gas Lines Coating, Corrosion Mitigation, and LDS if applicable***

***Note 1*** – Project to add leak detection in progress and anticipated to be completed in August 2020

All pipelines were designed and installed with proper external coatings to protect from external corrosion. The exception to this is Line #11, which was installed with coal tar enamel (CTE). This type of coating was a commonly accepted type of coating for larger diameter lines at the time of its installation. Since that time coating products have evolved and polyethylene (PE) or polypropylene (PP) coatings are now the coatings of choice for newer lines. As can be seen in the table, all other underground lines installed by ADNOC since that time have used PE or PP coatings. While both PE and PP provide external coating protection, PP does provide protection at higher temperatures than PE.

Three lines, Sales Gas lines #6, #7 and #9 are internally coated pipelines. Internal coating of lines is a frequently used design method that can help reduce drag (friction losses), which can in turn increase flow capacity (potentially reducing required pipe diameter). It is also used to prevent internal corrosion in the lines and help prevent the formation of black powder. Black powder can develop within gas pipelines due to the reaction of iron with condensed moisture (containing oxygen, carbon dioxide and/or hydrogen sulfide). Sales Gas line #9 design basis specifically referenced GASCO DGS-1470-008 & Addendum to DGS-Internal Coating of Line Pipe for Non-corrosive Sales Gas Transmission-01004110SP-GEN-95-049. At the time of writing, this specific document of the design philosophy for internal coating of these three lines was not provided.

Visual inspections, pressure loss criteria, material balance and on some lines, leak detection systems are used to monitor the lines. Impressed current cathodic protection (CP) is employed on all the underground Sales Gas lines. This type of CP has a proven track record for protecting pipelines.

The pipeline diameters are properly sized to accommodate required throughput for each pipeline per ADNOC data provided. The gas pipelines have the capacity to deliver the planned production. ADNOC has plans in place for those pipelines that do not have the capacity for the planned production, and this is discussed further in Section 4.2.5.

The pipe material grades for each pipeline are also consistent with industry standards. All the Sales Gas pipelines are in-line with appropriate industry standards.

### 4.2.2 Operations Review

The objective of the operations review of the Sales Gas pipelines is to assess the operating and maintenance track record including compliance with safe operating practices as well as an opinion of the operator's experience and capabilities.

ADNOC has a complete set of operating procedures that are to be followed in the field. They have operated and maintained these Sales Gas pipelines for thirty-six (36) years. In our opinion, they have proven their capabilities within the region to develop and maintain a safe operating system to transport natural gas products. They have established procedures for operating and maintaining systems, and their track record reflects this. This maintenance program includes monitoring for pipeline corrosion, cathodic protection (CP) measurements, leak detection systems, and preventative maintenance and repair programs. These plans, procedures and implementation are captured in the Integrity Management (IM) system discussed in later sections.

ADNOC has a robust operating and maintenance program for monitoring pipeline corrosion. The operations manuals reviewed were well detailed and covered the entire life cycle of the pipelines from pre-start-up reviews, commissioning guidelines, operational pigging frequencies, corrosion monitoring and management, ILI (In-Line Inspection) frequency, and the decommissioning and mothballing of lines that have reached the end of their useful lives.

As part of, or as a supplement to, the operation manuals, there are alarms and set point lists. These lists ensure the safe operation of each asset and help further outline and monitor the safe operating limits of the equipment. The alarms and set points ensure that the operating conditions do not exceed the design limits of equipment and are normally set at or below design limits. The alarm set-points are used to alert operators of impending danger while other set-points invoke an immediate action by the control system, such as an emergency shutdown.

ILI pigging is performed on a periodic basis for each pipeline that is equipped for it. This analysis is based on results obtained in the most recent ILI, which identifies anomalies that meet or exceed pre-established criteria. In this method, future ILI can be accelerated or slowed as a result of the pigging results. Repair records were reviewed to determine frequency, location and types of repairs completed.

A specific corrosion threat assessment for Sales Gas lines #5, #6, #7, #8, #9 and #11 was completed by a third-party contractor prior to February 2018. Sales Gas lines #1, #2, #3, #4 and #10 were not a part of this assessment. These lines are all above ground piping and are not capable of hosting ILI tools. An integrity report and inspection data were provided for pipelines commissioned as recently as 2015 including Sales Gas line #12. Sales Gas Line #12, the Shah-ASG pipeline, is a joint venture pipeline that shows ILI is, in general, applied across all the pipelines to generate a baseline and is then performed on a periodic basis.

Most repairs were minor and limited to recoating of the lines after confirmation and verification of anomalies. Some split sleeve repairs were noted, which is a reliable method for repairing small anomalies. Composite wraps (aka clock springs) and composite sleeves were also noted, with both also being commonly accepted repair techniques.

In addition to the repairs that were required, reports may come with recommended operational limits, reassessment targets and recommended mitigation (if any).

ADNOC has comprehensive guidelines for maintenance pigging of their pipelines and frequencies of these operations are continuously reviewed. The latest version provided, Pipeline Cleaning Pigging Frequency Review and Recommendation, identifies lines that may require special operations to accommodate these operations, as well as specifically discussing the piggable Sales Gas lines #5, #6, #7, #8 and #11. Line #9 was the only piggable Sales Gas line not specifically mentioned in the report. Information provided shows that a baseline ILI was completed on Line #9 after construction, however records for it are kept within the Habshan plant records and these were not available at the time of writing. The normal pigging operations performed on the Sales Gas lines are to be completed biennially (every two years). Furthermore, it is ADNOC policy to record the date, travel time of the pig, pressures and flow rates, the type of pig used, the condition of the pig (pre and post run), description of any debris found, and any problems encountered. As previously mentioned, Sales Gas lines #1, #2, #3, #4 and #10 are above ground lines and are non-piggable.

It is evident from all documentation provided that the pipelines within the work scope are operated within the design pressure regimes.

***Table 7*** presents a summary of the various pressure definitions for the Sales Gas pipelines as provided. Also included is the design capacity and 2018 average flow rates of the Sales Gas pipelines.

| Line number | Nomenclature | Line Size [in] | Length [km] | Design Pressure [barg] | Operating Pressure or Range if Provided [barg] | Current Utilization Annual Average Flow Rate (2018) | Design Capacity [MMscfd] |
|---|---|---|---|---|---|---|---|
| 1 | Thamama-C manifold – Habshan-(0-4) | 20 | 1.0 | 63.5 | 40 | 166 | 270 |
| 2 | Habshan-(0-4) -Thamama-C manifold | 30 | 1.0 | 63.5 | 39 - 42 | 431 | 405 |
| 3 | Habshan-(0-4) -Thamama-C manifold | 42 | 1.0 | 63.5 | 39 - 42 | 503 | 1,162 |
| 4 | Habshan-(0-4) -Thamama-C manifold | 42 | 1.0 | 63.5 | 39 - 42 | 503 | 1,533 |

| Line number | Nomenclature | Line Size [in] | Length [km] | Design Pressure [barg] | Operating Pressure or Range if Provided [barg] | Current Utilization Annual Average Flow Rate (2018) | Design Capacity [MMscfd] |
|---|---|---|---|---|---|---|---|
| 5 | Asab – Thamama-C manifold | 36 | 87.6 | 63.5 | 37 - 43 | 170 | 640 – **Note 1** |
| 6 | Bu Hasa – Bab manifold | 24 | 45.6 | 63.5 | 40 - 44 | 309 | 370 |
| 7 | Bab manifold – Thamama-C manifold | 24 | 4.4 | 63.5 | 40 - 44 | 166 | 298 |
| 8 | Habshan-5 – Transmission Network | 30 | 3.5 | 63 | 42 | 1,130 | 1,200 – **Note 2** |
| 9 | Bab plant – Bab compressor station | 16 | 2.6 | 46.5 | 20 | 74 | 106 |
| 10 | Bab compressor station – Bab manifold | 10 | 0.2 | 76.1 | 41 | 74 | 106 |
| 11 | Thamama-C manifold – Bab manifold | 30 | 4.5 | 51 – **Note 3** | 39 – 42 | 250 | 405 |
| 12 | Shah ASG – Thamama-C manifold | 36 | 127.7 | 64.5 | 42 | 549 | 755 – **Note 4** |

***Table 7. Sales Gas Pipeline Pressure Definition, Design Capacity, & 2018 Average Flow Rates***

***Note 1*** – Sales Gas Line #5 is capable of bi-directional flow. The rate given is if line flow is from Asab to the Thamama-C manifold. If this line is flowing from Thamama-C to Asab, the flow rate is reduced to 357mmscfd.
***Note 2*** – 896 MMscfd is the original design capacity provided by ADNOC; however, re-analysis of the operating criteria show that line can flow up to 1,200 MMscfd. The re-analysis determined that the gas was clean and dry (free of solids & liquids) and could tolerate higher velocities and hence higher flow rates than normally allowed for in ADNOC design guidelines.
***Note 3*** – Original design pressure was 63.5 barg. Has been de-rated as a result of integrity assessments.
***Note 4*** – Original design capacity for this line was 656 MMscfd; however, a re-analysis of this pipeline indicates it can flow up to 755 MMscfd. The re-analysis confirmed that design capacity can be 140% of the original design capacity.

From the operating manuals, asset management standards and functional procedures reviewed, it was evident that the guidance provided was comprehensive. This is as expected of industry standard operating procedures and guidelines which provide the end user (the personnel responsible for implementing or executing the outlined procedure) enough detail to execute the specific operation effectively.

### 4.2.3 Condition Review

The objective of the condition review of the Sales Gas pipelines is to assess the current integrity of the installed facilities and their suitability for future operation, including remaining useful life.

The condition review included examination of provided information for the Sales Gas pipelines related to the fitness for service (FFS) and remnant life assessment (RLA) reports defining the suitability for future operation (including remaining useful life). ADNOC follows a systematic and industry recognized integrity management process to ensure remaining life of the pipelines.

Information was provided by ADNOC regarding the useful remaining life for all twelve of the gas pipelines. ADNOC realizes the risk of operating pipelines and has successfully implemented a rigorous integrity management plan per industry standards. Reports showing the pipelines integrity and their remaining life is well documented. Proactive steps are in place to ensure the design life is achieved and extended as possible.

Line numbers #1, #2, #3, #4 and # 10 are an exception to the other lines. While they are still a part of the integrity management system, they are above ground piping connections and not subject to the same maintenance procedures. ADNOC stated that the integrity data for these lines, as well as line #9, are kept with the Habshan plant. ADNOC manages above ground piping through RBI (risk-based inspections) and UT (ultrasonic testing) to ensure the piping is safe to operate and is not degrading beyond safe limits.

***Table 8*** presents a summary of the original design life along with the end of life revisions, which define the Sales Gas lines' useful life.

| Line Number | Nomenclature | Line Size [in] | Length [km] | Year Commissioned | Design Life [years] | Initial Design End of Life | Revised End of Life |
|---|---|---|---|---|---|---|---|
| 1 | Thamama-C manifold – Habshan-(0-4) | 20 | 1.0 | 1996 | 30 | 2026 | 2026 |
| 2 | Habshan-(0-4) -Thamama-C manifold | 30 | 1.0 | 1996 | 30 | 2026 | 2026 |
| 3 | Habshan-(0-4) -Thamama-C manifold | 42 | 1.0 | 1996 | 30 | 2026 | 2026 |
| 4 | Habshan-(0-4) -Thamama-C manifold | 42 | 1.0 | 2001 | 30 | 2031 | 2031 |
| 5 | Asab – Thamama-C manifold | 36 | 87.6 | 2011 | 30 | 2041 | 2041 |
| 6 | Bu Hasa – Bab manifold | 24 | 45.6 | 2015 | 30 | 2045 | 2045 |
| 7 | Bab manifold – Thamama-C manifold | 24 | 4.4 | 2015 | 30 | 2045 | 2045 |
| 8 | Habshan-5 – Transmission Network | 30 | 3.5 | 2012 | 30 | 2042 | 2042 |
| 9 | Bab plant – Bab compressor station | 16 | 2.6 | 2013 | 30 | 2043 | 2043 |
| 10 | Bab compressor station – Bab manifold | 10 | 0.2 | 2013 | 30 | 2043 | 2043 |
| 11 | Thamama-C manifold – Bab manifold | 30 | 4.5 | 1984 | 30 | 2014 | 2022 |
| 12 | Shah ASG – Thamama-C manifold | 36 | 127.7 | 2015 | 30 | 2045 | 2045 |

***Table 8. Sales Gas Pipelines' Useful Life***

As a result of the analysis performed to establish the useful life of these Sales Gas pipelines, which is based on the ILI data received as well as industry standard integrity management plans, these pipelines meet or exceed expectations regarding integrity and suitability for future operation. ILI pigging is provided periodically based on degradation of wall thickness criteria. Procedures are developed by ADNOC regarding steps to take based on corrosion evaluations. Maintenance pigging (dewatering) is performed quarterly to help prevent corrosion development. The materials used in the manufacturing and fabrication of these pipelines (as defined by the information provided) meet all technical and operating criteria for all the pipelines.

An integrity management plan has been provided for this network. The asset integrity management system (AIMS) uses a nine-element model. Integrity barriers are provided and monitored for each pipeline threat to prevent the Loss of Primary Containment (LOPC). Threats include internal corrosion, external corrosion, fatigue/stress corrosion, operating outside the design envelope, and third-party damage. Each threat is provided with an LOPC barrier, an escalating factor (EF), and escalating factor controls (EFC). Escalating factor controls include monitoring, measuring, surveying, maintenance plans, audits, incident investigations, mitigation, and risk assessment. If effectively maintained and monitored, this program is adequate to protect the integrity of the pipeline network.

A concern with the condition of this system is the oldest line of the group, Sales Gas line #11, the Thamama-C manifold to Bab manifold pipeline. This pipeline exceeds its 30-year design life as it has been in operation for over

35 years. There have been over one thousand repairs completed over the course of its operating history and its maximum allowable pressure rating has been reduced in order to lengthen its operational effectiveness. This pipeline is safe to operate; however, its required replacement is imminent. ADNOC recognizes this risk and has shown that it will proactively adjust the inspection and maintenance programs, increase inspection frequencies, changing operating regime, and perform repairs as necessary. As a result of this work, ADNOC updates its remaining life estimates as new inspection data becomes available from field measurements.

As previously mentioned, lines #1, #2, #3, #4 and #10 are above ground lines and were not part of the 2018 pipeline assessment. It was later determined that line #9, as well as the lines (#1-4 and #10) are all under the Habshan plant integrity system and were not provided at the time of this writing. Data received included a “2018 Pipeline Integrity Report” for six of the twelve pipelines. These reports included specific details on internal, external, and third-party issues. As part of ADNOC plans and procedures, the integrity assessment provides a condition status color rating for each pipeline as red, yellow, or green wherein green represents good condition, red represents bad condition, and yellow represents a condition somewhere between. In simple terms, green entails no risk to pipeline condition, yellow is medium and red is high risk that requires remedial measures such as repairs and change of operating regime to restore pipeline condition to green status. This is common industry practice.

Of the six Sales Gas lines for which assessment reports were provided for, four were yellow and classified as medium risk pipelines (lines #5 – #8). Line # 11 is currently classified as orange, which represents medium-high risk. These risks are discussed further in this report.

Line #12 did not have a pipeline datasheet provided, and therefore the interpreted risk level is not known. However, an ILI report was provided, which can be considered as a baseline report. The ILI baseline report for line #12 is the first of such reports as the line is fairly new, being installed in 2015. This inspection report is used to determine all original flaws in the piping materials. Subsequent ILIs will provide data as to the degradation and corrosion of the line as compared to the baseline. This data can then be used to determine a corrosion rate and mitigating actions can be implemented as necessary. Line #12 was commissioned in 2015 and the ILI was performed in 2016, the next ILI is scheduled to take place within 5 years, that is, by 2021.

Any anomalies that required action were investigated and repaired. The records of suggested repairs performed were addressed in the reports and were made available for this assessment. The report shows ADNOC has an effective field implementation of the integrity management plan and meets normal industry practice.

Information provided during interviews of ADNOC Operations personnel suggests that decommissioning is performed on a case by case basis. If decommissioning is because the pipeline no longer serves a useful purpose but has not reached its end of life, ADNOC companies are asked if they could utilize the line and if so, the asset is transferred. If decommissioned for end of life purpose or replacement, AGP would issue a tender to demolish the decommissioned line after the proper isolation and purging of such line. It was suggested that assets should not be abandoned in place and that they would be taken out and sold as scrap. However, where this is difficult such as at a road crossing where open cut is not allowed, it will be grouted and filled with cement. We do not see any HSE impact if the pipeline is properly cleaned and abandoned. Generally, it is a regulatory issue when determining whether abandoning in place is authorized. Based on our discussions with ADNOC, this does not appear to be an issue. Additionally, ADNOC retains the responsibility for decommissioning activities and costs.

### 4.2.4 Sales Gas Metering and Control Systems

This section provides an assessment of the metering and control systems associated with the Sales Gas pipelines, with a focus on their ability to accurately report volume flows and monitor the operations of the system.

ADNOC provided locations of the meters on an overall system schematic and table showing status of each meter. Most of these meters are fit for purpose but are not necessarily custody transfer accurate. The consulting team was also provided with an interview with ADNOC Gas Processing - Production Planning & Shipping representatives to discuss metering and Sales Gas flow paths. From the conversation and information provided, the following items and systems were identified:

- On the upstream inlet to every Sales Gas pipeline within the scope of this investigation, there is a meter. This meter measures all the Sales Gas flow production leaving the individual processing facilities battery limits.

- These meters are processing meters and are presently a mix of orifice and Venturi style meters. These meters are currently being upgraded in an ongoing project to meet UKAS (United Kingdom Accreditation Services) standards.

- Custody transfer metering is accomplished on the downstream side (customer/demand side). Of these meters, approximately 60% presently meet UKAS standards. The ongoing meter upgrade project will bring all meters in compliance with UKAS.

An important note for measurement uncertainty is that the metering calculations need to include a gas composition. For these calculations to be as accurate as possible the gas composition needs to be known. In some instances, an online gas chromatograph (GC) is installed which can provide real time gas compositions for these metering calculations. In instances where a gas chromatograph is not installed the metering calculations are based on an assumed gas composition which can be verified periodically by obtaining gas samples and sending them to a lab for analysis.

All Sales Gas pipelines are integrated in the common pipelines SCADA system, which is called the Pipelines Supervisory, Monitoring & Control System (SMC). Maqta Control room is manned 24/7 and is the main control room for operations. The isolation of pipeline sections in the case of emergency are solely managed by the Pipeline Operations group.

In the Pipeline SMC system, the graphics/mimics are available per the pipeline network which indicate source, destination, geographical area and pipeline corridor that indicates all block valve stations, manifolds, gathering stations and receipt points.

### 4.2.5 Capability to Deliver Planned Production

#### *4.2.5.1 Summary*

This section provides an assessment of the Sales Gas pipelines capability to deliver the planned forecast production over the term of the relevant concessions as well as the capability to meet any minimum contracted volumes based upon the Gas Master Plan provided by "ADNOC – Downstream". The contractually agreed BSF is lower than the GMP, and so our review of the capability to meet the GMP can be considered conservative for the BSF. Additionally, the MVC is set at 75% of the BSF, and any capability to meet the BSF can be applied to the MVC. Our review was limited to the fields within the Use and Operating Agreement and did not consider any other field production.

The assessment indicates that seven out of the twelve pipelines included in this work scope can deliver their designed and planned capacity. Sales Gas Lines #2, #3, #4, #5, and #12 forecasted flow exceeds their design capacities. For these pipelines, operating parameters and ADNOC plans are reviewed to confirm they meet the forecasted production.

There is no impact of minimum contracted volume to be delivered on capability of these pipelines as there is no technical minimum flow required through these pipelines.

The overall pipeline network has redundancy in some places to ensure forecast production volumes can be attained. Much of this redundancy is present on the upstream side of the processing plants, where raw gas volumes can be diverted from one facility to another for processing.

#### *4.2.5.2 Minimum and Maximum Flow*

The technical minimum flow requirement of these lines is based on the principle that the slower the gas moves, the more liquids will drop out of the gas. These pipelines have low risk of degradation due the following:

- These pipelines are generally downstream of facilities where any liquids and debris are typically removed. The product that is moved is dry gas and water accumulation is of minor concern.

- These pipelines are regularly pigged to ensure any water that may have accumulated in low spots is removed.

The maximum flow or capacity is governed by the process system, as well as the hydraulic limitations of the pipelines. Compression and operating parameters at the processing plants define system capacity as does the operating pressure ranges and sizes of the pipelines. The capacities can be increased with minimum piping debottlenecking and henceforth this defines system maximum flow capacity as much as the capacity of lines. At the time of writing of this report, no information has been provided for any of the compression or process equipment, as it is not within AssetCo's asset perimeter.

The capacity of pipelines is defined by the hydraulic limitations of the pipeline. These limitations can affect the lines in different manners such as:

- Operating pressure – The pressures in the pipeline must remain below the design pressure. The inlet of the pipeline will have the highest pressure and this pressure will decrease through the length of the line as friction losses cumulatively increase. Pressure on the outlet must remain high enough to be useful and allow its entry to the next part of the process. As the gas flow rate is increased in a pipeline, the difference between the inlet and outlet pressures increases (a larger pressure drop is experienced). The limit of the pipeline is reached when the flowrate of gas is so high that the inlet pipeline pressure is equal to the design pressure (MAOP), and the exit pressure is the minimum pressure required for delivery (maximum pressure drop).

- Velocities – As volumes increase, the velocity of the gas travelling through the pipeline will also increase. If the velocity is too high, it can cause erosion of the pipe wall. High velocity will also limit the effectiveness of chemical corrosion inhibition.

As shown in ***Table 9***, all lines have adequate capacity to transport the **current** production to the Sales Gas Network, with the exception of line #2, which appears to be operating slightly above its design capacity. Line #2 is a short pipeline (or piping) and is above ground. The slightly higher flow rates for short periods to meet demand are considered acceptable.

| Line Number | Nomenclature | Line Size [in] | Length [km] | Design Capacity [MMscfd] | 2018 Average Flow Rate [MMscfd] | Available Capacity [MMscfd] | 2018 Utilization of Design Capacity [%] |
|---|---|---|---|---|---|---|---|
| 1 | Thamama-C manifold – Habshan-(0-4) | 20 | 1.0 | 270 | 166 | 104 | 60 |
| 2 | Habshan-(0-4) -Thamama-C manifold | 30 | 1.0 | 405 | 431 | -26 | 106 |
| 3 | Habshan-(0-4) -Thamama-C manifold | 42 | 1.0 | 1,162 | 503 | 659 | 44 |
| 4 | Habshan-(0-4) -Thamama-C manifold | 42 | 1.0 | 1,533 | 503 | 1030 | 33 |
| 5 | Asab – Thamama-C manifold | 36 | 87.6 | 357 – **Note 1** | 170 | 187 | 48 |
| 6 | Bu Hasa – Bab manifold | 24 | 45.6 | 370 | 309 | 61 | 84 |
| 7 | Bab manifold – Thamama-C manifold | 24 | 4.4 | 298 | 166 | 132 | 56 |
| 8 | Habshan-5 – Transmission Network | 30 | 3.5 | 1,200 | 1,130 | 70 | 94 |
| 9 | Bab plant – Bab compressor station | 16 | 2.6 | 106 | 74 | 32 | 70 |
| 10 | Bab compressor station – Bab manifold | 10 | 0.2 | 106 | 74 | 32 | 70 |
| 11 | Thamama-C manifold – Bab manifold | 30 | 4.5 | 405 | 250 | 155 | 62 |
| 12 | Shah ASG – Thamama-C manifold | 36 | 127.7 | 755 | 549 | 206 | 73 |

***Table 9. Sales Gas Pipeline Production Delivery Summary***

***Note 1*** – Sales Gas Line #5 is capable of bi-directional flow. The rate given is if line flow is from the Thamama-C manifold to Asab. If this line is flowing from Asab to Thamama-C, the flow rate is reduced to 640 MMscfd.

As part of this review, the gas processing facilities were studied to ensure that the processing capacity of the facilities is sufficient to handle the forecasted gas volumes per the ADNOC Gas Master Plan (GMP). The raw inlet gas volumes to each facility were distributed where possible to ensure processing capacities were not exceeded. For a more detailed description of the gas distribution study, refer to Section 4.5 for the assessment of gas processing plants.

Once the gas volumes from the GMP were distributed amongst the facilities, the Sales Gas volumes were calculated using a gas conversion factor. The conversion factor provided by ADNOC used for each facility is 0.68, meaning 0.68 MMscfd of Sales Gas is produced for every 1 MMscfd of raw inlet gas. This calculated Sales Gas rate was compared to the respective Sales Gas lines design capacity to ensure adequate capacity is available. The exception to this conversion factor is the Shah ASG gas processing plant which used a gas conversion factor of 0.498. The reason for Shah ASG using a lower conversion factor is the fact that its raw gas is extremely sour (high in $H_2S$), and when $H_2S$ is removed from the gas stream, it leads to a lower volume of Sales Gas.

The analysis shows that Sales Gas Lines #1, and lines #6 through #11 have sufficient capacity. The Sales Gas Lines #2, #3, #4, #5, and #12 forecasted flowrates exceed their design capacity (overcapacity). An explanation on meeting the forecasted flowrates for these pipelines is as follows:

- Sales Gas Lines #2, #3, and #4 forecasted flow exceed their design capacities by a margin of about 3% in late 2030's. These are above ground and short pipelines (or piping). These lines will be re-evaluated for their design criteria along with the compressor output at their source facilities, and the final required delivery pressures. Through such a re-evaluation, the design capacity of these lines may potentially be extended to cover the planned throughput.

- Line #5 forecasted flow exceeds its design capacity by a margin of about 10% during the early 2030's. This line will also undergo a re-evaluation of its operating parameters (mostly pressure) to see if the capacity can be increased. As per ADNOC yearly business plan review, in the event that a line is re-evaluated and still deemed to lack sufficient capacity for forecasted flow, ADNOC will commence a debottlenecking project at least two to three years in advance.

- Line #12 exceeds its forecasted flow exceed their design capacities by a margin of about 3% after 2025. ADNOC states that hydraulic analysis indicates that there is a potential to handle flow within these margins and re-evaluation is in progress to find a solution.

In general, we find the capacity constraint of these Sales Gas lines is due to velocity concerns. Too high of velocities in pipelines can lead to erosion of the pipe walls, diminishing their overall integrity and lifespan. The imposed design limits may be revisited and adjusted***Error! Bookmark not defined.***. The velocity of this line exceeded its original design limit, however upon careful review and consultation with ADNOC Partners' technical experts on criteria, it was deemed that the velocity limit could be increased as long as the gas is clean and dry.

In addition, the Sales Gas compressors at the processing facilities can provide the volume of gas required at a high enough pressure (while not exceeding the pipeline MAOP) while at the same time meeting the final delivery pressure. In this scenario, the pressure drop across the pipeline is maximized and achieves the greatest flow possible within the acceptable erosional velocity.

### 4.2.6 Future Capital Improvements

Notably, ADNOC is responsible for all CAPEX, OPEX, and decommissioning costs, and so any costs relevant to future capital improvements will be borne by ADNOC. At the time of writing this report, ADNOC has minimal plans for the existing Sales Gas pipeline network. It appears that they would replace the pipeline if it is required beyond its design life. This is understandable because future capital improvements are performed by an operator to reduce the operating cost (OPEX) and find avenues to increase production capacity of the system. However, these drivers do not apply to ADNOC, as follows:

- The operating cost (OPEX) for pipelines is not generally a significant cost as it usually only pertains to inspection and maintenance of the lines. Therefore, reducing OPEX is usually not a driver.

- The capacity to handle production is enough in these pipelines and meets the planned forecast production until the next business planning cycle. Therefore, there are currently no capital investments needed to upgrade this pipeline system. This explains why ADNOC does not have any upgrades but plans to replace the pipeline as dictated by the remnant pipeline life.

ADNOC does have two projects mentioned on their major projects dashboard which involve the Sales Gas system. Neither of these projects' objective is production capacity based.

The first is to add pipeline leak detection systems (PLDS) to their pipelines. The Pipeline Leak Detection System (PLDS) is to help early detection of pipeline leakages, which is not only loss of hydrocarbons but also is a major environmental & fire/explosion hazard. This project is expected to conclude in August 2020.

The second current project is the upgrade of their Sales Gas metering systems. This project involves replacement of metering skids identified during the Pre-FEED study along with the provision of gas chromatographs at the Sales Gas Consumer Receipt Stations. The Sales Gas metering upgrades are to be completed by August 2021. At the time of writing this report, no further details about either project was available.

### 4.2.7 Risk and Mitigation

ADNOC conducts yearly inspections of their Sales Gas network of pipelines to determine the status of each pipeline. A traffic light status risk matrix is provided in the report to determine the severity of pipeline degradation. Once the condition is established, a plan is provided to make the necessary repairs.

***Figure 4*** represents the Pipeline Integrity Management Process Overview. This process provides clear guidance and procedures for implementing effective threat barriers and assessing their performance. For the Sales Gas network, barrier performance is primarily inferred from regular pipeline integrity inspections.

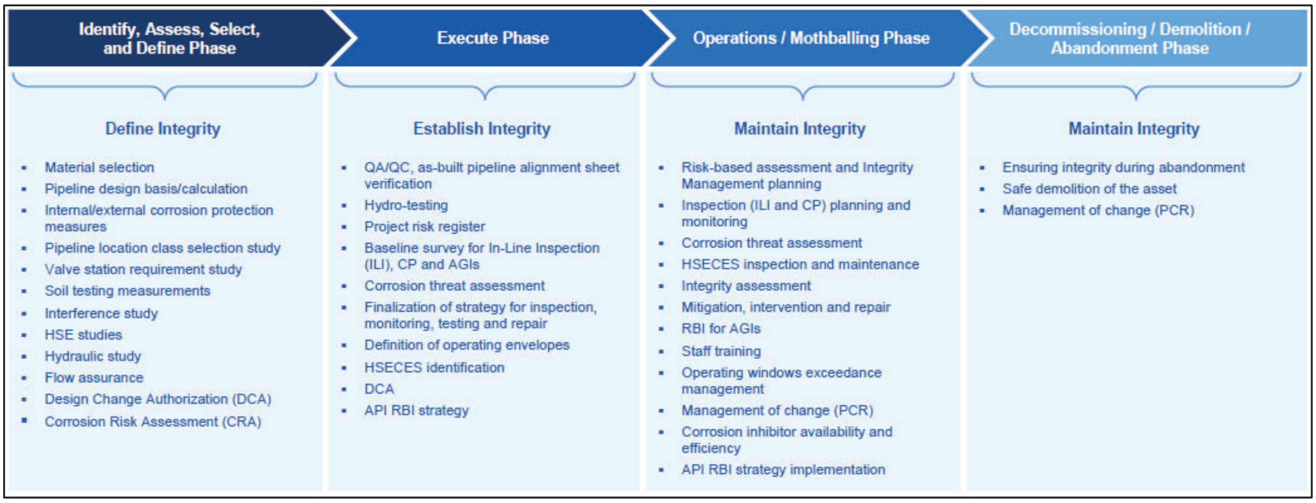


***Figure 4. Pipeline Integrity Management Process Workflow***

Through these systems a Technical Integrity Status Report was developed which covered five (5) of the twelve (12) Sales Gas pipelines, which is currently valid through December 2019. These reports are updated yearly with the results of the pipeline integrity assessments that have been completed throughout the previous year. The findings of these reports are summarized in a 6 x 6 risk assessment matrix (RAM) format that rates the overall risk involving a pipeline at that point in its life. As previously mentioned, a risk ranking (based on the RAM) was not provided during our assessment. In lieu of this, the raw data from the baseline ILI performed in 2016 was provided.

Based on the documentation provided, we believe the asset integrity management system has been implemented for managing the technical risks associated with the Sales Gas pipelines. In the case of the Sales Gas pipelines, design data, proof of baseline integrity, inspection reports, risk assessments, repair records and remaining life assessments were provided which indicate that this work has been completed for some of the Sales Gas lines. Specifically, ADNOC has provided integrity data for six (6) of the twelve (12) lines. Lines #1, #2, #3, #4 and #10 (all above ground piping connections) and line #9 (Bab plant to Bab compressor station) are kept with the Habshan Plant integrity plan. ADNOC manages above ground piping through RBI (risk-based inspections) and UT (ultrasonic testing) to ensure the piping is safe to operate and is not degrading beyond safe limits.

At the time of writing, a risk ranking for line #12 was not provided, however, an ILI report was supplied. This report was for the first ILI performed on this line (baseline ILI). A baseline ILI serves the purpose of documenting the initial material flaws of the pipeline so that future ILI data can be used to accurately track the degradation of the pipeline over time. This baseline ILI did not show any major/significant flaws in the pipeline. The next ILI is to be performed within 5 years of the baseline (sometime in 2021).

While the breadth of integrity data which was made available was quite limited for a number of these lines, we have seen that AGP does follow up on the recommendations made within the assessments, and if warranted will complete more thorough investigations.

#### 4.2.8 Maintenance System and Schedules

A pipeline integrity management system (PIMS) is in place that provides processes and procedures required to carry out pipeline maintenance. The strategic plans provide a proactive approach to set schedules either for inspection and repairs, such as review of cathodic protection systems, ILI assessments, and eventual replacement based on remaining life assessments (RLA).

For its maintenance administration, ADNOC uses a Computer Maintenance Management System (CMMS). Currently ADNOC makes use of both Maximo and SAP software suites. The CMMS is used for asset data management, work order management, development of preventative maintenance plans, storing maintenance records, and managing inventories of spare parts. ADNOC also provided various information on their maintenance standards and processes.

A summary of maintenance schedules is as follows:

- Operating conditions of the lines are monitored daily to ensure the pipelines are operating within the design parameters. If significant deviations are noted, the effects of these must be assessed to understand the potential effects on the pipeline.

- Cleaning pig runs are scheduled at a minimum of every two (2) years (biennially). These are completed to ensure any water drop out in the low areas of the pipelines are kept clear. If any of these runs are missed, non-compliance reports must be submitted and documented.

- Dewatering pig runs shall also be completed after any process upsets involving water ingress to the pipeline. These are in addition to the “cleaning” pig runs mentioned above.

- Pig debris analysis is completed as a part of operational pig runs. If any debris is found in the pig receivers after a run, a sample shall be taken for analyses to determine the nature of the debris.

- Water content monitoring of Sales Gas product entering the pipeline. ADNOC Sales Gas pipelines should be free from water as its presence could lead to corrosion issues.

- Monthly Sales Gas compositional analyses of the Sales Gas stream is taken to ensure product is within acceptable parameters.

- Corrosion inhibitor (if used) rates shall be monitored to ensure target rates are being met.

- Monthly $H_2S$ partial pressure monitoring to ensure pipelines designed for sour service are operating within parameters and lines not designed for sour service are free from $H_2S$.

- Cathodic protection (CP) surveys completed a minimum of every five (5) years to ensure the minimum and maximum limits set by ADNOC.

- CP regular measurements completed yearly to identify any trends to ensure the minimum and maximum limits set by ADNOC.

- Batch biocide (if required) as per specific requirements. This would be determined by analyses performed on pig debris and/or product streams.

- ADNOC performs an in-line inspection (ILI) typically every five (5) years after the initial baseline survey. Results are assessed to ensure they are within the parameters set forth and RLA is calculated is based on inspection results and repair mitigation of any defects.

- An ultrasonic tool (UT) is used yearly to help define the integrity of the piping associated with the lines. This includes measurement of the wall thickness of the pipeline throughout the inspected length, records of noticeable wall thinning points, dents and any other anomaly features.

### 4.2.9 Historical Planned/Unplanned Outages

ADNOC identifies their pipeline systems of critical importance for the safe operation, safety of the people, environment and to provide business continuity. For that reason, ADNOC considers the pipelines integrity at the top of their objectives.

ADNOC stated that there was only one LOPC event, described as follows, “To ADNOC’s knowledge, Sales Gas pipeline leaked in year 2001 by third party damage on 20” Asab – Bab Gas Pipeline which decommissioned in year 2011 which was subsequently replaced with Sales Gas line #5”.

Except for the one incident reported above, no other outages have taken place on these assets.

Regarding major repairs or other issues that may require pipeline shutdowns, ADNOC states that they do not have specifically planned shutdowns for any of their pipelines. The opportunities provided by shutdowns/turnarounds at the source plants are used for any critical repair and rehabilitation work required to be completed on the pipelines.

ADNOC has an EPRS (Emergency Pipeline Repair Service) plan and equipment in place to quickly address repairs. ADNOC OPN has an EPRS agreement to attend any emergency along with the other ADNOC group of companies to support each other during any emergency. AGP has an agreement with a service provider to address any pipeline leaks within hours and they are available 24/7.

## 4.3 Injection Lines

### 4.3.1 Technical Review

The objective of the technical review of the injection gas pipelines is to assess the general suitability of design to meet capacity objectives and their conformity to recognized industry standards plus applicable UAE regulations.

ADNOC is the regulator for all the HSE issues covering the ADNOC Group of companies. During the assessment, it was identified with the onsite personnel in Abu Dhabi that there are currently no UAE regulations which govern the design and operations of pipelines and that ADNOC is a “self-regulated company”. All specifications for design and operation follow the companies DGS (design general specifications) which have been derived from international standards. As such, this review is limited to compliance with the industry codes and standards. Overall, ADNOC has adhered to industry codes and standards for these pipelines. For longer pipelines, ADNOC co-ordinates with the Abu Dhabi Department of Municipalities & Transport to agree on the pipeline routes and buffer zones required for the pipeline corridors.

Design information was gathered from many different sources, including design basis documents, Process Flow Diagrams (PFDs), Piping & Instrumentation Diagrams (P&IDs), alignment sheets, integrity reports, quantitative risk assessments and various other documentation. From this documentation, information such as pipe specifications, design details, design codes, material specifications, and design parameters were established. Information provided indicates that all the pipelines were designed to the industry standard design code, ASME B31.8 – Gas Transmission and Gas Distribution Piping Systems.

The fifteen (15) Injection Gas trunk lines range in size from 12-inch to 16-inch. They are all designed to transport dry natural gas and vary in lengths from two (2) to twenty-one (21) kilometers. The pipeline diameters are properly sized to accommodate the designed throughput of each pipeline, per ADNOC data provided. The exception is injection trunk line #9, which marginally exceeds its stated design capacity briefly during future operations. A hydraulic analysis with updated operating parameter may allow this marginal increase in capacity. A detailed discussion of the capacity is in later sections.

All injection gas trunk lines utilize industry standard API Specification 5L carbon steel pipe. Design information for these pipelines was gathered from various sources (i.e. alignment sheets, integrity reports, etc.). ADNOC also provided a few pipeline design basis documents for review. From these documents it is clear the minimum expectations of the design are well defined. These design bases include a thorough set of specific requirements for materials, design, construction methods, cathodic protection, and electrical isolation.

Once installed and operational, an integrity management (IM) plan is used to extend the remaining life of a pipeline. ADNOC has implemented a rigorous IM plan per industry codes. Details on ADNOC’s IM plan are discussed in later sections.

***Table 10*** summarizes the design codes and materials used for the pipelines, as well as their expected remaining life.

| Line Number | Line Size [in] | Length [km] | Design Code | Pipe Grade | Year Commissioned | Pipeline Age Jan. 2020 [yrs] | Forecast Replacement Year | Remaining Life [yrs] |
|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 20.6 | B31.8 | API 5L X60 | 1995 | 25 | 2022 - 2035 | 2 -15 |
| 2 | 12 | 13.3 | B31.8 | API 5L X60 | 1995 | 25 | 2041 | 21 |
| 3 | 12 | 14.7 | B31.8 | API 5L X60 | 1995 | 25 | 2065 | 45 |
| 4 | 12 | 16.0 | B31.8 | API 5L X60 | 1995 | 25 | 2027 | 7 |
| 5 | 16 | 20.4 | B31.8 | API 5L X65 | 2006 | 14 | 2046 | 26 |
| 6 | 16 | 19.3 | B31.8 | API 5L X65 | 2006 | 14 | 2046 | 26 |
| 7 | 16 | 15.4 | B31.8 | API 5L X65 | 2006 | 14 | 2046 | 26 |
| 8 | 16 | 13.6 | B31.8 | API 5L X65 | 2006 | 14 | 2046 | 26 |
| 9 | 12 | 20.3 | B31.8 | API 5L X60 | 1988 | 32 | 2023 | 3 |
| 10 | 12 | 2.0 | B31.8 | API 5L X52 | 1995 | 25 | 2030 | 10 |
| 11 | 12 | 2.0 | B31.8 | API 5L X60 | 2005 | 15 | 2029 | 9 |
| 12 | 14 | 11.4 | B31.8 | API 5L X65 | 2000 | 20 | 2045 | 25 |
| 13 | 12 | 10.1 | B31.8 | API 5L X65 | 2000 | 20 | 2063 | 43 |
| 14 | 12 | 13.9 | B31.8 | API 5L X65 | 2000 | 20 | 2036 | 16 |
| 15 | 12 | 1.8 | B31.8 | API 5l X60 | 2002 | 18 | 2032 | 12 |

***Table 10. Injection Trunk Lines Design Information and Remaining Life***

The remaining life of pipelines are based on inline inspection reports that are then interpreted by ADNOC using a Risk Based Analysis (RBA) is described in Section 4.2.1.

At the time of this writing, trunk line #9 was the only pipeline currently planned for replacement (project P11636 FEED). It is also noted that an older annual integrity report was provided by ADNOC for injection trunk line #1 which indicated an end of life at the year 2022. However, this report also included a list of planned repairs and it is assumed that these repairs were completed as the latest information provided by ADNOC indicates an end of life in 2035. Repair records and an updated integrity report should be provided to validate the repairs and updated end of life estimate.

***Table 11*** presents a summary of corrosion coatings, cathodic protection, and leak detection systems (LDS) of the injection trunk lines as provided.

| Line Number | Field | Line Size [in] | Length [km] | Year Commissioned | Internal Corrosion Coating | External Corrosion Coating | Cathodic Protection (Y/N) | Leak Detection (Y/N) |
|---|---|---|---|---|---|---|---|---|
| 1 | Bab | 12 | 20.6 | 1995 | None | 3LPP | Yes | No |
| 2 | Bab | 12 | 13.3 | 1995 | None | 3LPP | Yes | No |
| 3 | Bab | 12 | 14.7 | 1995 | None | 3LPP | Yes | No |
| 4 | Bab | 12 | 16.0 | 1995 | None | 3LPP | Yes | No |
| 5 | Bab | 16 | 20.4 | 2006 | None | 3LPP | Yes | No |
| 6 | Bab | 16 | 19.3 | 2006 | None | 3LPP | Yes | No |
| 7 | Bab | 16 | 15.4 | 2006 | None | 3LPP | Yes | No |
| 8 | Bab | 16 | 13.6 | 2006 | None | 3LPP | Yes | No |
| 9 | Bab | 12 | 20.3 | 1988 | None | Vinyl Ester / 3LPP | Yes | No |
| 10 | Bu Hasa | 12 | 2.0 | 1995 | None | CTE | Yes | No |
| 11 | Bu Hasa | 12 | 2.0 | 2005 | None | 3LPP | Yes | No |
| 12 | Asab | 14 | 11.4 | 2000 | None | 3LPP | Yes | No |
| 13 | Asab | 12 | 10.1 | 2000 | None | 3LPP | Yes | No |
| 14 | Asab | 12 | 13.9 | 2000 | None | 3LPP | Yes | No |
| 15 | Asab | 12 | 1.8 | 2002 | None | 3LPP | Yes | No |

***Table 11. Injection Trunk Lines Corrosion Mitigation & Leak Detection***

All pipelines were designed and installed with external coatings to protect from external corrosion. The coating of choice would normally be a 3-layer polyethylene (3LPE) coating, but due to the higher temperatures of these lines, the best choice appears to be a 3-layer polypropylene (3LPP). From the information provided, all trunk lines were coated with polypropylene except for two.

Injection trunk line #9 was originally installed with an external fusion bonded epoxy layer that had deteriorated and was then replaced through the years 2004-2007 with a glass flake reinforced vinyl ester liquid coating. More recently this vinyl ester coating has been found to be disintegrating, however this line will not likely be recoated as it is scheduled for replacement in 2021-2022. The new segment of injection trunk line #9 is externally coated with 3LPP. Injection trunk line #10 is coated with a glass reinforced coal tar enamel which appears to be holding up extremely well, as the annual pipeline report indicated no external defects.

None of the pipelines have been internally coated. Note that internal coating is used on larger transmission lines in order to reduce drag, and in some services to prevent corrosion. Although a few of these injection trunk lines are transmitting sour gas it is not deemed to be corrosive as the gas has been dehydrated (water content has been sufficiently reduced to prevent the formation of any liquid water). This however poses the risk of corrosion/contamination if there were ever an upset in a gas dehydrating facility. This issue has presented itself in the Asab region where black powder, scale, and corrosion have been noted in injection trunk lines #13 and #14 and have caused delays in performing inline inspection services.

The formation of black powder indicates that liquid water had been present at some point. Black powder can consist of various iron sulfides, iron carbonates, and/or iron oxides. The formation of iron sulfides is a result of reactions of the piping material (iron) with hydrogen sulfide ($H_2S$), and iron carbonates form from reactions between iron and carbon dioxide ($CO_2$). Both $H_2S$ and $CO_2$ are present in the Asab gas streams, and therefore the gas is considered sour and has the potential for corrosion/black powder formation. The formation of iron oxides requires oxygen to be present, even if in small amounts. These reactions will only occur in the presence of a liquid water phase. This water may be only present during a process upset. For example, it may come from carryover in a facility (poor separation), from condensing water vapor in the gas (insufficient dehydration or colder than expected temperatures), or from start-up/maintenance procedures such as inadequate drying of the line during commissioning or from pigging procedures. Once the water is eliminated, the corrosion and black powder formation will cease. The integrity report for injection line #13 indicates that water ingress occurred during an intelligent pigging survey (IPS), scale samples were taken, and a root cause analysis performed. The current degradation rate of the pipeline has since been returned to zero (0) mm per year.

All injection trunk lines are cathodically protected using impressed current systems. The lines are electrically isolated from above ground piping/facilities, except for the old segment of injection line #9. When this line is replaced (2021-2022) it will be equipped with isolation joints to electrically isolate the pipeline from the facility and therefore less current will be required for protection.

None of the injection trunk lines are equipped with leak detection systems. However, each line is monitored for flowrates and pressures. Further to this, each wellhead is equipped with flow meters and a SCADA link (supervisory control and data acquisition). These systems will quickly indicate the presence of any larger leaks and the injection system can be shut down from the control room. This includes the wellhead emergency shutdown valves (ESDVs).

### 4.3.2 Operations Review

The objective of the operations review of the injection trunk lines is to assess the operating and maintenance track record including compliance with safe operating practices as well as an opinion of the operator's experience and capabilities directly related to injection lines. For a more detailed review of general operations, refer to Section 4.2.2.

***Table 12*** presents a summary of the operating conditions versus the design conditions of the injection trunk lines. Note that injection trunk line #9 is operating near its design pressure. This is because the old segment of the pipeline has been de-rated in pressure due to its ageing and deteriorating status.

| Line Number | Line Size [in] | Length [km] | Annual Average Flow Rate [MMscfd] | Capacity [MMscfd] | Operating Pressure [barg] | Design Pressure [barg] | Operating Temp. [oC] | Design Temp. [oC] |
|---|---|---|---|---|---|---|---|---|
| 1 | 12 | 20.6 | 185 | 253 | 320-370 | 420 | 55-70 | 85 |
| 2 | 12 | 13.3 | 106 | 182 | 320-370 | 420 | 55-70 | 85 |
| 3 | 12 | 14.7 | 135 | 170 | 320-370 | 420 | 55-70 | 85 |
| 4 | 12 | 16.0 | 150 | 229 | 320-370 | 420 | 55-70 | 85 |
| 5 | 16 | 20.4 | 290 | 300 | 330-380 | 420 | 55-70 | 85 |
| 6 | 16 | 19.3 | 160 | 300 | 330-380 | 420 | 55-70 | 85 |
| 7 | 16 | 15.4 | 220 | 300 | 330-380 | 420 | 55-70 | 85 |
| 8 | 16 | 13.6 | 242 | 300 | 330-380 | 420 | 55-70 | 85 |
| 9 | 12 | 20.3 | 200 | 280 | 285 | 290 | 37-61 | 85 |

| Line Number | Line Size [in] | Length [km] | Annual Average Flow Rate [MMscfd] | Capacity [MMscfd] | Operating Pressure [barg] | Design Pressure [barg] | Operating Temp. [oC] | Design Temp. [oC] |
|---|---|---|---|---|---|---|---|---|
| 10 | 12 | 2.0 | 122 | 150 | 45-50 | 58 | 40-50 | 68 |
| 11 | 12 | 2.0 | 122 | 150 | 45-50 | 58 | 40-50 | 68 |
| 12 | 14 | 11.4 | 300 | 357 | 380-385 | 431 | 78-90 | 110 |
| 13 | 12 | 10.1 | 180 | 345 | 380-385 | 431 | 78-90 | 110 |
| 14 | 12 | 13.9 | 230 | 259 | 380-385 | 431 | 78-90 | 110 |
| 15 | 12 | 1.8 | 17 | 30 | 30-48 | 63.5 | 45-60 | 85 |

***Table 12. Injection Trunk Lines Operating & Design Information***

Another key component of operations and maintaining the integrity of pipelines is the use of pigging operations. ILI (In-line Inspection) pigging is performed periodically on each of the injection trunk. Each field has its own inspection and corrosion plan which were provided by ADNOC for review. The Bab field has a maximum interval between ILI pigging of seven (7) years on the injection trunk lines, however this appears to be done typically in five (5) year intervals. Bu Hasa appears to perform ILI inspections on the trunk lines every four (4) years, and Asab every five (5) years. The actual inspection frequency may be more frequent for any pipeline and depends on the results of the most recent ILI. If corrosion rates were higher than expected, a change in operations may be implemented and the next ILI will be performed sooner than the normal inspection frequency.

Data was provided for our review by ADNOC regarding ILI records and subsequent repairs. Most repairs on the lines were minor and typical of normal inspections. The largest repairs noted include the recoating of injection trunk line #9, numerous composite and clock spring repairs of injection trunk line #9, and the replacement of a few short sections of injection trunk line #13 in Asab.

Another maintenance activity is the surveys for the cathodic protection (CP) systems. These surveys are performed four times per year for each line, and this is standard for all three fields. The CP surveys are used to ensure the external coating is intact and that the imposed current is not leaking into the ground. The test points for these surveys are at one-kilometer intervals along the entire length of each pipeline.

Corrosion coupons are also used for monitoring the corrosion rates of pipelines and these have been installed on the various injection trunk lines. From the Bu Hasa inspection plan, it is seen that ADNOC inspects these coupons four times per year to monitor the corrosion rates.

### 4.3.3 Condition Review

The objective of the condition review of the injection trunk lines is to assess the current integrity of the installed facilities and their suitability for future operation, including remaining useful life. General information regarding methodology and information is discussed in Section 4.2.3; the following section discusses pipeline conditions relevant only to the injection lines.

The key concern in this study is injection trunk line #9, specifically the old section. This line has been recoated (externally) and the new coating has been found to also be deteriorated. This line has also had other repairs including composite based cold repairs and clock spring repairs. Despite these repairs/remediations the line has deteriorated to the point of requiring its maximum allowable operating pressure to be de-rated. This line will also see the replacement and upgrade of its entire instrument and control system that has become obsolete. ADNOC recognizes this concern and this line segment is scheduled to be replaced in 2021-2022 as part of the Bab major equipment replacement plan.

An older annual integrity report (2015) was provided by ADNOC for injection trunk line #1 and this report indicated an end of life in 2022. However, this report also included a list of planned repairs. It is assumed that these repairs have been completed, as the latest information provided by ADNOC indicates a current end of life in 2035. Repair records and an updated integrity report should be provided to validate the repairs and updated end of life estimate.

### 4.3.4 Injection Gas Metering and Control Systems

This section provides an assessment of the metering and control systems associated with the injection trunk lines, with a focus on their ability to accurately report volume flows and monitor the operations of the system. The metering for injection lines per field basis is as follows:

BAB Field (Gas Injection Lines 1 to 9):

For injection trunk lines #1 through #9 the metering is performed upstream at the Habshan 0-4 facility. The type of meter and whether it meets UKAS standards has not been provided.

The gas injection flowrate to each wellhead is measured by an orifice plate meter providing an indication in the ADNOC Onshore/AGP control room via a SCADA link.

The use of meters on the upstream and downstream end of the trunk lines allows for mass balance and to ensure proper flow distribution is achieved.

The injection compressors are located and controlled in the Habshan 0-4 facility. At the wellheads, gas injection flowrates are regulated by a manual choke valve. The wellhead choke valves ensure the correct proportion of gas passes to each wellhead. The injection wells are connected to a SCADA system which enables wellhead information to be viewed at the ADNOC Onshore/AGP control rooms. The wells may be shutdown remotely via SCADA, however restarting of a well must be done locally by an ADNOC Onshore operator.

BU HASA Field (Gas Injection Line 10 to 11):

The injection trunk lines #10 and #11 are metered both at the upstream tie-in point at the Bu Hasa valve station as well as at the downstream end of the lines at the Bu Hasa compressor station. These meters are orifice plate meters with an accuracy of 0.05% and can be viewed from the ADNOC control room.

The Bu Hasa injection trunk lines (#10 & #11) take gas from the Bu Hasa valve station and transport it to the Bu Hasa Injection Compressor Station. The pressure in these lines is regulated by control valves and the compressors at the station. The flow, temperature and pressure transmitters at the valve station send their signals to the ADNOC control room. Shutdown Valves (SDVs) are located and controlled from the compressor station.

ASAB (Gas Injection Line 12 to 15):

The Asab injection trunk lines #12-14 are metered both at the upstream end at Asab-2 and at each individual injection wellheads. On the other end, the flow transmitters located at the wellheads transmit a signal back to the AGP control room via a SCADA link. The SCADA link also allows for viewing and control of wellheads from the Gas Remote Station 2 (GRS-2), which has a manned control room.

Injection trunk line #15 is metered using a flange fitted orifice plate outfitted with a flow computer. The meter is located outside of the Asab-1 facility. This meter is not equipped with a gas chromatograph for real time measurement of the gas composition.

The injection trunk lines from Asab (#12-14) begin at the Asab-1/2 facility and transport gas to various parts of the Asab oil field. The pressure in these lines is controlled at the Asab-1/2 facility. At the wellheads the gas injection flowrates are regulated by manual choke valves. The wellhead choke valves ensure the correct proportion of gas passes to each wellhead and under normal operation, these do not require adjustment. The injection wells are connected to a SCADA system which enables wellhead information to be delivered to the AGP control room. The SCADA link also allows for viewing and control of wellheads from the Gas Remote Station 2 (GRS-2), which has a manned control room.

### 4.3.5 Capability to Deliver Planned Production

#### *4.3.5.1 Summary*

This section provides an assessment of the injection trunk lines' capability to deliver the planned forecasted injection volumes over the term of the relevant concessions as well as the capability to meet any minimum contracted volumes based upon the Gas Master Plan provided by "ADNOC – Downstream".

The assessment indicates that the pipelines included in this work scope can deliver their planned production. The two exceptions to this are line #9 and line #15 that are further investigated and explained.

Injection line #9 planned production briefly goes over its design capacity slightly in 2024. It is not a concern as it is part of a Bab replacement line project in 2021-2022. Alternatively, ADNOC may decide to change the lines operating parameter to accommodate this slightly higher planned production.

Injection line #15 design capacity is misquoted. On further investigation, it was established that this line has more than sufficient capacity to handle planned production.

#### *4.3.5.2 Minimum and Maximum Flow*

Minimum flow is not a concern as the injection pipelines have low risk of degradation due the following:

- These pipelines are generally downstream of facilities where any liquids and debris are typically removed. The product that is moved is dry gas and water accumulation is not a regular concern.
- These pipelines are regularly pigged to ensure any water that may have accumulated in low spots is removed.

The parameters which influence the maximum flow or capacity are discussed in Section 4.2.5.2. The following section discusses considerations to the maximum flow relevant to the injection lines.

All injections pipelines have design capacity to meet the planned production except for lines #9 and #15 which are explained below:

- Injection trunk line #9 appears to briefly go over its design capacity by a minimal amount in 2024. Injection trunk line #9 has a design capacity of 280 MMscfd, however in the years 2024 and 2025 the forecasted flow rates are 282 and 283 MMscfd respectively. This may mean that the injection trunk line experiences slightly higher than intended velocities and/or slightly higher than intended pressure at the source end. This pipeline is part of the 2021-2022 Bab replacement line and therefore its capacity may change or be updated with that project. Furthermore, the line may only be exceeding its design capacity for a short length, as the nearest injection well is less than three (3) kilometers away from the Habshan 0-4 facility. However, a detailed hydraulic analysis would be required to confirm the limiting factor (e.g. design pressure, velocity, or compressor capacity) for stated design capacity in this trunk line.

- Injection line #15 has a “stated” design capacity of 30 MMscfd. The “stated” design capacity is a misrepresentation whereas the ‘actual” design capacity for Injection line #15 operating at 30 to 48 barg should be 100 MMscfd plus. Note the “stated” design capacity is from an initial project design basis in 2002 citing a given criteria to design a pipeline with capacity of 30 MMscfd operating at 35 barg. A smaller diameter pipeline than the chosen 12-inch diameter line could have handled these criteria. However, a 12-inch diameter pipeline was selected and installed in the field. A 12-inch pipeline with operating pressure of 30 to 48 barg can handle 100 MMscfd plus flow rates. To further substantiate the “actual” design capacity, it should be noted that Injection line #10 and #11 having a 12-inch diameter operating at 45 to 50 barg has a design capacity of 150 MMscfd. Considering the “actual” design capacity, injection line #15 can handle the forecasted flow of 54 MMscfd from year 2021 through 2025.

### 4.3.6 Future Capital Improvements

At the time of writing this report, ADNOC has minimal plans for the existing injection trunk line networks. ADNOC will replace a pipeline if the line is required beyond its design life.

Another potential driver for future improvements in the trunk lines is the desire to reduce the operating costs (OPEX) and find avenues to increase capacity of the system. These drivers are not factors in the injection lines because the injection pipeline system already has sufficient capacity to meet planned forecast production

ADNOC has one project mentioned on their Bab Major Equipment Replacement plan. The project is to replace the old segment of injection trunk line #9 and this is to be completed by 2022. This project’s objective is not based on transmission/injection capacity, but rather on asset integrity.

### 4.3.7 Risk and Mitigation

This section provides an overview and analysis of key procedures and methods deployed for risks and mitigations associated with the injection pipelines. A discussion of corporate policies and procedures can be found in Section 4.2.7.

Based on documentation provided for the Sales Gas, one may assume that a similar asset integrity management system has been implemented for managing the technical risks associated with the Injection pipelines. Previously supplied information on the pipelines included design data, proof of baseline integrity, inspection reports, risk assessments, repair records and remaining life assessments. However, these were not provided to the same extent for the injection lines. Pipeline integrity reports were provided for ten (10) of the fifteen (15) injection lines, however these do not appear to use the same ADNOC corporate 6 x 6 risk assessment matrix (RAM) format as was presented for the previous lines. For example, six of the seven lines for which an assessment was provided were classified as green, with the other line being classified as amber. These colors were provided, but the rating within the color, for example A1 or D1 was not provided. Examples of the ADNOC corporate RAM are shown in Section 4.2.7.

While the amount of integrity data which was made available was quite limited, we have seen that ADNOC does follow up on the recommendations made within the assessments, and when warranted, will complete more thorough investigations. The framework for providing long-term risk management of the underground pipelines within the injection network is comprehensive. The current status of the pipelines indicates that specific mitigation strategies, such as repairs or lowering operation pressures for maintaining pipeline integrity, have been implemented in order to extend the operating life of pipelines that have reached or exceeded their original design life.

### 4.3.8 Maintenance System and Schedules

The maintenance system and schedules associated pipeline upkeep is discussed in detail in Section 4.2.8

The ADNOC Inspection and Corrosion Management Standard "TE-ST-001" is an example of how ADNOC mitigates the risk of corrosion within its assets, including its injection pipelines. This standard utilizes a risk-based approach in order to maintain facilities in a commercially focused manner while not compromising the integrity and HSE using a series of steps to identify, assess, analyze, and prevent risks.

Another example of ADNOC asset management is the Asset Life Extension Management Strategy. The Asset Life Extension Management (ALEM) Strategy "OEX-STR-001" is a framework that outlines how asset life should be managed and assessed, including the decision to extend the life of an asset or replace the asset.

The ALEM Strategy is further supported by guidelines such as the ALEM Prerequisites "OEX-GU-004" which identifies what information is required for the life extension selection process. This includes information regarding the strategic business plans, shareholder initiatives, stakeholder's identification, alignment and interfaces with other programs etc.

Another supporting document to the ALEM Strategy is the ALEM Remnant Life Assessment Guideline "OEX-GU-006", which provides information on how to identify the required data to perform a remnant life assessment.

### 4.3.9 Historical Planned / Unplanned Outages

The objective of this section is to provide an analysis of throughput and planned and unplanned downtime for the injection pipelines in the last three (3) years.

At the time of this assessment, ADNOC has explicitly stated that no major outages have occurred on these injection trunk lines, except for injection trunk lines #9, 14, 15 for which no data or comment were provided.

Regarding major repairs or other issues that may require pipeline shutdowns, ADNOC does not have planned shutdowns specifically for any of their pipelines. The opportunities provided by shutdowns/turnarounds at the source plants are used for any critical repair and rehabilitation work to be carried out on the pipelines.

The previous three (3) years of historical data of injection volumes were provided by ADNOC on a per day basis. This data includes the years 2017 through 2019. Injection trunk lines #1-8 were running 100% of the time. If we only consider the time that these injection lines were operating at more than 1,000 MMscfd, then we find these lines were operational for 95.4% of the time. This may be attributed to times were a portion of the Habshan 0-4 facility was down for maintenance, as this amount of time seems typical for a large gas processing facility.

Injection trunk line #9 appears to have been operation for approximately 91.2% of the time. This again may be attributed to regular plant downtime, however the first instance of outage in the year 2017 was quite a bit little longer than considered normal for a plant turnaround and indicates the possibility of a larger maintenance activity taking place.

Injection trunk lines #10 and #11 were operational for over 99.4% of the time. A possible explanation for this is that one compressor train was taken down at a time for maintenance purposes and the injection flow rates are small enough such that this is possible.

Injection trunk lines #12-14 were operational for over 94.4% of the time. This level of downtime may be considered slightly higher than normal for a typical gas plant turnaround/maintenance cycle. This may indicate a larger revamp or project took place in one of the Asab facilities. The data indicates two (2) outages occurred in the year 2019.

Injection trunk line #15 was operational for over 98.7% of the time. This equates to about five (5) days of outage per year. This level of downtime is considered fairly normal for a typical gas plant turnaround and/or maintenance activity.

## 4.4 NGL Pipelines

### 4.4.1 Technical Review

The objective of the technical review of the NGL pipelines is to assess the general suitability of design to meet capacity objectives and their conformity to recognized industry standards plus applicable UAE regulations.

A stand-alone design basis and alignment sheets were provided for only some of the NGL pipelines. Subsequently, design information was gathered from many different sources, including project basis documents, drawing packages, hydraulic studies, integrity assessments, quantitative risk assessments and various other documentation. From this documentation information such as pipe specifications, design details, design codes, material specifications, design parameters were established. Information provided indicates that all the pipelines were designed and constructed to industry standard design codes.

All the NGL pipelines utilize industry API Specification 5L carbon steel pipe, except for Line #10. Line #10 is an above ground piping connection and ASTM piping was used. Only NGL line #8 was explicitly specified as being NACE compliant within the documentation provided for this study.

***Table 13*** presents a summary of the design codes and materials utilized for the NGL pipelines.

| Line number | Nomenclature | Line Size [inch] | Length [km] | Year Commissioned | Design Code | Pipe Grade |
|---|---|---|---|---|---|---|
| 1 | Habshan-3 to MP-21 | 20 | 37.3 | 2010 | ASME B31.4 | API 5L X65 PSL2 |
| 2 | MP-21 to Ruwais | 24 | 67.7 | 2010 | ASME B31.4 | API 5L X65 PSL2 |
| 3 | Bab manifold to Ruwais | 30 | 101.0 | 2010 | ASME B31.4 | API 5L X65 PSL2 |
| 4 | Asab-2 to 921 receiver | 16 | 81.1 | 2010 | ASME B31.4 | API 5L X65 PSL2 |
| 5 | Asab-0 to Bab manifold | 24 | 89.0 | 2010 | ASME B31.4 | API 5L X65 PSL2 |
| 6 | Bu Hasa to MP-21 | 16 | 34.2 | 2010 | ASME B31.4 | API 5L X65 PSL2 |
| 7 | Habshan-0/1/2 to Bab manifold | 10 | 6.3 | 1995 | ASME B31.4 | API 5L X52 PSL2 |
| 8 | Habshan-OAG to Bab manifold | 12 | 4.5 | 2010 | ASME B31.4 | API 5L X60 PSL2 (NACE) |
| 9 | Habshan-5 to Bab manifold | 24 | 17.6 | 2012 | ASME B31.4 | API 5L X60 PSL2 |

| Line number | Nomenclature | Line Size [inch] | Length [km] | Year Commissioned | Design Code | Pipe Grade |
|---|---|---|---|---|---|---|
| 10 | Bab Plant to Bab manifold | 8 | 0.2 | 2010 | ASME B31.3 | A-333 Gr. 6 |
| 11 | Shah-ASG to either Asab-0 or Asab-2 Pipeline @ KP 31.3 | 16 | 68.5 | 2015 **Note 1** | ASME B31.4 | API 5L X65 |

***Table 13. NGL Pipeline Design Code & Pipe Grade Parameters***

***Note 1*** – Per ADNOC reported year commissioned and also referred in Shah Gas Development (SGD) Project documents.

All the NGL pipelines were designed, constructed and installed for an intended 30-year design life. Once installed and operational, an integrity management (IM) plan can be used to extend the remaining life of a pipeline. ADNOC has implemented a rigorous IM plan per industry codes. Details on ADNOC's IM plan are discussed in later sections. None of the eleven (11) NGL lines have reached their thirty (30) year design life and only one of the lines is over 20 years in age.

***Table 14*** summarizes the NGL pipelines original design lives, years commissioned, and currently projected replacement years.

| Line number | Nomenclature | Design Life [yrs] | Year Commissioned | Pipeline Age January 2020 [yrs] | Current Asset Replacement Year | Current Remaining Life [yrs] |
|---|---|---|---|---|---|---|
| 1 | Habshan-3 to MP-21 | 30 | 2010 | 10 | 2040 | 20 |
| 2 | MP-21 to Ruwais | 30 | 2010 | 10 | 2040 | 20 |
| 3 | Bab manifold to Ruwais | 30 | 2010 | 10 | 2040 | 20 |
| 4 | Asab-2 to 921 receiver | 30 | 2010 | 10 | 2040 | 20 |
| 5 | Asab-0 to Bab manifold | 30 | 2010 | 10 | 2040 | 20 |
| 6 | Bu Hasa to MP-21 | 30 | 2010 | 10 | 2040 | 20 |
| 7 | Habshan-0/1/2 to Bab manifold | 30 | 1995 | 25 | 2027 | 7 |
| 8 | Habshan-OAG to Bab manifold | 30 | 2010 | 10 | 2037 | 17 |
| 9 | Habshan-5 to Bab manifold | 30 | 2012 | 8 | 2042 | 22 |
| 10 | Bab Plant to Bab manifold | 30 | 2010 | 10 | 2040 | 20 |
| 11 | Shah-ASG to either Asab-0 or Asab-2 Pipeline @ KP 31.3 | 30 | 2015 **Note 1** | 12 | 2038 | 18 |

***Table 14. Asset Life of NGL Pipelines***

***Note 1*** – Per ADNOC reported year commissioned and referred to in Shah Gas Development (SGD) Project documents.

NGL line #7, the oldest NGL line which was commissioned in 1995 is an example of life extension, as its useful life has currently been extended by two years, to an overall life expectancy of 32 years. At the time of this writing, no asset replacement plans have been provided for this, or any of the NGL pipelines. There is no reference in the project dashboard of upcoming projects that address replacement of any NGL lines. Given that all NGL pipelines with the exception of NGL line #7 were commissioned after 2010 for a design life of 30 years, this is not unusual.

In turn, installation issues, changes in parameters from initial design conditions, process upsets and improper maintenance may potentially shorten the operational life of a pipeline. NGL line #8, which was initially commissioned in 2010, has had its current life expectancy reduced by three years to a total of 27 years and is currently planned to have run its useful life by 2036. If the recommended remediation is completed prior to its next ILI inspection, the asset life of the pipeline is expected to be restored to at least its original 30 years.

***Table 15*** presents a summary of external coatings, cathodic protection and leak detection system (LDS) of the NGL pipelines.

| Line Number | Nomenclature | Line Size [in] | Length [km] | Year Commissioned | External Corrosion Coating | Cathodic Protection (Y/N) | Leak detection (Y/N) |
|---|---|---|---|---|---|---|---|
| 1 | Habshan-3 to MP-21 | 20 | 37.3 | 2010 | 3LPE | Yes | No, **Note -1** |
| 2 | MP-21 to Ruwais | 24 | 67.7 | 2010 | 3LPE | Yes | No, **Note -1** |
| 3 | Bab manifold to Ruwais | 30 | 101.0 | 2010 | 3LPE | Yes | No, **Note -1** |
| 4 | Asab-2 to 921 receiver | 16 | 81.1 | 2010 | 3LPE | Yes | No |
| 5 | Asab-0 to Bab manifold | 24 | 89.0 | 2010 | 3LPE | Yes | No |
| 6 | Bu Hasa to MP-21 | 16 | 34.2 | 2010 | 3LPE | Yes | No |
| 7 | Habshan-0/1/2 – Bab manifold | 10 | 6.3 | 1995 | 3LPE | Yes | No |
| 8 | Habshan-OAG to Bab manifold | 12 | 4.5 | 2010 | 3LPE | No | No |
| 9 | Habshan-5 to Bab manifold | 24 | 17.6 | 2012 | 3LPE | Yes | No |
| 10 | Bab Plant to Bab manifold | 8 | 0.2 | 2010 | Paint | Yes | No |
| 11 | Shah-ASG to Asab-0 or Asab-2 Pipeline | 16 | 68.5 | 2015 **Note 2** | 3LPE | Yes | Yes |

***Table 15. NGL External Coating, Corrosion Mitigation, and LDS if applicable***

***Note 1*** – Project to add leak detection is in progress and anticipated to be completed in August 2020
***Note 2*** – Per ADNOC reported year commissioned and is referenced in Shah Gas Development (SGD) Project documents.

All pipelines were designed and installed with proper external coatings to protect from external corrosion. Impressed current cathodic protection (CP) is employed on all the underground NGL lines.

### 4.4.2 Operations Review

The objective of the operations review of the NGL pipelines is to assess the operating and maintenance track record including compliance with safe operating practices, as well as an opinion of the operator's experience and capabilities. A general discussion of ADNOC's operations is provided in Section 4.2.2.

ADNOC has operated and maintained these NGL pipelines for twenty-five (25) years. In our opinion, they have proven their capabilities within the region to develop and maintain a safe operating system to transport NGL products. They have established procedures for operating and maintaining these systems and their track record proves this. These plans, procedures and implementations are all captured in the Integrity Management (IM) system discussed in later sections.

Visual inspections, pressure loss criteria and material balance criteria are currently used for most of the pipelines. Only line #11 has a more sophisticated leak detection system (LDS), however the details for this were not available at the time of this writing. Line #1, #2 and #3 are all also in the process of having LDS added and this is expected to be completed in August 2020. An impressed current cathodic protection (CP) system is employed on all the buried pipelines, except for NGL line #10, as it is an above ground piping system.

Data was provided for our review by ADNOC in regard to ILI records and subsequent repairs. Repairs on the lines were minor and typical of normal inspections. Only Line #7 had a major repair noted in its history. No information was available for Line #10 (above ground), or Line #11, the Shah-ASG NGL line.

Most repairs were limited to recoating of the lines after confirmation and verification of anomalies. One split sleeve repair was noted, which is a reliable method for repairing small anomalies. Several “clock spring” repairs were also noted which is also a common repair technique.

ADNOC has comprehensive guidelines for pigging of their pipelines and frequencies of these operations are continuously reviewed. The latest version provided, Pipeline Cleaning Pigging Frequency Review and Recommendation, identifies lines that may require special operations to accommodate these operations, as well as specifically discussing the piggable NGL lines. ADNOC has stated that some of the NGL lines have had some water accumulation issues at lower profile points, which can lead to internal corrosion at certain areas. This is common in pipelines carrying this product. As such, the normal pigging operations performed on the NGL lines are to be completed quarterly (one cleaning run for every three months), which is also normal operating practice. Furthermore, it was recommended to collect samples during cleaning of the NGL pipelines for lab testing. These test results are to be reviewed and analyzed to further change the frequency in the future. In addition to these quarterly maintenance runs, pigging is also completed as part of the in-line inspections (ILI).

It is evident from the documentation provided that the pipelines within the work scope are operated within the pressure regimes for which the designs were developed.

The overall operations review was primarily limited to programmatic aspects as little actual condition data or anomaly information was provided. Most of the operations related information that was available covered the pressure regimes of the NGL systems pipelines. 2018 flow rates had originally been provided by ADNOC for most of the pipelines. As much as reasonably possible, pipeline specific information was deduced from the general NGL system documents provided.

***Table 16*** presents a summary of the various pressure definitions for the NGL pipelines as provided. Also included is the design capacity and 2018 average flow rates of the NGL pipelines.

| Line number | Nomenclature | Line Size [in] | Design Pressure [barg] | Operating Pressure or Range if Provided [barg] | Current Utilization Annual Average Flow Rate (2018) | Initial Design Capacity [TPD] |
|---|---|---|---|---|---|---|
| 1 | Habshan-3 to MP-21 | 20 | 72.5 | 26 - 50 | 8,794 | 18,152 |
| 2 | MP-21 to Ruwais | 24 | 72.5 | 26 - 37 | 19,661 | 23,691 |
| 3 | Bab manifold to Ruwais | 30 | 72.5 | 26 - 55 | 28,947 | 50,814 |
| 4 | Asab-2 to 921 receiver | 16 | 72.5 | 29 - 54 | 4,278 | 6,412 |
| 5 | Asab-0 to Bab manifold | 24 | 72.5 | 26 - 55 | 6,947 | 15,253 |
| 6 | Bu Hasa to MP-21 | 16 | 72.5 | 22 - 50 | 6,589 | 10,409 |

| Line number | Nomenclature | Line Size [in] | Design Pressure [barg] | Operating Pressure or Range if Provided [barg] | Current Utilization Annual Average Flow Rate (2018) | Initial Design Capacity [TPD] |
|---|---|---|---|---|---|---|
| 7 | Habshan-0/1/2 – Bab manifold | 10 | 72.5 | 45 | 4,000 - **Note 1** | 6,473 |
| 8 | Habshan-OAG to Bab manifold | 12 | 88 | 18 - 63 | 6,177 | 10,223 |
| 9 | Habshan-5 to Bab manifold | 24 | 72.5 | 30 - 66 | 10,039 | 12,840 |
| 10 | Bab Plant to Bab manifold | 8 | 72.5 | 26 - 50 | 1,446 | 1,736 |
| 11 | Shah-ASG to Asab-0 or Asab-2 Pipeline @ KP 31.3 | 16 | 72.5 | 64 - 67 | 4,338 | 5,311 |

***Table 16. NGL Pipeline Pressure Definition, Design Capacity, and 2018 Average Flow Rates***

***Note 1*** – Flow rate for NGL Line #7 was assumed based on material balance calculations.

From the operating manuals, asset management standards and functional procedures reviewed, it was evident that the guidance provided was comprehensive. Some manuals reviewed are listed in section 4.2.2.

### 4.4.3 Condition Review

The objective of the condition review of the NGL pipelines is to assess the current integrity of the installed facilities plus their suitability for future operation including remaining useful life.

The condition review included examination of provided information for the NGL pipelines related to the fitness for service (FFS) and Remnant life assessment (RLA) reports defining the suitability for future operation (including remaining useful life). ADNOC follows a systematic and industry recognized integrity management process to ensure remaining life of the pipelines.

Information provided for nine of the eleven NGL pipelines was reviewed to determine ADNOC's current assessment of each pipelines fitness for service (FFS) and suitability for future operations (including useful life). ADNOC realizes the risk of operating pipelines and has successfully implemented a rigorous integrity management plan per industry standards. Reports showing the NGL pipelines integrity and its remaining life are well documented. Proactive steps are in place to ensure the design life is achieved and extended as possible. Generally, based on the results of the FFS, remedial work is determined that may range from accept, repair, replace and/or a combination of all.

***Table 17*** presents a summary of the original design life along with the end of life revisions presented in the documentation. This table summarizes a comparison of the original design life for each pipeline against the results from FFS / RLA reports.

| Line Number | Nomenclature | Length [km] | Line Size [in] | Year Commissioned | Design Life [yrs] | Initial Design End of Life | Revised End of Life |
|---|---|---|---|---|---|---|---|
| 1 | Habshan-3 to MP-21 | 37.0 | 20 | 2010 | 30 | 2040 | 2040 |
| 2 | MP-21 to Ruwais | 70.0 | 24 | 2010 | 30 | 2040 | 2040 |
| 3 | Bab manifold to Ruwais | 101.0 | 30 | 2010 | 30 | 2040 | 2040 |
| 4 | Asab-2 to 921 receiver | 81.1 | 16 | 2010 | 30 | 2040 | 2040 |
| 5 | Asab-0 to Bab manifold | 89.0 | 24 | 2010 | 30 | 2040 | 2040 |

| Line Number | Nomenclature | Length [km] | Line Size [in] | Year Commissioned | Design Life [yrs] | Initial Design End of Life | Revised End of Life |
|---|---|---|---|---|---|---|---|
| 6 | Bu Hasa to MP-21 | 35.0 | 16 | 2010 | 30 | 2040 | 2040 |
| 7 | Habshan-0/1/2 – Bab manifold | 6.3 | 10 | 1995 | 30 | 2025 | 2027 |
| 8 | Habshan-OAG to Bab manifold | 4.5 | 12 | 2010 | 30 | 2040 | 2037 |
| 9 | Habshan-5 to Bab manifold | 17.6 | 24 | 2012 | 30 | 2042 | 2042 |
| 10 | Bab Plant to Bab manifold | 0.2 | 8 | 2010 | 30 | 2040 | **Note 1** |
| 11 | Shah-ASG to Asab-0 or Asab-2 Pipeline @ KP31.3 | 68.5 | 16 | 2015 | 30 | 2045 | 2045 |

***Table 17. Life Extension Summary for NGL Pipelines***

***Note 1*** – Line #10 is an exception to the other lines. It is a part of the integrity management system; however, it is an above ground piping connection and not subject to the same reporting program as the other lines.

As examples of how these system assessments may change the assets life, the oldest line, NGL line #7, was built in 1995, and an Integrity and Remnant Life Assessment was completed in 2017. From the results if this assessment, the acceptable life limit was extended by two years. NGL line #8 was built in 2010 and had its design life shortened by 3 years, subsequent to its most recent assessment. It has been scheduled for its next ILI in 2021 and results from this inspection will form the base for next steps and potentially revising the useful life again. From the documentation that has been provided, it indicates that all required inspection and maintenance activities are being performed in a timely and thorough manner.

The condition of one line was flagged during our review, the oldest line of the group line #7, the Habshan- (0/1/2) to Bab manifold pipeline. This pipeline is 25 years old and required a complete replacement of ~500 meters in 2015. However, subsequent ILI pigging has shown that the repair was successful and in fact, the design life of this pipeline has been extended by two (2) years. It is currently not anticipated to run the course of its useful life until 2027. ADNOC recognizes this risk and has shown that it will proactively adjust the inspection and maintenance programs, increase inspection frequencies, change operating regimes, and perform repairs as necessary. As a result of this work ADNOC updates its remaining life estimates as new inspection data becomes available from field measurements.

These reports included specific details on internal, external, and third-party issues. As part of ADNOC plans and procedures, the integrity assessment provides a condition status color rating for each pipeline as red, yellow, or green, wherein green represents good condition; red represents bad condition; and yellow represents a condition somewhere in between. This is common industry practice.

All nine of the NGL pipelines that assessment reports were provided for are green and classified as low risk pipelines. Any anomalies that required it were investigated and repaired as required. The records of suggested repairs performed were addressed in the reports and were made available for this assessment. The report shows ADNOC performs effective field implementation of the integrity management plan and meets normal industry practice.

Verbal information provided suggests that decommissioning is performed on a case by case basis. If decommissioning is because it serves no useful purpose but has not reached its end of life, ADNOC companies are asked if they could utilize the line and if so, the asset is transferred. If a line is decommissioned for end of life purpose or replacement, AGP would issue a tender to demolish the decommissioned line after the proper isolation and purging of the line. It was suggested that assets would not be abandoned in place and that they would be taken out and sold as scrap. However, where this is difficult, such as at a road crossing where open cut is not allowed, it will be grouted and filled with cement. We do not see any HSE impact if the pipeline is properly cleaned and abandoned. Generally, it is a regulatory issue when determining whether abandoning in place is authorized. Based on our discussions with ADNOC, this does not appear to be an issue.

### 4.4.4 NGL Metering and Control Systems

This section provides an assessment of the metering and control systems associated with the NGL pipelines, with a focus on their ability to accurately report volume flows and monitor the operations of the system.

ADNOC provided locations of the meters on an overall system schematic and table showing status of each meter. These meters are credited according to UKAS. The consulting team was also provided with an interview with ADNOC Gas Processing - Production Planning & Shipping representatives to discuss metering and NGL flow paths. From the conversation and information provided, the following items and systems were identified:

- On the upstream inlet to every NGL pipeline within the scope of this investigation, there is a custody transfer quality meter located there. This meter ensures all tariffed NGL flows can be measured.

- The meters on the NGL pipeline inlets are Coriolis style meters. Coriolis meters are an effective measurement tool and are used widely for custody transfer. Coriolis meters measure mass flow rather than volumetric flow. This provides a distinct advantage as NGL products are sold by weight, rather than volume. In addition to the Coriolis meters, each measurement point is also equipped with gas-liquid chromatography equipment.

- With each facility having this effective of a metering system on the inlets to the NGL lines leaving the individual facility, ADNOC has the accuracy potential required to understand the NGL production that is leaving each facility.

- On the receiving end of all the NGL production is the Ruwais Fractionation facility. There is no NGL metering here prior to the inlet streams entering the fractionation process. Measurement at Ruwais is based off the actual (“tanked”) volumes of each of the separated compositions (ethane, butane, propane, etc.) that made up the initial, combined NGL stream. From measuring the tanked volumes of each individual product and comparing that total to the total NGL volume that was reported leaving the facilities, a shrinkage factor can be applied to make up any difference.

- ADNOC NGL measurement system is UKAS (United Kingdom Accreditation Service) credited.

All pipelines including NGL pipelines are integrated in the common pipelines SCADA system, which is call the Pipelines Supervisory, Monitoring & Control System (SMC). A general discussion of the control systems is in section 4.2.4.

The NGL flow split, which occurs with the production from Bu Hasa, is controlled by the Ruwais NGL Plant through Pipeline SMC system interface. The isolation of pipeline sections in the case of emergency are solely managed by the Pipeline Operations group.

### 4.4.5 Capability to Deliver Planned Production

*4.4.5.1 Summary*

This section provides an assessment of the NGL pipelines capability to deliver the planned forecast production over the term of the relevant concessions as well as the capability to meet any minimum contracted volumes based upon the Gas Master Plan provided by "ADNOC – Downstream". Our review was limited to those fields within the Use and Operating Agreement and did not consider any other field production.

The assessment indicates that ten out of eleven pipelines included in this work scope can deliver their designed capacity and planned flow rate. NGL Line #11 planned flow rate exceeds the stated design capacity but can handle these increased flow rates by changing operating parameters.

There is no impact of minimum contracted volume to be delivered on capability of these pipelines as there is no technical minimum flow required through these pipelines.

*4.4.5.2 Minimum and Maximum Flow*

There is no technical minimum flow requirement because these pipelines have low risk of degradation due to continuous operation of the pipelines and regular pigging. This is further described in Section 4.2.5.2.

The general parameters which influence the maximum flow or capacity are discussed in 4.2.5.2. The following section discusses considerations to the maximum flow relevant to the NGL lines.

Per ***Table 18***, all the lines currently have adequate capacity to transport the current production to the Ruwais Fractionation facility.

| Line Number | Nomenclature | Line Size [in] | Design Capacity [TPD] | 2018 Average Flow Rate [TPD] | Available Capacity [TPD] | Utilization of Design Capacity [%] |
|---|---|---|---|---|---|---|
| 1 | Habshan-3 to MP-21 | 20 | 18,152 | 8,794 | 9,358 | 48 |
| 2 | MP-21 to Ruwais | 24 | 23,691 | 19,661 | 4,030 | 83 |
| 3 | Bab manifold to Ruwais | 30 | 50,814 - **Note 1** | 28,947 | 21,867 | 57 |
| 4 | Asab-2 to 921 receiver (Habshan-3 to MP-21 PL) | 16 | 6,412 | 4,278 | 2,134 | 67 |
| 5 | Asab-0 to Bab manifold | 14 | 15,253 | 6,947 | 8,306 | 46 |
| 6 | Bu Hasa to MP-21 | 16 | 10,409 | 6,589 | 3,820 | 63 |
| 7 | Habshan-0/1/2 to Bab manifold | 10 | 6,473 | 4,000 – **Note 2** | 2,473 | 62 |
| 8 | Habshan-OAG to Bab manifold | 12 | 10,223 | 6,177 | 4,046 | 60 |
| 9 | Habshan-5 to Bab manifold | 24 | 12,840 | 10,039 | 2,801 | 78 |
| 10 | Bab Plant to Bab manifold | 8 | 1,736 | 1,446 | 290 | 83 |
| 11 | Shah-ASG to Asab-0 or Asab-2 Pipeline @ KP 31.3 | 16 | 5,311 | 4,338 | 973 | 82 |

***Table 18. NGL Pipeline Production Delivery Summary***

***Note 1*** – The initial design capacity reported as 42,606 but subsequent hydraulic analysis confirmed 50,814 TPD
***Note 2*** – Estimated amount was based on a line balance of volumes provided.

ADNOC Gas Processing production profiles provided show that NGL volumes are anticipated to increase from 44,875 TPD in 2020 to 57,564 TPD in 2040: An increase of 12,689 TPD or 28% over 2020 volumes. All NGL volumes must ultimately transfer through lines #2 and #3 in order to be processed at the Ruwais Plant. From design capacities provided for these two lines, there is approximately 25,900 TPD of available capacity in these lines, which is approximately double what is anticipated to be required in 2040. These two lines will have available capacity between them.

As part of this review, the gas processing facilities were studied to ensure that the processing capacity of the facilities is sufficient to handle the forecasted gas volumes as per the ADNOC Gas Master Plan (GMP). The raw inlet gas volumes to each facility were distributed where possible to ensure processing capacities were not exceeded.

Once the inlet gas volumes were distributed amongst the facilities the NGL volumes were calculated using an NGL conversion factor. The conversion factor provided by ADNOC, and which was to be used for each facility was 5.35 (+/- 15%). That is for every 1 MMscfd of raw inlet gas going to a processing facility, 5.35 TPD of NGLs would be produced. These NGL volumes were then compared to the respective NGL pipelines to ensure adequate capacity is available.

It was found that NGL Lines #1 through #10 had sufficient capacity. However, NGL line #11 from the Shah-ASG facility to its tie-in at kilometer 31.3 on NGL line #5 has planned flow rates higher than stated design capacity (overcapacity) starting in the year 2023. This highlights a potential bottleneck in the NGL network system that can be addressed by refining NGL conversion factor and updating pipeline operating parameters.

The overcapacity of NGL line #11 illustrates a limitation on how this study was performed. The use of an NGL conversion factor that is common to all facilities is not realistic. The fact that some facilities will receive inlet gas that is much richer (or leaner) in NGLs than other facilities, means that a single NGL conversion factor may not be adequate. If we use the lower bound of 4.55 for the NGL conversion factor (5.35 +/-15%), then NGL Line #11 is still overcapacity.

To fully address this issue, a detailed assessment of the hydraulic parameters for this pipeline is required. Our high-level assessment of the design report on hydraulic analysis shows that increased capacity can be achieved by changing operating parameters. The hydraulic report reviewed shows the stated capacity is based on operating pressure of 59 barg. However, the pipeline is designed for maximum allowable operating pressure (MAOP) of 72.5 barg. In addition, maximum erosional velocity for this pipeline is 4m/sec while hydraulic analysis shows velocity for maximum flow is currently 1.5m/sec. By changing the operating pressure parameters, design capacity can be increased, and will require ADNOC verification, to meet the planned flow rates.

As the pipeline is operating below it MAOP, it may find an increase in capacity provided that the NGL pumps at Shah are capable of delivering the required flowrates at a higher pressure. If the pumps cannot deliver the flowrate at this pressure, then a retrofit of the pumping system may be necessary.

### 4.4.6 Future Capital Improvements

At the time of writing this report, ADNOC does not have any major improvement plans for the existing NGL pipelines. It appears that they would replace the pipeline if it is required beyond its design life. This is understandable because future capital improvements are performed by an operator to reduce the operating cost (OPEX) and find avenues to increase production capacity of the system. However, these drivers do not apply to ADNOC because the NGL pipeline system already has sufficient capacity to meet planned forecast production.

### 4.4.7 Risk and Mitigation

This section provides an overview and analysis of key risks and mitigations associated with the NGL pipelines and presented in a risk matrix format.

ADNOC conducts yearly inspections of their NGL lines to determine the status of each pipeline. A traffic light status risk matrix is provided in the report to determine the severity of pipeline degradation. Once the condition is established, a plan is provided to make the necessary repairs.

Based on the documentation provided, there is much evidence that asset integrity management systems have been implemented for managing the technical risks associated with the NGL pipelines. In the case of most of the NGL pipelines, design data, proof of baseline integrity, inspection reports, risk assessments, repair records and remaining life assessments were provided which indicate that this work has been completed for some of the NGL lines. Specifically, ADNOC has provided integrity data for nine (9) of the eleven (11) lines. ADNOC stated that integrity data for line #10 (Bab plant to Bab manifold) is kept with the Habshan plant integrity plan, however at the time of this writing, these reports have not been provided. Also, no information on line #11, the Shah-ASG line, has been provided.

The pipeline integrity management process and risk assessment matrix discussed for gas pipelines also applies for the NGL pipelines.

Through these systems a Technical Integrity Status Report is developed yearly. The 2018 report was reviewed which covered nine (9) of the eleven (11) NGL pipelines and is currently valid through December 2019. These reports are updated yearly with the results of the pipeline integrity assessments that have been completed throughout the previous year. The findings of these reports are summarized in a 6 x 6 risk assessment matrix (RAM) format that rates the overall risk that a pipeline at that point in its life, described in Section 4.2.7.

The framework for providing long-term risk management of the pipelines within the NGL network is comprehensive. The current status of the pipelines indicates that anomalies that are identified during ILI are investigated, verified, assessed and repaired if required, in order to extend the operating life of pipelines that have reached or exceeded their original design life.

Line #7 is the oldest NGL line, as it is approaching twenty-five (25) years since commissioning. The purpose of the integrity management process for these pipelines, is to slow pipeline degradation as much as possible (as opposed to restoring original performance) while planning for ultimate replacement. As can be seen by line #7 this approach appears to be working as it is still assessed as low risk pipeline.

### 4.4.8 Maintenance System and Schedules

PIMS includes processes and procedures required to carry out pipeline maintenance. The strategic plans provide a proactive approach to set schedules for either inspection or repairs, such as review of cathodic protection systems, ILI assessments, and eventual replacement based on remaining life assessments (RLA). Detail regarding maintenance schedules is in Section 4.2.8.

### 4.4.9 Historical Planned/Unplanned Outages

The objective of this section is to provide an analysis of throughput, availability, planned and unplanned downtime for the last three (3) years.

At the time of this assessment, no documents were available to review the availability, planned and unplanned downtime for the last three (3) years. However, during the interview ADNOC pipeline operations personnel stated that there has been no downtime as a result of pipeline operations. ADNOC has further provided in writing that since commissioning no LOPC has occurred on any of the NGL pipelines.

These verbal and written statements can be relied upon considering the following facts regarding these NGL pipelines operations:

- Each pipeline has higher capacity than required for the planned production.
- The NGL pipeline system consists of two networks that are connected at three (3) separate points. While this does not provide 100% redundancy in the system, it does provide some options if either network was to require a partial shutdown.
- A procedure for pipeline repair, referred to by ADNOC as Emergency Pipeline Repair Services (EPRS) is in place and is available 24/7. On the NGL pipelines in the scope herein, there have been primarily only inspections, only one line has required a repair which required a shut down. NGL Line #7 had a 500-meter section replaced in 2015. This section was identified through ILI services and a shut down and replacement plan was implemented to address in order to limit the amount of volumes unable to be transported. This repair was completed in conjunction with a source plant shutdown/turnaround and that no volumes were unable to be transported, solely due to this repair.
- All the NGL pipelines are downstream of processing facilities, therefore any debris found in the production streams, would be removed through the process and not enter the pipeline.
- The nature of the NGL product transported via these pipelines does not produce precipitates, thus there is no risk of plugging these lines.
- A robust PIMS (Pipeline Integrity Management System) exists that ensures early detection of pipeline adverse condition and planning for any replacements.

## 4.5 Gas Processing Plants

### 4.5.1 Summary

The due diligence assessment of the gas Processing Plants was completed based on information supplied by ADNOC, and through interviews with key personnel. The review of the gas Processing Plants was kept to a high level due to the fact that the gas plants are not part of the transaction.

The review of the gas processing facilities' ability to process forecast production was strictly from a volumetric capacity point of view. Due to this high-level approach, there is the risk that gas processing trains dedicated to processing gas of a certain nature (rich, lean, sour, etc.) are not available to the capacity required. This approach entailed looking at the forecasted gas volumes from the Gas Master Plan (GMP) and comparing these values to their associated processing plant's capacity. In this study, gas volumes were diverted between facilities as needed to satisfy capacity constraints. These diversions were only considered where known piping connections allow for such transfer of raw gas. The exact location of these diversions, from field level to specific gas processing trains or equipment was not investigated. Likewise, any limits to this gas transfer system were not investigated.

The quality/composition of gas was not checked against specific gas processing train limitations or specific equipment designs. Gas plant capacities were provided by ADNOC in an AGP Overview presentation. The improvement plans which ADNOC has committed to were given in the Major Projects Dashboard. Most of the Processing Plants appear to have sufficient capacity to handle the production forecasts given in the GMP. A few of the gas processing facilities do appear to have capacity constraints in the future and therefore will require debottlenecking projects. These projects should be defined in ADNOC's 5-year business plan as they come nearer to term.

The Gas Processing Plants were also reviewed for their reliability and availability. The statistics for reliability and availability were provided for the previous 5 years of operations. Overall, the facilities appear to have high reliability and availability with an average reliability higher than 99% across the facilities, and an average availability higher than 97%. Only planned shut-downs due to periodic maintenance and project requirement significantly decreases availability for the specific year.

### 4.5.2 Technical Review

The objective of the technical review of the gas processing facilities is to assess the general suitability of design to meet capacity objectives and their conformity to recognized industry standards as well as any applicable UAE regulations.

During the course of this assessment, it was identified with the onsite personnel in Abu Dhabi that there are currently no UAE regulations which govern the design and operations of gas processing facilities, and that ADNOC is a "self-regulated company". As such, this review is limited to compliance with the industry codes and standards.

The information provided regarding gas plant design was limited because the gas processing plants were to be reviewed from a summary level. However, some drawings such as Piping and Instrumentation Diagrams (P&IDs), Alignment Sheets, and piping specifications were provided for some of the pipelines and surface piping in the area of pipelines that are within the project scope.

From the piping specifications it appears that facility piping and pipelines are constructed of ASTM and API certified materials and in cases where needed the piping conforms to NACE requirements for sour service operation. From the P&IDs it appears that facility piping is designed to ASME B31.3 "Process Piping" standards. It also appears that the specification breaks between facility piping (ASME B31.3) and pipeline codes (ASME B31.4 for NGLs and ASME B31.8 for Gas) are in the correct places.

### 4.5.3 Operations Review

Due to the high-level summary review of the gas processing facilities, the operating practices, procedures, and operating parameters were not evaluated. Operating manuals, set points, procedures etc., were not provided by ADNOC for review as they are deemed to be beyond the scope of work required for this study. However, corporate level integrity and maintenance standards were provided and are discussed in subsequent sections of this report.

ADNOC did provide the document "HSE-ST-032 – Process Safety Management Standard" which outlines their expectations, responsible parties, processes, as well as the required verifications to ensure the quality and safety of their processes/activities. The document serves to make certain that all operations, integrity and maintenance procedures, and management of change are completed in a safe and responsible manner and that they uphold/promote the ADNOC process safety culture. Although this document is not specific to any particular facility or its operations, it does indicate that ADNOC reviews and ensures that its activities/operations are compliant with ADNOC management systems.

### 4.5.4 Condition Review

#### *4.5.4.1 Overview*

The gas processing facilities were reviewed at a summary level and mostly from an availability and reliability point of view. Information specific to each facility's integrity and remaining life was not reviewed in this study. The redundancy of facilities was reviewed from an overall gas plant redundancy (total capacity available amongst the various plants) as opposed to redundancies within any particular plant.

#### *4.5.4.2 Remaining Life*

The nature of a gas plant challenges the concept of remaining life because a facility may be expanded numerous times throughout its life, individual pieces of equipment age differently and may have different design lives, and certain equipment may be replaced while others are not. Thus, to give a value for the remaining expected life for an entire facility would require a grossly simplified approach. The remaining life of facilities was not further investigated.

On the other hand, corporate level integrity management systems were provided such as ADNOC's "TE-ST-001 – Inspection and Corrosion Management Standard", and "OE-ST-002 – ADNOC Gas Processing Maintenance Standard". These documents outline ADNOC's corporate requirements to ensure that the integrity of its facilities (and therefore their remaining life) is maintained through inspections, testing, maintenance, and equipment overhauls. These documents are further discussed in ***Section 4.5.8*** below.

#### *4.5.4.3 Redundancy*

The redundancy of ADNOC Gas Processing (AGP) facilities was investigated at a high level by looking at the ability of the gas plants to divert their raw inlet gas to other plants with available capacity. The redundancies found within a gas plant due to parallel processing trains or standby/spare equipment was not reviewed. The methodology of the capacity study is discussed in further detail in the later sections. The overall redundancies can be summarized as follows:

- The Asab-0/3 gas plant can divert inlet gas to the Asab-1/2 plant, and therefore if the Asab-1/2 plant is operating under capacity, then the Asab-0/3 plant may operate at a reduced capacity or shutdown altogether. However, given the forecast rates provided in the Gas Master Plan (GMP) this does not appear to be an option. Throughout the years 2020-2040 these facilities will be operating near full capacity, and even overcapacity in the years 2028-2035. Therefore, apart from any potential equipment sparing (or standby equipment) located inside these facilities, there is no available redundancy between the Asab plants.

- The Shah-ASG facility is a standalone facility that processes highly sour gas. This facility cannot divert any of its flow to other facilities. Therefore, no redundancy is expected outside of the Shah-ASG facility.

- The Bab facility can divert gas for processing to the Habshan and the Habshan-5 facilities. There appears to be enough spare capacity at these facilities to allow a complete shutdown of the Bab plant. The exceptions to this are the 4 years of 2032-2035 where the Habshan and Habshan-5 facilities are running at or near full capacity.

- The Bu Hasa facility can divert gas for processing to the Habshan-5 facility. There appears to be sufficient spare capacity at Habhsan-5 that could allow for a complete shutdown of the Bu Hasa plant. The exceptions to this are the 2 years of 2023-2024, and the 4 years of 2032-2035 where the Habshan and Habshan-5 facilities are operating at or near full capacity.

- The Habshan and Habshan-5 facilities can divert gas to or from each other as necessary. This can allow for partial outages (shutdown of one or more gas processing trains) at either of these facilities provided that the other facility is not operating too close to its capacity. This is a simplification, as these facilities contain gas processing trains that are dedicated to treating certain types or qualities of gas (lean or rich and sweet or sour). The design of the individual gas processing trains was not reviewed in this study. The Habshan and Habshan-5 facilities' spare capacity additionally allows for the individual shutdowns of the Bab and Bu Hasa facilities as mentioned above. In some years, the available spare capacity is high enough to allow the shutdown of both Bab and Bu Hasa simultaneously – this occurs in the years 2020, 2030-2031 and 2036-2040. This available capacity does not take into account that gas processing trains may only be designed to handle a specific type/quality of gas.

### 4.5.5 Capability to Deliver Planned Production

#### *4.5.5.1 Methodology*

This section provides an assessment of the Gas Processing Facilities' capability to process the forecast production as provided by ADNOC in the Gas Master Plan (GMP). The GMP lists gas production rates from each "Field" and by each "Asset/Unit". The rates are given as an average daily rate measured in units of "millions of standard cubic feet per day" (MMscfd). These rates are given for the years 2020 through 2050. A separate GMP was provided from the ADNOC Downstream Directorate which shows sales demand, and the volumes of gas to be re-injected at specific facilities. This Downstream GMP covers the years 2020 through 2040.

With the help of ADNOC personnel in the Downstream Planning Unit, gas production volumes from each asset/unit were assigned to their respective gas processing facility. The values were then summed up to obtain a total volume of gas at the inlet to each facility. Offshore Gas production has been allocated for processing in the Habshan-5 facility.

#### *4.5.5.2 Gas Diversions/Gas Distribution*

Where it was found that the inlet gas volumes exceeded the processing capacity of a facility, a portion of that gas was diverted to other facilities with available capacity. These diversions of raw gas were only performed where ADNOC personnel indicated the availability of such an option exists. The raw inlet gas diversions between facilities includes the following (***Table 19***):

| Facility A | Direction | Facility B |
|---|---|---|
| Asab-0/3 | → | Asab-1/2 |
| Bu Hasa | → | Habshan-5 |
| Bab | → | Habshan-(0-4) |
| Bab | → | Habshan-5 |
| Habshan-(0-4) | ←→ | Habshan-5 |

***Table 19. Gas Processing Plants - Inlet Raw Gas Diversion Capability***

The Asab-0/3 facility processes associated gas and can divert raw gas to Asab-1/2 if needed. Gas produced in association with oil is considered high priority because to limit its production would also limit oil production. Therefore, if needed the non-associated gas production to Asab-1/2 could be curtailed to provide treatment capacity of the associated gas from Asab-0/3.

The residue gas leaving the Bu Hasa processing facility is still sour (contains $H_2S$) and therefore cannot be used for export into the Sales Gas Network. This residue gas must be used for re-injection purposes. A portion of this gas is used directly in the Bu Hasa area, while the rest goes through Sales Gas line #6, then to line #7, then to line #1, for re-injection in the Thamama-B reservoir. If the volume of gas entering the Bu Hasa facility is in excess of what is required for injection (Bu Hasa and Thamama-B), or beyond the processing capacity of the Bu Hasa plant, then the excess volume will be diverted to the Habshan-5 facility for processing.

The Bab plant processes associated gas and it has a low processing capacity. The excess inlet gas is diverted to either Habshan-(0-4) and/or Habshan-5 facilities. As the gas produced is associated with oil production, its processing is considered a high priority (in order to not restrain oil production).

The Habshan-(0-4) and the Habshan-5 facilities have the capability of diverting raw gas from either facility to the other. Information regarding the types of gas that can be transferred from one facility to the other (lean or rich, sweet or sour) was not shared by ADNOC. The gas processing trains in these facilities may be designed to handle a type of gas (e.g. rich sour gas), but the capacities of these trains and their specific diversion capabilities were not discussed.

*4.5.5.3 Results and Outlook*

The results of this study indicate that the gas processing facilities generally have some flexibility in their operations through raw gas diversions, and that the facilities have sufficient handling capacity for the next 5 years. From the year 2025 onward, it does appear that some capacity constraints exist within these gas facilities. The facilities that are expected to experience capacity issues include Shah, Asab-0/3, and Habshan-5.

As the identified bottlenecks come nearer to term, it is expected that ADNOC will develop plans for addressing these issues.

*4.5.5.4 Shah-ASG Bottleneck*

In the years 2020 through 2040 the Shah-ASG facility is expected to be over capacity in the years, 2025, 2027-2029, 2031-2033, and 2035-2037. This is 10 years of operation above capacity out of the 20-year span.

This facility processes highly sour gas and does not have the option to divert its gas to any other facility. ADNOC, in line with industry general practice, addresses issues foreseen within the next five years in a business plan. Since capacity constraints start in 2025, ADNOC will be addressing this in the next business plan directly at the Shah-ASG facility to ensure the plan can be met.

#### *4.5.5.5 Asab-0/3 Bottleneck*

In the years 2020 through 2040 the Asab-0/3 facility is expected to be over capacity in the years 2028-2035. This is 8 years of operation above capacity out of the 20-year span. The Asab-0/3 facility can divert a portion of its gas to the Asab-1/2 facility, but in the years 2028-2035 the Asab-1/2 facility will be at full capacity and will not be able to take any more gas from Asab-0/3. This capacity constraint may be addressed at either the Asab-0/3 or the Asab-1/2 facility in the future.

#### *4.5.5.6 Habshan-5 Bottleneck*

In the years 2020 through 2040 the Habshan-5 facility is expected to be over capacity in the years 2032-2033. This is 2 years of operation above capacity out of the 20-year span. The Habshan-5 facility can divert raw gas to the Habshan-(0-4) facility, but in the years 2032-2033 the Habshan-(0-4) facility will be at full capacity and will not be able to take any more gas from Habshan-5. The fact that Habshan-5 receives gas that has been diverted from other facilities means that the capacity constraint may be addressed in a variety of places. The Habshan-5 facility may itself be expanded in the future, otherwise the Habshan-(0-4), Bab, or offshore facilities may undergo expansion to address this overcapacity constraint. Other potential options for expansion include the Bu Hasa facility which is not operating at its full capacity in these years. The Bu Hasa facility is not operating at full capacity, yet it is forced to divert raw gas to Habshan-5 because the Bu Hasa residue gas is sour and may only be used for re-injection. To achieve higher utilization at Bu Hasa the injection volumes may be revised upward, thus allowing Bu Hasa to produce more of its sour residue gas for injection. Alternatively, Bu Hasa may be upgraded to include sweetening capabilities such that it can produce sweet Sales Gas which can be diverted to the Sales Gas network at the Thamama-C manifold.

### 4.5.6 Future Capital Improvements

The capital improvement projects currently underway at ADNOC were supplied in the form of a project dashboard. This project dashboard is a table, which provides a list of the ongoing projects and includes a brief description of each project, the increase in production capacity associated with the project, the current stage of the project, a rough timeline of the project, and the status of the project (% complete, and % spent).

Currently the ongoing projects for ADNOC gas processing facilities include expansions/debottlenecking at Bu Hasa, Habshan-5, Asab-1, and Ruwais fractionation facilities. Other capital improvement projects currently being undertaken include upgrades to the pipeline leak detection systems, upgrades to Sales Gas metering systems, a Sales Gas pipeline enhancement study, and a Sales Gas & NGL flow assurance project (in the event of any operational interruptions at key locations).

Projects are created and added to the dashboard as part of a 5-year business plan, and so plans further out from this are not available. These projects are identified by addressing or fulfilling a need of importance, safety of operation, safety of people and environment, or for business continuity. These needs may be raised by the various planning departments (upstream, downstream, marketing, etc.), or through maintenance/inspection groups and programs. Projects for the rehabilitation or replacement of assets will fall under the Asset Life Extension Management system, which is described in further detail within this report.

All projects will follow the Value Assurance Process (VAP) set forth by ADNOC's Project Excellence group. This is a framework that has been put in place to manage and govern capital projects from their inception through to the operations stage. The overall purpose of the VAP is to ensure that quality and value are delivered to each project. The VAP is a stage gate process, where the stages are labeled as: Assess, Select, Define, and Execute. Each stage has defined workflows, deliverables, and reviews – these will vary based on the project classification which is decided based on the project complexity and project value.

The VAP process accounts for external and internal costs throughout the entire project lifecycle (including drilling costs, licensor cost, etc.). This works rather well as ADNOC is a vertically integrated company with control over drilling, production, transportation, storage, refining, and marketing. This means that the overall project development, from drilling to marketing, is considered and can be optimized. This process also makes sure that workflows and procedures are followed throughout the entire design, construction, start-up, and operation of assets. This mitigates and controls risks and is used to ensure that proper insurance coverage can and will be provided.

### 4.5.7 Risk and Mitigation

This section is intended to provide an overview and analysis of key risks and mitigations associated with the gas processing facilities.

The VAP process is in place to ensure that projects are developed and optimized to provide maximum quality and value. This process looks at increasing the value of a project in terms of HSE, operability, technical, economic, and business risk criteria. The VAP process is used to mitigate and control risks and to ensure that the proper insurance coverage is provided for all assets.

In order to manage risks associated with existing/operating assets ADNOC has many systems and standards in place. This includes "HSE-ST-032 – Process Safety Management Standard", which serves to ensure that all operations, integrity and maintenance procedures, and management of change are completed in a safe and responsible manner; and "OE-ST-002 – ADNOC Gas Processing Maintenance Standard", which is described further in the Maintenance section.

The ADNOC Inspection and Corrosion Management Standard "TE-ST-001" is an example of how ADNOC mitigates the risk of corrosion within its assets. This standard utilizes a risk-based approach in order to maintain facilities in a commercially focused manner while not compromising the integrity and HSE. This standard focuses on static pressure containing equipment and piping, storage tanks, Pressure Safety Valves (PSVs), and steel support structures. The process outlined in this standard includes steps of identification, assessment, analysis, and prevention. The identification step uses asset registers in helping to identify assets with specific corrosion threats in their lifecycles. The assessment step looks at expected corrosion/degradation mechanisms, and mitigations in order to assess the threat of failure in accordance with the corporate Risk Assessment Matrix (RAM). The analysis step identifies Risk Based Inspection (RBI) practices to monitor the threats and includes monitoring of operating parameters that may affect corrosion rates. The final step of prevention (or threat response) identifies the control measures to be implemented to manage the corrosion risk to As Low As Reasonably Practicable (ALARP) levels. Finally, this standard provides maximum inspection intervals for various types of equipment.

In order to obtain insurance coverage of its assets, ADNOC periodically commissions third parties to perform Risk Management Reports. These third-party insurance audits assess the assets for various risks and evaluate ADNOC on its risk mitigations and controls. The reports also provide a list of recommendations to help further reduce potential impacts and risks. These recommendations are reviewed during the subsequent audit to verify their status/implementation. The following information (***Table 20***) is a list of Third-Party Insurance Audits that ADNOC had made available for review:

| OPCO | Facility Type | Report By | Year | Rating |
|---|---|---|---|---|
| ADNOC Sour Gas – Shah | Onshore Gas Processing | Price Forbes | 2018 | Excellent |
| ADNOC Gas Processing | Pipelines Division | Marsh & McLennan | 2019 | Better than Standard |
| ADMA | Offshore Oil & Gas | Price Forbes | 2018 | Above Average |
| ADGAS – Das Island | Offshore Gas Processing | Willis Towers Watson | 2017 | Above Average |
| ADCO | Onshore Oil & Gas | Willis Towers Watson | 2017 | Above Average |
| ZADCO – Zirku Island | Offshore Oil & Gas | Price Forbes | 2018 | Average |

***Table 20. Third-Party Risk Management Reports***

### 4.5.8 Maintenance System and Schedules

Specific maintenance schedules and reports for the gas processing facilities were not made available for review during this study. For its maintenance administration, ADNOC uses a Computer Maintenance Management System (CMMS). Currently ADNOC makes use of both Maximo and SAP software suites. The CMMS is used for asset data management, work order management, development of preventative maintenance plans, storing maintenance records, and managing inventories of spare parts. ADNOC also provided various information on their maintenance standards and processes as described below.

- The Inspection and Corrosion Management Standard “TE-ST-001” describes how Risk-Based Inspections and operating parameter monitoring are developed for each asset as well as the maximum inspection intervals for various types of equipment.

- The ADNOC Gas Processing Maintenance Standard “OE-ST-002” outlines the use of an Equipment Criticality Assessment to determine what type of maintenance strategy and level of effort is required for maintaining an asset.

- The Asset Life Extension Management (ALEM) Strategy “OEX-STR-001” is a framework that outlines how asset life should be managed and assessed, including the decision to extend the life of an asset or replace the asset.

### 4.5.9 Historical Planned/Unplanned Outages

The Gas processing plants were reviewed for their reliability and availability for the previous 5 years of operations. The statistics for reliability and availability were provided as bar charts. Overall the facilities appear to have sufficient reliability and availability.

Over the 5-year span of data, the average reliability was over 99% across the facilities, and the average availability was over 97%. From these values it was calculated that the average planned downtime for maintenance appears to be between 1 to 2 weeks yearly. This is considered to be in line with industry norms.

Planned shut-downs due to periodic maintenance and project requirements significantly decreases availability for the specific year. These are as follows:

- Periodic maintenance would be related to the Major Overhaul of Gas Turbines or Gas Compressors within the plant
- Project Requirement would be related to Project Tie-ins with the facility or with a neighboring facility.

For instance, Asab 1/2 had two Major Planned Shutdowns during 2019, in which periodic maintenance and project related activities were conducted in both instances. ADNOC ensures the alignment of all planned shutdowns within its group companies via ADNOC Gas Processing's Operations and Planning Sub-Division and is overseen by a Sub-Committee chaired by the Upstream and Downstream Directorate.

The unplanned downtime varied from year-to-year and facility-to-facility but in general it appears to be in the range of 1 day per year or less. There were a couple of instances where facilities appear to have had a year with much higher unplanned downtime. One instance of approximately 2 weeks of unplanned downtime was experienced at the Asab-1/2 facility in the year 2014. Two instances of approximately 2.75 weeks of unplanned downtime were experienced at the Bab and Habshan-5 facilities in the years 2014 and 2016 respectively. The reason for these longer downtimes was not investigated further.

# 5 Environmental and Social Assessment

## 5.1 Summary

After a complete HSE assessment of the assets under consideration within the project scope, we believe limited HSE risk exists for GalaxyCo. Based on a thorough review of the IFC and World Bank Performance Standards on Environmental and Social Sustainability, we believe ADNOC is in, and fully intends to maintain, full compliance with the related elements discussed within this report.

## 5.2 HSE Risk Discussion

The assets for review are the Gas (12), Injection (15), NGL (11) Pipelines, and the Processing Plants (7) used by ADNOC for gas transmission and distribution. All gas and NGL pipelines are used for gas transport/delivery post plant processing where the reservoir extracted associated and non-associated gas is treated. The transport lines receive the gas from the facilities that have sales specifications to meet. As such, the processed gas has low concentrations of $H_2S$ or other impurities. Similarly, the NGL is stabilized at the plants before entering the NGL transport lines. Operational HSE risk could include such elements as combustible/flammable/toxic gas release response, spills from pipelines, environmental fines and penalties for infractions that would be governed by regulatory agencies (e.g. environmental permitting agencies or United States Occupational Safety and Health Administration), or mitigating environmental damage caused by some operations. Our understanding of the general structure of this agreement per ADNOC is as follows:

- ADNOC operates these pipeline assets under a U&O Agreement with ADNOC Gas Pipeline Assets LLC ("AssetCo"). GalaxyCo is a non-operating investor in AssetCo. ADNOC fully retains all the operating risks and costs, such as CAPEX, OPEX, insurance, services, etc., relating to the pipelines. In short, ADNOC has the sole responsibility for all operating and required capital expenditure at no expense to GalaxyCo or AssetCo.

- AssetCo leases the pipelines from ADNOC for 20 years, and then enters into a U&O Agreement with ADNOC for the use and operation of the relevant gas and NGL lines.

- Under that U&O Agreement, ADNOC takes responsibility for carrying out pipeline operations, which include (among other things): (1) obtaining, maintaining, renewing and paying for all registrations, licenses, consents and permissions required in respect of the Pipeline Operations; and (2) making sure that the use, operation and management of the Pipelines is in accordance with the "Performance Standards," which shall include applicable laws, internationally accepted petroleum industry practices, good health, safety, and environmental practices, ADNOC's annual operating plan and any relevant requirements of any insurance policies relating to the Pipelines.

- Modification works, repairs, replacement, and decommissioning are the responsibility of ADNOC.

The assets under consideration in AssetCo are operated and maintained by ADNOC Gas Processing. All ADNOC subsidiaries are governed by top level requirements and guidance documents. For example, all ADNOC Codes of Practice are requirements for all subsidiaries including ADNOC Gas Processing. As such the overall HSE programs are similar. However, each ADNOC operating company may have some unique aspects of implementing operations (e.g. maintenance, emergency response, asset integrity, etc.) provided it is consistent with ADNOC top corporate philosophy and requirements. In discussions with ADNOC personnel they indicated that approximately 80% of operations methods are common to the operating companies whereas up to 20% may be unique to a specific company. In the detailed review below, the narrative applies to ADNOC Gas Processing. If there are uniqueness's in processes, they are highlighted in the narrative.

Through discussions with ADNOC and ADNOC Onshore personnel, and review of all supplied program information, it was determined that, while these are independent operations, each injection pipeline network falls under the primary asset HSE requirements. For example, Habshan and Bu Hasa, having only one or two gas lines, would fall under the same HSE management as Bab and Asab. These requirements are consistent across all onshore networks and cover all assets within their individual purview, to include the injection line networks.

Within Abu Dhabi, an Environment Agency[3] and an Occupational Safety and Health Abu Dhabi organization[4] exist. These agencies are responsible for setting health, safety and environmental standards, goals and policies. Based on this structure, ADNOC has a set of Codes of Practice (COP) for HSE functions that are compliant with the top-level requirements. These COP standards flow down such that all ADNOC or its OPCO (Operating Company) operations procedures are to be compliant with the HSE COPs. However, unlike many other countries where health, safety and environmental organizations have operational compliance enforcement branches, no separate regulatory agencies exist within Abu Dhabi that would impose fines or penalties for non-compliance on ADNOC. As such, based on discussion with ADNOC personnel, operational risk to GalaxyCo is believed to be negligible or non-existent. Documentation provided during the assessment supports this statement. Specifically, ADNOC-COPV1-01 states the following regarding HSE regulation:

**3.2 HSE Regulation**

**3.2.1 HSE Regulation by ADNOC**

ADNOC the regulator in HSE matters for all ADNOC Group Companies and SPC affiliated Companies, acting under the direction of the Supreme Petroleum Council and in accordance with Law No.1, 1988. This is a key issue and it is imperative that the rationale for this and the details of background legislation are fully understood. Details are provided in the CoP V1-06 [Ref. 2].

Being the Regulator means that: "ADNOC must comply with all relevant Abu Dhabi and UAE Federal Laws and that the monitoring of legal compliance will be carried out internally and ADNOC will not be subject to direct external regulatory scrutiny".

An additional risk typically carried by AssetCo partners in industrial operations is litigation risk, often resulting from a catastrophic incident. Two recent gas incidents occurring in the U.S. are described below. Incidents such as these most often result in litigation, fines and penalties in addition to the actual cleanup costs incurred. If such gas releases were to occur in Abu Dhabi, all cleanup cost responsibility would be borne by ADNOC or its OPCOs.

1. On 1 August 2019, an Enbridge 30-inch gas transmission pipeline exploded and burned in Stanford, Kentucky. One (1) person was killed and five (5) others were injured. Five (5) homes were destroyed and at least four structures (4) were damaged in the Indian Camp mobile home park in Stanford. According to officials, flames reached more than 300 feet high and melted tar on nearby roads.

2. On 3 March 2019, an Energy Transfer Partners 30-inch natural gas pipeline exploded and burned in Audrain County, Missouri, destroying a house (previously under construction). No deaths or injuries were attributed to the incident. The cause was determined to be stress corrosion cracking. After the failure, hydrostatic

[3] https://www.ead.ae
[4] https://www.oshad.ae

testing was performed on the pipeline and four (4) other sections of pipeline failed. An estimated 91,719 cubic feet of natural gas was released during the incident.

Litigation initiation is usually via one of two types:

1. Government agency against the operators for violations of country-specific laws (such as the U.S. Clean Air Act); and
2. From the public parties that are impacted by the incident. Examples of this in the U.S. include class action litigation that resulted from loss of property by area residents or families that filed suit for the loss of, or injury to, loved ones.

ADNOC is the National Oil and Gas Company of Abu Dhabi. Unlike other catastrophic releases that were unconstrained/uncontrollable for a long period, if the project assets under consideration were to have a catastrophic failure (such as a complete pipeline separation), ADNOC would be able to isolate and shut down flow. Shut down would be accomplished with leak detection triggers, automatic pump trips, and isolation valves upstream of the assets. As such, any catastrophic releases from the assets under consideration should be adequately controlled and isolated with a significantly small chance that any release would not be contained within the boundaries of Abu Dhabi.

Potential risk could come from catastrophic failure leading to loss of life or significant injury where the injured party/parties pursue litigation against the operating partners - including possible AssetCo partners. However, this risk is viewed as low because the project assets are only transport pipelines of natural gas and NGLs. The pipelines themselves are typically some of the safest assets in oil and gas upstream, midstream and downstream operations. The pipelines are constructed of static components whereas most catastrophic failures are associated with dynamic equipment (e.g. drilling and lifting assets). However, as noted in the two incidents described above, pipelines can and do fail. In addition to the low probability of an incident, the pipelines under consideration are in relatively remote locations in desert conditions in Abu Dhabi – which is unlike the two examples above where the pipelines were in populated areas.

## 5.3 Detection and Response

### 5.3.1 Overview

Incident response for pipelines are associated with leaks from onshore lines that are mostly buried in the desert sands. By their nature, onshore leaks are mostly constrained by the environment as opposed to offshore leaks, which present more critical concerns due to the potential to widely disperse and impact larger areas. As part of this assessment, the ADNOC incident response plans for both pipelines and plants were reviewed. The plans are detailed and comprehensive. The following summary is focused on assessment of pipelines.

Historically, practical implementation of an incident preparedness and response program was through a three-tier system per the International Petroleum Industry Environmental Conservation Association (IPIECA) Tiered Preparedness and Response Good Practice Guidelines[5] as shown in ***Figure 5.*** Approaches to incident preparedness and responses have continued to evolve from the concentric circle model that was relevant in 2018

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[5] http://www.ipieca.org/resources/good-practice/tiered-preparedness-and-response/

to the incident management system (IMS) based segmented representation of capability model used today and shown in ***Figure 6.***

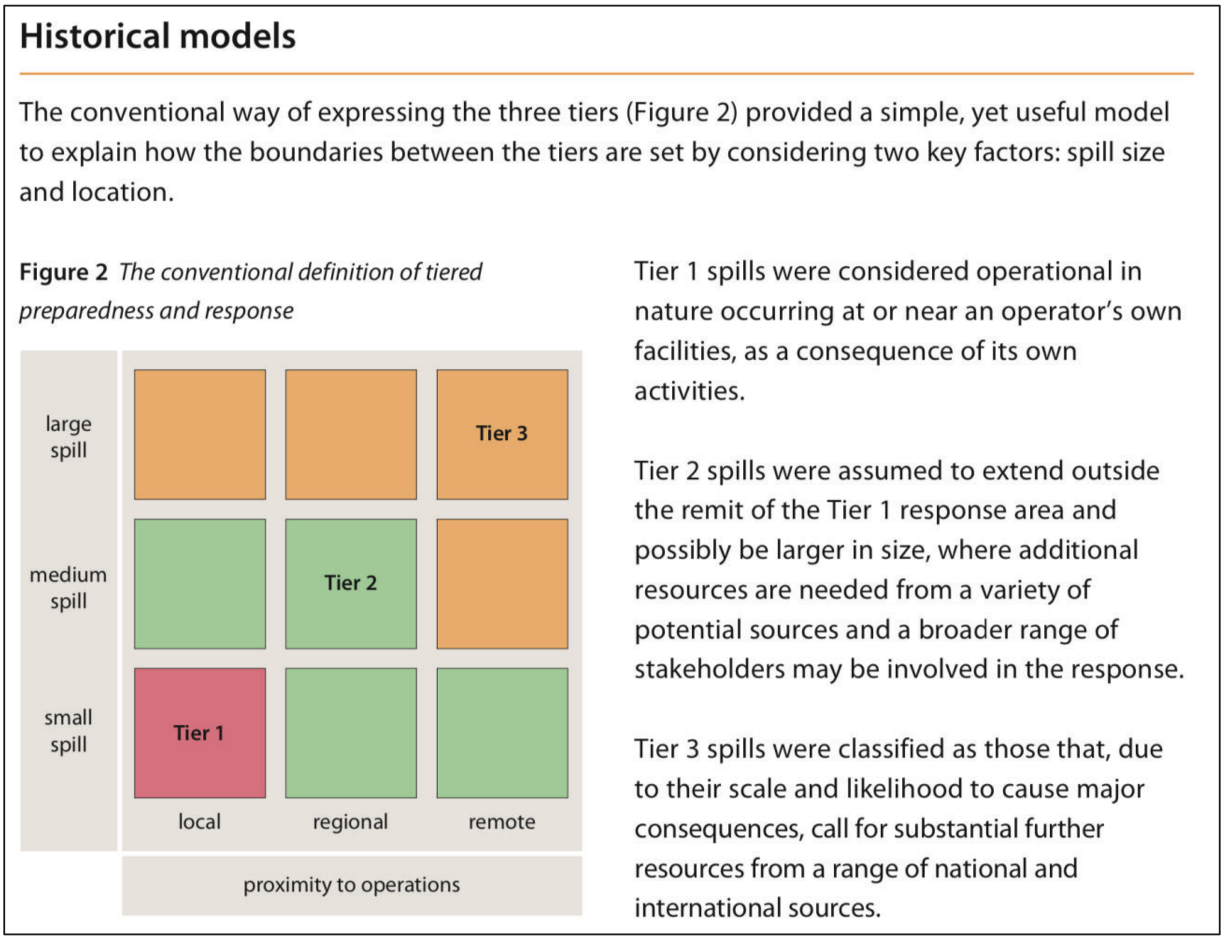



***Figure 5. IPIECA Historical Three-Tiered Model***

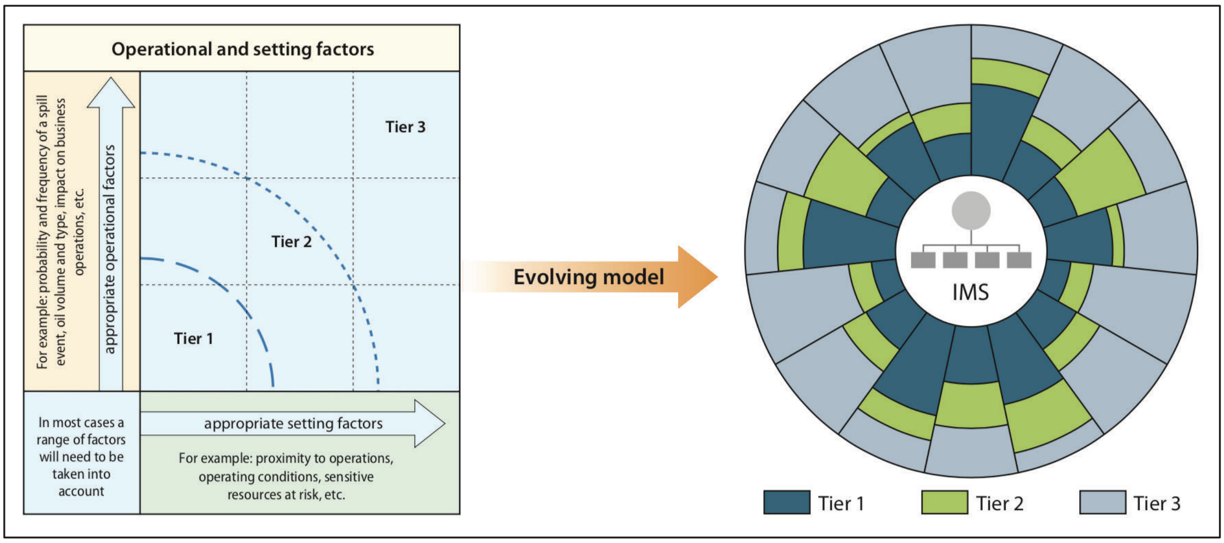



***Figure 6. Current IPIECA Evolving Model with Segmented Representation.***

ADNOC Gas Processing operations have implemented their incident response approach in compliance with IPIECA guidelines and appropriate international conventions and protocols for on-land systems. ADNOC Gas Processing plants comply with the Pipeline Network Division (OPN) Facility Response Plan which applies to all AGP OPN facilities and sites. Their incident management procedures are well defined in their Pipeline Network Division (OPN) facility response plan (FRP). As shown in ***Figure 7***, ADNOC implements emergency response in three (3) distinct phases:

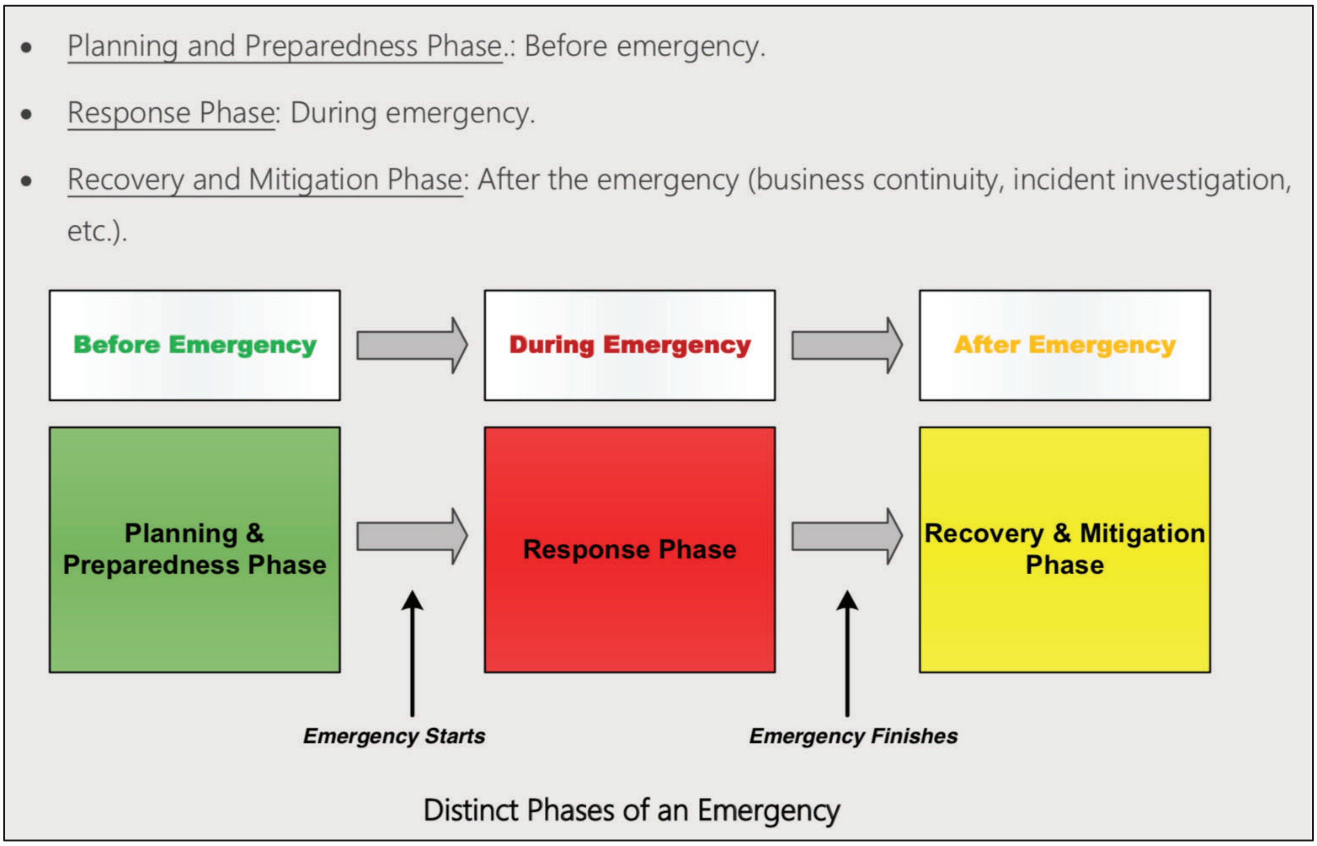



***Figure 7. Implementing the FRP Emergency Response***

Before an emergency occurs, ADNOC focuses on means to safeguard personnel and property from injury and damage due to incident exposure. Such safeguards include engineering solutions (design for lowest risk), emergency response training and stationing, and administrative controls.

During an emergency, ADNOC deploys first responders to assess the threat to personnel, the environment and property (in that order of priority). While any gas release would be of concern from an HSE standpoint, the mitigation strategies are straight-forward. First, the gas pipelines under consideration have isolation valves installed at various locations along the pipeline run. If a leak occurs, the valves can be shut off, which thereby limits the amount of gas leaked by shutting flow down through the lines. Leaked gas is most likely to occur with no personnel in close proximity and in open air such that the gas is most likely to disperse. Emergency broadcasts are announced informing personnel in the vicinity of the incident to shelter in place (SIP) or evacuate. Law enforcement personnel take affirmative actions to limit downwind exposure to the potential vapor cloud by closing all highways and roads within the vicinity of the incident. Should the gas be exposed to high heat resulting in ignition, a fire would occur requiring emergency responders to fight the fire. Firefighting personnel would first ensure all personnel working in the vicinity are safe and accounted for, then focus on combatting the flames to minimize the damage.

After an incident is controlled and threats mitigated, ADNOC deploys recovery and mitigation strategies that include decontamination and environmental cleanup while replenishing emergency response resources (e.g. breathing apparatus).

Internally, ADNOC Gas Processing self performs all Tier I and Tier II incident responses as shown in ***Figure 8***. Note that ***Figure 8*** is provided by ADNOC, and that "AGP" is referred to as "GASCO", as it was previously known. Their plans are detailed and comprehensive across the entire range of operational hazards including:

- NGL pipeline release
- Flammable/toxic gas release
- Fire/explosion.

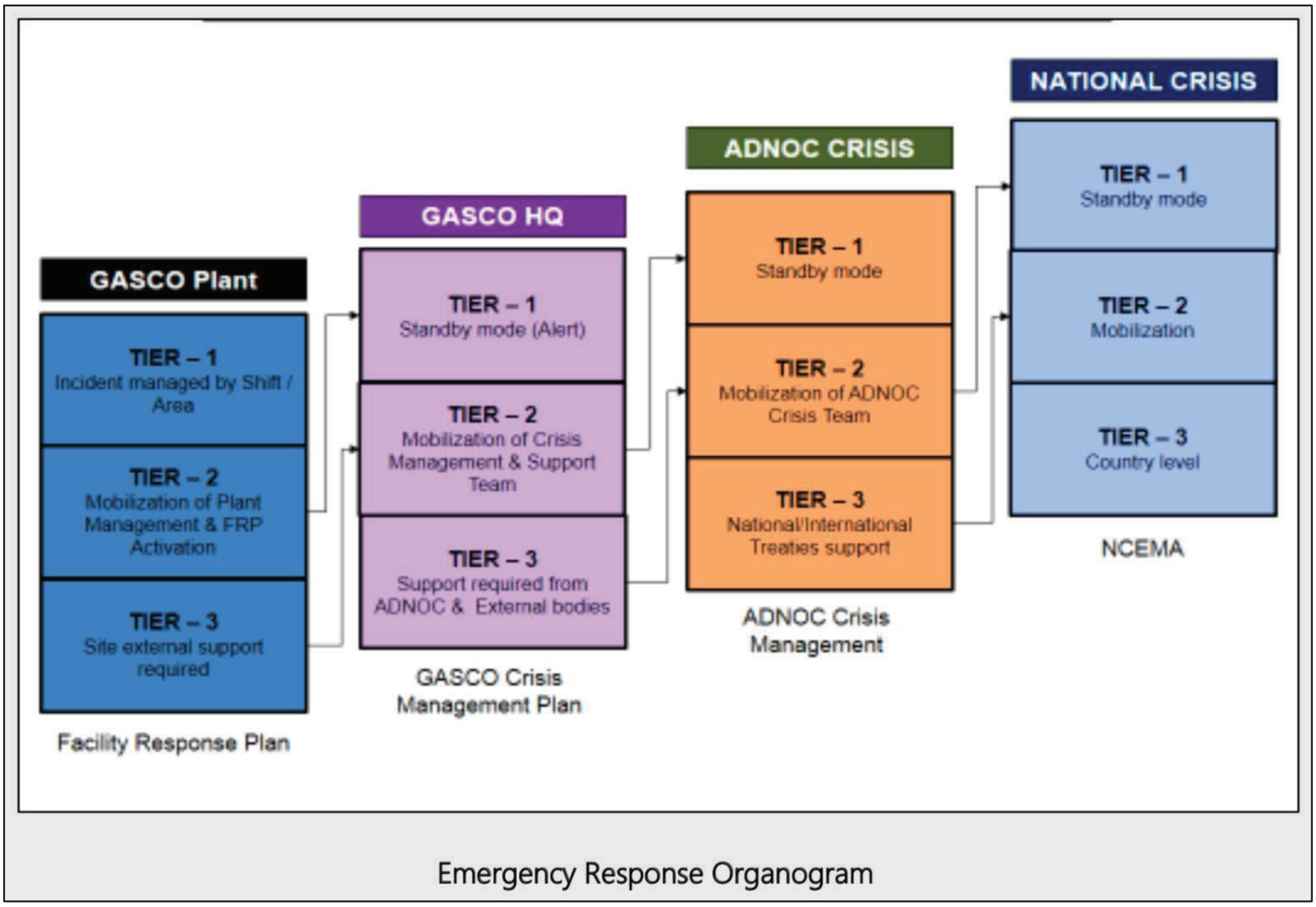



***Figure 8. Emergency Response Organization***

Incident responses are managed through the Incident Command Center (ICC) that is staffed by the Incident Management Team (IMT) who maintains responsibility to direct emergency response for Tier I and Tier II events.

ADNOC Gas Processing's plans include in-depth discussion about pipeline leaks. Specifically, the plans address possible pipeline rupture from mechanical failures. However, ADNOC Gas Processing has not experienced incidents in its history so proof of actual incident responses is minimal. Given these facts, our due diligence effort focused on evaluating the routinely performed emergency response drills as summarized here:

- At least four (4) simulated major accidents annually (one per calendar year quarter).
- Quarterly desktop reviews.
- Monthly evacuation drills.
- Daily HSE inspections of processing operations to look for anomalous conditions.

Though these routine drills are performed on a planned basis, exact timing is not always communicated to best test and prove facility response plans are applied effectively with the simulated incident seemingly occurring spontaneously.

The spill response plans reviewed are detailed and properly address incident response organization; risk assessment; predictive modeling of vapor cloud movement; impacts on cultural, human and the natural environment; strategies for decontamination and use of mitigation measures such as chemical fire suppressants; training and drills; and establishing and equipping Incident Command Centers (ICC). The ADNOC Gas Processing ICC responding to Tier I and Tier II incidents is located at the Maqta Facility and located in a separate room within the Maqta Control Room (MCR) Building. In the event of a Tier 3 incident, AGP Pipeline Network has established relationships with the AGP Crisis Management Team (CMT), ADNOC Corporate Crisis Team (CCT), and Local (Abu Dhabi) and Federal (UAE) authorities.

Based on a thorough review of ADNOC's incident response methods and capabilities, evidence exists of compliance with international standards and that proper procedures are in place to address releases as they occur. However, as noted earlier and per our understanding of GalaxyCo's investment structure, ADNOC or its OPCO JVs are responsible for release containment and response such that GalaxyCo as a shareholder carries little to no HSE risk from gas releases regardless of size.

### 5.3.2 Leak Detection

An example of the requirement for LDS exists in the Process Design Basis document dated 23.07.2013 (Bu Hasa to Bab, Bab to Thamama-C) for the new 24" lean gas lines. It states: "A leak detection system (LDS) shall be provided to detect pipeline leaks during abnormal events such as external third-party interference like excavation or any rupture". These lines were commissioned in 2015 and LDS was included.

Due to insufficient information regarding LDS details, we are unable to fully assess and describe the leak detection systems (LDS) of the pipelines. The following information is limited to conveying details regarding which lines do or do not currently have LDS, the type of system installed (if information is available) and any plans in the future to install new systems. A summary of LDS status for each pipeline system is as follows:

<u>Sales Gas Pipelines</u>

- Pipeline #s 1-4 and 10 do not have an LDS. Per feedback from ADNOC, these are above ground pipes and do not require LDS.

- Pipeline #5 currently has no LDS; however, it is included in Project 5306 to have an LDS installed.

- Pipeline #s 6 and 7 (commissioned in 2015) have LDS. The system is Fiber Optic Cable (FOC) using Distributed Temperature Sensing (DTS). No other details were provided.

- Pipeline #s 8, 9, and 11 do not have LDS.

- Pipeline #12 (Shah ASG to Th-C manifold) has an integrated Pipeline Leak Monitoring System (PLMS). This is a common system to the entire Shah product area. This system operates via data acquisition from the Supervisor Monitoring and Control System (SMC) system server. This data represents process parameters specific to temperature, pressure, and flow from field instruments located at the inlets and outlets of each pipeline. Temperature and pressure only are monitored at each main line block valve. As a primary function, the PLMS analyzes data from the SMC system. When a leak or catastrophic failure in any pipeline is detected, the system alerts the product pipeline operator who will initiate the appropriate actions to save the system and protect personnel and property per the appropriate facility response plans.

*Injection Pipelines*

Per ADNOC Onshore feedback, no automated leak detection systems exist for any of the gas injection lines in this scope of work. Monthly patrolling is performed in accordance with set schedules and system pressures are monitored to assure that any anomaly, which could represent a leak or other LOPC, is identified as quickly as possible and response plans are initiated per FRP requirements for the scenario.

Although there are no automated leak detection systems associated with the injection lines, ADNOC Onshore maintains comprehensive asset integrity procedures that ensure that pipeline inspection, repair and testing is planned, controlled, performed and documented according to the applicable requirements and in compliance with the applicable codes and standards to maintain pipeline integrity. These system integrity processes increase the overall integrity of the pipelines and reduce the likelihood of leaks occurring resulting in personnel, environmental, or equipment impacts. In the unlikely event of an injection line leak, response and control systems are in place to mitigate the issue as quickly as possible from identification through corrective action as well as to minimize any disruption in product flow in order to maintain production rates. Historically, there have been few leaks in these lines; however, those which did occur were minor in nature and were mitigated and repaired expeditiously with no adverse impacts on production.

*NGL Pipelines*

- Pipeline #s 1, 2, and 3 all have active projects (Project 5306) to add LDS.

- Pipeline #11 (Shah ASG to Asab-0/Asab-2) has an integrated Pipeline Leak Monitoring System (PLMS)***Error! Bookmark not defined.***. This is a common system to the entire Shah product area. This system operates via data acquisition from the Supervisor Monitoring and Control System (SMC) system server. This data represents process parameters specific to temperature, pressure, and flow from field instruments located at the inlets and outlets of each pipeline. Temperature and pressure only are monitored at each main line block valve. As a primary function, the PLMS analyzes data from the SMC system. When a leak or catastrophic failure in any pipeline is detected, the system alerts the product pipeline operator initiate the appropriate actions to safe the system and protect personnel and property per the appropriate facility response plans.

- No other information has been provided regarding how leak detection is managed on the remaining pipelines (4-10) and no further assessment of this process was able to be accomplished.

## 5.4 Management Systems

We performed a detailed review of the ADNOC HSE Management System (HSEMS) as part of our assessment. The HSEMS is comprehensive. The corporate, top-level approach to HSE implementation is codified in a set of procedures named Codes of Practice (COP). The top-level COP is ADNOC-COPV1-01 Code of Practice on HSE Administration Systems. The ADNOC COPs are implemented by all operating companies including the OPCO partners. The HSEMS covers all elements of a high-quality program including topics such as occupational safety, using hazards analyses in addressing risk along with Quantitative Risk Assessments (QRA), Control of Major Accident Hazards (COMAH), implementing Health Safety and Environmental Impact Assessments (HSEIA), asset integrity, waste management, and resource protection. Proper implementation of the HSEMS ensures environmental, safety and social risks are minimized.

The ADNOC HSEMS was reviewed against the International Finance Corporation (IFC) Sustainability Framework Performance Standard 1, Assessment and Management of Environmental and Social Risks and Impacts[6]. This performance standard defines requirements for a compliant HSEMS such that environmental and social risks and impacts are managed so development opportunities are enhanced sustainably. The seven (7) required elements are shown in ***Figure 9.*** The ADNOC HSEMS and COPs are fully compliant with the IFC elements from policy through monitoring and review.

**Requirements**

**Environmental and Social Assessment and Management System**

5. The client, in coordination with other responsible government agencies and third parties as appropriate,[8] will conduct a process of environmental and social assessment, and establish and maintain an ESMS appropriate to the nature and scale of the project and commensurate with the level of its environmental and social risks and impacts. The ESMS will incorporate the following elements: (i) policy; (ii) identification of risks and impacts; (iii) management programs; (iv) organizational capacity and competency; (v) emergency preparedness and response; (vi) stakeholder engagement; and (vii) monitoring and review.

***Figure 9. IFC Management System Requirements***

## 5.5 Maintenance

### 5.5.1 Schedules

Sections 0, 4.3.8, 4.4.8, 4.5.8 in this report also include an assessment of the maintenance schedules for Sales Gas, injection, NGL, and gas processing plants respectively. These sections provide detailed description of the asset integrity and maintenance programs. Refer to those sections for specifics regarding maintenance performance and schedules. The following narrative summarizes our assessment of the maintenance schedules and asset integrity program from an HSE perspective.

[6] https://www.ifc.org/wps/wcm/connect/24e6bfc3-5de3-444d-be9b-226188c95454/PS_English_2012_Full-Document.pdf?MOD=AJPERES&CVID=jkV-X6h

The ADNOC Gas Processing Maintenance Standard, OE-ST-002, clearly defines the maintenance strategies and practices that apply to all assets to ensure high reliability while conforming to integrity and HSE requirements. Regarding the pipelines within the scope of this assessment, the focus of maintenance from an HSE perspective is to prevent gas leaks (toxic or flammable) and other such system failures that can cause environmental impacts as well as potentially introduce uncontrolled safety hazards impacting people and overall asset integrity. Key elements of ADNOC's Gas Processing maintenance program include, but are not limited to:

- Preventive Maintenance (PM)
- Predictive Maintenance (PdM)
- Corrective Maintenance (CM)
- Run to Failure
- Turnaround Maintenance
- Asset Life Extension Management (ALEM)

Each of these program elements is critical to the overall capability of ADNOC Gas Processing to assure maximum system integrity and up-time across all assets and each has a specific purpose another is not designed to fulfill. This multi-faceted approach provides increased assurance of system reliability as opposed to a solely preventive or risk-based focus.

Additional activities contributing to the overall success of maintenance and asset integrity efforts include:

- Using cleaning pigs on the onshore pipelines on a pre-determined schedule, unless increased frequency is warranted, for cleaning the lines and ensuring quality product.
- Intelligent pigging is run on a pre-determined schedule. These inspections check for pipeline conditions and ensure integrity.
- A Six Week Rolling Plan (6WRP) process has been implemented to standardize maintenance processes across ADNOC AGP. This has a direct impact on targets set to meet maintenance Key Performance Indicators (KPIs). This plan is updated weekly to ensure a six week look ahead plan is always available. See ***Figure 10*** for this process flow.
- Implementing a pipeline integrity management program to ensure the safety of people, control environmental impacts, and assure asset integrity.
- Managing a robust Inspection and Corrosion Management Standard and Framework that have been fully integrated with the overall maintenance and integrity processes.

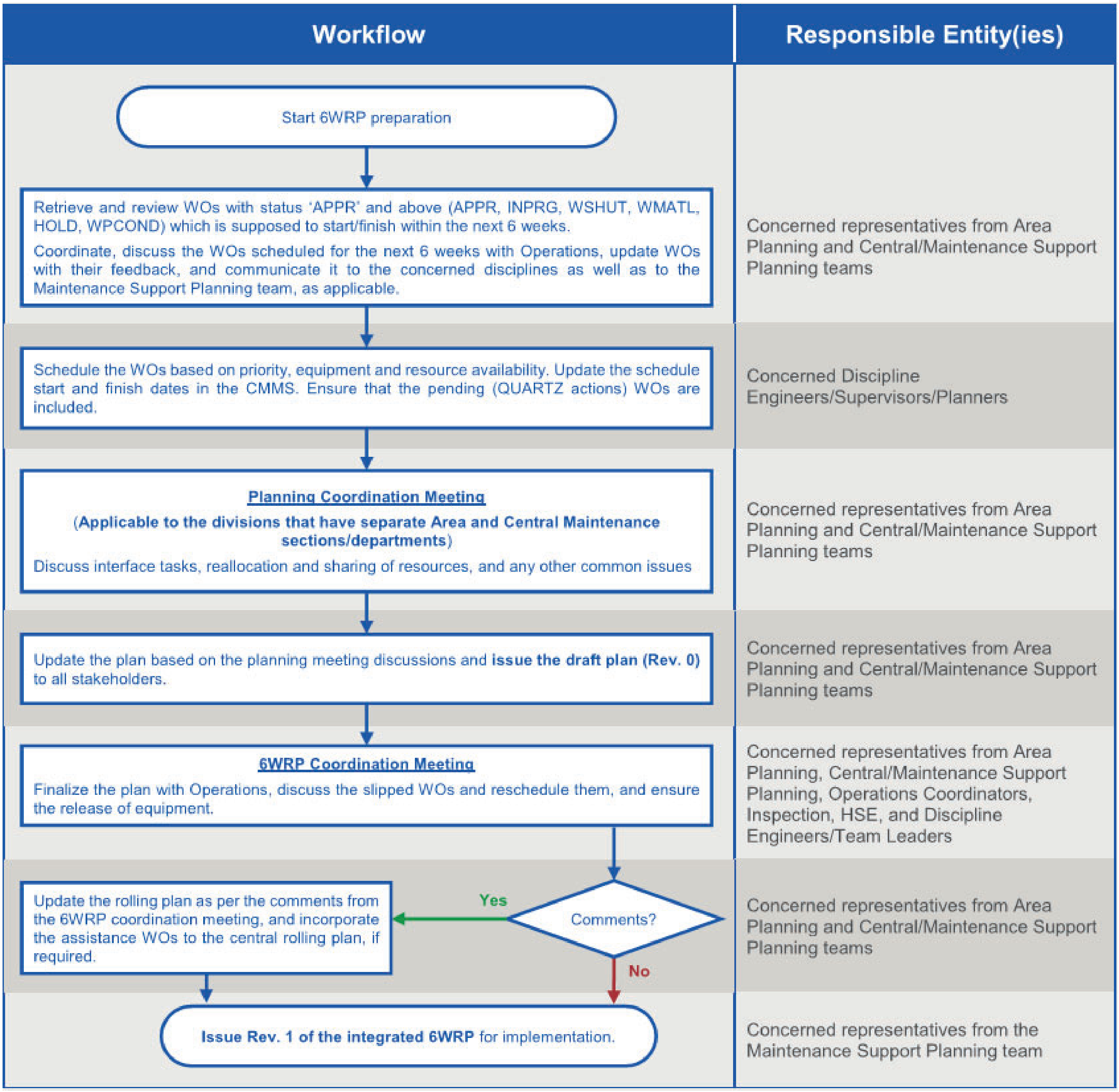



***Figure 10. Six Week Rolling Plan Flow***

- Patrolling inspections are performed and documented per established schedules and any corrective actions are implemented and followed up on the same day. An example inspection plan is shown in ***Figure 11***.

PIPELINE NETWORK DIVISION
OPERATIONS DEPARTMENT
IMECO EMPLOYEES WEEKLY PATROLLING & ACTIVITIES SCHEDULE

ADNOC Gas Processing

| 4 th week Sept 2019 | NAME | | LOCATION | WORK DESCRIPTION |
|---|---|---|---|---|
| | EMPLOYEE | ASSISTANT | | |
| 22/09/2019 SUNDAY | Pavithran+Benoy | | 12" Old Gup P/L, 18" New Gup P/L, 16" Fertil 2 P/L, 4"BeAAT P/L | Checklist for 586 - 20" Pig receiver station(586-V-101), CRS 713 Fertil 2 & ,& CRS 708. & Follow up contractor activities |
| | Jayadeep | ASIF | 42" Gas P/L Th-C-Ruwais corridor. | Checklist for SV-03,SV-04 ,follow up contractors activities |
| 23/09/2019 MONDAY | Pavithran+Benoy | | 10" Nitrogen P/L For Fertil 2 , 8" N2 P/L Gasco Ruwais, 12" N2 P/L for Takreer & 18" N2 P/L for Borouge & 8" N2 P/L for ADNOC RRD | Checklist for CRS 709(Gasco)+CRS 708 Borouge 1 &2 Follow up contractor activities |
| | Jayadeep | ASIF | 24" HAB – Ruwais Cond. PL-950 (42-108 K.P.) | Checklist for 950 SV-4 (100.3 K.M.) & 950 SV-3 (71.4).Follow up contractor activities. |
| 24/09/2019 TUESDAY | Pavithran+Benoy | | 48" Gas P/L Ruwais-Shewihat corridor. | Checklist for42" ( 710-V-101)+48"(711-V-101) pig receivers Shewaihat &CRS 708(Borouge 1 & 2) . Follow up contractor activities |
| | Jayadeep | ASIF | 24" NGL P/L Habshan-Ruwais Corridor | Checklist for SV-2 & SV-3. Follow up contractors activities |
| 25/09/2019 WEDNESDAY | Pavithran + Benoy | | 12" & 8" GAS P/L for Borouge 1 & 2 + 16" Gas P/L 551 to Borouge 3 | Checklist for 12" & 8"Borouge Launcher& Receiver &CRS 708 (Borouge 1 & 2). Follow up contractors activities |
| 26/09/2019 THURSDAY | Benoy | | 18" Gas P/L 702-ROV-101 Tie-in station to 702 CRS +18" gas p/l 503-rov-411 tie in to 701 CRS (Hydro cracker/skimmer) | Checklist for BeAAT CRS 714+Ruwais NGV (203-XUY-201) & CRS 708 |
| 27/09/2019 FRIDAY | BELAL | ASIF | 18" Condensate p/l Asab- Ruwais Corridor | Checklist for SV-5 & SV-6 . |
| 28/09/2019 SATURDAY | BELAL | ASIF | 20" Fertil ll gas p/l 713 to 586 Pig Receiver+ 12" Gas P/L 551- to Gasco Ruwais . | Checklist for CRS 708(Borouge 1 & 2).Borouge 3 CRS 50 &16" Gas P/L (551-BOROUGE 3 PIG RECEIVER ) |

●Pipeline patrolling should be start at 07.30 am .

●Patrolling check lists on **Operator Round App** should be completed within collection period.

All patrolling team should follow up contractors activities in the afternoon

Prepared by,
Supervisor Network Operation,
**HAMED AL MARRI PNOE/S(NO)**

***Figure 11. Weekly Patrolling Plan***

The overall, cumulative HSE, maintenance, asset integrity, and corrosion control program elements establish the inspection and maintenance criteria for the AGP network. Equipment criticality assessments are performed to determine the appropriate maintenance strategies and level of effort required for the assets. Equipment is categorized as Health, Safety, and Environmental Critical Equipment and Systems (HSECES) or Production Critical Equipment (PCE). The HSECES Identification Guide, OEX-GU-019, defines the methodology used to identify safety related critical equipment. Additional guidance on determining the criticality of assets can be found in the Equipment Criticality Assessment Procedure, OE-PR-007.

Production criticality consists of five equipment criticality rankings as shown in ***Figure 12***. The type of intervention required to reduce the identified risk will depend on this criticality ranking. Assets in unacceptable zones of the risk matrix require measures to be put in place to minimize the risk. Intervention strategies to reduce risk include Reliability Centered Maintenance (RCM) for H and MH categories, Review of Existing Maintenance (REM) for M and L categories and Run to Failure for the N category. Additional intervention types include Risk Based Inspections (RBI) for pressure containments, Safety Instrumented Function (SIF) for critical instrument loops, Minimum

Assurance Tasks (MAT) for HSECES assets. This strategy on preventive maintenance is further elaborated in the RCM and REM Guideline

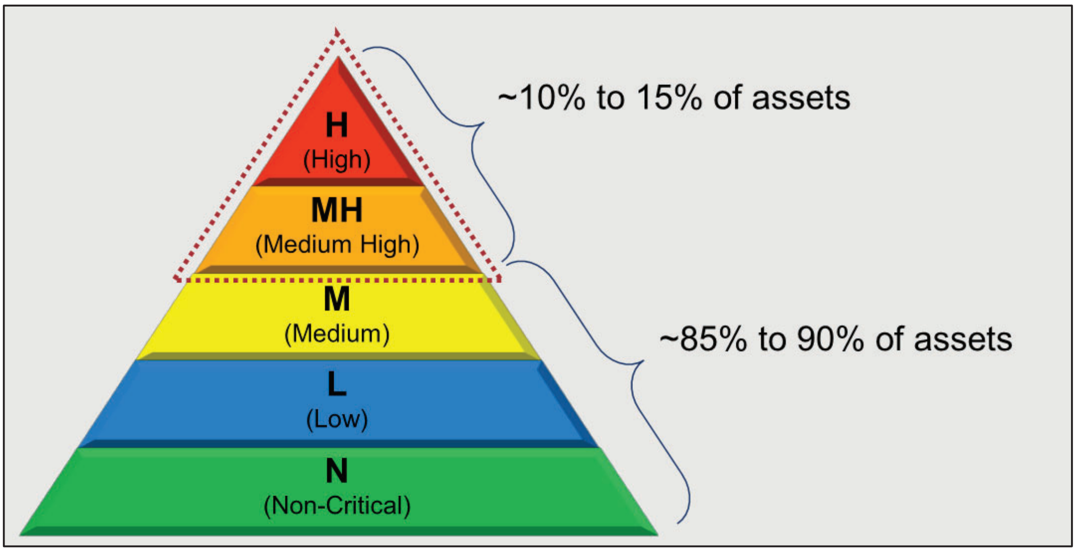
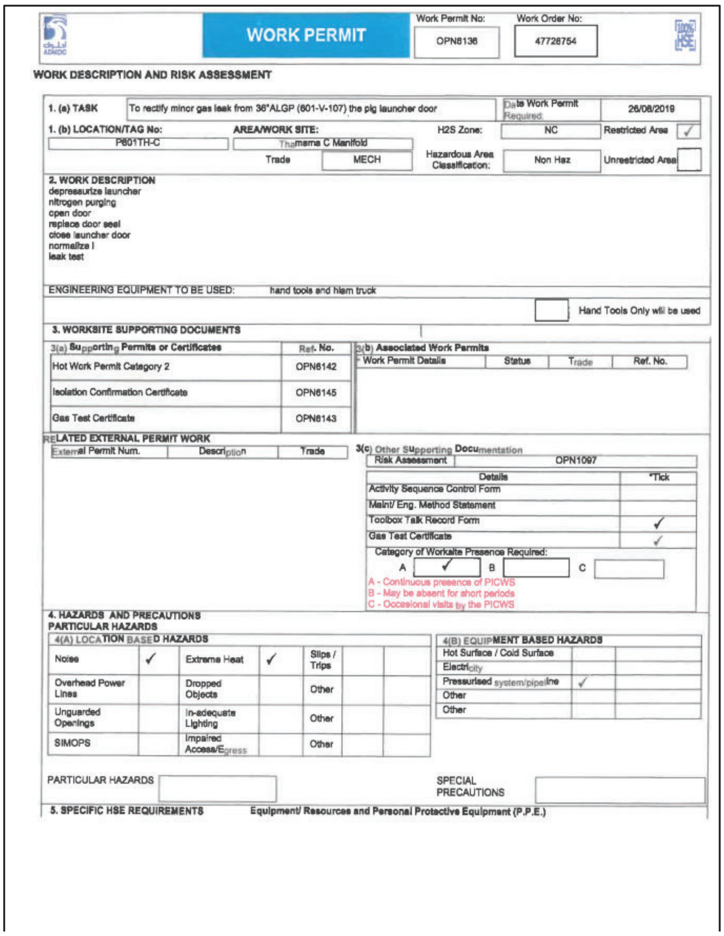



***Figure 12. Equipment Criticality Ranking Levels***

To facilitate effective maintenance management, as well as equipment performance and costs, equipment details are maintained in Maximo, a Computerized Maintenance Management System (CMMS). At a minimum, Maximo covers asset data management, WO management, PM and inventory management. For HSECES, Maximo



**WORK PERMIT**

Work Permit No: OPN6136

Work Order No: 47728754

**WORK DESCRIPTION AND RISK ASSESSMENT**

| | | | |
|---|---|---|---|
| 1. (a) TASK | To rectify minor gas leak from 36"ALGP (601-V-107) the pig launcher door | Date Work Permit Required: | 26/08/2019 |
| 1. (b) LOCATION/TAG No: P601TH-C | AREA/WORK SITE: Thamama C Manifold | H2S Zone: NC | Restricted Area ✓ |
| | Trade: MECH | Hazardous Area Classification: Non Haz | Unrestricted Area |

**2. WORK DESCRIPTION**
depressurize launcher
nitrogen purging
open door
replace door seal
close launcher door
normalize l
leak test

ENGINEERING EQUIPMENT TO BE USED: hand tools and hiam truck

Hand Tools Only will be used

**3. WORKSITE SUPPORTING DOCUMENTS**

| 3(a) Supporting Permits or Certificates | Ref. No. |
|---|---|
| Hot Work Permit Category 2 | OPN6142 |
| Isolation Confirmation Certificate | OPN6145 |
| Gas Test Certificate | OPN6143 |

3(b) Associated Work Permits

| Work Permit Details | Status | Trade | Ref. No. |
|---|---|---|---|

RELATED EXTERNAL PERMIT WORK

| External Permit Num. | Description | Trade |
|---|---|---|

3(c) Other Supporting Documentation

Risk Assessment: OPN1097

| Details | *Tick |
|---|---|
| Activity Sequence Control Form | |
| Maint/ Eng. Method Statement | |
| Toolbox Talk Record Form | ✓ |
| Gas Test Certificate | ✓ |

Category of Worksite Presence Required: A ✓ B C

A - Continuous presence of PICWS
B - May be absent for short periods
C - Occasional visits by the PICWS

**4. HAZARDS AND PRECAUTIONS**
**PARTICULAR HAZARDS**

4(A) LOCATION BASED HAZARDS

| | | | | | |
|---|---|---|---|---|---|
| Noise | ✓ | Extreme Heat | ✓ | Slips / Trips | |
| Overhead Power Lines | | Dropped Objects | | Other | |
| Unguarded Openings | | In-adequate Lighting | | Other | |
| SIMOPS | | Impaired Access/Egress | | Other | |

4(B) EQUIPMENT BASED HAZARDS

| | | |
|---|---|---|
| Hot Surface / Cold Surface | | |
| Electricity | | |
| Pressurised system/pipeline | ✓ | |
| Other | | |
| Other | | |

PARTICULAR HAZARDS

SPECIAL PRECAUTIONS

**5. SPECIFIC HSE REQUIREMENTS** Equipment/ Resources and Personal Protective Equipment (P.P.E.)

***Figure 13. Maximo Work Permit***

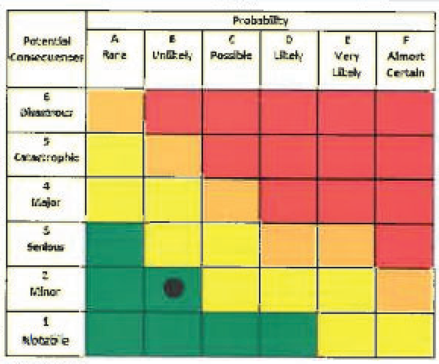
provides real time tracking and inventory of the critical assets and equipment, streamlining the ability of the sites to properly monitor and maintain these items, thereby reducing risk to personnel safety, the environment, and asset integrity. See the above ***Figure 13*** for an excerpt of a Maximo Work Permit.

Detailed inspection and technical integrity reports are maintained for each pipeline and were reviewed as part of this assessment. ***Figure 14*** shows example data from an integrity status report. See sections 6 through 8 of this report for additional details of the technical integrity program inspections. When an inspection results in a finding requiring mitigation, a Maximo work order is submitted that provides corrective action tasks or troubleshooting guidance to be implemented.

Pipeline Network Division

Technical Integrity Status Report 2018 Level 1 Rev.0
Validity: December 2019

| | | | |
|---|---|---|---|
| **Pipeline Name** | 12 inch Habshan to Bab NGL (OAG) pipeline. | **Pipeline Tag Number** | 944 |
| **Pipeline Location** | Thammama C and Bab area | **Product** | NGL |
| **Pipeline Owner** | ADNOC GP - Pipeline Network Division (OPN) | | |
| **Pressure (barg)** – **Design** | 88 | **Year of Commissioning** | 2010 |
| **Pressure (barg)** – **MAOP** | 88 | **Design Code/ Material grade** | ASME B31.4/ API 5L X60 PSL2 |
| **Pressure (barg)** – **Operating** | 48-52 | | |
| **Pipeline Length (km)** | 4.5 | **Design Life (years)** | 30 |
| **Wall thickness** | 7.1 | **Coating type** | 3LPE |
| **Corrosion Allowance (mm)** | 0 | **Piggability** | Yes |
| **Location class** | 3 | **Design factor** | 0.5 |




**Integrity Status**

| | | |
|---|---|---|
| **Remaining Life, Years** | **At Design Pressure** | **18**[1] |
| | **At De-rated Pressure** | **N/A** |

**Top threats:**
No major threat noted.

| | |
|---|---|
| **Overall Risk Profile of the Pipeline** | 2018: LOW – B2 |

**Conclusions**

ILI findings (2013 ROSEN and 2017 LINSCAN MFL)

- ILI inspection completed in 2013. In-line inspection completed in 2013 where no major anomalies were found.
- The first feature is estimated to require remediation by year 2036. At this stage it is recommended to employ a suitable method to monitor the growth of the features, rather than arrange pipeline repairs/de-rating.[1]
- Due to operation issue in September 2015, the pipeline was not pressured and the NGL product was left stagnant. This issues have been solved during the second week of January 2017.Following this incident, ILI was performed in January 2017 by LINSCAN. Minimal corrosion growth reported.

CP findings

- On-off survey conducted in year 2017. The instant OFF potentials are meeting the protection criteria.
- DCVG was conducted in year 2017. 3 category-1 coating defects were detected where no action is required.

Above Ground Inspection

- UT monitoring was conducted in year 2018. Moderate metal loss corrosion were observed at several locations and were assessed as acceptable with reference with the MAWT.
- On-stream inspection was conducted in 2017. No significant issues was reported.

Actions status from previous recommendations (TIS2017)

(R2017-1) Perform ILI inspection within the next 4 years which is year 2021.

- Included in ILI plan

Overall risk

- Overall risk of the pipeline is assessed as Low.

| | | |
|---|---|---|
| **Launcher KM +000** | **0 – 4.5 KM** | **Receiver KM +4.5** |
| **Un-mitigated Risk** | B2 | **Un-mitigated Risk** |

**Recommended Mitigation Plan**

- Perform ILI in 2021 as planned. This was highlighted in R2017-1.

Note-1 Intertek, "Integrity Assessment of 12inch Habshan-Bab NGL pipeline," Op-20151025-155327-R2, Rev.2, 10th January 2017.

***Figure 14. Technical Integrity Status Report***

Corrosion control is a significant element in the overall asset integrity program that is well integrated into the overall maintenance, inspection, and integrity processes. ADNOC Gas Processing manages corrosion control and inspection in accordance with the Inspection and Corrosion Management Standard (ICMS), TE-ST-001, which details the processes involved in ensuring the gas lines are regularly inspected and maintained. The ICMS is compliant with multiple requirements, both internal and international, as described in Section 1.6 of the ICMS (***Figure 16***). The ICMS aims to maintain the integrity of ADNOC Gas Processing assets using a risk-based approach of identification, analysis, assessment, prevention and mitigation of degradation risks, which may adversely affect health, safety, environment, reputation and asset integrity. This comprehensive inspection program clearly outlines the decision-making processes involved and the ICMS framework (***Figure 15***) and is based on the ISO Standards.

**1.6. Regulatory Requirements and References**

The ICMS meets the requirements of ADNOC HSEMS Code of Practice, Volume 6, COP V6-01: "Identification and Integrity Assurance of HSECES".

The ICMS also complies with international codes, specifications and standards, as applicable to Oil and Gas Industry, as well as the "COMPANY" specifications and ISO-9001 Quality Management Systems.

***Figure 16. ICMS Regulatory Requirements and References***

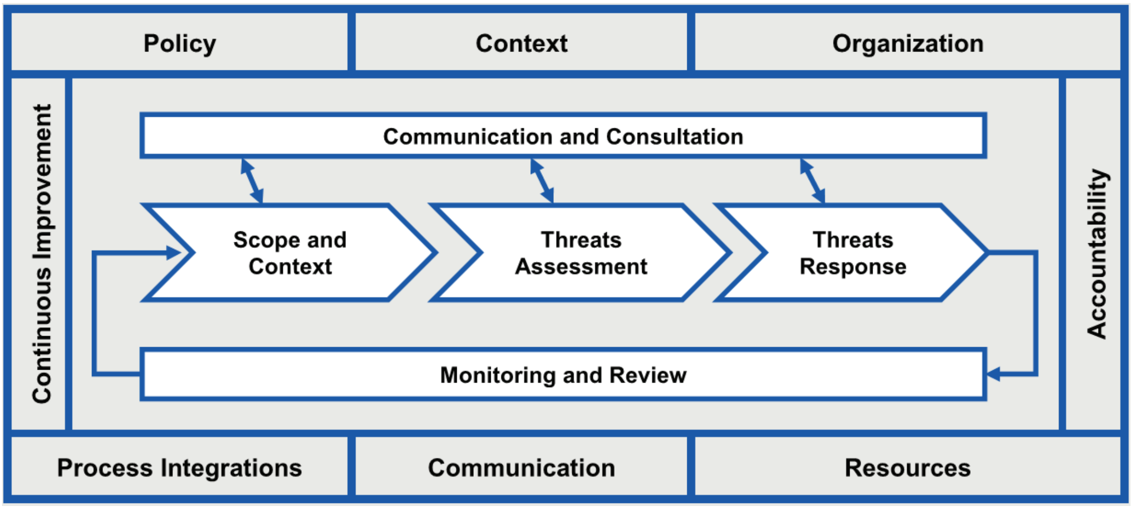



***Figure 15. ICMS Framework***

### 5.5.2 Summary

A thorough HSE review of the asset integrity process was performed with a comprehensive focus on inspections and maintenance. Based on our review, the overall system integrity appears well managed and processes are in place to ensure the overall integrity of the pipelines. Maintenance is primarily performed in response to findings from established risk-based inspections and a formal maintenance program outlined in the ADNOC Gas Processing Maintenance Standard (OE-ST-002). The current process has shown positive outcomes and has resulted in an overall healthy status of the pipeline network with no overall loss of gas volume for an affected flow route at any given time. ADNOC COPV6-01: Verification of Technical Integrity, defines the processes by which the Group Companies ensure HSECES are suitable for the required function and are properly maintained. This process provides assurance that the systems will perform their intended functions throughout the expected lifecycles. A typical asset integrity lifecycle is illustrated in ***Figure 17*** as an example of how the overall health and integrity of the pipelines are managed, including the maintenance and corrosion control aspects.

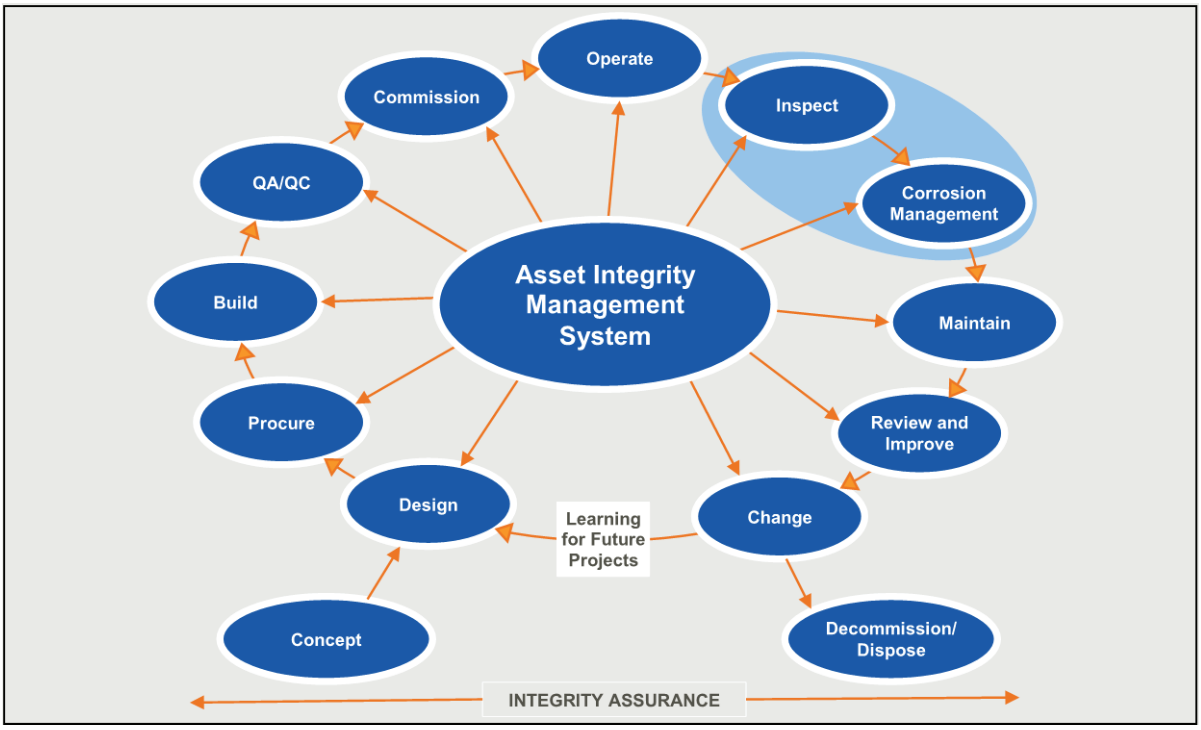



***Figure 17: Asset Integrity Life Cycle***

## 5.6 Applicable Standards

ADNOC is “self-regulatory” regarding HSE matters, meaning “ADNOC must comply with all relevant Abu Dhabi and UAE Federal Laws and that the monitoring of legal compliance will be carried out internally and ADNOC will not be subject to direct external regulatory scrutiny.” We have performed a detailed review of the ADNOC HSE procedures and data provided. Based upon our understanding and review, the ADNOC HSE approach is consistent with UAE laws and regulations within the construct of its self-regulatory definition. ADNOC and the OPCOs maintain compliance with the applicable International Finance Corporation (IFC) discussed in Section 5.7, and all evidence indicates that this practice will continue.

This due diligence was to evaluate the environmental and social risks and residual (post- mitigation) impacts of the Pipelines and Processing Plants against the Applicable Standards.

The “Applicable Standards” are:

**Laws, regulations and permits/approvals in the UAE pertaining to environmental and social issues (including any applicable international treaties);**

**Assessment:** As discussed previously, ADNOC is “self-regulatory” regarding HSE matters; meaning “ADNOC must comply with all relevant Abu Dhabi and UAE Federal Laws and that the monitoring of legal compliance will be carried out internally and ADNOC will not be subject to direct external regulatory scrutiny.” We have performed a detailed review of the ADNOC HSE procedures and data provided. Based upon our understanding and review, the ADNOC HSE approach is consistent with UAE laws and regulations within the construct of its self-regulatory definition. ADNOC maintains compliance with Abu Dhabi environmental and safety laws. However, by the self-regulatory definition, ADNOC is not required to obtain environmental permits although the Environment Agency of Abu Dhabi requires other industrial operations and businesses to obtain permits. Examples of permits include licenses for groundwater well drilling and environmental licenses for development of infrastructure projects and industrial facilities. Details of environmental permits required in Abu Dhabi, but not for ADNOC, are shown on the Environment Agency - Abu Dhabi’s website[7].

**International Finance Corporation Performance Standards;**

***Assessment:*** The International Finance Corporation has two (2) sets of performance standards:

1. IFC Sustainability Framework - Policy and Performance Standards on Environmental and Social Sustainability, effective January 1, 2012[8]; and

2. IFC Environmental, Health, and Safety General Guidelines, dated April 30, 2007[9].

The Sustainability Framework sets performance standards in eight (8) specific areas as shown in ***Figure 18***. These standards set out overall policy and goals. Our compliance assessment of each of the eight (8) performance standards follows.

| | |
|---|---|
| Performance Standard 1: | Assessment and Management of Environmental and Social Risks and Impacts |
| Performance Standard 2: | Labor and Working Conditions |
| Performance Standard 3: | Resource Efficiency and Pollution Prevention |
| Performance Standard 4: | Community Health, Safety, and Security |
| Performance Standard 5: | Land Acquisition and Involuntary Resettlement |
| Performance Standard 6: | Biodiversity Conservation and Sustainable Management of Living Natural Resources |
| Performance Standard 7: | Indigenous Peoples |
| Performance Standard 8: | Cultural Heritage |

***Figure 18: IFC Sustainability Framework Performance Standards***[10]

[7]https://www.ead.ae/Pages/our-services/business-and-industry.aspx

[8]https://www.ifc.org/wps/wcm/connect/24e6bfc3-5de3-444d-be9b-226188c95454/PS_English_2012_Full-Document.pdf?MOD=AJPERES&CVID=jkV-X6h

[9]https://www.ifc.org/wps/wcm/connect/29f5137d-6e17-4660-b1f9-02bf561935e5/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES&CVID=jOWim3p

[10] International Finance Corporation (IFC)

## 5.7 IFC Compliance

*5.7.1.1 IFC Sustainability Framework Compliance*

**Performance Standard 1 – Assessment and Management of Environmental and Social Risks and Impacts**: Performance Standard 1 underscores the importance of managing environmental and social performance throughout the life of a project. An effective Environmental and Social Management System (ESMS) is a dynamic and continuous process initiated and supported by management. ESMS involves engagement between the client, workers, local communities directly affected by the project (the affected communities) and, where appropriate, other stakeholders. Drawing on the elements of the established business management process of "plan, do, check, and act," the ESMS entails a methodical approach to managing environmental and social risks and impacts in a structured way and on an ongoing basis. A good ESMS promotes sound and sustainable environmental and social performance and can lead to improved financial, social, and environmental outcomes. This standard sets requirements for an overall ESMS that contains seven (7) specific elements: (i) policy; (ii) identification of risks and impacts; (iii) management programs; (iv) organizational capacity and competency; (v) emergency preparedness and response; (vi) stakeholder engagement; and (vii) monitoring and review.

This performance standard as defined above requires that the Operator will manage environmental and social risks and impacts of the project throughout the project life cycle in a systematic manner, proportionate to the nature and scale of the project and the potential risks and impacts." A comprehensive programmatic assessment of the overall ADNOC HSE program as it relates to the defined scope of this project was accomplished to provide objective evidence of compliance with this requirement as well as multiple other HSE program elements. Consistent with our assessment in the Management Systems section of this report, the ADNOC HSEMS is deemed to be compliant with this IFC Performance Standard.

**Performance Standard 2 – Labor and Working Conditions:** Performance Standard 2 recognizes that the pursuit of economic growth through employment creation and income generation should be accompanied by protection of the fundamental rights of workers. For any business, the workforce is a valuable asset and a sound worker-management relationship is a key ingredient in the sustainability of a company. Failure to establish and foster a sound worker-management relationship can undermine worker commitment and retention and can jeopardize a project. Conversely, through a constructive worker-management relationship where the company treats the workers fairly and provides them with safe and healthy working conditions, clients may create tangible benefits such as enhancement of the efficiency and productivity of their operations.

The requirements set out in this Performance Standard have been in part guided by a number of international conventions and instruments including those of the International Labour Organization (ILO) and the United Nations (UN). Detailed requirements of this standard include standards for Direct Workers, Contracted Workers and Supply Chain Workers. They include requirements for:

- Establishing Human Resources Policies and Procedures
- Specifying Working Conditions and Terms of Employment
- Allowing for Workers' Organizations
- Ensuring Non-Discrimination and Equal Opportunity

- Establishing Requirements for Retrenchment
- Providing a Grievance Mechanism
- Prohibiting Child Labor
- Prohibiting Forced Labor
- Requiring Occupational Health and Safety Programs.

In performing our assessment of ADNOC's compliance with Performance Standard 2, we reviewed all essential documents such as the COPs and conducted interviews with ADNOC employees. Based on data received, we believe that ADNOC complies with this performance standard for the workforce that operates and manages the Gas Pipelines and Processing Plants within the scope of this assessment.

**Performance Standard 3 – Resource Efficiency and Pollution Prevention:** Performance Standard 3 recognizes that increased economic activity and urbanization often generate increased levels of pollution to air, water, and land and consume finite resources in a manner that may threaten people and the environment at the local, regional, and global levels. A growing global consensus exists that the current and projected atmospheric concentration of greenhouse gases (GHG) threatens the public health and welfare of current and future generations. At the same time, more efficient and effective resource use, pollution prevention, and GHG emission avoidance and mitigation technologies and practices have become more accessible and achievable in virtually all parts of the world. This performance standard requires that during the project life cycle, the operator considers ambient conditions and applies technically and financially feasible resource efficiency and pollution prevention principles and techniques that are best suited to avoid or minimize (where avoidance is not possible) adverse impacts on human health and the environment.

For this project, ADNOC has properly addressed pollution prevention concerns with its detailed combustible/flammable gas release prevention and control plans. In regard to the GHG aspects of this standard Abu Dhabi processes gasses for sale. In years past, many oil fields, including some in Abu Dhabi, flared the associated gas as part of the extraction process. However, as consistent with most other major oil and gas companies in today's processes ADNOC gathers, treats and processes the gas for sale. As such there are no emissions from flaring as used to happen; thereby reducing GHG emissions over time. The gas Processing Plants incorporate the latest in pollution prevention technologies as new plants and trains are started in the FEED process and generally do not release greenhouse gasses. The actual flow lines under review in this report do not have emissions that could contribute to GHG concerns. Their only emissions would be from line leaks that are quickly fixed (see details on leak detection, maintenance and emergency response). While it is known that burning of natural gas and other hydrocarbons causes GHG emissions, Abu Dhabi has installed Combined Cycle Gas Turbines (CCGT) in its main Umm Al Nar power plant. The CCGT turbines are some of the most efficient in use today.

**Performance Standard 4 – Community Health, Safety, and Security:** This performance standard recognizes that project activities, equipment, and infrastructure can increase community exposure to risks and impacts. In addition, communities subjected to impacts from climate change may also experience an acceleration and/or intensification of impacts due to project activities. While acknowledging the public authorities' role in promoting the health, safety, and security of communities, this performance standard addresses the operator's responsibility to avoid or minimize the risks and impacts to community health, safety, and security that may arise from project-related activities, paying particular attention to vulnerable groups.

ADNOC has a detailed HSEIA process that properly addresses community exposure to risks and impacts prior to implementation of projects. However, many of the pipelines were installed prior to the establishment of Abu Dhabi's environmental standards and development of ADNOC's COPs. As such, the pipelines did not have detailed assessments performed prior to their original construction. However, ADNOC Gas Processing completes a detailed HSEIA against their entire pipeline network every five (5) years. The last FIVE-YEAR OPERATIONS HSEIA REVIEW for the ADNOC Gas Processing pipeline network was completed on April 26, 2016. The HSEIA includes assessments of the pipelines, their risks, and mitigation measures for ensuring public health, safety and security. In addition, ADNOC has a detailed asset integrity process which helps ensure the safety of the assets so that they do not impact the health, safety, and security of communities. As such, ADNOC is believed to be compliant with this performance standard.

**Performance Standard 5 – Land Acquisition and Involuntary Resettlement:** This performance standard recognizes that project-related land acquisition and restrictions on land use can have an adverse impact on communities and persons that use this land. Involuntary resettlement refers both to physical displacement (relocation or loss of shelter) and to economic displacement (loss of assets or access to assets that leads to loss of income sources or other means of livelihood) as a result of project-related land acquisition and/or restrictions on land use. Resettlement is considered involuntary when affected persons or communities do not have the right to refuse land acquisition or restrictions on land use that result in physical or economic displacement.

Regarding the pipelines within the scope of this project, data was not available to determine if land acquisition and involuntary resettlement occurred at the time the pipelines were constructed – some as early as 1981. Prior to oil and gas exploration, Abu Dhabi and much of the UAE consisted of Bedouin tribes. The Bedouin people were primarily nomadic camel herders who used the camels for transport, meat, and milk, but were also fishermen. At the time of initial oil field development and installation of the pipelines, it is not clear if Bedouin tribes were impacted. The mostly nomadic Bedouin people lived in a harsh desert environment and likely did not "own" the land in a legal sense, but ownership was likely presumed to be with the tribal rulers.

In 1971, the UAE was established as a country and the people established a constitution and laws. The possibility exists that people were affected by early oil and gas operations and the installation of the gas and NGL pipelines, but data was not made available. However, as indicated earlier, common industry practice at the start of Abu Dhabi's oil extraction was to flare the associated gas. By the time it was decided to process and use the gas, around the early 1980s, most of the oil field lines and process locations were installed and operating. As such, when the gas lines were installed the main pipeline corridors were in existence and people were not likely impacted by any involuntary settlement. The UAE Constitution and current ADNOC procedures specifically address the safety and security of its citizens and land acquisition as well as protection of personal property. During the timeframe of this AssetCo partnership arrangement, some pipelines are planned to be replaced. When this occurs, the new lines will be placed adjacent to the existing ones in existing pipeline corridors. No additional land will be needed, nor will people be required to move. As such, ADNOC complies with this performance standard.

**Performance Standard 6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources:** This performance standard recognizes that protecting and conserving biodiversity, maintaining ecosystem services, and sustainably managing living natural resources are fundamental to sustainable development. The requirements set out in this performance standard have been guided by the Convention on Biological Diversity. The convention defines biological diversity as “the variability among living organisms from all sources including inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species, and of ecosystems.”

ADNOC has a top-level commitment to the environment and good COPs to enforce its goals. For example, Abu Dhabi worked to establish the United Nations Educational, Scientific and Cultural Organization (UNESCO) Biosphere Reserve for Marawah. The site includes numerous islands and a coastline stretching over 120 km. Marawah comprises several important representative habitats with national and regional significance. These habitats include sea grass beds (three species), coral reef communities (more than 18 species), macroalgae outcrops (more than 15 species), and mangrove vegetation (monostands of Avicennia marina). Marawah Biosphere reserve is also of global importance as a shelter and feeding ground for the vulnerable dugongs (Dugong dugon). This Biosphere Reserve is an example of Abu Dhabi’s commitment to Biodiversity, Conservation and Sustainable Management of Living Natural Resources.

Regarding existing, in-place pipelines, they are either buried or partially above ground. The assets are existing and do not impact preservation of natural resources in any way unless a significant leak were to occur. Incident response and leak detection have been covered in Sections 11.3.5 and 11.3.6 of this report. As such, we believe that ADNOC complies with this performance standard.

**Performance Standard 7 – Indigenous Peoples:** This performance standard recognizes that Indigenous Peoples, as social groups with identities that are distinct from mainstream groups in national societies, are often among the most marginalized and vulnerable segments of the population. In many cases, their economic, social, and legal status limits their capacity to defend their rights to, and interests in, lands and natural and cultural resources, and may restrict their ability to participate in and benefit from development. Indigenous Peoples are particularly vulnerable if their lands and resources are transformed, encroached upon, or significantly degraded. Their languages, cultures, religions, spiritual beliefs, and institutions may also come under threat. As a consequence, Indigenous Peoples may be more vulnerable to the adverse impacts associated with project development than non-indigenous communities. This vulnerability may include loss of identity, culture, and natural resource-based livelihoods, as well as exposure to impoverishment and diseases.

As described for Performance Standard 5, the UAE and Abu Dhabi have excelled in using the national oil and gas reserves to benefit the country’s citizens. The standard of living for all residents has improved greatly from the use of oil and gas reserves. Abu Dhabi has also done a remarkable job for its Indigenous People in many significant ways including:

- Education – Abu Dhabi has a strong educational policy for its citizens and believes that education is key to further improving well-being of the populace. This policy includes education for women to a level that is often not the case with other Islamic countries. The visionary approach to education was established by Sheik Zayed bin Sultan Al Nahyan, founder of the UAE.

- Land Ownership – Given substantial development over the last 50+ years, the UAE and Abu Dhabi have kept tight control on land ownership. True land can only be owned by Emiratis. This policy has allowed the Indigenous Peoples to benefit from all the investment in the country stemming from the UAE’s oil and gas reserves. In 2019, Abu Dhabi updated its land ownership rights and foreigners can now purchase freehold or leasehold properties but only in certain investment zones in Abu Dhabi. These purchase agreements can extend up to 99 years. However, Abu Dhabi's land ownership laws significantly favor Emiratis (indigenous peoples).

- Emiratization – ADNOC and its OPCO JVs have formal programs to work towards Emiratization, an initiative with the purpose of providing UAE citizens with meaningful employment in an efficient manner in the public and private sectors (instead of staffing expatriates from other countries). In place since 2006, Emiratization has provided positive, meaningful employment results for Indigenous Peoples predominantly in the public sector.

Based on the evidence described above, ADNOC and the UAE's policies comply with this performance standard.

**Performance Standard 8 – Cultural Heritage:** This performance standard recognizes the importance of cultural heritage for current and future generations. Consistent with the Convention Concerning the Protection of the World Cultural and Natural Heritage, this performance standard aims to ensure protection of cultural heritage in the course of project activities. In addition, the requirements of this performance standard on a project's use of cultural heritage are based in part on standards set by the Convention on Biological Diversity.

Although the UAE has modernized since its founding, the country has maintained a strong commitment to its past and culture. For example, consider two of Sheik Zayed's quotes[11]:

- "There is no glory without the glory of the country and its citizens. We have to be proud of our forefathers, who were able to face the harshness of life with a strong will and dedication to shape a better collective future."
- "A nation without a past is a nation without a present or a future. Thanks to God, our nation has a flourishing civilization, deep-rooted in this land for many centuries. These roots will always flourish and bloom in the glorious present of our nation and in its anticipated future."

Sheik Zayed's vision carries through to today. Instead of assuming a completely western-assimilated culture, Emiratis wear traditional dress and practice customs of their past. Emiratis have a national cultural center focused on providing cultural heritage services and offerings[12]. Abu Dhabi is active with UNESCO in establishing proposed cultural sites for consideration and acceptance[13]. Abu Dhabi has properly balanced development of its oil and gas industries while maintaining a cultural tie to the past. Based on the evidence described above, ADNOC and the UAE's policies comply with this performance standard.

*5.7.1.2 IFC Environmental, Health, and Safety General Guidelines Compliance*

The IFC Environmental, Health, and Safety (EHS) Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice (GIIP). When one or more members of the World Bank Group are involved in a project, these EHS Guidelines are applied as required by their respective policies and standards. These General EHS Guidelines are designed to be used together with the relevant Industry Sector EHS

11 https://gulfnews.com/news/uae/general/shaikh-zayed-in-quotes-1.306268
12 https://mckd.gov.ae/sites/MCYCDVar/en-us/Pages/CulturalCenterAbuDhabi.aspx
13 http://whc.unesco.org/en/statesparties/AE/

Guidelines, which provide guidance to users on EHS issues in specific industry sectors. These standards set out overall policy and goals. The General Guidelines (April 2007) for all projects are organized as shown in ***Figure 19***.



***Figure 19: IFC HSE Guidelines[14]***

[14] International Finance Corporation (IFC)

Most of these general guidelines are not applicable to GalaxyCo's interest and the environmental and social due diligence associated with the gas and NGL pipelines. For example, the pipelines themselves do not have routine air emissions (however, emissions would occur in the event of a leak) or contribute to ambient air quality concerns and the pipelines themselves do not consume energy so the energy conservation GIIP is not applicable. Upon detailed review of the guidelines, the only GIIPs believed to be applicable are listed below.

- 1.5 Hazardous Materials Management
- 2. Occupational Health and Safety
- 2.1 General Facility Design and Operation
- 2.2 Communication and Training
- 2.3 Physical Hazards
- 2.4 Chemical Hazards
- 2.7 Personal Protective Equipment (PPE)
- 2.8 Special Hazard Environments
- 2.9 Monitoring
- 3. Community Health and Safety
- 3.1 Water Quality and Availability
- 3.2 Structural Safety of Project Infrastructure
- 3.3 Life and Fire Safety (L&FS)
- 3.4 Traffic Safety
- 3.5 Transport of Hazardous Materials
- 3.6 Disease Prevention
- 3.7 Emergency Preparedness and Response
- 4. Construction and Decommissioning
- 4.1 Environment

- 4.2 Occupational Health & Safety
- 4.3 Community Health & Safety.

Within each of these guidelines, many of the details are not applicable to the static main gas and NGL pipelines. For example, in 2.3 Physical Hazards HSE criteria exists for Rotating and Moving Equipment, Noise, Vibration, Electrical, Welding/Hot Work, Industrial Vehicle Driving and Site Traffic, Ergonomics, Repetitive Motion, Manual Handling, Working at Heights, and Illumination. The only one applicable to the gas and NGL lines is Welding/Hot Work. Welding and Hot Work standards would apply when ADNOC is performing a project to replace pipeline segments during the term of GalaxyCo's partnership agreement as the sections of pipeline are welded together.

The overall guidelines 2.0 Occupational Health and Safety and 3.0 Community Health and Safety address health and safety issues with the workforce as well as local communities. As described previously, ADNOC has a strong commitment to HSE and a effective HSEMS that is codified into a set of COPs. As part of this assessment, the details of the IFC Guidelines were compared to the ADNOC COPs and implementation of HSE programs. ADNOC is compliant with the IFC GIIPs specified.

Regarding Guideline 4. Construction and Decommissioning: the details of this section apply to ADNOC when replacing gas and NGL pipelines where they will have to both construct new lines as well as decommission the existing assets. As such, a detailed review of the approach to be used cannot be made against the IFC GIIP. However, the general approach ADNOC will use when performing these projects is as follows:

- Engineering design will be performed for the new lines and capital projects will be initiated that include the costs of design, construction, and decommissioning.
- To avoid disruption of gas or NGL flow, the new lines will be constructed adjacent to the existing lines.
- At completion of the construction and commissioning phases, the lines will be cut and tied into the existing pipeline networks.
- After tie-in is complete, the old lines will be decommissioned. Verbal information provided by ADNOC suggests that decommissioning is performed on a case by case basis. If decommissioning is due to a line no longer in service, but it has not reached its end of life, ADNOC companies are asked if they could utilize the line(s), in which case the asset(s) are transferred. If decommissioning is due at end of life or replacement, AGP would issue a tender to demolish the decommissioned line after proper isolation and purging. It was suggested that assets should not be abandoned in place and that they would be removed and sold for salvage value. However, where this is difficult such as at a road crossing where open cut is not allowed, it will be grouted and filled with cement.

- Per ADNOC's legal department, at the time the lines are considered abandoned-in-place, the ownership of the lines in the AssetCo stake will be transferred to ADNOC. Therefore, no long-term risk exists to GalaxyCo stemming from decommissioned pipelines.

Based on ADNOC's well formulated HSE COPs, it is presumed that the detailed plans and implementation will maintain compliance with the IFC GIIP. From GalaxyCo's risk assessment standpoint, any new line construction will be 100% the responsibility of ADNOC and AssetCo is not a part of the ownership until the new lines are commissioned into service and transferred into AssetCo's portfolio.

In addition to the General Guidelines, the IFC has industry specific standards. The IFC has a standard for Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development (April 2007)[15]. The EHS Guidelines for Onshore Oil and Gas Development include information relevant to seismic acquisition, exploration and production drilling, development and production activities, transportation activities including pipelines, other facilities including pump stations, metering stations, pigging stations, compressor stations and storage facilities, ancillary and support operations, and decommissioning. A complete review of ADNOC's gas and NGL pipelines was performed against this standard and found to be compliant.

***Assessment:*** The World Bank Environmental and Social Framework[16] was finalized and put into effect on October 1, 2018. The complete framework consists of 10 standards shown in ***Figure 20***. The first eight (8) environmental and social standards (ESS) are directly aligned with the IFC Sustainability Framework performance standards. ADNOC's compliance with these standards is described above and is not repeated here for brevity. Only compliance with Standards 9 and 10 are described herein.

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15 https://www.ifc.org/wps/wcm/connect/f0167aa2-edd2-4b46-aeb6-b2935a9e6c95/Final%2B-%2BOnshore%2BOil%2Band%2BGas%2BDevelopment.pdf?MOD=AJPERES&CVID=jkD2DAU&id=1323153172270

16 http://pubdocs.worldbank.org/en/837721522762050108/Environmental-and-Social-Framework.pdf

5. Projects supported by the Bank through Investment Project Financing are required to meet the following Environmental and Social Standards:

- **Environmental and Social Standard 1:** Assessment and Management of Environmental and Social Risks and Impacts;
- **Environmental and Social Standard 2:** Labor and Working Conditions;
- **Environmental and Social Standard 3:** Resource Efficiency and Pollution Prevention and Management;
- **Environmental and Social Standard 4:** Community Health and Safety;
- **Environmental and Social Standard 5:** Land Acquisition, Restrictions on Land Use and Involuntary Resettlement;
- **Environmental and Social Standard 6:** Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- **Environmental and Social Standard 7:** Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities;
- **Environmental and Social Standard 8:** Cultural Heritage;
- **Environmental and Social Standard 9:** Financial Intermediaries; and
- **Environmental and Social Standard 10:** Stakeholder Engagement and Information Disclosure.

***Figure 20: World Bank Environmental and Social Framework***[17]

**Environmental and Social Standard 9 – Financial Intermediaries:** This standard recognizes that strong domestic capital and financial markets and access to finance are important for economic development, growth and poverty reduction. The World Bank is committed to supporting sustainable financial sector

[17] World Bank Environmental and Social Framework

development and enhancing the role of domestic capital and financial markets. This standard applies to Financial Intermediaries (FI) that receive financial support from the World Bank.

FIs include public and private financial services providers including national and regional development banks, which channel financial resources to a range of economic activities across industry sectors. Financial intermediation also includes provision of financing or guarantees by FIs to other FIs. For the purposes of this ESS, the term “FI subproject” refers to projects financed by FIs with support from the World Bank. Where the project involves on-lending by the FI to another FI, the term “FI subproject” will include the subprojects of each subsequent FI. Given the scope of this project, this ESS does not apply to ADNOC because ADNOC is the direct recipient of the funding and is not an intermediary.

**Environmental and Social Standard 10 – Stakeholder Engagement and Information Disclosure:** This standard recognizes the importance of open and transparent engagement between the financial recipient and project stakeholders as an essential element of good international practice. Effective stakeholder engagement can improve the environmental and social sustainability of projects, enhance project acceptance, and make a significant contribution to successful project design and implementation. Financial recipients must engage with stakeholders throughout the project life cycle, commencing such engagement as early as possible in the project development process and in a timeframe that enables meaningful consultations with stakeholders on project design. The nature, scope and frequency of stakeholder engagement will be proportionate to the nature and scale of the project and its potential risks and impacts. Financial recipients must engage in meaningful consultations with all stakeholders. Financial recipients must provide stakeholders with timely, relevant, understandable and accessible information, and consult with them in a culturally appropriate manner, which is free of manipulation, interference, coercion, discrimination and intimidation. This ESS must be read in conjunction with ESS1. Requirements regarding engagement with workers are found in ESS2. Special provisions on emergency preparedness and response are covered in ESS2 and ESS4. In the case of projects involving involuntary resettlement, Indigenous Peoples or cultural heritage, the Operator will also comply with the special disclosure and consultation requirements described in ESS5, ESS7, and ESS8.

Consistent with the description of ADNOC compliance with the eight (8) IFC performance standards provided above, ADNOC likely did not perform stakeholder engagement early, when some of the pipelines were initially installed in the early 1980s. Similarly, the World Bank standards did not exist at that time either. However, as ADNOC matured and started developing its detailed HSE programs, stakeholder involvement and information disclosure became a part of their processes and procedures. Therefore, regarding any partnerships in the Gas and NGL Pipelines that exist today and subject to any future agreement with the AssetCo, ADNOC, is considered to be in compliance with the World Bank Environmental and Social Framework Standard 10.

No additional standards, guidelines or policies have been provided for review.

## 6 References

We had access to extensive ADNOC internal documents and information on the assets. For brevity, the references herein only site the external sources.


1. https://www.oshad.ae
2. Pipeline Tracking List developed by Ryder Scott to accumulate data from numerous sources provided.
3. International Petroleum Industry Environmental Conservation Association (IPIECA)
4. IPIECA Tiered Preparedness and Response
5. Environmental Agency - Abu Dhabi
6. International Finance Corporation (IFC)
7. International Finance Corporation: Sustainability Framework Performance Standard 1, Assessment and Management of Environmental and Social Risks and Impacts
8. International Finance Corporation: Performance Standards on Environmental and Social Sustainability
9. International Finance Corporation: Environmental, Health, and Safety General Guidelines
10. International Finance Corporation: Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development
11. Gulfnews article: Shaikh Zayed in Quotes
12. UAE Ministry of Culture & Knowledge Development
13. The United Nations Educational, Scientific and Cultural Organization - UAE
14. The World Bank Environmental and Social Framework

## 7 Disclaimer

The Consultant Team followed the explicit instructions provided by Galaxy Pipeline Assets Bidco Limited (referred herein as GalaxyCo) for the scope of work. At GalaxyCo's request, accordingly the Consultant Team does not opine on the risks and opportunities associated with infrastructure upstream or downstream of the assets included in the study. The team also did not review the oil and gas reserves and resources potentially transported through the pipelines. The Consultant Team was not provided the details of the terms or parameters of any financial transaction nor did we consider any potential revenues and other parameters that may affect or have an impact on the determination of pipeline tariffs.

Assessments included herein may be revised in the future as additional engineering data becomes available. Assessments included herein may also be revised due to other factors such as changes in economic conditions, results of future operations, effects of regulation by governmental agencies, or geopolitical or economic risks.

The data utilized in this analysis was furnished to the Consultant Team by ADNOC. We accepted the data provided to us as factual. We did not independently make any calculations or verification. In cases of discrepancies between data sources, ADNOC informed us as to which values were correct.

The review was limited to a desktop review of the documents provided as well as interviews conducted at ADNOC's headquarters. No field visits were made during this assessment.

This document is issued pursuant to an Agreement between Ryder Scott and GalaxyCo, which sets forth the entire rights, obligations and liabilities of those parties with respect to the content and use of the document. Reliance by any other party on the contents of the document shall be at the other party's own risk. Ryder Scott makes no warranty or representation, expressed or implied, to any other party with respect to the accuracy, completeness, or usefulness of the information contained in this document. Ryder Scott assumes no liabilities with respect to any other party's use of, or damages resulting from such use of any information, conclusions, or recommendations disclosed in this document. Any investor or other third party, before receiving our report, must agree to the terms and conditions provided in the "Form of Reliance" per our engagement with GalaxyCo.

## 8 Standards of Independence and Professional Qualifications

Ryder Scott is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1937. We have approximately eighty engineers and geoscientists on our permanent staff. By virtue of the size of our firm and the large number of clients for which we provide services, no single client or job represents a material portion of our annual revenue. We do not serve as officers or directors of any privately-owned or publicly traded oil and gas company and are separate and independent from the operating and investment decision-making process of our clients. This allows us to bring the highest level of independence and objectivity to each engagement for our services.

Ryder Scott actively participates in industry related professional societies and organizes an annual public forum focused on the subject of reserves evaluations and SEC regulations. Many of our staff have authored or co-authored technical papers on the subject of reserves related to topics. We encourage our staff to maintain and enhance their professional skills by actively participating in ongoing continuing education.

Prior to becoming an officer of the Company, Ryder Scott requires that staff engineers and geoscientists have received professional accreditation in the form of a registered or certified professional engineer's license or a registered or certified professional geoscientist's license, or the equivalent thereof, from an appropriate governmental authority or a recognized self-regulating professional organization. Regulating agencies require that, in order to maintain active status, a certain amount of continuing education hours be completed annually, including an hour of ethics training. Ryder Scott fully supports this technical and ethics training with our internal requirement mentioned above.

We are independent petroleum engineers with respect to Galaxy Pipeline Assets Bidco Limited. Neither we nor any of our employees have any financial interest in the subject properties, and neither the employment to do this work nor the compensation is contingent on our estimates of reserves for the properties which were reviewed.

The professional qualifications of the undersigned, the technical person primarily responsible for reviewing and approving the reserves information discussed in this report, are included as an attachment to this letter.

## 9 Terms of Usage

This report was prepared for the exclusive use and sole benefit of GalaxyCo and may not be put to other use without our prior written consent for such use. Any beneficiary or investor, before it has been provided our report must agree to the terms and conditions provided in the “Form of Reliance” per our engagement with Galaxy Pipeline Assets Bidco Limited (GalaxyCo) for the support of Project Galaxy.

We have provided GalaxyCo with a digital version of the original signed copy of this report letter. In the event there are any differences between the digital version and the original signed report letter, the original signed report letter shall control and supersede the digital version. Please contact us if we can be of further service.

Very truly yours,

**RYDER SCOTT COMPANY, L.P.**

TBPE Firm Registration No. F-1580

Herman G. Acuña, P.E.

TBPE License No. 92254

Executive Vice President

Sandeep Khurana, P.E.

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Head Advisor - Midstream

## 10 Abbreviations

| | |
|---|---|
| 3-LPE | 3 Layer Polyethylene |
| 3-LPP | 3 Layer Polypropylene |
| ADCO | Abu Dhabi Company for Onshore Oil Operations (Also called ADNOC Onshore) |
| ADNOC | Abu Dhabi National Oil Company |
| AGP | ADNOC Gas Processing (Operating Company) |
| ALARP | As Low As Reasonably Practicable |
| API | American Petroleum Institute |
| ASG | ADNOC Sour Gas |
| ASME | The American Society of Mechanical Engineers |
| ASTM | American Society for Testing and Materials |
| BPD | Barrels Per Day |
| GalaxyCo | Galaxy Pipeline Assets Bidco Limited |
| CAPEX | Capital Expenditure |
| COPs | Code of Practice or Practices |
| CP | Cathodic Protection |
| CPP | Central Processing Plant |
| CTE | Coal Tar Enamel |
| DGS | Design General Specifications |
| D/t | Pipe Diameter to Wall Thickness ratio |
| EF | Escalating Factor |
| EFC | Escalating Factor Control |
| E&P | Exploration and Production |
| EP | Engineering Practice |

| | |
|---|---|
| EPC | Engineering, Procurement and Construction |
| ERW | Electric Resistance Weld |
| ES | Engineering Standard |
| ESD | Emergency Shutdown |
| FFS | Fit-For-Service |
| GASCO | ADNOC Gas Processing (formerly) |
| GOR | Gas to Oil Ratio |
| GMP | Gas Master Plan |
| GS | Gathering Station |
| HDD | Horizontal Directional Drilling |
| HF-ERW | High Frequency-Electric Resistance Welding |
| HSE | Health, Safety, Environment |
| IAG | Integrated Asset Group |
| IFC | International Finance Corporation |
| ILI | In-Line Inspection |
| IM | Integrity Management |
| IN | Inch |
| KP | Kilometer Point (or Post) |
| KPI | Key Performance Indicator |
| LOPC | Loss of Primary Containment |
| LSAW | Longitudinal Submerged Arc Welding |
| MBOPD | Thousand ($10^3$) Barrels of Oil per Day |
| MESC | Material and Equipment Standards and Code |
| MMBOPD | Million Barrels of Oil per day |
| MMscfd | Million Standard Cubic Feet per Day |
| MOC | Material of Construction (alternatively Management of Change) |

| | |
|---|---|
| MP | Mile Point (or Post) |
| NACE | National Association of Corrosion Engineers |
| NGL | Natural Gas Liquids |
| NMS | New Manifold Station |
| OPCO | Operating Company |
| OPEX | Operating Expenditure |
| P&ID's | Piping and Instrumentation Diagrams |
| QRA | Quantitative Risk Assessment |
| RLA | Remnant Life Assessment |
| RVP | Reid Vapour Pressure |
| SAW | Submerged Arc Welding |
| SCADA | Supervisory Control and Data Acquisition |
| SCC | Stress-Corrosion Cracking |
| SMC | Supervisory, Monitoring & Control System |
| SMLS | Seamless |
| SMYS | Specified Minimum Yield Strength |
| TH | Thamama |
| TPD | Tonnes Per Day |
| TVP | True Vapour Pressure |
| UKAS | United Kingdom Accreditation Service |
| UG | Under Ground |

**ANNEX B2: INDEPENDENT TECHNICAL DUE DILIGENCE REPORT ADDENDUM**

# Galaxy Pipeline Assets Bidco Limited ("GalaxyCo")

**Addendum for Technical and HSE Due Diligence Study**

**Associated with Abu Dhabi National Oil Company (ADNOC) Certain Pipelines and Processing Plants in United Arab Emirates**

**As of**

**February 5, 2021**


Herman G. Acuña, P.E.
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Executive Vice President

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## 1 Executive Summary

This report is an addendum to the October 16, 2020 technical and HSE due diligence report (the "Main Report") of selected Abu Dhabi National Oil Company (ADNOC) operated Sales Gas, Injection, and NGL pipelines in the United Arab Emirates (UAE) to facilitate a debt offering for Galaxy Pipeline Assets Bidco Limited (referred herein as GalaxyCo). The objective of this addendum report is to provide an update as of February 5, 2021 on ADNOC pipeline plans, forecasted throughputs, operations, maintenance, response to the COVID-19 pandemic, and Health, Safety, and Environmental (HSE) aspects since the last evaluation completed as of March 15, 2020.

Ryder Scott Company, the technical consultant ("Consultant"), has based this due diligence on data collected and discussion with the ADNOC team from late December 2020 up to January 31, 2021. We, the Consultant, interviewed the ADNOC technical team, operations team and HSE personnel via video conferences and numerous targeted discussions regarding these assets. We did not perform a physical site visit; however, wherever deemed necessary ADNOC provided open access to its internal management systems, databases, and ongoing daily operations as well as relevant updates so we could complete this assessment.

We find ADNOC's COVID-19 pandemic response well-planned at the operations site and for the support staff at the head offices. ADNOC issued guidelines and standard operating procedures (SOPs) in line with the Government Policies to ensure employee safety and business continuity. As a result, there were no disruptions to the flow through the pipelines. ADNOC delayed a few in-line inspections (ILI) for low risk pipelines scheduled in 2020 to 2021 due to HSE logistic constraints. We conclude that such a delay is prudent for safety of the personnel, and these delays do not affect the long-term performance of these assets. ILI activity is performed during normal operation and does not impact the flow volumes through the pipelines.

ADNOC's HSE performance in 2020 was exemplary and slightly improved from the previous years. There were no major accidents or loss of primary containment (LOPC) reported in the pipelines. In addition, there were no gas leaks to report. ADNOC followed its 2020 HSE protocols in the field and similar plans are in place for 2021. According to its HSE guidelines, ADNOC carried out emergency response drills in the field. As for leak detection, ADNOC is implementing projects to install a state-of-the-art leak detection system, which exceeds standard industry practices.

We reviewed the ability of the Sales Gas, Injection, and NGL pipelines to deliver flow per ADNOC's 2021 to 2025 production forecast provided at the gas processing plant inlets. The capacity analysis results confirmed all lines are able to deliver the forecasted production volumes from the updated Gas Master Plan (GMP). As for the Injection lines, the forecasted volumes have not changed significantly since the Main Report and the conclusion that Injection lines have adequate capacity is still valid. In addition, we reviewed the reliability and availability of the gas processing plants (GPP) and we find them in line with the industry norms.

We reviewed the operations and maintenance records of the Galaxy Pipelines. ADNOC has been maintaining these lines as per its integrity management system (IMS) and industry standards. We conclude that there are no integrity issues. The in-line inspections (ILI) performed on the pipelines closely followed the industry standard and ADNOC practices. Wherever necessary, ADNOC has performed maintenance repairs and updated the risk assessment of the pipelines. The remaining life assessment (RLA) shows ample life exists for all the pipelines except for two: Sales Gas line #11 and Injection line #9 for which ADNOC has replacement projects underway.

We also reviewed ADNOC's metering systems, leak detection and response, and miscellaneous projects undertaken to ensure continuing confidence of flow through the pipelines. ADNOC met metering requirements for custody transfer through the pipeline system in 2020 by calibrating all meters. In addition, ADNOC will upgrade all Sales Gas meters to the custody transfer requirements. ADNOC's leak detection and response system is adequate. ADNOC has proactively chosen in 2020 to continue upgrading its leak detection to state-of-the-art technology. ADNOC continues to undertake miscellaneous projects to debottleneck gas processing plants (GPP) feeding the pipeline system and enhance pipeline related facilities.

In summary, ADNOC has been a prudent operator. ADNOC has satisfied all technical requirements during 2020 and had an exemplary HSE 2020 performance, in spite of the COVID-19 pandemic, for the Galaxy Pipelines.

## 2 Scope and Review Process

The objective of this report is to provide an update on ADNOC pipelines asset plans, forecasted throughputs, operations, maintenance, response to COVID-19 pandemic and Health, Safety, and Environmental (HSE) aspects since the last evaluation completed as of 15 March 2020. In March 2020, we wrote two reports as a result of our evaluation: One for the Sales Gas and NGL lines, and the other for the Injection lines. We combined these evaluations into one report in October 2020 (referred herein as “Main Report”).

The Consultant’s scope of work included the following:

- Assess adequacy of COVID-19 Response and HSE Performance
    - Discuss ADNOC HSE policies and implementation thereof for COVID-19 with focus on risk and mitigation measures in place
    - Discuss changes made to the field operations and its impact on the assets
    - Provide a review of 2020 HSE key performance indicators (KPI) to ensure they are in line with the industry performance
- Ensure Pipelines and Processing Plants have the capability to deliver and process any updates to the planned forecast production volumes
    - Confirm previously identified constraints and plans to rectify those constraints are being addressed accordingly
    - Analysis of 2020 flow volumes to confirm average conversion factors from previous assessment are still valid
    - Analysis of pipeline capacity in case the updates to forecast production volumes differs from the previous profile
- A review of operations and maintenance records
    - Ensure that ADNOC has implemented the required inspection, maintenance, and repair of the pipelines per its Integrated Management System (IMS)
    - Provide an update on remaining life assessments (RLA) of the pipelines with specific focus on pipelines having low RLA to ensure adequate actions such as repairs and replacement plans were performed
    - Check regular operations to ensure emergency drills and responses on the assets

- Miscellaneous aspects
    - Provide latest on technical specifications and locations of Sales Gas and NGL metering updates and recalibration made in 2020
    - Update on major projects such as implementation of leak detection system, debottlenecking of Gas Plants, upgrade of pipelines facilities, etc.

We as the Consultant team carried out planning and execution of the above scope from late December 2020 to January 31, 2021. We collected required 2020 operations data from ADNOC. We provided targeted questions for data collection and interviewed ADNOC technical team, operations team and HSE personnel via video conferences. We did not perform a physical site visit; however, whenever deemed necessary ADNOC provided open access to its internal management systems, databases, and visual exhibits.

The Main Report provides Galaxy Pipeline asset details covered in the scope of work here. The pipeline network system in **Figure 1** is extracted from the Main Report for reference.

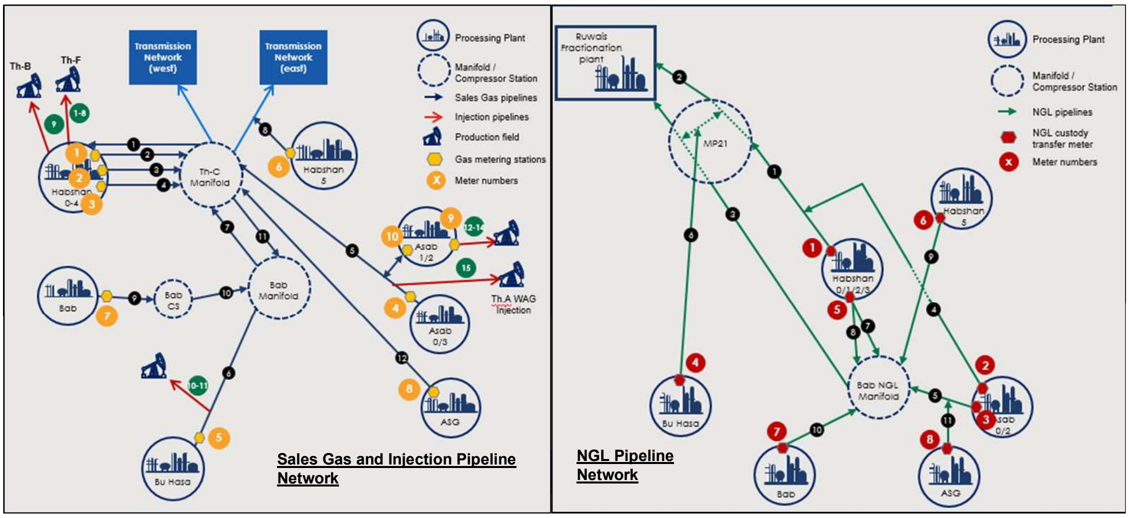


***Figure 1. ADNOC's Galaxy Pipeline Network Schematic***

The pipeline network schematic provides the pipeline numbers, flow direction, and related nomenclature as referenced in throughout the report herein.

## 3 COVID-19 and HSE Performance

### 3.1 Summary

ADNOC's response to the COVID-19 pandemic has been exemplary from both a personnel safety and business continuity perspective. ADNOC issued various guidelines and standard operating procedures (SOPs) for the operating groups within the company to follow. In all cases, Government Policies took precedence. ADNOC adjusted daily operations in the field accordingly in response to the pandemic and there were no visible disruptions and impact to the flow.

HSE performance in 2020, as concluded from key performance index, was slightly better than previous years. There were no major leaks and/or loss of containments reported for Galaxy Pipelines. ADNOC implemented its routine 2020 HSE action plan in the field successfully and has a similar plan already in place for 2021.

### 3.2 COVID-19 Response and Impact

ADNOC has staffed operations adequately to ensure that it continues to deliver on commitments to customers over the long term. In response to the COVID-19 pandemic, ADNOC has the majority of non-operational staff working remotely. ADNOC has effectively implemented business continuity plans for critical operational roles. ADNOC is committed to protecting the health and ensuring the safety of personnel working at or coming to their facilities, along with maintaining the continuity of its business.

ADNOC formed four (4) teams at the start of the pandemic as follows:

- *Executive Leadership Team:* This is led by group CEOs to decide on critical items.
- *CV-19 Alignment Team*: This to ensure alignment on all aspects across functions as endorsement authority, that is, communications, technology, HSE, etc.
- *ADNOC Business Continuity Team*: This team oversees decisions and issues in regards to operational changes such as rotation of employees and developed guidelines specific to those issues.
- *ADNOC Health Advisory Team*: This team provides guidance and issues Standard Operating Procedures (SOPs) across the Group that cover precautionary measures (i.e. disinfection protocols, reporting protocols, awareness material, etc.) and alignment with the Government entities.

ADNOC corporate issued a guidance document titled "Business-Critical Teams Isolation and Redundancy to Ensure Continuity of Operations" to ensure the continuity of operations by providing a suitable mechanism and/or a recovery strategy to prepare for the pandemic. Based on this guideline, they divided personnel into at least two teams to ensure additional redundancy for business continuity purposes. The teams were divided based on shift and shift change over, and team swap and rotational model. In addition, within teams and rotations ADNOC implemented measures such as social distancing, sanitizations, safe transportation, and safe handover.

ADNOC issued guidance for "Site Personnel Management Plan". ADNOC Health Advisory Team issued COVID-19 SOPs in order to assist ADNOC Group companies with managing the rapidly evolving situation in relation to COVID-19, including, particularly, those relating to sites and their operations. Based on this guideline, a review of the operational personnel on site was performed. ADNOC groups created a list of personnel based on "attend in-person" at sites for critical business continuity reasons and other personnel who do not require in-person presence at site to perform their roles. ADNOC categorized personnel as follows:

- Essentials subdivided into Critical Staff or Essential and Non-Critical Staff;

- and personnel who need to attend in-person at Sites for critical business continuity reasons.

ADNOC ensured compliance with all issued government instructions and applicable directives as well as the documents issued by ADNOC corporate from time to time. In all cases, employees were to foremost adhere to Government policies. In accordance with the ADNOC Group Disciplinary Policy, failure of an ADNOC Group Employee to comply with the various documents, including the precautionary measures, as issued from time to time may be considered a disciplinary matter with consequences (following investigation) leading to disciplinary action up to and including dismissal.

In case precautionary measures fail and lead to a risk of compromise to any of the personnel, ADNOC has contingency plans in place. These plans include measures such as longer rotation periods at all sites in order to cater to the required quarantine period prior to returning to work.

ADNOC prepared separate guidance for its Head-Office personnel. ADNOC had a proactive and responsible response by moving certain Head-Office based employees to remote working. An eligibility criterion to work from office was developed with strict guidelines in the offices on health safety protocols. A phased approach for the continued expansion of the number of Head-Office based individuals working in the offices has been developed and is implemented following Government directives and COVID-19 pandemic conditions in the country.

ADNOC tracked and continues to track the following Key Performance Indicators (KPI) as follows:

- Positive cases
- Personnel under quarantine and/or isolation
- Number of recovered cases
- Number of SOPs released
- Number of awareness packages released
- Number of vaccinated personnel

The KPI includes number of Vaccinated Personnel as of December 2020 when Abu Dhabi became one of the first few countries to approve and administer COVID-19 vaccines.

ADNOC's Executive Management Team, Group Leader Level, and Group Coordinator Level monitors and reviews these KPI to make operations decisions. The routine items covered during the KPI discussions are as follows:

- Infection in business critical positions
- Infection rates by location and overview of UAE
- Contractor camp audit and infection status
- Projections of when rates may peak and when they reach "isolated transmission status"
- Analysis of infection source (on off duty – to test if quarantine and shielding precautions are working)
- Review of external case development outside UAE for lessons to apply inside

A few critical decisions made by the KPI monitoring and reviewing team were that quarantine and testing for all operations personnel returning from outside UAE will be required for near future. ADNOC also worked with its joint venture IOCs (International Oil Companies, such as Total, ExxonMobil, Shell, etc.) to coordinate travel plans and incorporated their policy input and practices in operations.

In addition, ADNOC implemented a "Close Contact Tracing & Surveillance Protocol". This guidance is included for the relevant parties in the organization on how to conduct close contact tracing and surveillance as a proactive precautionary measure.

As for daily site operations, there were no disruptions to the flow reported due to lack of personnel. The operations and maintenance as discussed later in other sections was adequate and performed as planned. ADNOC operations recognized a few long-term maintenance issues such as in-line inspections (ILI) that were not critical, and delayed them from 2020 to 2021 due to the HSE related field logistics.

### 3.3 <u>HSE Performance</u>

ADNOC considers HSE as a top priority for management and staff. Health and Safety is a high priority amongst the management and staff at headquarters. Behavioral safety culture is at par and at times ahead of its peer group in the industry. We conclude that ADNOC continued to maintain these high HSE standards and had an exemplary 2020 performance.

ADNOC follows API RP 754 process safety guidelines in operation, wherein definition of major incidents is as follows:

- A Tier 1 Process Safety Event (T-1 PSE) is a loss of primary containment (LOPC) with the greatest consequence as defined by API RP 754. A T-1 PSE is an unplanned or uncontrolled release of any material, including non-toxic and non-flammable materials (e.g. steam, hot water, nitrogen, compressed CO2 or compressed air), from a process that results in one or more of the consequences listed in AP RP 754.
- A Tier 2 Process Safety Event (T-2 PSE) is a LOPC with lesser consequence. A T-2 PSE is an unplanned or uncontrolled release of any material, including non-toxic and non-flammable materials (e.g. steam, hot water, nitrogen, compressed CO2, or compressed air), from a process that results in one or more of the consequences listed in API RP 754 and is not reported as a Tier 1 PSE.

In 2020, ADNOC reported no major incidents and/or loss of product containment as Tier 1 or Tier 2 with regard to the Galaxy Pipelines. In general, the process safety event (PSE) for Tier 1 and Tier 2 for ADNOC operations has been far better than the set yearly target and the previous years.

ADNOC reported no leaks in 2020. Leak detection on NGL pipelines is via detection of pressure loss, followed by mass balance. Leak detection on Sales Gas and Injection lines is by pressure & temperature anomalies with some areas using mass balance measurements as backup. These are standard industry practices. In 2020, ADNOC has further progressed its projects to install pipeline leak and detection system (PLDS). This is to bring the system up to par with the latest and best technologies available, beyond the current industry standards. This will include fiber optic systems employing distributed temperature sensing (DTS) capable of detecting small leaks immediately and pinpointing their location with great accuracy. High fidelity fiber optic systems are used to monitor acoustics, strain, vibrations, and temperature in order to not only detect leaks, but third party intrusions, and ground shifts. More details on the PLDS are in the later sections.

ADNOC records TRIR, which is number of Total Recordable Injuries and Illness per million hours worked. TRIR performance has been in line with past performance with slight improvements.

At the field level, ADNOC is engaging its staff to a high degree with mock drills, policies, and codes of practice. As per the 2020 HSE Action Plan, ADNOC operations planned and conducted Major Accident Hazard (MAH) drills. In addition, ADNOC conducted four tabletop exercises (one per quarter) and twelve mini-mock drills (one per month). These drills were performed at the plants and manifolds supplying gas and NGL to the pipeline network system.

Specifically, for the Galaxy Pipelines, ADNOC performed a mock emergency drill for the 24-inch Bu Hasa to Bab Gas pipeline (Sales Gas line #6). MAH drills for the Galaxy pipelines are also included in the 2021 HSE Action plan.

# 4 Capacity Analysis

## 4.1 Summary

This section discusses the ability of the Sales Gas, Injection, and NGL pipelines to deliver the most updated production forecast. In the March 15, 2020 report, we provided the capacity analysis of the pipelines through 2040 based on ADNOC's Gas Master Plan (GMP) forecast made in 2019. At year-end 2020, ADNOC published a new five-year business plan with an updated production forecast. In this report, we have utilized ADNOC's provided 2020 business plan with production forecast for 2021 to 2025 at the gas processing plants (GPP) inlets for the capacity analysis. ADNOC also provided separately a forecast of Injection gas usage at its various fields.

The ADNOC production forecast is for the raw gas entering the GPP. ADNOC confirmed historical average conversion factors to convert raw gas in the plant to the gas and NGL production entering into the pipeline system remained unchanged with the exception of the ASG plant. Using these conversion factors and mass and balance equations, we calculated the flow throughput in the pipeline system and eventually for each individual pipeline.

In comparing the forecasted throughput to the pipelines design capacity, we concluded all the Sales Gas, Injection, and NGL lines were able to deliver forecasted GMP volumes from 2021 to 2025. Volumes forecasted in the GMP are higher than the volumes contractually agreed in the Baseline Supply Forecast (BSF). All lines can deliver volumes forecasted in the GMP, and so all lines can deliver the BSF volumes.

## 4.2 Methodology

The study basis is ADNOC's GMP (Gas Master Plan) forecasted rates of raw gas feed at the inlet of the GPP for 2021 to 2025. Total demand for ADNOC's natural gas, from its GMP, is higher than the contractually agreed Baseline Supply Forecast (BSF) flowing through the pipelines. In summary, the study basis using ADNOC's GMP is a conservative approach for the due diligence.

ADNOC confirmed average historical conversion factors to calculate gas and NGL at the plant outlet remain unchanged for 2020. **Table 1** shows these conversion factors.

| Description | Unit | Factor |
|---|---|---|
| GPP to Sales Gas | MMscfd | 0.69 |
| GPP to NGL | TPD | 5.35 |

***Table 1. Gas Processing Plant Conversion Factors.***

A conversion factor of 0.69 for Sales Gas entails that for every 1 MMscfd of raw inlet gas, 0.69 MMscfd of Sales Gas is produced. The average conversion factor for all gas processing plants as given by ADNOC is 0.60 with range of plus and minus 9%. For all gas processing plants besides Shah ASG, we used the higher value of 0.69 to conservatively test the system capacity. Since the production at the Shah ASG is sour, we used an adjusted conversion factor to reflect historical data.

Similarly, for the NGL, the conversion factor of 5.35 entails that for every 1 MMscfd of raw inlet gas, 5.35 TPD of NGL is produced. Because of the high sulfur concentration in raw acid gas incoming to Shah ASG, we used an adjusted conversion factor to reflect historical data.

We used ADNOC's production forecast and applied conversion factors to calculate the volumes of Sales Gas and NGL entering the pipeline system. ADNOC separately provided Injection gas forecast from 2021 to 2025. Using a mass and balance equation with an understanding of pipeline network flow, we calculated the amount of flow throughput in each pipeline. We compared these forecasted flow to the design pipeline capacities. The results of the capacity analysis are discussed in the following sections.

4.3 Sales Gas Pipelines

**Table 2** provides a summary of maximum forecasted flow over 2021 to 2025 versus the design capacity of the pipeline.

| Line Number | Origin | Destination | Line Size [inch] | Maximum Required Capacity 2021 - 2025 [MMscfd] | Design Capacity [MMscfd] |
|---|---|---|---|---|---|
| 1 | Thamama-C manifold | Habshan (0-4) | 20 | 243 | 270 |
| 2 | Habshan (0-4) | Thamama-C manifold | 30 | 237 | 405 |
| 3 | Habshan (0-4) | Thamama-C manifold | 42 | 680 | 1162 |
| 4 | Habshan (0-4) | Thamama-C manifold | 42 | 897 | 1533 |
| 5 | Thamama-C manifold | Asab | 36 | 390 | 640[1] |
| 6 | Bu Hasa | Bab manifold | 24 | 243 | 370 |
| 7 | Bab manifold | Thamama-C manifold | 24 | 243 | 298 |
| 8 | Habshan 5 | Transmission network | 30 | 725 | 1200[2] |
| 9 | Bab plant | Bab compressor station | 16 | 103 | 106 |
| 10 | Bab compressor station | Bab manifold | 10 | 103 | 106 |
| 11 | Thamama-C manifold | Bab manifold | 30 | N/A[3] | 405 |
| 12 | Shah ASG | Thamama-C manifold | 36 | 706 | 755[4] |

***Table 2. Sales Gas Pipelines: Maximum Required Capacity versus Design Capacity.***

Based on our analysis, each pipeline has capacity to handle the maximum forecasted flow. At the forecasted production rates provided by ADNOC, there are no technical capacity limitations for the Sales Gas lines. Notably, line #9 and line #10 do reach 97% of their design capacity in 2025 at 103 MMscfd flow for each pipeline. The future year's forecast will have to be closely monitored to see that the design capacity for these lines is sufficient.

Sales gas line #12 has a maximum capacity of 755 MMscfd, and can handle all forecasted flows. However, at its current configuration, the Shah ASG plant is bottlenecked at its outlet at 656 MMscfd. ADNOC has planned by year-end 2022 to increase capacity at the outlet of the Shah ASG processing plant with the addition of a 24" loop line from the residue gas compressor common suction and a 16" loop line from the residue compressor discharge to the Sales Gas metering skid inlet. The Shah ASG expansion will increase outlet capacity at the plant to 721 MMscfd, thereby removing this bottleneck.

[1] Gas Line #5 is capable of bidirectional flow. The rate given references flow from Asab to the Thamama-C manifold. If this line is flowing from Thamama-C to Asab, the flow rate is reduced to 357 MMscfd.

[2] 896 MMscfd is the design capacity provided by ADNOC; however, re-analysis of the operating critera show that the line can flow up to 1200 MMscfd. The re-analysis determined that the gas was clean and dry and could tolerate higher velocities and hence higher flow rates than normally allowed for in ADNOC design guidelines.

[3] Line #11 is used when demand for gas at Ruwais is high.

[4] Original design capacity for this line was 656 MMscfd; however, a re-analysis of this pipeline indicates it can flow up to 755 MMscfd under certain conditions. The re-analysis confirmed that design capacity can be 140% of the original design capacity.

### 4.4 Injection Pipelines

ADNOC provided the forecasted Injection volumes for 2021 to 2025. These forecasts did not change significantly since our last report and analysis. Based on minimal volume differentials from the last report, we conclude that Injection lines are able to handle the forecasted volumes.

ADNOC provided forecasted Injection volume data associated with the respective fields instead of individual pipelines. We performed capacity analysis for Injection lines on a field basis and grouped the relevant Injection lines together. For each field, we ensured that the total forecasted Injection volume is less than the sum of the design capacity of the lines associated for those fields. **Table 3** shows the design capacity of the Injection lines and the maximum capacity comparison per field basis.

| Line Number | Field | Origin | Destination | Line Size [in] | Length [km] | Design Capacity for pipelines [MMscfd] | Maximum Required Capacity (2021 - 2025) per Field [MMscfd] | Design Capacity per Field [MMscfd] |
|---|---|---|---|---|---|---|---|---|
| 1 | Bab | Habshan-1 | Bab (North East) | 12 | 20.6 | 253 | 973 | 2,034 |
| 2 | Bab | Habshan-1 | Bab (West) | 12 | 13.3 | 182 | | |
| 3 | Bab | Habshan-1 | Bab (South) | 12 | 14.7 | 170 | | |
| 4 | Bab | Habshan-1 | Bab (East) | 12 | 16.0 | 229 | | |
| 5 | Bab | Habshan-3 | Bab (North East) | 16 | 20.4 | 300 | | |
| 6 | Bab | Habshan-3 | Bab (West) | 16 | 19.3 | 300 | | |
| 7 | Bab | Habshan-3 | Bab (South) | 16 | 15.4 | 300 | | |
| 8 | Bab | Habshan-3 | Bab (East) | 16 | 13.6 | 300 | | |
| 9 | Bab | Habshan-1 | Bab (North East) | 12 | 20.3 | 280 | 279 | 280 |
| 10 | Bu Hasa | Bu Hasa Valve Station 1 | Bu Hasa Compressor Station Train 1 | 12 | 2.0 | 150 | 163 | 300 |
| 11 | Bu Hasa | Bu Hasa Valve Station 1 | Bu Hasa Compressor Station Train 2 | 12 | 2.0 | 150 | | |
| 12 | Asab | Asab-1/2 | Asab (South West) | 14 | 11.4 | 357 | 600 | 961 |
| 13 | Asab | Asab-1/2 | Asab (Central) | 12 | 10.1 | 345 | | |
| 14 | Asab | Asab-1/2 | Asab (North East) | 12 | 13.9 | 259 | | |
| 15 | Asab | Asab-1/2 | Th. A WAG Inj. | 12 | 1.8 | 30 | 61 | 30 |

***Table 3. Injection Lines: Maximum Required Capacity versus Design Capacity per field***

For line #1 to #8, the overall Bab field forecasted Injection volumes is below the sum of design capacities of these lines. Line #9 goes to a different part of the Bab field. The new forecasted volumes for line #9 is lower than from previous volumes, and the line has capacity to handle this flow.

For line #10 to #11, the overall Bu Hasa field forecasted Injection volumes is below the sum of design capacities of the lines.

For line #12 to #14 the overall Asab- 1/2 field forecasted Injection volumes is below the sum of design capacities of the lines.

Line #15 in Asab field serves the need separately for Injection. The line does go over its stated design capacity of 30 MMscfd in 2021 and from 2023-2025. We had re-established that this line could take a flow of up to 100 MMscfd at different operating conditions in the Main Report, and therefore, this line can handle the forecasted flow.

4.5 NGL Pipelines

**Table 4** below provides a summary of maximum forecasted flow over 2021 to 2025 versus the design capacity of the pipeline.

| Line Number | Origin | Destination | Line Size [in] | Maximum Required Capacity (2021-2025) [TPD] | Design Capacity [TPD] |
|---|---|---|---|---|---|
| 1 | Habshan-3 | MP-21 | 20 | 11,331 | 18,152 |
| 2 | MP-21 | Ruwais | 24 | 11,331 | 23,691 |
| 3 | Bab manifold | Ruwais | 30 | 31,751 | 50,814 |
| 4 | Asab-2 | 921 receiver | 16 | 5,350 | 6,412 |
| 5 | Asab-0 | Bab manifold | 24 | 7,988 | 15,253 |
| 6 | Bu Hasa | MP-21 | 16 | 2,766 | 10,409 |
| 7 | Habshan-0/1/2 | Bab manifold | 10 | 5,800 | 6,473 |
| 8 | Habshan OAG | Bab manifold | 12 | 9,000 | 10,223 |
| 9 | Habshan-5 | Bab manifold | 24 | 5,621 | 12,840 |
| 10 | Bab plant | Bab manifold | 8 | 797 | 1,736 |
| 11 | Shah ASG | To either Asab-0 (Line #5) KP 31.3 or Asab-2 (Line #4) | 16 | 4,947 | 5,311 |

***Table 4. NGL Pipelines: Maximum Required Capacity versus Design Capacity.***

Lines #1 through #10 have sufficient capacity to deliver planned production through 2025 using a conversion factor provided by ADNOC of 5.35 TPD/MMscfd (+/- 15%) for raw feed gas to NGLs. Under real conditions, different gas compositions for raw inlet feed gas to the processing plants will generate different NGL yields for equal volumes of inlet gas. However, there is sufficient spare capacity in the NGL pipeline network lines #1 through #10 to handle increased volumes if the upper bound of the conversion factor, 6.0 TPD/MMscfd, is used.

NGL line #11 has sufficient design capacity to deliver forecast production through 2025. In our analysis, we calculated the forecast production flow through this line using an adjusted conversion factor provided by ADNOC.

In 2023, the Optimum Shah Gas Expansion (OSGE) project is slated to increase the Shah Gas Plant and Shah Sulfur Station capacity to be able to process 1,450 MMscfd of raw gas. The actual forecast provided by ADNOC anticipates 1,410 MMscfd of raw gas at the Shah plant inlet. Due to processing limitations in the NGL plant $C_2$ (ethane) recovery will be reduced in NGL and increased in the Sales Gas. Using the adjusted factors, the maximum capacity encountered from 2021-2025 does not exceed the design capacity of NGL Line#11.

# 5 Operations and Maintenance

## 5.1 Summary

ADNOC has performed all necessary maintenance based on its Integrated Management System (IMS) and industry practices. We reviewed the remaining useful life of the pipelines. We confirm ADNOC has firm replacement plans for a few pipelines that are nearing the end of their useful life. We conclude that adequate risk mitigations are in place for all the pipelines. There are no major concerns to the pipeline integrity.

The salient points to note are as follows:

- Sales gas line #11 has a medium to high risk classification in the ADNOC system. Consequently, ADNOC has firm project plans to replace this line by December 2022. At the time of writing this report, the project is beginning the FEED (Front End Engineering Design) study.
- ADNOC has scheduled Injection line #9 for replacement in 2023.
- ADNOC delayed many in-line inspections (ILI) for the Sales Gas and NGL pipelines scheduled for 2020 to 2021 due to operational constraints caused by COVID-19. Activities took extra time due to ADNOC HSE protocols in place addressing COVID-19. Based on remaining life assessments, there is no negative impact to the pipeline integrity by deferring ILI (In-line inspection) to 2021. ILI activity is performed during normal operation and does not impact the flow volumes through the pipelines.
- The pipelines were fully available throughout 2020. ADNOC did have GPP planned shut downs due to the related upgrades. Besides GPP planned shutdowns, we found no major concerns with reliability and/or availability of these plants

## 5.2 General Practices

ADNOC has a complete set of operating procedures and practices in line with industry standards. ADNOC consistently and diligently applied these in its 2020 operations. We are reiterating some of the salient general practices herein to show ADNOC's effectiveness of operations and its adherence to the industry norms.

ADNOC established operating and maintenance procedures include pipeline corrosion monitoring, cathodic protection (CP) measurements, leak detection systems, and preventative maintenance and repair programs.

ADNOC follows a systematic and industry-recognized integrity management system (IMS) to ensure remaining life of the pipelines. The ADNOC pipeline IMS uses a nine-element model. Integrity barriers are provided and monitored for each pipeline threat to prevent loss of primary containment (LOPC). Threats to pipeline useful life include internal and external corrosion, fatigue and stress corrosion, operating outside of specified conditions, and third-party damage. Each threat is provided with an LOPC barrier, an escalating factor (EF), and escalating factor controls (EFC). EFC includes monitoring, measuring, surveying, maintenance plans, audits, incident investigations, mitigation, and risk assessment. If effectively maintained and monitored, this program is adequate to protect the integrity of the pipeline network.

As part of its IMS, ADNOC conducts remaining life assessments (RLA) to ensure fitness for service (FFS) and developed decommissioning or replacement plans as required.

ILI (In-Line Inspection) are smart pigging inspections performed on a regular basis for each pipeline. The survey intent is to find metal loss and other corrosion anomalies. A RBA (Risk Based Analysis) is conducted to determine the repair plan and date of next smart pigging run. For low risk pipelines, ADNOC conducts ILI every 5 to 8 years, and for higher risk pipelines, pigging is conducted every 2 to 5 years.

The subsequent sections discuss the remaining life of the Sales Gas, Injection and NGL pipelines, followed by the regular maintenance and pigging activities performed in 2020 according to these general practices.

### 5.3 Sales Gas Pipelines

We gathered data on the risk assessment and remaining life of these pipelines. **Table 5** provides the status of the remaining life as of 2021, and accordingly the replacement year for the Sales Gas pipelines.

| Line Number | Origin | Destination | Line Size [inch] | Length [km] | Year Commissioned | Current Asset Replacement Year | Current Remaining Life as of 2021 [yrs] |
|---|---|---|---|---|---|---|---|
| 1 | Thamama-C manifold | Habshan (0-4) | 20 | 1.0 | 1996 | 2026 | 5 |
| 2 | Habshan (0-4) | Thamama-C manifold | 30 | 1.0 | 1996 | 2026 | 5 |
| 3 | Habshan (0-4) | Thamama-C manifold | 42 | 1.0 | 1996 | 2026 | 5 |
| 4 | Habshan (0-4) | Thamama-C manifold | 42 | 1.0 | 2001 | 2040 | 19 |
| 5 | Thamama-C manifold | Asab | 36 | 87.6 | 2011 | 2041 | 20 |
| 6 | Bu Hasa | Bab manifold | 24 | 45.6 | 2015 | 2045 | 24 |
| 7 | Bab manifold | Thamama-C manifold | 24 | 4.4 | 2015 | 2045 | 24 |
| 8 | Habshan 5 | Transmission network | 30 | 3.5 | 2012 | 2042 | 21 |
| 9 | Bab plant | Bab compressor station | 16 | 2.6 | 2013 | 2042 | 21 |
| 10 | Bab compressor station | Bab manifold | 10 | 0.2 | 2013 | 2043 | 22 |
| 11 | Thamama-C manifold | Bab manifold | 30 | 4.5 | 1984 | 2022 | 1 |
| 12 | Shah ASG | Thamama-C manifold | 36 | 127.7 | 2015 | 2045 | 24 |

***Table 5. Sales Gas Pipeline Remaining Life.***

All Sales Gas lines have a remaining useful life of five years or more except for Sales gas line #11. Sales gas line #11 is considered a medium to high risk pipeline, and is scheduled to be replaced by the end of 2022.

ADNOC's integrity management system shows these pipelines meet or exceed expectations regarding integrity and suitability for future operation. All Sales Gas pipelines have a remaining life of 5 years or more based on the most recent RBA (risk-based assessment) activities with the exception of line #11, the Thamama-C manifold to Bab manifold pipeline. Line #11 has integrity concerns discussed in detail later in this report, and the pipeline is scheduled to be replaced by December 2022. Although the initial design MAOP (Maximum Allowable Operating Pressure) for this line was 63.5 barg, the line maximum pressure has been de-rated to 52 barg, and it operates within the range of 36 – 42 barg. Currently, AGP (ADNOC Gas Pipeline) management approvals have been obtained to replace the pipeline. A Pre-FEED (Front End Engineering Design) study has been completed, the FEED study is planned in 2021, and construction will begin in 2022. This provides confidence that the pipeline will be replaced at the end of its useful life.

The lines #1 to 4 and line #10 are above ground lines and are not subject to smart pigging activities. Integrity status reports were provided for the lines, and no risk was found to the scheduled remaining life of the pipelines.

For the remaining lines, ILI pigging is performed periodically to determine internal and external corrosion anomalies and wall thickness of the pipelines. ILI inspections are performed every 5 to 8 years for low risk pipelines and every 2 to 5 risk for higher risk pipelines.

**Table 6** below summarizes the risk levels and ILI schedules of the Sales Gas pipelines.

| Line Number | Origin | Destination | Line Size [inch] | Length [km] | Risk Level | Previous ILI | Next Planned ILI |
|---|---|---|---|---|---|---|---|
| 1 | Thamama-C manifold | Habshan (0-4) | 20 | 1.0 | Low | N/A | N/A |
| 2 | Habshan (0-4) | Thamama-C manifold | 30 | 1.0 | Low | N/A | N/A |
| 3 | Habshan (0-4) | Thamama-C manifold | 42 | 1.0 | Low | N/A | N/A |
| 4 | Habshan (0-4) | Thamama-C manifold | 42 | 1.0 | Low | N/A | N/A |
| 5 | Thamama-C manifold | Asab | 36 | 87.6 | Medium[1] | 2012 | 2021 |
| 6 | Bu Hasa | Bab manifold | 24 | 45.6 | Medium | 2019 | 2023 |
| 7 | Bab manifold | Thamama-C manifold | 24 | 4.4 | Low | 2019 | 2023 |
| 8 | Habshan 5 | Transmission network | 30 | 3.5 | Medium | 2016 | 2023 |
| 9 | Bab plant | Bab compressor station | 16 | 2.6 | Medium[1] | 2014 | 2021 |
| 10 | Bab compressor station | Bab manifold | 10 | 0.2 | Low | N/A | N/A |
| 11 | Thamama-C manifold | Bab manifold | 30 | 4.5 | Medium-High[2] | 2019 | N/A |
| 12 | Shah ASG | Thamama-C manifold | 36 | 127.7 | [3] | 2016 | 2022 |

***Table 6. Sales Gas Pipelines: Risk Level and ILI Schedule.***

ADNOC has classified the majority of sales gas lines as low to medium risk pipelines. Planned ILI activities for a few of the pipelines in 2020 were delayed to 2021 due to operational constraints. The exception is line

[1] Due to operational constraints, ILI activity was deferred to Y 2021 and is included in Y 2021 Annual ILI plan. No anomalies are exceeding the safe remaining life

[2] Pipeline will be replaced in December 2022 and repair plan is optimized accordingly

[3] No integrity status report provided. Cleaning Pigging activities planned in March 2021 (Date range: 4-20 March, 2021)

#11, which is classified as a medium to high risk pipeline and is planned for replacement as discussed earlier.

All lines were subjected to normal On-Off CP (Cathodic Protection) surveys. For most lines, electric potentials were found to be within acceptance criteria. All lines were subjected to on-stream inspections in 2020, and no significant issues were encountered for any of these lines.

Any anomalies encountered were investigated and repaired. ADNOC provided an overview of the scope and number of repairs completed as part of their integrity status documentation.

The details of maintenance activities performed on specific lines is as follows:

- Line #5 **–** Areas from 0 to 19 km and 83 to 88 km were not found to have electric potentials within the acceptance criteria. Polarization coupons were examined for the deviation areas, and these indicate that potentials are within the accepted range. ADNOC states that ILI activity was not performed in 2020 due to operational constraints requiring close coordination between operational teams, as this line is bi-directional. ADNOC has committed internally to complete an ILI in 2021.
- Line #9 **–** Maintenance activities in 2020 included installation of flashing beacon fire alarms, flashing beacon gas alarms, flammable gas detectors, multi-tone audible alarm sounder horns, smoke detectors, and flame detectors. Internal ADNOC procedures recommend ILI frequency of 5-8 years, and a remaining life assessment estimated that for this line there is no negative impact to pipeline integrity. The medium risk of the pipeline is assigned due to the close proximity of the line to the GPP plants and human occupancy.
- Line #11 **–** This pipeline is planned for replacement in 2022. A detailed integrity assessment was performed in 2020 and found that the pipeline is unsafe to operate at the design pressure of 72.5 barg, and has been de-rated to an operating pressure of 52 barg until Q4 2021. The integrity assessment identified 12 locations that were repaired using the appropriate repair type. Of the 12 repairs, 4 were composite wet wrap, and 8 were epoxy coatings. Repairs were completed from September to December 2020.

5.4 Injection Pipelines

We gathered data on the risk assessment and remaining life of these pipelines. **Table 7** below provides the status of the remaining life for the Injection pipelines.

| Line Number | Field | Origin | Destination | Line Size [in] | Length [km] | Year Commissioned | Current Replacement Year | Remaining Life [yrs] |
|---|---|---|---|---|---|---|---|---|
| 1 | Bab | Habshan-1 | Bab (North East) | 12 | 20.6 | 1995 | 2030 | 9 |
| 2 | Bab | Habshan-1 | Bab (West) | 12 | 13.3 | 1995 | 2041 | 20 |
| 3 | Bab | Habshan-1 | Bab (South) | 12 | 14.7 | 1995 | 2065 | 44 |
| 4 | Bab | Habshan-1 | Bab (East) | 12 | 16.0 | 1995 | 2027 | 6 |
| 5 | Bab | Habshan-3 | Bab (North East) | 16 | 20.4 | 2006 | 2046 | 25 |
| 6 | Bab | Habshan-3 | Bab (West) | 16 | 19.3 | 2006 | 2046 | 25 |
| 7 | Bab | Habshan-3 | Bab (South) | 16 | 15.4 | 2006 | 2046 | 25 |
| 8 | Bab | Habshan-3 | Bab (East) | 16 | 13.6 | 2006 | 2046 | 25 |
| 9 | Bab | Habshan-1 | Bab (North East) | 12 | 20.3 | 1988/1995 | P-11636 Project for | 2 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | 2023 Replacement | |
| 10 | Bu Hasa | Bu Hasa Valve Station 1 | Bu Hasa Compressor Station Train 1 | 12 | 2.0 | 1995 | 2038 | 9 |
| 11 | Bu Hasa | Bu Hasa Valve Station 1 | Bu Hasa Compressor Station Train 2 | 12 | 2.0 | 2005 | 2038 | 8 |
| 12 | Asab | Asab-1/2 | Asab (South West) | 14 | 11.4 | 2000 | 2045 | 24 |
| 13 | Asab | Asab-1/2 | Asab (Central) | 12 | 10.1 | 2000 | P-90243 Project for line relocation by 2023 | 42 |
| 14 | Asab | Asab-1/2 | Asab (North East) | 12 | 13.9 | 2000 | 2036 | 15 |
| 15 | Asab | Asab-1/2 | Th. A WAG Inj. | 12 | 1.8 | 2002 | 2032 | 11 |

***Table 7. Injection Pipeline Remaining Life.***

All Injection lines have sufficient remaining life except for line #9. Line #9 is scheduled for replacement in 2023 as part of a project to replace the Th-B Injection network.

ADNOC's integrity management system shows these pipelines meet or exceed expectations regarding integrity and suitability for future operation.

Based on the available data, there are no concerns regarding remaining life of the Injection pipelines. Line #9 is scheduled for replacement in 2023, and line #13 is scheduled for line relocation by 2023. According to the latest RBA report, the integrity status of all the pipeline is characterized as a low risk.

Project P-11636 is planned in 2023 to replace the entire Th-B Injection network. As part of the scope of the project, the Th_KH_2 (B) gas Injection header will be replaced with a new parallel Injection header for the old Th_KH_2 (B) gas Injection trunk line header. ADNOC will replace the existing pig launcher and receiver in Area 10 in the Bab Far North Area with an interlock system, fixed swing crane with an electric chain block, and loading facilities plus the required permanent piping. Additionally, the well surface area facilities will be upgraded.

ILI pigging is a key component in maintaining pipeline integrity and is performed periodically. Each field associated with Injection lines has its own inspection and corrosion plan. The Bab field has a maximum interval between ILI pigging of seven (7) years on the Injection trunk lines, but typically performs the pigging inspections at a frequency of five (5) years. The Bu Hasa field requires inspections at a four (4) year frequency, and the Asab field requires inspections at a five (5) year frequency.

**Table 8** below shows the previous and next planned date of ILI for the Injection lines.

| Line Number | Field | Origin | Destination | Line Size [in] | Length [km] | Previous ILI | Next Planned ILI |
|---|---|---|---|---|---|---|---|
| 1 | Bab | Habshan-1 | Bab (North East) | 12 | 20.6 | 2020 | 2025 |
| 2 | Bab | Habshan-1 | Bab (West) | 12 | 13.3 | 2004 | 2021 |
| 3 | Bab | Habshan-1 | Bab (South) | 12 | 14.7 | 2014 | 2021 |
| 4 | Bab | Habshan-1 | Bab (East) | 12 | 16.0 | 2020 | 2025 |
| 5 | Bab | Habshan-3 | Bab (North East) | 16 | 20.4 | 2019 | 2025 |
| 6 | Bab | Habshan-3 | Bab (West) | 16 | 19.3 | 2019 | 2024 |
| 7 | Bab | Habshan-3 | Bab (South) | 16 | 15.4 | 2020 | 2025 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 8 | Bab | Habshan-3 | Bab (East) | 16 | 13.6 | 2019 | 2024 |
| 9 | Bab | Habshan-1 | Bab (North East) | 12 | 20.3 | 2018 | 2023 |
| 10 | Bu Hasa | Bu Hasa Valve Station 1 | Bu Hasa Compressor Station Train 1 | 12 | 2.0 | 2020 | 2025 |
| 11 | Bu Hasa | Bu Hasa Valve Station 1 | Bu Hasa Compressor Station Train 2 | 12 | 2.0 | 2020 | 2025 |
| 12 | Asab | Asab-1/2 | Asab (South West) | 14 | 11.4 | 2015 | 2021 |
| 13 | Asab | Asab-1/2 | Asab (Central) | 12 | 10.1 | 2020 | 2025 |
| 14 | Asab | Asab-1/2 | Asab (North East) | 12 | 13.9 | 2015 | 2021 |
| 15 | Asab | Asab-1/2 | Th. A WAG Inj. | 12 | 1.8 | 2015 | 2021 |

***Table 8. Injection Pipelines ILI Schedule.***

Although risk levels are not explicitly stated, there were no significant risks in the operations of Injection lines.

ADNOC provided a summary table of pigging frequencies and high-level findings from the ILIs. The scheduled ILIs pigging frequencies fall into the range required by each field. Out of 15 Injection lines, 6 ILI were performed in 2020. The findings from the 2020 ILI surveys are as follows:

- Line #1 – Line is flowing with max 21% of metal loss. No major integrity threat was identified after a dig verification was completed for anomalies, and the pipeline is designated as fit to run at the current operating pressure.
- Line #4 – Line is flowing with max 28% of metal loss, and the subsequent composite repair was completed in November 2020.
- Line #7 – Line is flowing with max of 24% metal loss. No major integrity threat was identified, and the pipeline is designated as fit to run at the current operating pressure.
- Line #10 – Two separate ILI were conducted in March 2020. Two joints in each section were successfully replaced.
- Line #11 - Two separate ILI were conducted in January 2020. Two joints in each section were successfully replaced.
- Line #13 – A preliminary ILI report from April 2020 shows 8 metal loss features with the deepest being at 12% metal loss. Verification of anomalies is to be completed in December 2020, and this has not been confirmed.

## 5.5 NGL Pipelines

**Table 9** below provides the status of the remaining life for the NGL pipelines.

| Line Number | Origin | Destination | Line Size [in] | Length [km] | Year Commissioned | Current Asset Replacement Year | Current Remaining Life as of 2021 [yrs] |
|---|---|---|---|---|---|---|---|
| 1 | Habshan-3 | MP-21 | 20 | 37.3 | 2010 | 2040 | 19 |
| 2 | MP-21 | Ruwais | 24 | 67.7 | 2010 | 2040 | 19 |
| 3 | Bab manifold | Ruwais | 30 | 101 | 2010 | 2040 | 19 |
| 4 | Asab-2 | 921 receiver | 16 | 81.1 | 2010 | 2040 | 19 |
| 5 | Asab-0 | Bab manifold | 24 | 89 | 2010 | 2040 | 19 |
| 6 | Bu Hasa | MP-21 | 16 | 34.2 | 2010 | 2040 | 19 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 7 | Habshan-0/1/2 | Bab manifold | 10 | 6.3 | 1995 | 2025 | 4 |
| 8 | Habshan OAG | Bab manifold | 12 | 4.5 | 2010 | 2037 | 16 |
| 9 | Habshan-5 | Bab manifold | 24 | 17.6 | 2012 | 2041 | 20 |
| 10 | Bab plant | Bab manifold | 8 | 0.2 | 2010 | 2040 | 19 |
| 11 | Shah ASG | To either Asab-0 (Line #5) KP 31.3 or Asab-2 (Line #4) | 16 | 68.5 | 2015 | 2045 | 24 |

***Table 9. NGL Pipelines Remaining Life.***

These pipelines meet or exceed expectations regarding integrity and suitability for future operation.

Based on the available data, there is no risk associated with the projected remaining life of the NGL pipelines.

ILI pigging is performed periodically to determine internal and external corrosion anomalies and wall thickness of the pipelines. ILI inspections are performed every 5 to 8 years for low risk pipelines and every 2 to 5 risk for higher risk pipelines.

**Table 10** below summarizes the risk levels and ILI schedules of the sales gas pipelines.

| Line Number | Origin | Destination | Line Size [in] | Length [km] | Risk Classification | Previous ILI Year | Next Planned ILI Year |
|---|---|---|---|---|---|---|---|
| 1 | Habshan-3 | MP-21 | 20 | 37.3 | Low | 2019 | 2023 |
| 2 | MP-21 | Ruwais | 24 | 67.7 | Low | 2015 | 2021[1] |
| 3 | Bab manifold | Ruwais | 30 | 101 | Low | 2016 | 2021[1] |
| 4 | Asab-2 | 921 receiver | 16 | 81.1 | Low | 2015 | 2020 |
| 5 | Asab-0 | Bab manifold | 24 | 89 | Low | 2015 | 2021[1] |
| 6 | Bu Hasa | MP-21 | 16 | 34.2 | Low | 2015 | 2021[1] |
| 7 | Habshan-0/1/2 | Bab manifold | 10 | 6.3 | Low | 2016 | 2021 [1] |
| 8 | Habshan OAG | Bab manifold | 12 | 4.5 | Low | 2017 | 2021[1] |
| 9 | Habshan-5 | Bab manifold | 24 | 17.6 | Low | 2016 | 2021[1] |
| 10 | Bab plant | Bab manifold | 8 | 0.2 | Low | N/A | N/A |
| 11 | Shah ASG | To either Asab-0 (Line #5) KP 31.3 or Asab-2 (Line #4) | 16 | 68.5 | N/A | 2016 | 2021[1] |

***Table 10. NGL Pipelines Risk Level and ILI Schedule.***

There were no significant maintenance anomalies or risks encountered during the review of the integrity status report of the NGL lines. ADNOC has classified all NGL lines as low-risk pipelines. ADNOC deferred ILI for many of the NGL pipelines from 2020 to 2021 due to operational constraints and adjusted the ILI plan accordingly.

All lines were subjected to normal On-Off CP (Cathodic Protection) surveys. For most lines, electric potentials were found to be within acceptance criteria for cathodic protection. All lines were subjected to

[1] Deferred scheduled ILI inspection from 2020 to 2021 due to operations constraints related to COVID-19 site protocols where access to pipelines was restricted.

on-stream inspections in 2020, and there were no significant issues encountered for any lines. The maintenance activities performed on specific lines is as follows:

- Line #1 – The On-Off CP survey identified that potentials are within acceptance criteria except for 0 km to 13.5 km due to interference from wellhead casing.
- Line #3 – The On-Off CP survey identified that potentials are within acceptance criteria except for the first 12 km; however, coupons indicate compliance with required potentials.
- Line #4 – The On-Off CP survey identified electrical disturbance in both ends of the pipeline, and additional coupons are planned for installation.
- Line #5 – Influence of well casings in the Bab and Asab plant CP systems is leading to non-compliance of potentials on line #5 between 0 – 9 km.
- Line #6 – Foreign electrical interference was identified in the 2020 On-Off CP survey. The integrity status report recommended inspecting coupons, as they do not indicate acceptable polarization.
- Line #7 – A gouge anomaly was identified at 5505.65 m and repaired with a Type B metallic sleeve, which is welded circumferentially onto the pipeline.

### 5.6 Gas Processing Plants

ADNOC pipelines were fully operational in 2020. Any shutdowns on the pipelines were due to the GPP (gas processing plants). ADNOC provided 2020 reliability and availability data for the GPP. The reliability was above 99% and in line with the industry norms. The plant availability met the industry standards except for major planned shutdowns for the Bab and Asab 1/2. The Bab field shutdown was for tie-in activities and a process column replacement conducted in July 2020 that lasted for forty days. The Asab shutdown of thirty days was due to an overhaul of two GE (General Electric) Gas Turbines.

The Shah ASG plant is slated to undergo an expansion project during the first half of 2022. A shutdown is forecasted for the ASG Plant Debottlenecking project, OSGE (Optimal Shah Gas Expansion), from January to March 2022. A full inspection, catalyst changeover, and plant reliability enhancements will be conducted in parallel to the debottlenecking. All other pipelines will continue normal operations during the shutdown. This illustrates ADNOC proactive approach and planning for GPP availability.

## 6 Miscellaneous Aspects

### 6.1 Summary

This section covers ADNOC metering systems, leak detection and response, and miscellaneous projects undertaken to ensure ADNOC is providing continuing confidence in the flow through the pipelines.

ADNOC met metering requirements for custody transfer through the pipeline system in 2020 by calibrating all meters. ADNOC also undertook a third party baselining of all Sales Gas and Injection line meters. Going forth, ADNOC has agreed to upgrade the Sales Gas meters used in the reporting of Galaxy flows to custody transfer or similar as soon as practically possible as part of the Galaxy Project obligations.

The leak detection and response system at ADNOC is adequate. ADNOC has proactively chosen in 2020 to continue to upgrade leak detection to the state-of-the-art-system.

ADNOC continues to undertake miscellaneous projects to debottleneck gas processing plants (GPP) feeding the pipeline system and enhance pipeline related facilities.

### 6.2 Metering Systems

ADNOC tested and calibrated all meters in Sales Gas and Injection lines, and NGL lines in 2020 to meet the Custody Transfer requirements.

The NGL measurement systems use Custody Transfer standard Coriolis meter for total mass flow measurement and online gas chromatograph. The requirement is to audit these meters annually per Independent UKAS (United Kingdom Accreditation Services) audit. The meters' pressure and temperature transmitters require quarterly calibration and testing with certified test equipment. ADNOC accomplished these calibrations and testing in 2020 for all NGL meters.

The majority of the gas meters are orifice plates in addition to meters, which are process pitot tubes, UltraSonic Meters (USM) and Venturi meters. These meters have not historically been considered or operated as Custody Transfer measurement. In past years, ADNOC has performed multiple periodic calibrations to allow for the meter measurement uncertainty and on a case-by-case basis made reconciliation for its partners. To meet the commercial and technical requirements of ADNOC joint venture partners and the Galaxy Project partners to meet Custody Transfer requirement, ADNOC took the following additional actions in 2020:

- Operation of an agreed maintenance and calibration schedule for the existing and future metering system instrumentation
- Third Party Baselining of the existing measurement systems
- An agreed plan to upgrade such meters that do not meet acceptable design standard for Custody Transfer measurement

ADNOC hired an independent contractor to perform "Third Party Baselining Exercise". In May and June 2020, the contractor satisfactorily calibrated all temperature, static pressure and differential pressure transmitters on primary and secondary meters. The contractor completed desktop meter reviews and uncertainty calculations in June 2020. The DCS (Distributed Control System) calculation baselining implementation was completed at all sites during July and August 2020. All quantities recorded prior to completion of the baselining DCS modification changes were calculated. The recalculation details at different sites and different meters on individual sites were updated in the DCS.

In addition, meters at the outlets of Asab 0/3, Bu Hasa and Bab will be upgraded. ADNOC has agreed to upgrade the meters used in the reporting of Galaxy flows to custody transfer or similar as soon as practically possible as part of the Galaxy Project obligations.

It is important to note that these sales gas meters are located downstream of the Gas Processing Plants (GPP) prior to the entry into the Sales Gas pipeline system. Fuel gas usage is upstream of the pipelines at the GPP facilities. The only exception to this is at the Bab Compressor Station (CS) where gas is taken from the pipeline and is used as fuel for the compressors. The maximum fuel gas consumption is minimal (1.5 MMscfd) for the compressors at the station. This is the only outlet from sales and Injection volumes in the entire pipeline system perimeter, which is measured and documented accordingly. Other offtakes are on Sales Gas line #6 where gas is taken in order to supply Injection lines #10 and #11. This gas is measured with high-accuracy orifice meters. In addition, ADNOC meters Injection volumes at the Injection point facilities.

Sales Gas line #5 has an offtake to provide Injection gas to Injection line #15 and this rate is measured. Sales Gas line #5 has an Ultrasonic meter (USM) capable of bi-directional measurement. This meter is located outside of the Asab-1/2 facility. Sales Gas Line #5 is the only bi-directional line within the perimeter. All other lines are single direction. Sales Gas line #5 also supplies for the Madinat Zayed Power Station, which also meters the gas used.

In summary, the metering system allows for documentation of mass balance of the sales and Injection volumes. ADNOC calibrates these meters annually and, accordingly, has accomplished this exercise in 2020.

### 6.3 Leak Detection and Response

As discussed in HSE performance, there has been no major loss of primary containment in 2020. The detection system is per the industry standard practices. The emergency response plans are in place. An example of the emergency response is that Maqta MCR (Main Control Room) is notified to initiate the response and, depending on the severity of the situation, the proper actions are taken. This includes notifying affected and nearby facilities, depressuring of the line, calls for police/evacuation, monitoring of vapor clouds, etc.

ADNOC continues to make its leak detection system state-of-the-art. Various Galaxy pipelines are part of ADNOC's Pipeline Leak Detection System (PLDS) Project 5306 as follows:

- Pipelines in Thamama-C to Ruwais Pipeline Corridor:
  - 20" Habshan to MP-21 NGL line #1
  - 30” NGL line #3 (Sour) from Bab Stn-900 to 902 Receiver @ Ruwais
- Pipelines in Asab to Thamama-C Pipeline Corridor:
  - 16” NGL line #4 from Asab-II to 921-Receiver @ Habshan
  - 24” NGL line #5 from Asab-0 to MP-21
  - 36” Sweet Gas from Asab-I to Thamama-C
- Pipelines in Buhasa to MP-21 & Habshan Pipeline Corridor:
  - 16” NGL line #6 from Buhasa to MP-21

The proposed PLDS is based on the RTTM (Real Time Transient Model) and SPLD (Statistical Pipeline Leak Detection) technologies. Clamp-on flow meters are the most important aspect of this project. To achieve these objectives, ADNOC will install instrumentation at various block valve stations. As a minimum, the performance criteria for the leak detection is as follows:

- A leak size of 25 sq. mm or 1% of the maximum flow (whichever is higher) is detected in under 30 minutes with a location accuracy of ±500 meters. This also can be fine-tuned to best possible extent
- Identify major rupture
- Clamp on flow meter accuracy of +/- 3% for the design purpose
- Interface with the existing leak detection system in pipelines

ADNOC estimates this state of the art leak detection system project will be fully operational during late 2022 and early 2023.

6.4 Miscellaneous Projects

ADNOC is progressing well with 2020 sanctioned projects to upgrade the Gas Processing Plants (GPP) and to enhance the pipeline facilities with metering upgrades and ensuring business continuity.

Projects are planned and executed through the Value Assurance Process (VAP) which ensures that the overall impact of a project is taken into consideration including the effects it has upstream and downstream of it. In short, ADNOC looks at the bigger picture of the benefits and costs of a project to study the effects of a project on the entire chain of production and distribution. VAP also categorizes projects based on its maturity such as whether it is in execution or early engineering stages.

The status of projects such as percentage complete, spent, budget, deadlines, etc., are presented in the VAP project dashboard. ADNOC uses this dashboard to track and manage its project. The 2020 project status is as follows:

- Bu Hasa Debottlenecking is in the VAP Execute Stage
- Habshan 5 Debottlenecking is in the VAP Execute Stage
- Pipeline Leak Detection System as discussed earlier is in VAP Execute Stage
- Metering Upgrades as discussed earlier is in VAP Execute
- Pipeline Enhancement Study (for Northern Emirates customers) is in VAP Define Stage
- Asab-1 Capacity Increase is in VAP Select Stage
- Business Continuity (in case of manifold interruption) is in VAP Select Stage

In addition to the above, ADNOC approved the Shah-ASG plant project in a letter dated October 10, 2019. The expansion project for Shah ASG is to bring the nominal plant capacity up to 1,450 MMscfd (inlet flow rate). The status of this project in 2020 is that engineering is now at the closeout stage, construction tendering is ongoing, and almost half of the long lead items have been procured.

## 7 Disclaimer

The Consultant Team followed the explicit instructions provided by Galaxy Pipeline Assets Bidco Limited (referred herein as GalaxyCo) for the scope of work. At GalaxyCo's request, accordingly the Consultant Team does not opine on the risks and opportunities associated with infrastructure upstream or downstream of the assets included in the study. The team also did not review the oil and gas reserves and resources potentially transported through the pipelines. The Consultant Team was not provided the details of the terms or parameters of any financial transaction nor did we consider any potential revenues and other parameters that may affect or have an impact on the determination of pipeline tariffs.

Assessments included herein may be revised in the future as additional engineering data becomes available. Assessments included herein may also be revised due to other factors such as changes in economic conditions, results of future operations, effects of regulation by governmental agencies, or geopolitical or economic risks.

The data utilized in this analysis was furnished to the Consultant Team by ADNOC. We accepted the data provided to us as factual. We did not independently make any calculations or verification. In cases of discrepancies between data sources, ADNOC informed us as to which values were correct.

The review was limited to a desktop review of the documents provided as well as interviews conducted at ADNOC's headquarters. No field visits were made during this assessment.

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## 8 Standards of Independence and Professional Qualifications

Ryder Scott is an independent petroleum engineering consulting firm that has been providing petroleum consulting services throughout the world since 1937. We have approximately eighty engineers and geoscientists on our permanent staff. By virtue of the size of our firm and the large number of clients for which we provide services, no single client or job represents a material portion of our annual revenue. We do not serve as officers or directors of any privately-owned or publicly traded oil and gas company and are separate and independent from the operating and investment decision-making process of our clients. This allows us to bring the highest level of independence and objectivity to each engagement for our services.

Ryder Scott actively participates in industry related professional societies and organizes an annual public forum focused on the subject of reserves evaluations and Security and Exchange Commission (SEC) regulations. Many of our staff have authored or co-authored technical papers on the subject of reserves related to topics. We encourage our staff to maintain and enhance their professional skills by actively participating in ongoing continuing education.

Prior to becoming an officer of the Company, Ryder Scott requires that staff engineers and geoscientists have received professional accreditation in the form of a registered or certified professional engineer's license or a registered or certified professional geoscientist's license, or the equivalent thereof, from an appropriate governmental authority or a recognized self-regulating professional organization. Regulating agencies require that, in order to maintain active status, a certain amount of continuing education hours be completed annually, including an hour of ethics training. Ryder Scott fully supports this technical and ethics training with our internal requirement mentioned above.

We are independent petroleum engineers with respect to Galaxy Pipeline Assets Bidco Limited. Neither we nor any of our employees have any financial interest in the subject properties, and neither the employment to do this work nor the compensation is contingent on our estimates of reserves for the properties, which were reviewed.

The professional qualifications of the undersigned, the technical person primarily responsible for reviewing and approving the reserves information discussed in this report, are included as an attachment to this letter.

## 9 Terms of Usage

This report was prepared for the exclusive use and sole benefit of GalaxyCo and may not be put to other use without our prior written consent for such use. Any beneficiary or investor, before it has been provided our report must agree to the terms and conditions provided in the “Form of Reliance” per our engagement with Galaxy Pipeline Assets Bidco Limited (GalaxyCo) for the support of Project Galaxy.

We have provided GalaxyCo with a digital version of the original signed copy of this report letter. In the event there are any differences between the digital version and the original signed report letter, the original signed report letter shall control and supersede the digital version. Please contact us if we can be of further service.

Very truly yours,

**RYDER SCOTT COMPANY, L.P.**

TBPE Firm Registration No. F-1580

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Head Advisor - Midstream

## 10 Acronyms

| | |
|---|---|
| ADNOC | Abu Dhabi National Oil Company |
| ASG | ADNOC Sour Gas |
| Barg | Gauge Pressure, Bars |
| BSF | Baseline Supply Forecast |
| $C_2$ | Ethane |
| CEO | Chief Executive Officer |
| CP | Cathodic Protection |
| CS | Compressor Station |
| DCS | Distributed Control System |
| DTS | Distributed Temperature Sensing |
| EF | Escalating Factor |
| EFC | Escalation Factor Controls |
| FEED | Front-End Engineering and Design |
| FFS | Fitness For Service |
| GMP | Gas Master Plan |
| GPP | Gas Processing Plants |
| HSE | Health, Safety, and Environment |
| ILI | In-Line Inspections |
| IMS | Integrity Management System |
| KPI | Key Performance Indicators |
| LOPC | Loss Of Primary Containment |
| MAH | Major Accident Hazard |
| MCR | Main Control Room |
| MMscfd | Million Standard Cubic Feet |
| NGL | Natural Gas Liquids |
| OSGE | Optimal Shah Gas Expansion |
| PLDS | Pipeline Leak Detection System |
| PSE | Process Safety Event |
| RBA | Risk Based Assessment |
| RLA | Remaining Life Assessment |
| SOP | Standard Operating Procedures |
| SPLD | Statistical Pipeline Leak Detection |
| TPD | Tonnes Per Day |
| TRIR | Total Recordable Injuries and Illness per million hours worked |
| UAE | United Arab Emirates |
| UKAS | United Kingdom Accreditation Services |
| USM | Ultrasonic Meter |
| VAP | Value Assurance Process |

**ANNEX C1: ORIGINAL WOOD MACKENZIE INDUSTRY REPORT**

# Galaxy Bond Prospectus Report

14th October 2020



Materials in this report were created in March and April 2020. The report provides Wood Mackenzie's assessment of the gas demand and supply outlook for the UAE. This includes a comparison with the Baseline Supply Forecast (BSF) and Minimum Volume Commitment (MVC) agreed between ADNOC Gas Pipeline Assets LLC ("AssetCo") and ADNOC.

Whilst reading this report is important to keep in mind Abu Dhabi's ambitions for its oil and gas sector which have been articulated in ADNOC 2030 Strategy and can be summarised as follows:

- More Profitable Upstream – Increasing production capacity, driving cost efficiency, exploring for new resources, reenergizing mature fields, and protecting market share;
- More Sustainable & Economic Gas Supply – Improving operational efficiency, increasing sour gas production and utilizing CO2 in enhanced oil recovery to free natural gas to meet the power needs of the UAE; and
- More Valuable Downstream – Stretching the margin of each refined barrel of oil, expanding petrochemical production, developing new high value products to meet growing demand and increasing refining capacity.

All of the above increase the importance and strategic focus on the gas sector within the UAE.

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# Executive Summary

The UAE gas market, at its peak, is an 8 Bcf/d market with key demand sectors consisting of utilities, industry, ADNOC industries and injection. The domestic market, excluding export LNG, is currently satisfied primarily by indigenous supply from Abu Dhabi (70%), Dolphin imports (27%) and minor contributions from other sources.

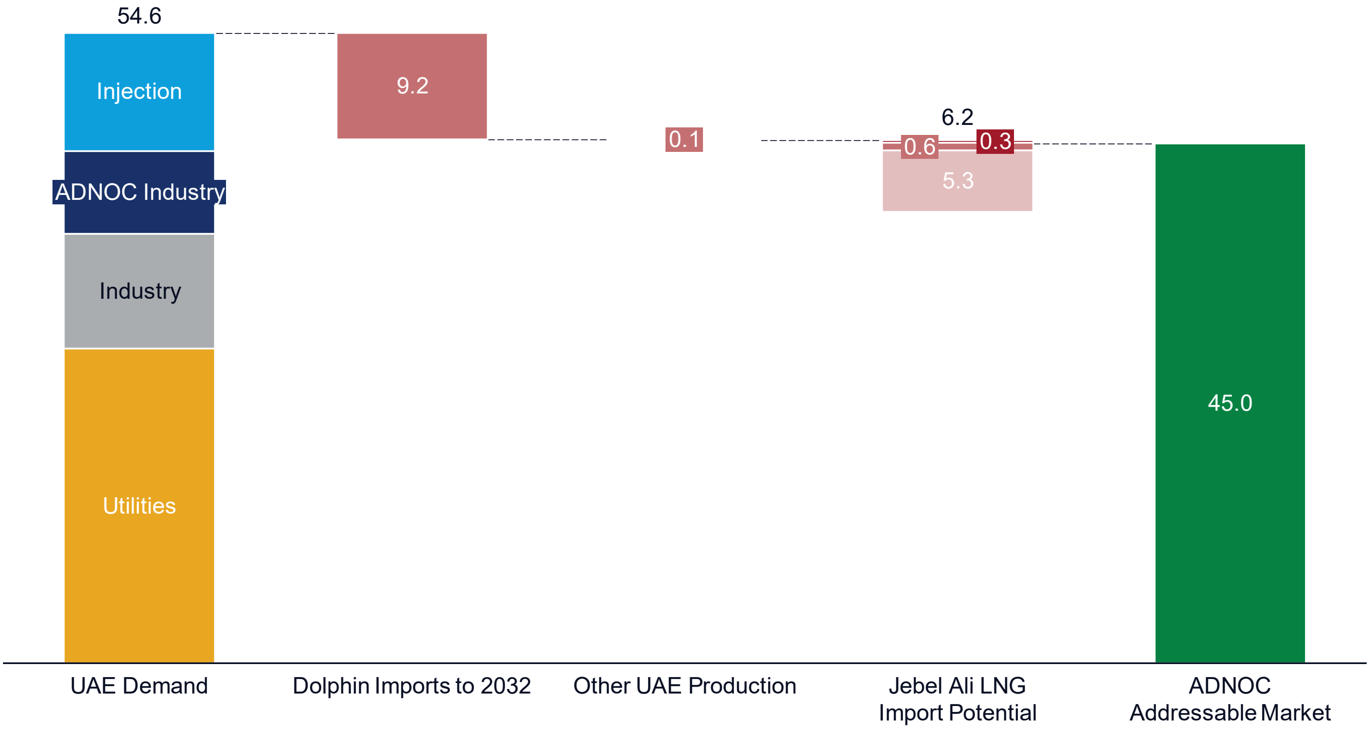
Wood Mackenzie's base case demand forecast for the market is provided in this report with additional commentary around the impact of the COVID-19 pandemic as well as oil price and demand reduction in H1 2020.

## Base Case

### Demand

Wood Mackenzie forecasts 55 Tcf of cumulative gas demand in the UAE from 2020 to 2040 in its base case.

Cumulative Demand Build-up 2020-40 (Tcf)




*Wood Mackenzie assumes Dolphin imports provide 2.1 Bcf/d supply to 2032; Jebel Ali LNG Import Base case (0.3 Tcf) assumes contracts run until 2025; full 6.2 Tcf reflects Jebel Ali FSRU running at nominal capacity to 2040. Excludes demand from LNG Export.*

The chart above shows that 50% of total demand (27 Tcf) is in the utilities sector where, despite the delivery of nuclear baseload in Abu Dhabi and a constant buildout of solar capacity across all Emirates, demand for gas is expected to be higher in 2040 than in 2020. Our base case forecast incorporates sustained electricity demand growth (though slower than observed in the past) and does not include the implementation of energy storage.

Other key categories of demand are:

- Industry where stable demand is expected from aluminium, steel, cement and other industries;
- ADNOC Industry which is a stable demand source with a significant upside potential; and
- Injection which acts as a key mechanism for Abu Dhabi to balance its gas market (see Definition and Glossary)

To satisfy this demand, three additional sources of potential supply were assessed beyond ADNOC:

1. Imports from Qatar via the Dolphin pipeline to 2032 – in our base case we envisage a maximum of 9.2 Tcf imports via Dolphin until end 2031 when Wood Mackenzie assumes the current imports contract expires, no renewal assumed;

2. Other UAE gas producers - outside of Abu Dhabi, the UAE's gas production is in decline; and

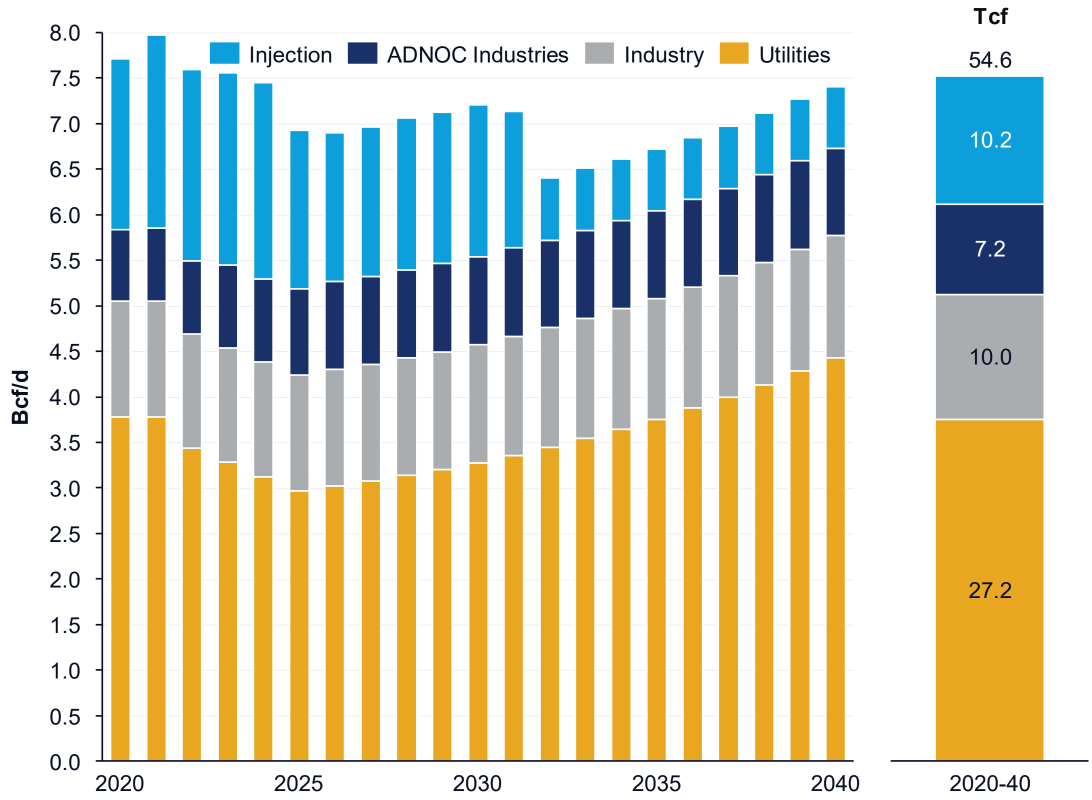
3. Jebel Ali LNG - The UAE's only existing LNG import facility is DUSUP's FSRU at Jebel Ali; a small volume of imports is contracted to 2025.

Taking into account the potential contribution from other sources of supply, we estimate a total addressable market for ADNOC volumes of 45 Tcf between 2020 and 2040.

Whilst the utilities sector accounts for over 50% of demand this is not evenly distributed across the 2020 to 2040 period. We anticipate a decline in demand from utilities until 2025 due to nuclear and solar build up, after which point demand increases again as solar on its own cannot satisfy market requirements.

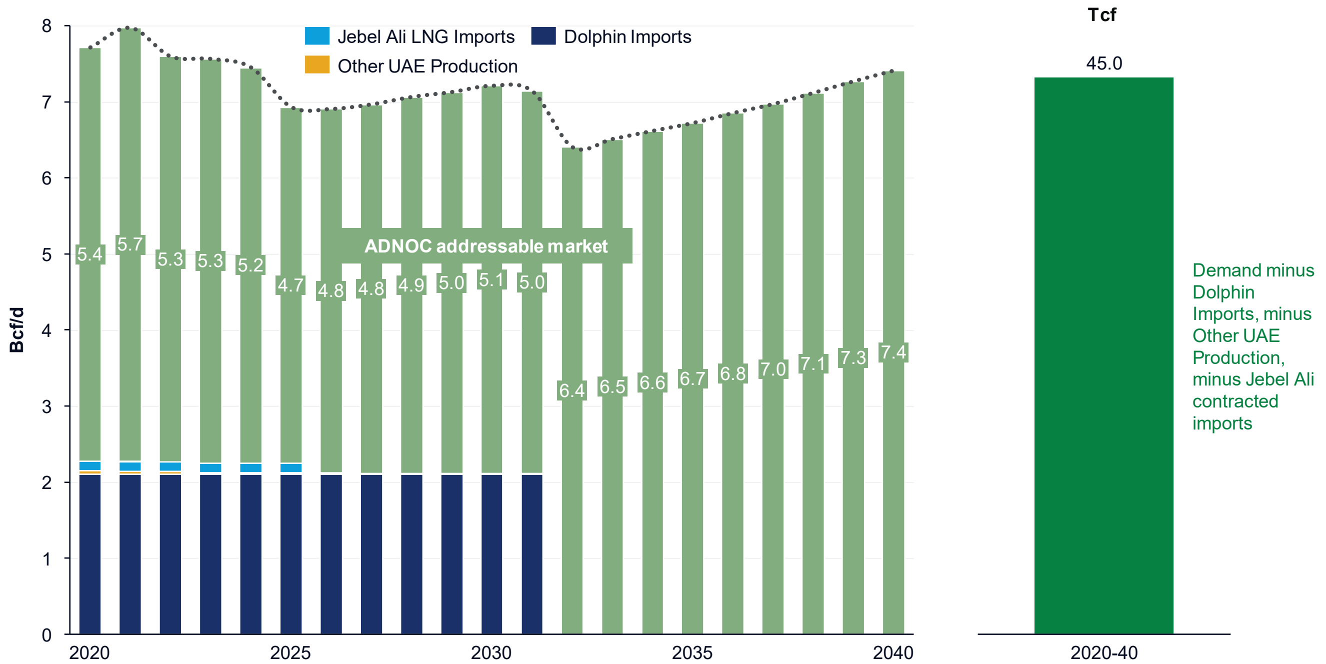
Demand from industry and ADNOC industries remains relatively constant throughout the period, but demand from injection is assumed to decline in 2032 as injection ceases at a certain field in Abu Dhabi, in order to divert injection volumes to the market to compensate for potential loss of imported Dolphin volumes.

## Annual UAE Gas Demand Forecast and Cumulative 2020-40




*Source: Wood Mackenzie; excludes demand from LNG export*

### Annual ADNOC Addressable Market (Demand Minus Other Supply) Forecast and Cumulative 2020-40

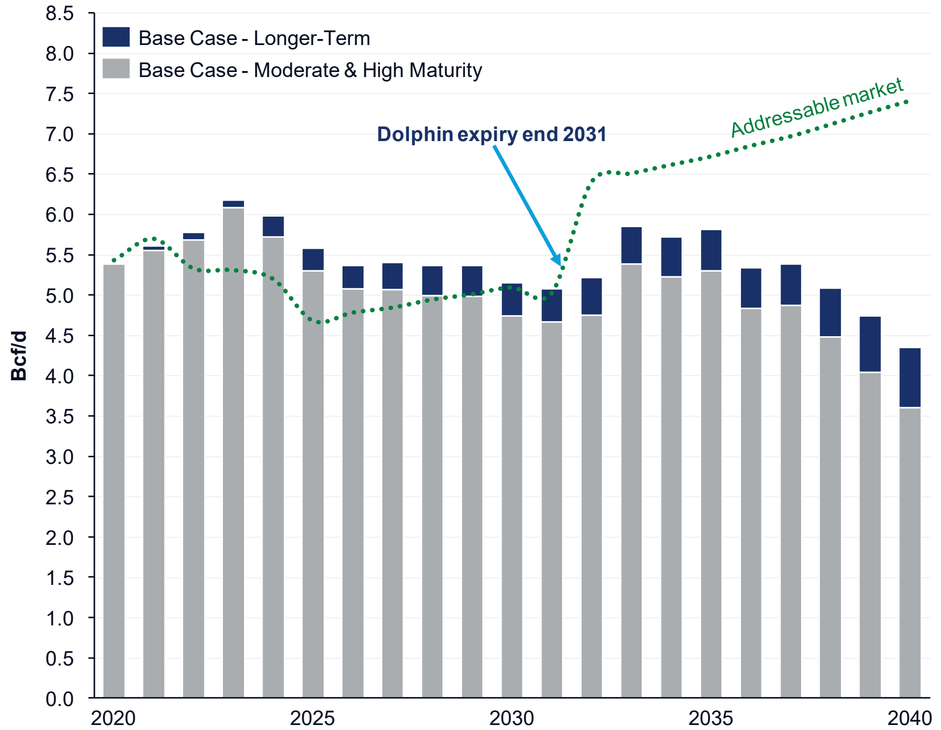



*Source: Wood Mackenzie. Excludes demand from LNG Export.*

## Supply

Wood Mackenzie's base case forecast of UAE gas supply includes volumes from developments that have a moderate and high degree of maturity and have typically been approved for expenditure and the contribution from longer term plans and development phases awaiting approval. Excluded is potential upside contribution from projects such as Ghasha and Ruwais JV. Our forecast sees just under 42 Tcf of total ADNOC sales gas supply from 2020-40.

### ADNOC Available Supply Outlook vs Addressable Market



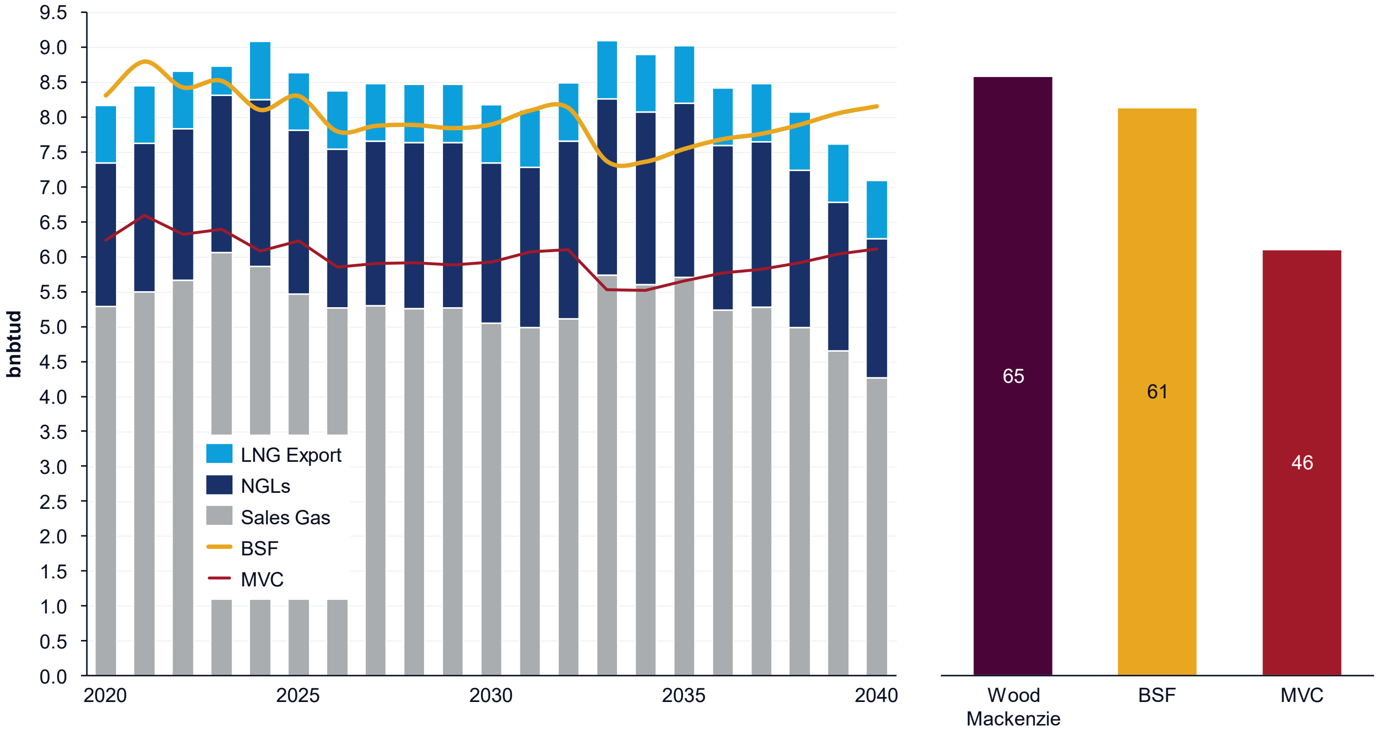

*Source: Wood Mackenzie. Volumes for ADNOC LNG have been excluded from supply and demand*

From 2020 until 2031, our base case forecasts that ADNOC available supply is higher than our expectations for the addressable domestic market. It is possible that ADNOC will be able to increase injection volumes during this period, boosting condensate production (condensate or liquids stripping is the process by which lean gas is injected into a liquids rich reservoir formation. As it comingles, the lean gas becomes liquids rich and can be extracted to the surface for that valuable liquids component to be removed). On the assumption that the Dolphin pipeline ceases to supply volumes to the UAE from 2032 onwards, the addressable market jumps by 1.5 Bcf/d in that year. The gap opened up by the potential loss of Dolphin volumes is offset by a drop in injection demand (see Definitions and Glossary).

## Comparison between Deal Volumes and Wood Mackenzie's Outlook

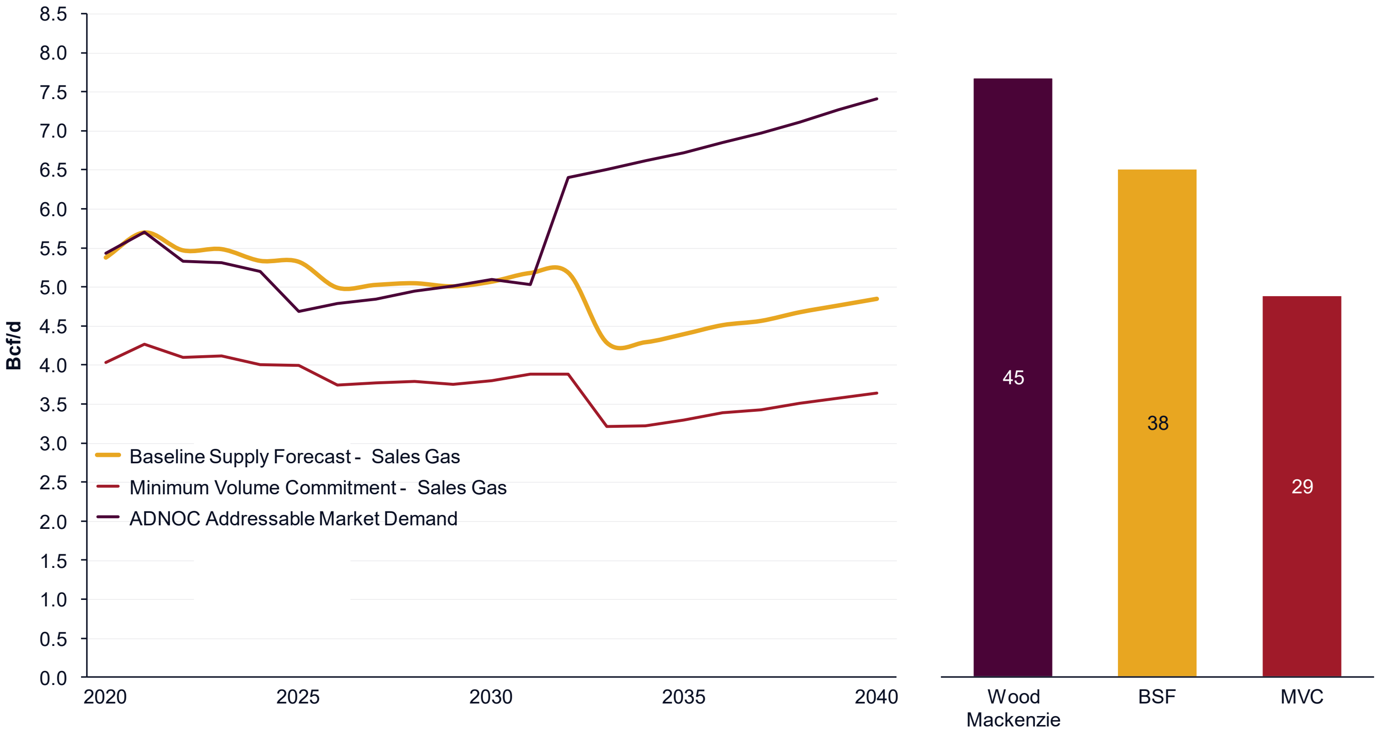
Comparing Wood Mackenzie's supply view with the baseline supply forecast (BSF) agreed between ADNOC and AssetCo, Wood Mackenzie forecasts 3.35 quadrillion btu of additional supply. As per the U&O agreement tariff is payable to AssetCo for sales gas, LNG and NGL volumes, on the basis of btu at pre-agreed conversion rates. Our forecast would reach BSF volumes during 2039 and is significantly higher than the minimum volume commitment (MVC). Until 2032 the UAE gas market can be considered demand rather than supply constrained. Note, as explained in the supply section of this report, any shortfall in supply can be compensated through a reduction in the injection rate and likewise excess gas can be "absorbed" through an increase in injection. The AssetCo contractual structure means that although the BSF has an annual volume cap, the carry forward and look back provision allows annual variances around the BSF to be offset in future periods and therefore it is the total volume over the 20-year period that is key.

### Annual Comparison Wood Mackenzie and BSF and MVC Supply Forecast and Cumulative 2020-40 (quadrillion btu)




*Source: Galaxy Pipeline Assets Bidco Limited and Wood Mackenzie. Conversions: Sales gas 980 Btu per scf, NGL 47.1 MMBTU per metric tonne and LNG 51.6 MMBTU per metric tonne (per U&O agreement).*

Annual Comparison BSF Sales Gas, MVC Sales Gas and Wood Mackenzie Addressable Market and Cumulative 2020-40




*Source: Galaxy Pipeline Assets Bidco Limited and Wood Mackenzie.*

# April 2020 Stress Test Modelling

Due to the dual effects of the COVID-19 pandemic and oil demand and price shock seen in 2020, additional sensitivities were modelled to the base case to assess the impact on UAE gas demand. Our base case forecast of 55 Tcf UAE gas demand from 2020-2040 was, primarily, shaped by a GDP forecast assuming steady growth from the oil sector as well as other economic sectors.

The 2020 situation will impact gas demand due to lower oil prices negatively impacting the oil-linked GDP (23% of total UAE GDP in 2019) and the non-oil sector will be impacted by a drop in oil revenue leading to less government spend at the same time as COVID-19 is impacting commercial sectors.

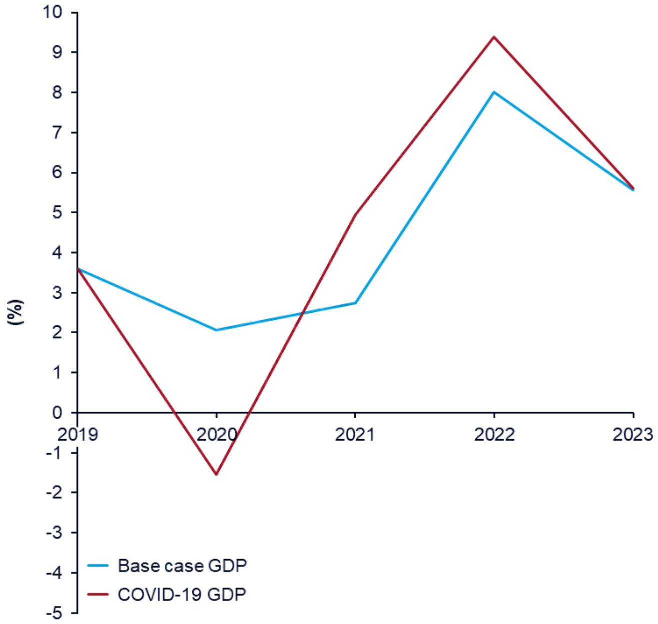
The four demand sectors are expected to be impacted at varying degrees:

- Utilities – is expected to see the biggest impact;
- Industry – may see some decline from small industry;
- ADNOC industries – may see some decline due to postponements, but limited impact on our base case projects; and
- Injections – can be responsive by either absorbing more gas not required by the market or providing more gas to the market (injections is the process by which sales gas is injected into liquids rich reservoirs to comingle in the reservoir to become liquids rich gas which can be produced and valuable liquids content separated and sold. In Abu Dhabi it also acts as an effective swing producer in the market to balance uneven demand requirements, seasonal or otherwise).

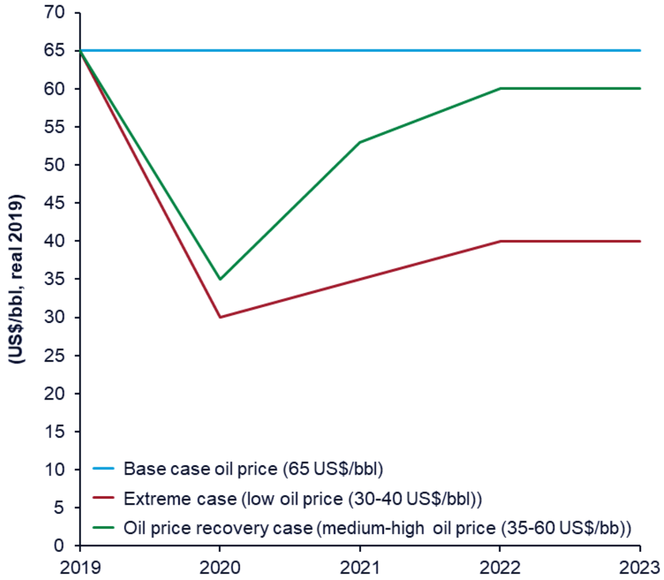
A number of scenarios were modelled to test the impact of a short-term disruption to the forecasted GDP growth and a short-term oil price shock followed by a lower outlook than our base case. The impact of two key scenarios is described below:

- An “extreme case” (COVID-19 GDP + low oil price in the charts below) which models the impact of a global recession as a result of the COVID-19 pandemic combined with limited oil price recovery from the low observed in Q1 2020 (note this oil price forecast is lower than reality and current expectations); and
- An “oil price recovery case” (COVID-19 GDP + medium-high oil price in the charts below) which tests the implication of a global recession combined with more rapid oil price recovery.

### UAE GDP growth scenarios




### Brent price scenarios

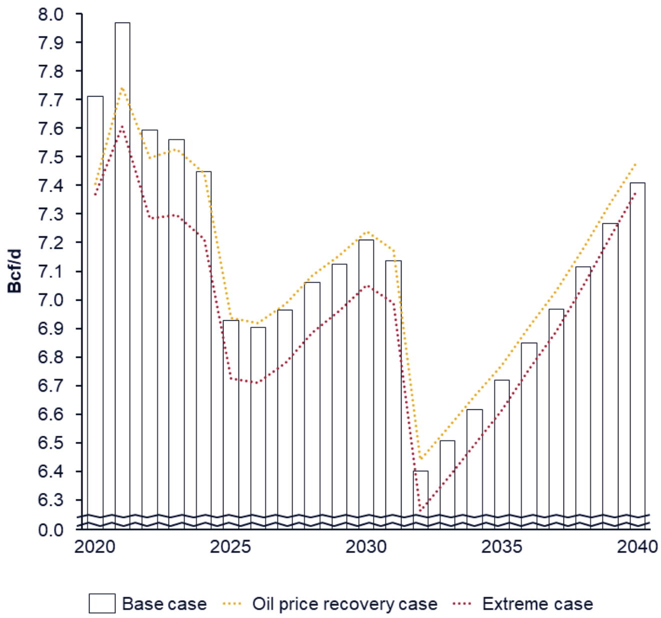



*Source: Wood Mackenzie*

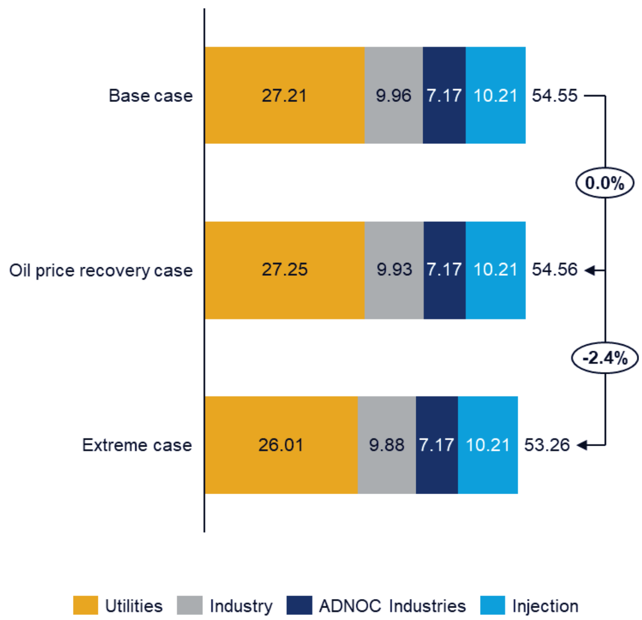
Both scenarios assumed a global outbreak and a 2020 recession with UAE GDP falling to -1.5% in 2020. Economic recovery is expected to be faster than observed in other financial crises e.g. in 2008 as the economic hit of COVID-19 is not a result of underlying economic issues which will impact growth in years to come. Thus, we forecast a strong and rapid rebound post-2020 due to two observations; firstly, work is being carried out 'behind the scenes' to increase efficiencies during the lockdown in many industries, and secondly, consumer behavior will lead to increased spend (in domestic countries and abroad) which will boost the economy. The rebound, however, does not fully make up for the negative impact of 2020 on the medium and long-term forecast.

The GDP impacts of COVID-19 are then paired with one of two oil price scenarios. One, the "low oil price" scenario models sustained low prices resulting in an average price for 2020 of 30 US$/bbl, already below the actual prices year to date, with some recovery to 2022 and flat 40 US$/bbl thereafter. The other, "medium-high oil price" case assumes an accelerated oil price recovery with an average 55 US$/bbl through 2021 and a flat 60 US$/bbl thereafter.

### UAE gas demand by scenario




### Cumulative 2020-2040 demand by scenario (Tcf)




*Source: Wood Mackenzie*

In real terms, the modelled impact may result in up to a c. 167 US$ billion reduction in GDP for the 2020-2022 period. At the same time, based on the modelled scenarios, population may see up to a 3.6% reduction in 2021 due to negative GDP growth and thus public spending. Due to its linkage to these two key factors, gas demand from the utilities sector is expected to suffer the biggest impact. However, in the oil price recovery case a combination of rapidly rising GDP and oil price in 2021 offsets the negative impacts of 2020 and leads to a slightly higher medium and long term forecast compared to the base case.

On the other end of the spectrum, we expect less impact on industrial gas demand as large industries such as aluminium and steel are expected to run unaffected by COVID-19 due to the high cost of restart after a shut down. However, industries such as cement, may see some impact due to their GDP linkage.

Ultimate impact on UAE gas demand is expected to be most severe in the short term with a c.0.0% or c.2.4% demand reduction over the full period. The biggest impact is seen in the utilities sector while stable demand from industry (including ADNOC Industries) acts as a buffer to demand destruction.

# UAE Gas Demand

Wood Mackenzie's UAE gas demand is broken down into four discrete sectors: utilities, industry, ADNOC industries and injection. Each sector has specific drivers to determine their future demand contribution. More details of specific methodologies applied to each sector can be found in Appendix 1, but the overall key drivers of demand in each of the four sectors can be summarized as follows:

Utilities – population projections in conjunction with per capita energy consumption expectations and GDP were used as the basis to determine future electricity demand. Key drivers of future electricity demand include economic growth, population growth and demand-side management. The future of the UAE's power supply mix i.e. the expected role of solar PV and nuclear power thus determine the utility sector's demand for gas;

Industry – Sector-by-sector forecasts for aluminium, steel and cement sectors, with a demand baseline and outlook based on capacity, anticipated growth in demand and competitiveness vs alternatives;

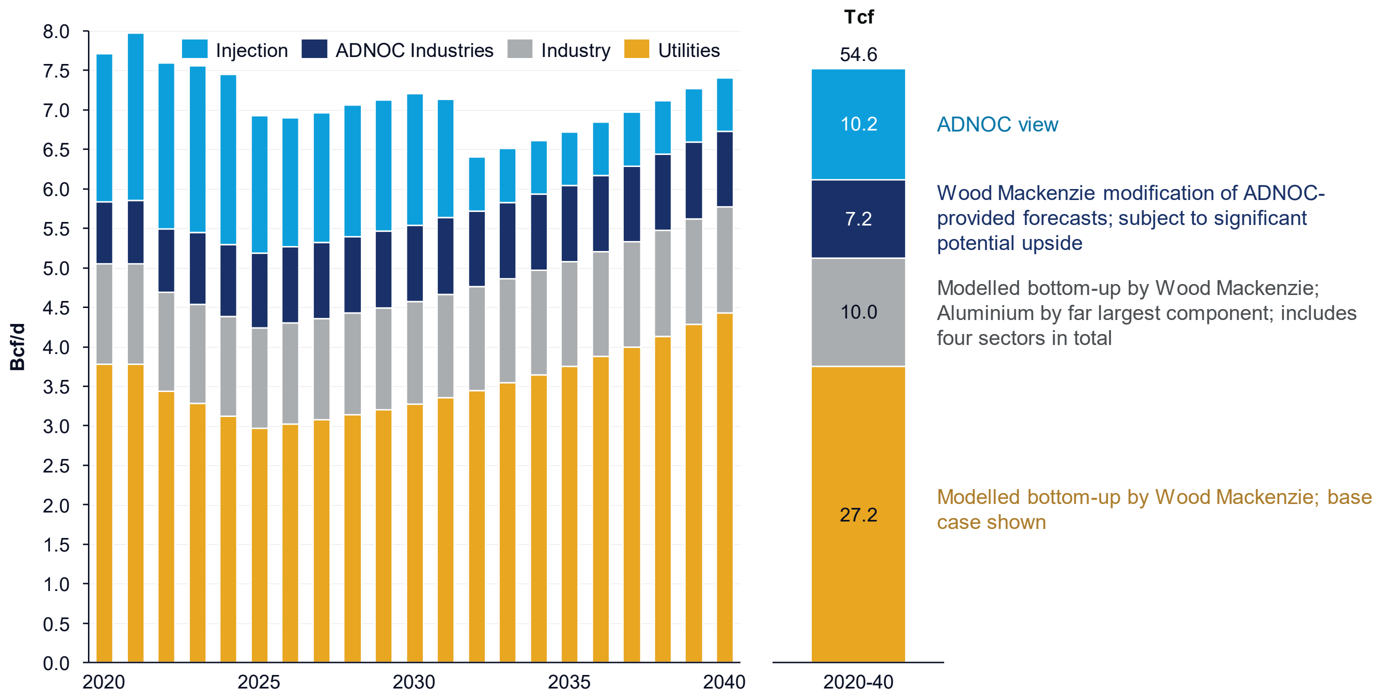
ADNOC Industries – ADNOC Group's own industrial ventures comprise a significant segment of sales gas demand within the UAE, our assessment is based on the maturity of each project, reliance on other projects to proceed and a high-level assessment of competitiveness and reasonableness of plans; and

Injection – Volumes are largely dependent on ADNOC plans and it is recognized that injection could act as a sink for excess sales gas or be reduced should there be a shortfall in gas available to the market.

## Summary

Our base case UAE gas demand forecast sees just under 55 Tcf of total gas consumption for 2020-40, approximately half of which is in utilities.

### Annual UAE Gas Demand Forecast and Cumulative 2020-40

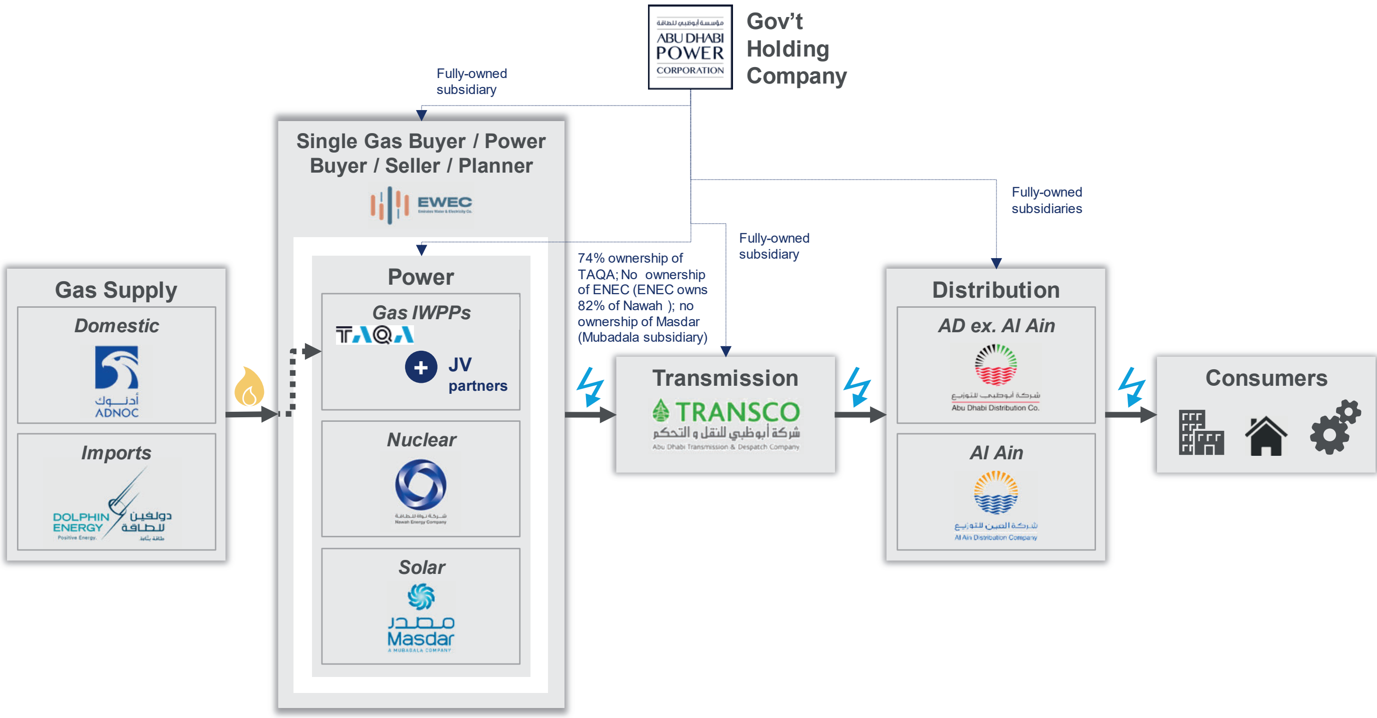



*Source: Wood Mackenzie, excludes demand from LNG export*

## Utilities

EWEC, DEWA, SEWA and FEWA are the key utilities responsible for each of the Emirates. Within Abu Dhabi and other Emirates, the utilities sector and value chain is still almost entirely controlled by the state despite of the introduction of IWPPs. The Abu Dhabi utilities sector can be summarized in the diagram below.

## Abu Dhabi Utilities Sector Entities Map



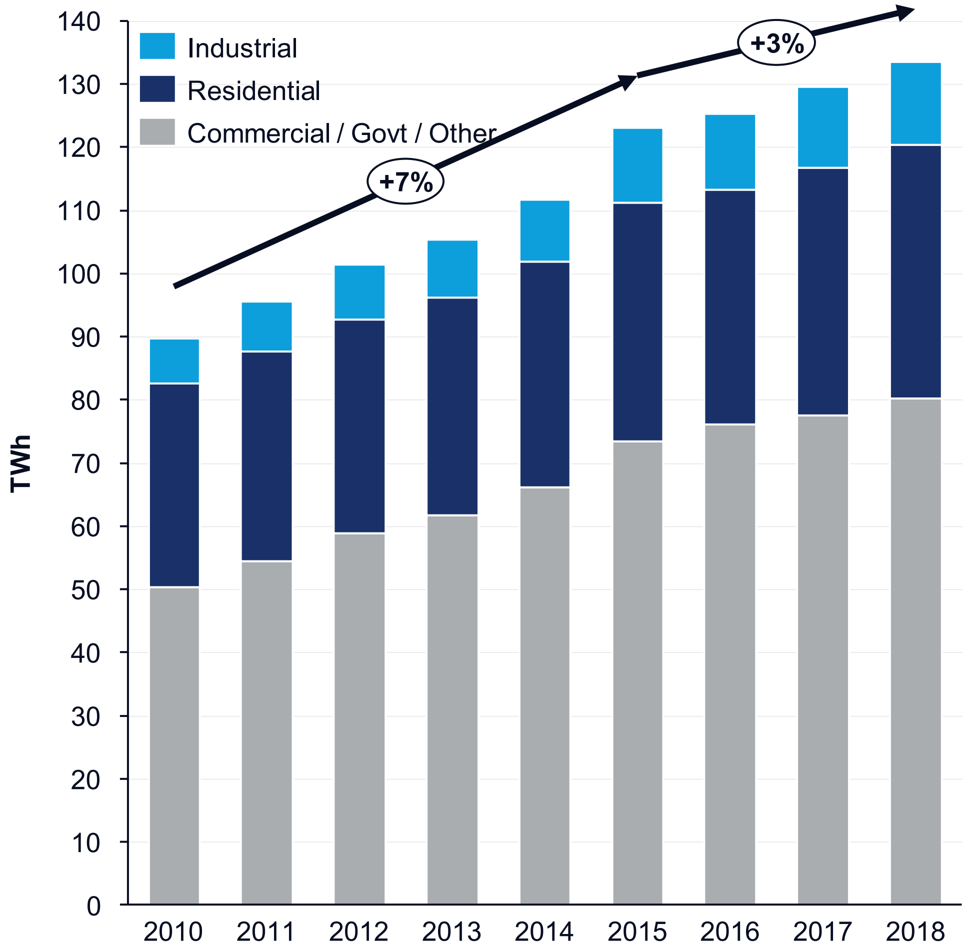

Abu Dhabi's generation sector is comprised almost entirely of gas-fired stations totalling over 13 GW. Each gas plant is operated by its respective JV company, with ADPC / TAQA owning a stake generally around 60%. Dubai and the other Emirates have a combined total of 18 GW generation capacity, almost all gas-fired. Plants are operated by the respective electricity and water providers in the Emirates, namely DEWA, SEWA and FEWA.

Electricity demand in the UAE has historically grown rapidly, although oil revenue stagnation has seen it slow. From 2010 to 2014, electricity demand in the UAE grew at 7% per annum on average, while in Abu Dhabi, demand grew even faster during this period, at a rate of 8%. At the same time, demand in Dubai grew at 5%, Sharjah demand grew at 6% and demand in FEWA emirates (RAK, Ajman, Fujairah, Umm Al Quwain) grew at 6%.

Subsequently electricity consumption has grown at a slower rate overall, influenced by the general slowdown in economic and population growth since 2015, coinciding with the oil price downturn.

Overall industrial demand for electricity has almost doubled between 2010 and 2018. Commercial, government and other demand (including agricultural) has grown at 6% per annum between 2010-18. Residential demand has grown the slowest at 3% per annum, although we understand that the commercial category contains district cooling services, in which a large proportion of energy ends up being consumed in homes.

UAE Electricity Demand




*Source: MoEI, EWEC, DEWA, SEWA, FEWA statistics*

It is worth noting that Abu Dhabi (and the other Emirates) must maintain a significant spare generation capacity to cope with summer demand peaks. Electricity consumption in the UAE is significantly higher during the hot summer months. This seasonal demand is slightly less volatile in Abu Dhabi due to a concentration of commercial and industrial electricity demand. Within Dubai and the Northern Emirates, electricity demand during the summer peak, June through August, is more than double that of the winter peak, December through February. This means that power capacity is required to fully cover peak demand, even though for a significant part of the year its utilisation rate is low.

Within Abu Dhabi the fleet of gas-fired power plants increased steadily from 2010 to 2016 with an addition of almost 4GW of primarily combined-cycle gas turbines (CCGT). Following 2016, the fleet saw some retirements of older gas power plants. Since then, no new-build gas power plants have been added in Abu Dhabi. Steam turbines (ST) make up part of the mix, as do integrated desalination plants. Abu Dhabi is connected to Dubai and Northern Emirates through regional grid interconnection (Emirates National Grid).

As of 2018, solar only made up 181MW of Abu Dhabi power capacity, vs 13.6GW of gas power capacity. This picture is mirrored across the other Emirates with Dubai and the other Emirates historically having almost solely focused on gas-fired capacity.

## Power demand forecast and its macroeconomic inputs

In forecasting future gas demand from utilities, our forecast for the power and water sectors is based on combined macroeconomic and utilities models which are summarized in the diagram below.

## Power and Water ("Utilities") Modelling Approach Overview

**Macroeconomic model**

- Forecasts of UAE GDP and population growth, by Emirate
- Use regression analysis to derive linkages between key input variables and macroeconomic outputs
- Specific methodologies apply to five GDP modules making up the total UAE economy:

| Abu Dhabi oil sector | Abu Dhabi non-oil sectors | Dubai oil sector | Dubai non-oil sectors | Other Emirates |
|---|---|---|---|---|

- For each of Abu Dhabi, Dubai and the other Emirates, we have developed population forecasts for both citizen and expatriate populations
- Input variables include:

| Brent oil price | UAE petroleum production | Global GDP growth | Public investment / expenditure policies |
|---|---|---|---|

**Utilities model**

- Our power model's most important output is a forecast of gas demand into the utilities sector of the UAE, split into Abu Dhabi and other emirates
- This is developed via a sector-by-sector power and desalinated water demand outlook based on our modelled population and GDP inputs
- Key forecast inputs and assumptions for the power model include:

| Demand-side efficiencies | Desalination types / capacities | Generation types / capacities | Plant efficiencies |
|---|---|---|---|

*Source: Wood Mackenzie*

We forecast a low utility gas demand in 2025 of under 3 Bcf/d after which we see a return to growth. Growth from 2025 occurs at a rate of just under 3% per year. While historical data is incomplete across the Emirates, this compares to 9% annual gas demand growth for EWEC from 2010-2018. The reduced growth rate is due to a combination of:

- Reduced electricity demand growth due to softer forecasts of population and economic growth;
- A gradually declining, as opposed to rapidly growing, per-capita consumption; and
- Constant solar buildout over the period, absorbing a portion of the electricity demand growth.

In addition to the above each of the four Barakah nuclear units come online from 2022-2025 knocking out around 220 mmcf/d. See the Nuclear capacity build out section.

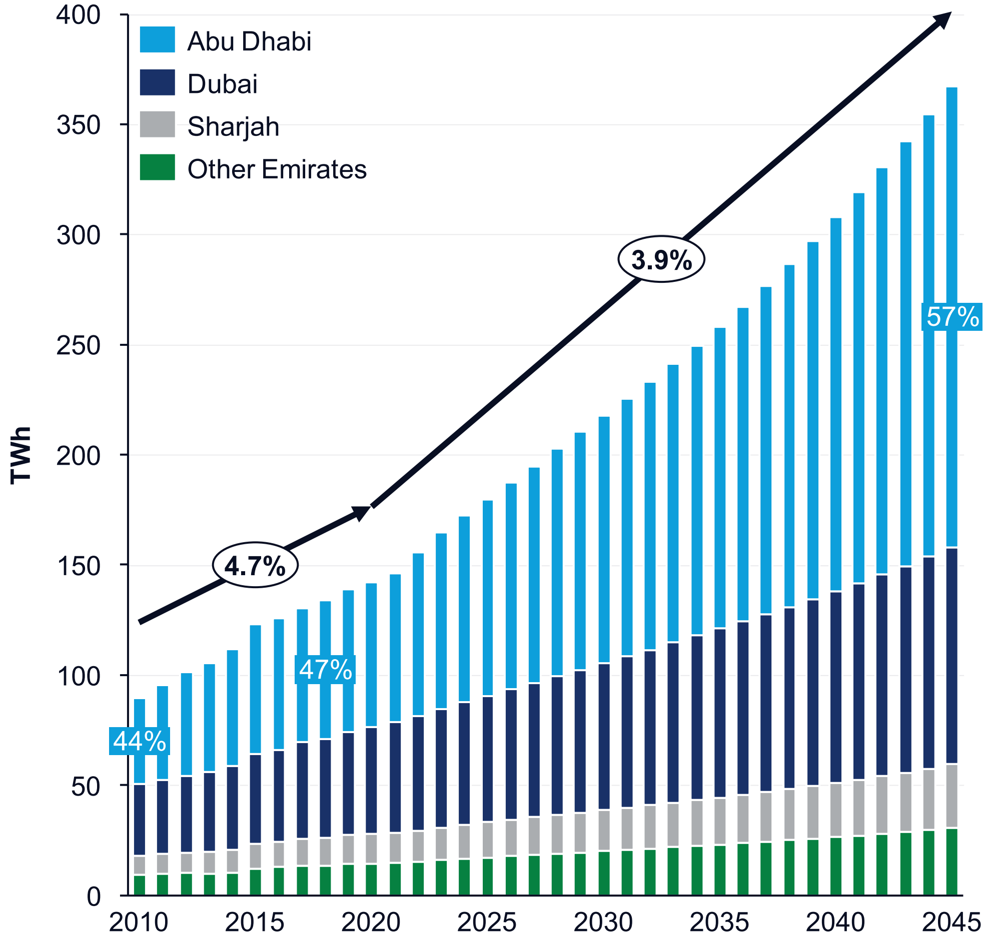
The key underlying assumptions for the utilities and other demand sectors are outlined in Appendix 1 - Wood Mackenzie Methodology and Approach.

We forecast continued, although slower than previously seen, growth in electricity demand in the UAE. Due, in part, to modelled reductions in per-capita electricity consumption, annual growth is expected to be slightly slower than historical growth. Growth in electricity consumption between 2010 and 2018 averaged over 5% per annum (CAGR), however, we forecast electricity demand to grow across the UAE at an average of just under 4.5% to 2030, with rates then declining to 3.5% per annum to 2045.

Abu Dhabi is set to remain the main contributor to demand growth, moving from 47% of total demand in 2018 to 57% by the end of our forecast period, this reflects its increasing overall share of UAE GDP and population.

We forecast total UAE electricity demand of over 350 TWh in 2045.

Electricity Demand Forecast



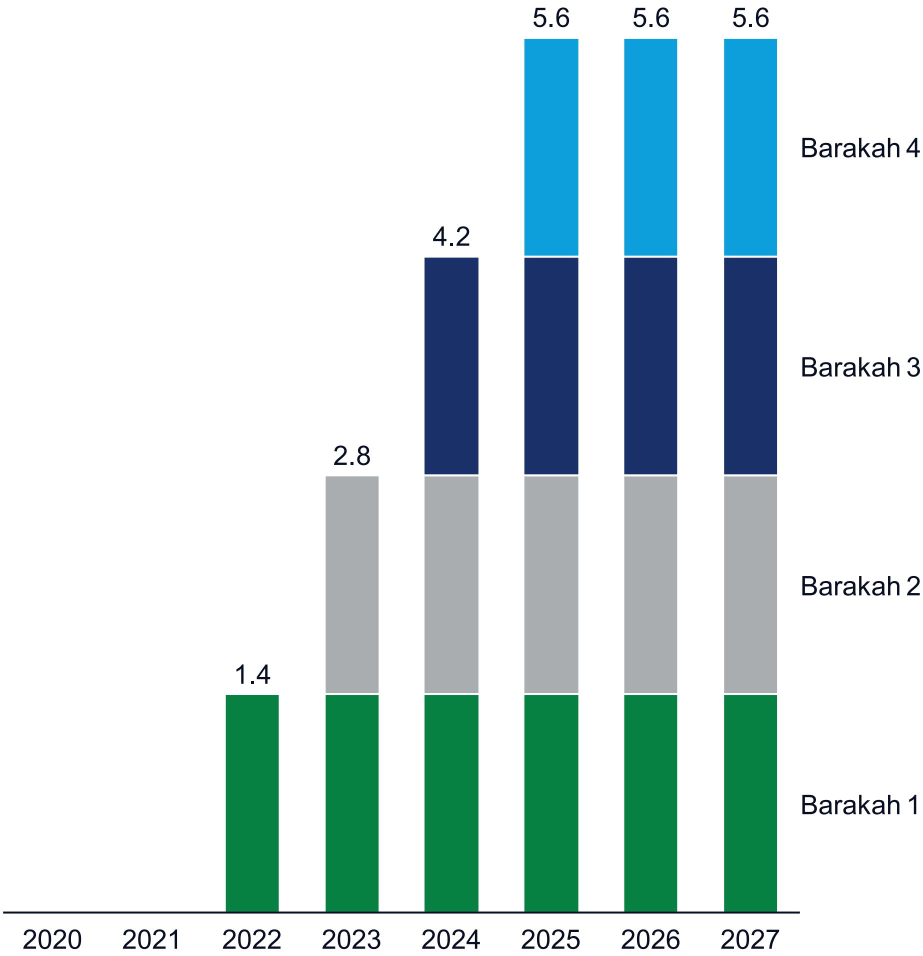

*Source: Wood Mackenzie, UAE 2019 State of Energy Report*

## Nuclear capacity buildout

Our base case assumes each of the four nuclear units comes online slightly later than currently planned, reaching full 5.6 GW capacity in 2025. The first unit, Barakah One, has publicly been announced for commissioning in H1 2020, and is currently online, however, Woodmac expects the reactor to come fully online and connected to the grid in H1 2022, slightly later than current (October 2020) expectations of commercial operations in 2021. We do expect that the subsequent units will follow in the planned manner with a new unit being commissioned every year from 2022, reaching full capacity in 2025. This sees nuclear power providing over 40% of Abu Dhabi's electricity demand by 2025. In 2022, when the first reactor comes online, it replaces 220 mmcf/d of gas demand from the utilities. In 2025, when all reactors are online, Barakah displaces 768 mmcf/d of gas demand from utilities.

We assume the Barakah nuclear reactor units run at an 80% capacity factor. As per the World Nuclear Performance Report 2019, the global mean average capacity factor for nuclear power plants was 80% in 2018, across all plant types. This is a figure that has remained stable (78%-82%) for the last twenty years. The Barakah units fall into the Pressurized Water Reactor (PWR) category, which was recorded to achieve a capacity factor of approximately 79-80% in 2018. The only operating reactor of the specific APR1400 type planned for Abu Dhabi, Shin Kori 3 in South Korea, has been recently reported to be achieving a capacity factor of around 85%. Given the as-yet relatively untested technology in use as well as the immaturity of nuclear power in Abu Dhabi in general, we assume an 80% capacity factor for our base case.

Nuclear Buildout Forecast (GW)




*Source: Wood Mackenzie*

## Solar capacity buildout

Rapidly declining solar PV prices, driven primarily by scalability advantages in module manufacturing, are having significant impacts on power markets. The UAE is no exception with the UAE having seen a significant proportion of the world's cheapest PPA (power purchase agreement) bids over the past years. In fact, the UAE is one of the world's most attractive PV markets with ample solar and land resources as well as supportive policies.

As one of the most attractive and largest solar markets in the MENA region, we forecast the UAE to install over 46 GW of capacity by 2045. Capacity buildout is dominated by utility-scale capacity procured by DEWA and EWEC. In the utility-scale segment, bidding competition is fierce, but policy stability and transparency keep developer interest high. Due to the very low price of PV in the UAE, other renewables, primarily wind, have effectively been priced out of the market, and capacity will be project-driven and limited.

As opposed to the US or Europe, where the low solar prices are driven by subsidies, the low prices in the UAE are a result of low construction and maintenance labour costs as well as a developer model that allows for lower prices.

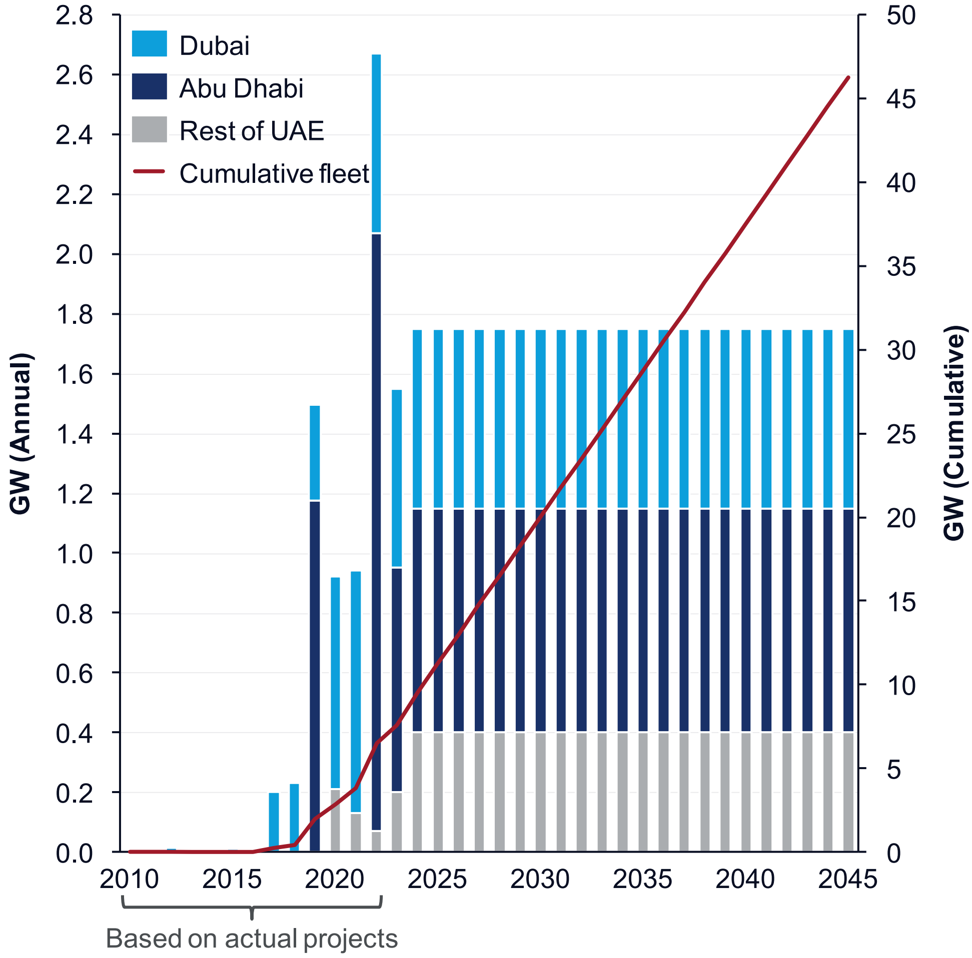
We forecast c. 1.75 GWdc of annual solar capacity growth over the forecast period for the whole UAE. This growth is expected to be faster in Dubai than the other Emirates, where the Government has set accelerated clean energy penetration targets and where there is no expectation for nuclear baseload capacity.

Some market participants have higher expectations for solar buildout: in one case up to 2 GW per year for Abu Dhabi alone, however, this is not envisaged in our base case due to:

- Solar curtailment: Without sufficient (and costly) energy storage buildout, higher growth would lead to significant curtailment of solar, thus undermining the economic case for solar. Energy storage has potential in the UAE, but the low cost of the existing gas-to-power fleet, due to the fact it already exists and benefits from low cost gas supply, is expected to keep large-scale deployment at bay. In addition, we do not forecast significant further buildout of Concentrated Solar Power (CSP) to provide energy storage, as it is less price-competitive than solar PV + storage.

- Reliability concerns: Solar power is less reliable and more dependent on weather patterns; too high penetration would lead to less predictable and sudden demand for flexible assets to generate on a cloudy day; and
- Land constraints: Although ample land is still available, continuous high growth would require projects in more remote locations which in turn requires significant grid extensions and buildout; some key sector participants have already expressed concern over suitable land availability.

PV Capacity Buildout Forecast (dc)

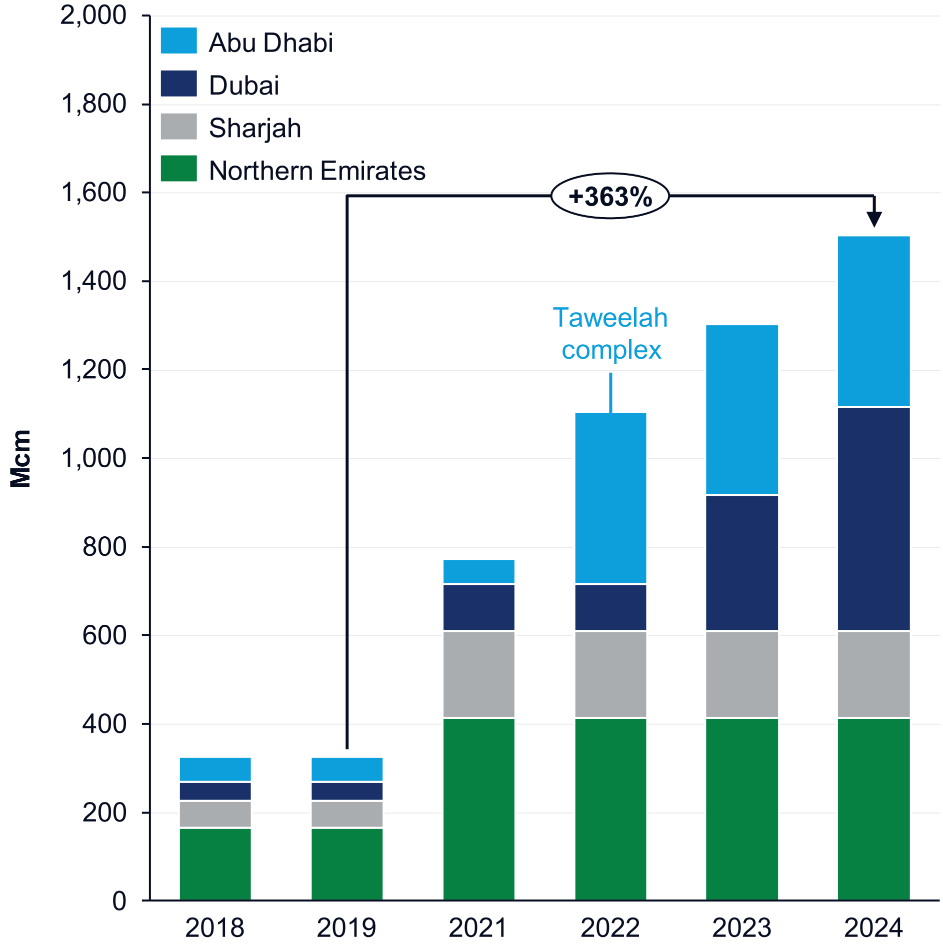



*Source: Wood Mackenzie*

## The growth of reverse osmosis desalination

The UAE relies heavily on desalinated water which is currently largely produced in thermal cogeneration distillation processes. The UAE is targeting a greater percentage of water production via reverse osmosis technology (RO) and we assume these goals are realised (30% by 2022 for Abu Dhabi and 40% by 2030 for Dubai). This will result in a decoupling of power and water generation, in line with UAE policy. This is achieved by adding to and replacing thermal desalination technologies with reverse osmosis (RO) plants, offering major energy efficiency savings versus thermal desalination. Our assumptions around RO capacity build out are shown below.

UAE Current and Near-term Planned RO Capacity




*Source: UAE 2019 State of Energy Report, DEWA and other public sources*

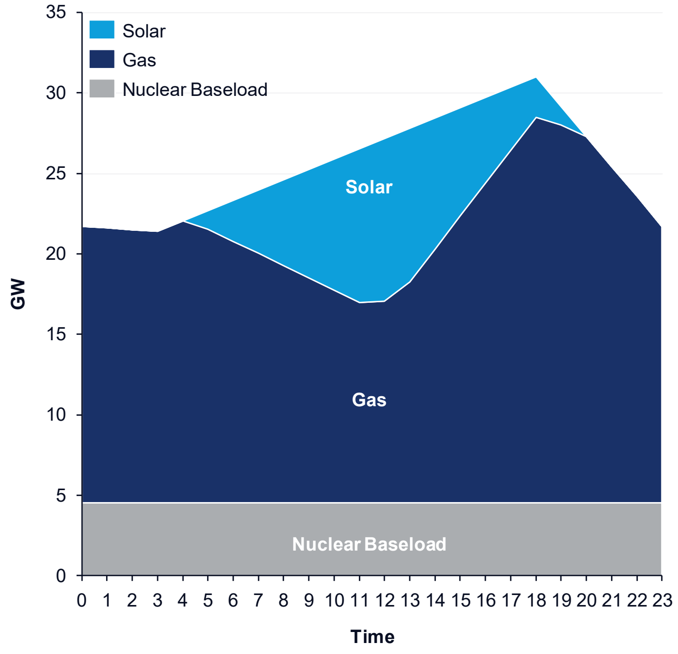
## Utilities Power Mix

We expect gas to continue to make up a significant portion of the generation mix, especially during summer months. However, the changing role of gas will see large parts of the gas-fired fleet running only part of the year and at a bare minimum must-run gas demand during winter solar peaks. This is clearly highlighted in the forecasts below, with the gas plants running in winter likely to be a subset of overall gas fleet, with many plants left cold in winter. Plants providing load flexibility in either winter or summer may require some reconfiguration and will run significantly below best-in-class modern CCGT efficiency rates of 60%.

Solar penetration and the UAE's seasonal power demand profile drives an increasingly fluctuating gas demand from utilities, but as has been shown; from 2025, gas demand from power is expected to increase once again after an initial decline.

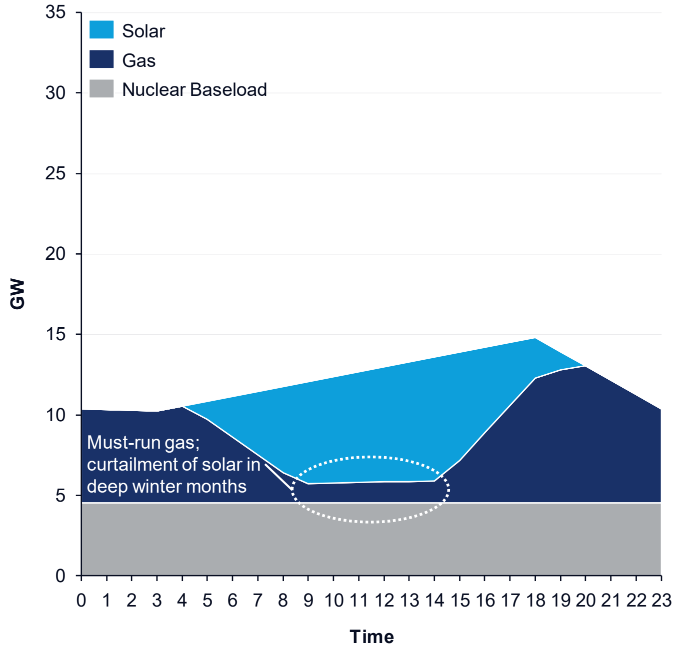
This electricity demand when taking into account the contribution from other generation sources, nuclear, solar and coal, leads to a forecast gas demand into utilities of 27.2 Tcf between 2020 and 2040.

## Abu-Dhabi Daily Generation Mix – July 2040



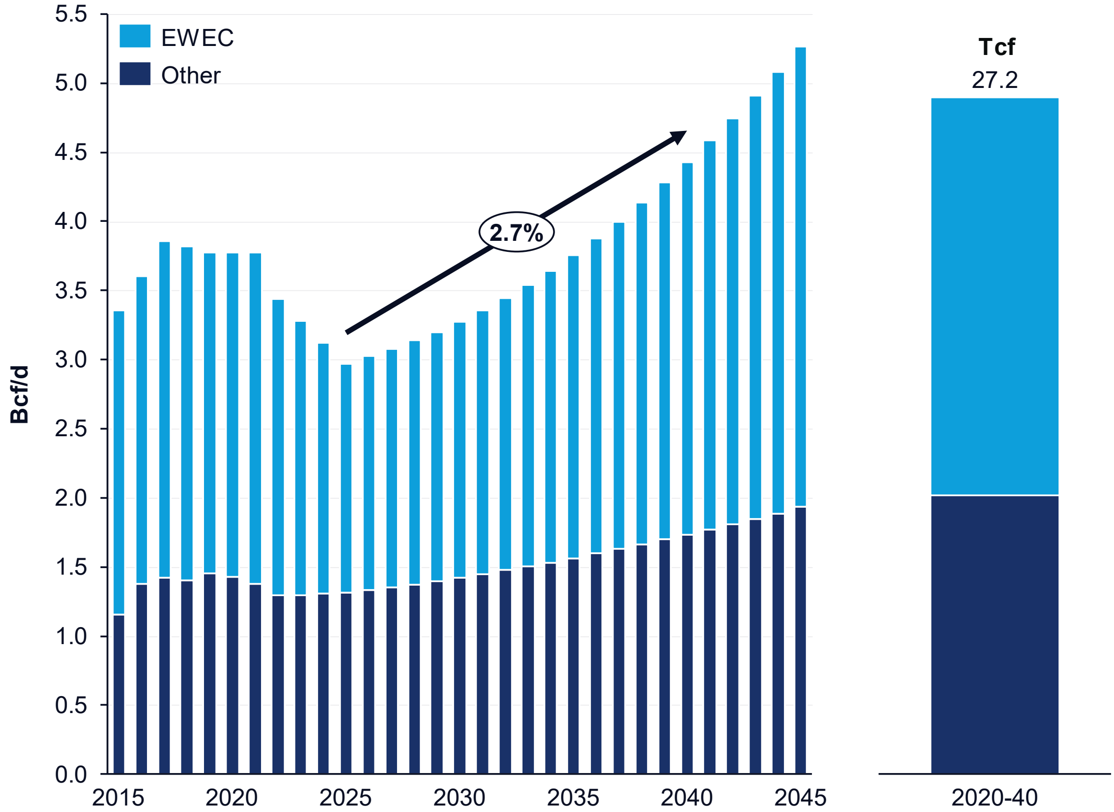

*Source – Wood Mackenzie*

## Abu Dhabi Daily Generation Mix – January 2040




*Additional notes in table footer wide style*

## Annual Gas Demand into Utilities and cumulative 2020 to 2040




*Source: Wood Mackenzie*

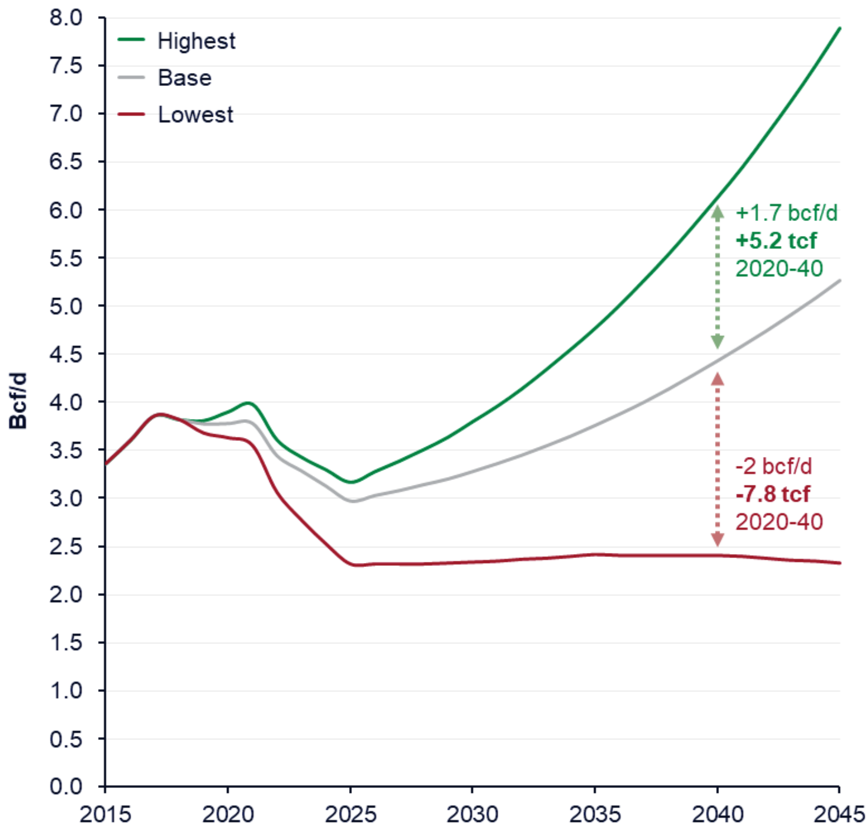
## Sensitivities

Our base case forecast of gas demand in utilities in the UAE reflects our current view of the most plausible scenario for the sector's future development. However, as previously noted, we recognise that gas demand in this sector, more than the others, is subject to a significant degree of uncertainty. Key uncertainties are:

- The rate of electricity demand growth, itself driven primarily by the rate of population and economic growth; and
- The rate of solar capacity buildout, which could be faster or slower than our base case, and may or may not be augmented by Energy Storage Systems (ESS).

While electricity demand growth to some extent dictates the rate of solar buildout, the two inputs could combine in various ways to produce different outcomes. It is important to note that we see our base case as the most plausible outcome for gas demand into utilities in the UAE and our maximum and minimum cases sit at the limits of likelihood.

## UAE Utilities Gas Demand Sensitivities vs Base




*Source: Wood Mackenzie*

Our modelled maximum outcome would add 5.2 Tcf of cumulative gas demand for 2020-40 and would see utilities gas demand 1.7 Bcf/d higher in 2040 than in our base case. For this to happen, two things must coincide:

- Higher modelled electricity demand with a 5% CAGR (2018-2040) – this could be driven by a lack of demand side management policy success, faster population growth, and stronger economic growth e.g. through higher oil prices, increase in oil production, higher global economic growth rates; and
- Solar PV buildout does not grow beyond what is assumed in Wood Mackenzie's base case i.e. 1.7GW per year in the medium and long term.

Our modelled minimum outcome sees 7.8 Tcf of cumulative gas demand eliminated for 2020-40 and sees flat demand of around 2.3-2.4 Bcf/d after 2025. Weak demand growth and solar buildout keep demand essentially flat after 2025 when the last of the Barakah nuclear units comes online. For this to happen, two things must coincide:

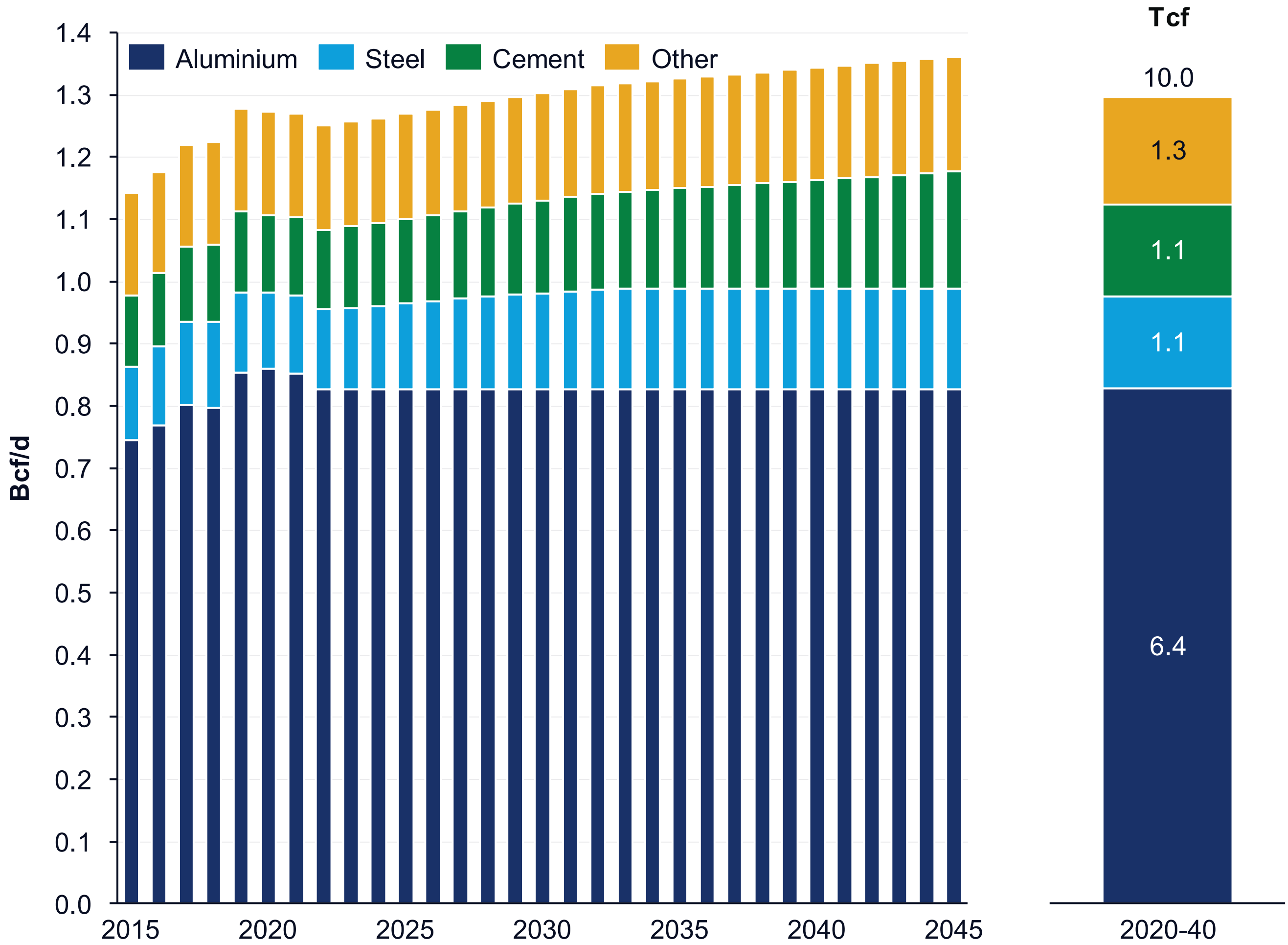
- Lower modelled electricity demand at a 1% CAGR (2018-2040) – which would have to be driven by lower GDP growth (1.8% CAGR compared to historical 8%) leading to lower population growth (1.8% CAGR compared to historical 6.4%) combined with starker decreases in per capita electricity demand (-1% CAGR compared to historical +1%); and
- Slower solar PV buildout as a result of lower economic growth – 875MW per year in the medium and long term, as more rapid build out is not compatible with a lower electricity demand view.

# Industry

Excluding ADNOC's own enterprises, which are covered in a distinct section, there are a range of direct gas-consuming industries in the United Arab Emirates. In this section we cover demand for gas in the full range of non-ADNOC industries, namely aluminium, steel, cement and other industries.

Combined, the gas demand from industries over the 2020 to 2040 period is forecast to be 10 Tcf.

## Annual Industries Gas Demand cumulative 2020 to 2040



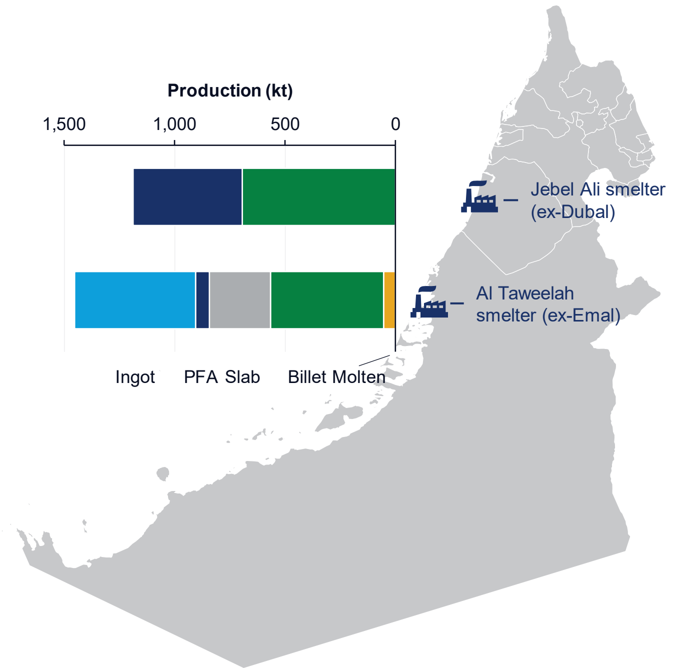

*Source: Wood Mackenzie*

## Aluminium

In summary, we do not expect addition of further aluminium smelter capacity in UAE. There is additional demand due to the construction of an alumina refinery but this is expected to be offset by an efficiency project at Jebel Ali plant.

The UAE's aluminium sector is comprised solely of Emirates Global Aluminium ("EGA") – a merger between EMAL and DUBAL in 2013.

### EGA 2019 Aluminium Production & Location Map




- With 2.6 Mt production in 2019, EGA is the Middle East's largest primary Aluminium producer and the sixth largest Aluminium company globally by production
- The company added an alumina refinery in 2019 to further its vertical integration and thereby lessen reliance on raw material imports
- Most aluminium smelters globally use their own captive power stations in order to ensure security of supply and operations; unplanned power outages can require extremely long periods of downtime to rectify
- EGA is no exception, running 5.5 GW of its own gas-fired generation capacity split between Jebel Ali and Al Taweelah, and supplied mostly by ADNOC
- EGA's smelters benefit from a relatively low energy cost, but it is far from the lowest in the world
- While EGA is believed to benefit from below-average energy costs, it pays significantly more than smelters elsewhere in the GCC
- EGA's smelters are understood to be cash positive in 2019 on an operating basis, however we do not believe they are competitive enough to expect capacity expansion
- In fact, we expect the Middle East to contribute relatively minor additions to global smelter capacity growth, with none added in the UAE

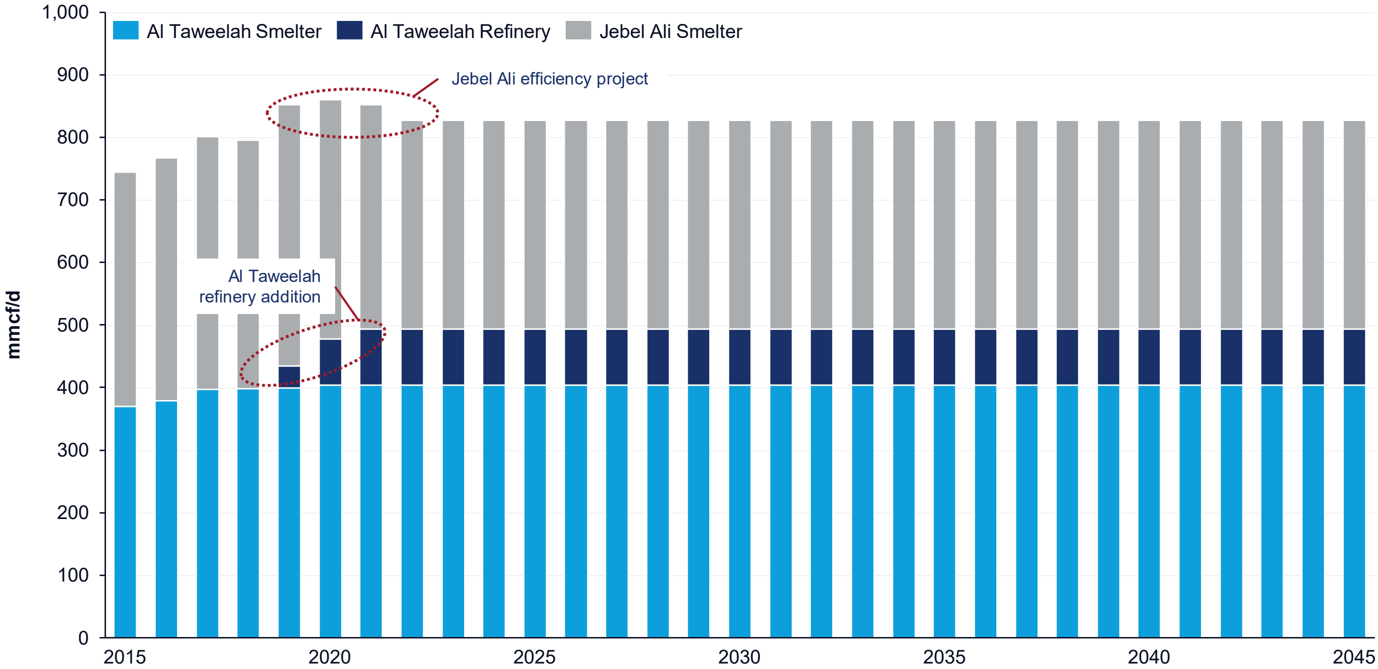
*Source: Wood Mackenzie*

Overall the production outlook for EGA is flat over the forecast period as is gas demand, although we do take into account two almost simultaneous development projects taking place within EGA:

- EGA is adding another alumina refinery to help cover its raw material input; and
- EGA is investing in a project to reduce gas consumption per tonne of production at Jebel Ali.

The impact of these projects is shown on the overall gas demand from EGA. Overall, we did not forecast gas demand from the aluminium sector to be at risk due to the plants being operational and the costs of shutting down and restarting operations.

## Historic and Forecast Gas Demand from Aluminium Sector



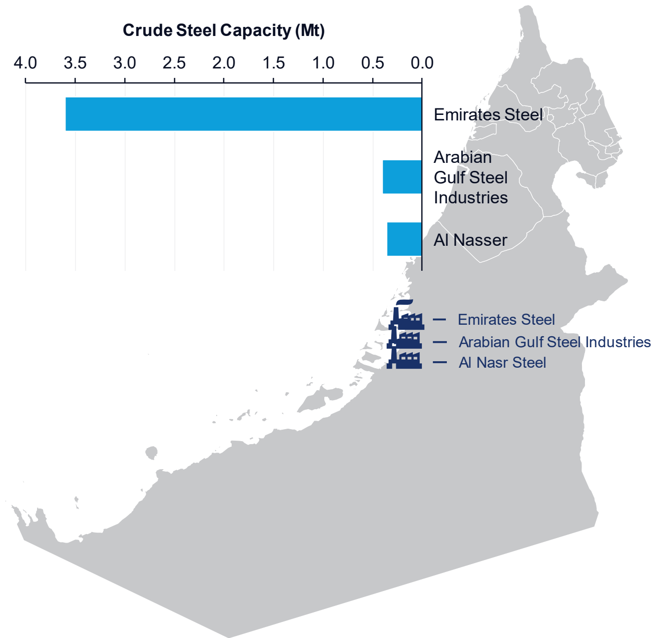

*Source: Wood Mackenzie*

## Steel

In summary, we forecast a slight increase in production over the forecast period, with no significant greenfield capacity expected.

Emirates Steel is the UAE's only major primary steel producer, with two other minor fabrication plants also in Abu Dhabi.

## Crude Steel Production Capacity & Location Map

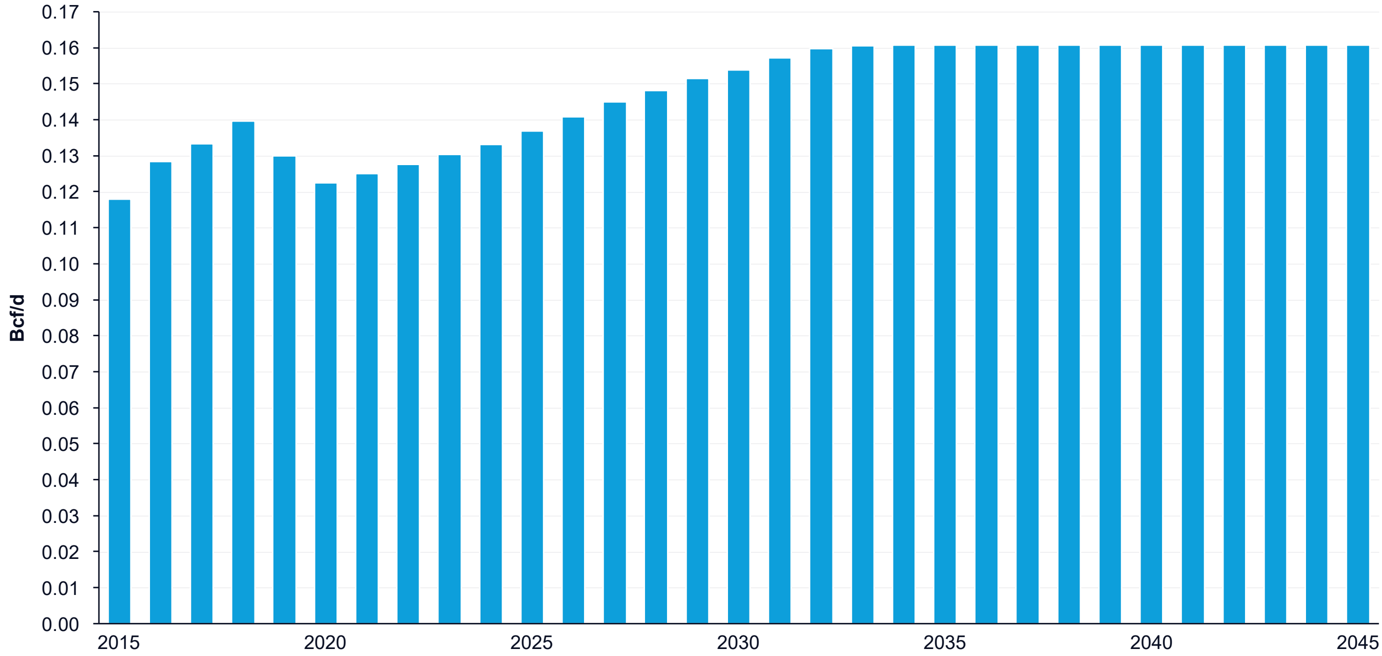



*Source: Wood Mackenzie*

- In 2019, the United Arab Emirates was expected to produce a total of 3.2 Mt of crude steel
- This is split between a domestic market for steel which has fluctuated between 6-8 Mt in recent years, and exports
- The country also imports around 4.5 Mt of steel currently
- The UAE has one major steel producer, Emirates Steel, with a 3.6 Mt plant
- The plant is an electric arc furnace (EAF) process as opposed to the more common basic oxygen furnace (BOF)
- In addition to Emirates Steel, we have identified Arabian Gulf Steel Industries and Al Nasr Steel which are also believed to use EAF
- While the EAF process uses electricity, the raw material for EAF, direct reduced iron, requires gas for its production
- Energy prices are an important component of a steel plant's cost profile; we do not see Emirates Steel as particularly advantaged and Emirates Steel is believed to sit towards the middle of the global steel cost curve
- The lack of clear cost advantage makes the development of further capacity in the UAE less likely

In our outlook, China continues to dominate global steel supply, including imports in the Gulf Region. Our forecast sees the UAE importing over 9 Mt of foreign steel in 2045, up from just over 3 Mt today. We do not expect any major greenfield steel plant capacity additions in the UAE, but we do build in minor capacity creep utilisation growth, therefore our forecast for gas demand into steel does not significantly expand from present levels.

## Historical and Forecast Gas Demand from Steel Sector



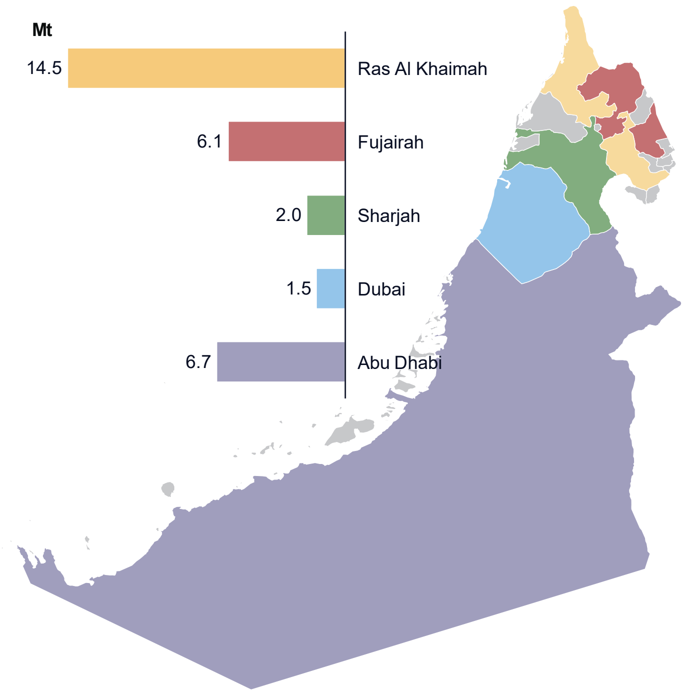

*Source: Wood Mackenzie*

## Cement

In summary, production is expected to increase along with population and GDP, resulting in increased gas demand.

The UAE is thought to have over 45 Mt of cement production capacity.

## UAE Cement Capacity (Clinker) by Emirate

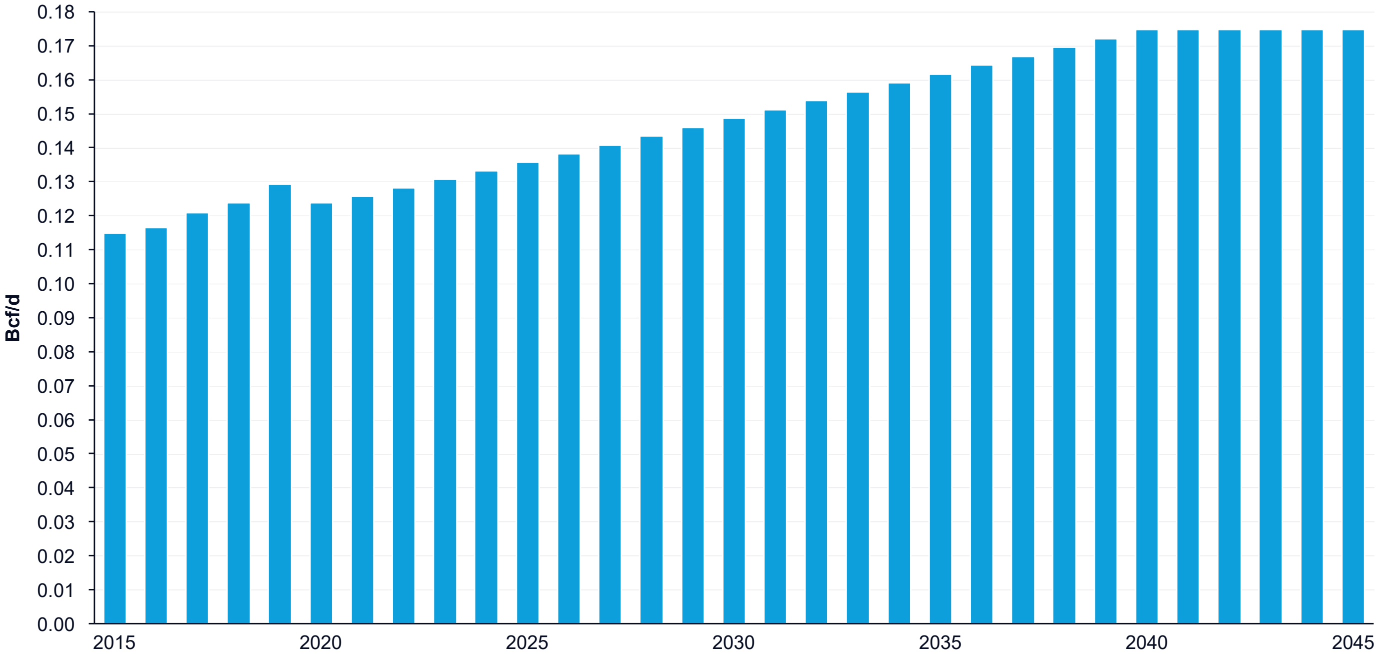



- We include at least 31 Mt of cement production capacity in the UAE
- This represents significant overcapacity versus current production levels of around 20 Mt
- While Abu Dhabi contributes over 20% of total plant capacity, the Northern Emirates, especially Ras al Khaimah and Fujairah, are home to the largest capacity
- These plants benefit from proximity to the limestone and aggregates quarries of the Northern Emirates, which provide raw material to the cement process
- In addition to its integrated cement plants, the UAE also has over 10 Mt of standalone cement grinding mills
- These do not possess kilns consuming fuel so are less relevant for our analysis
- While largely consumed in the domestic construction market, some UAE cement is also exported to nearby countries
- UAE cement production is believed to be mostly gas-fuelled
- Cement production last peaked during the construction boom of 2008, thus showing a strong correlation with GDP

*Source: Wood Mackenzie*

Cement production is more volatile than other industries and is highly linked to GDP and construction growth in particular.

## Estimated Historical and Forecast Gas Demand from Cement Sector

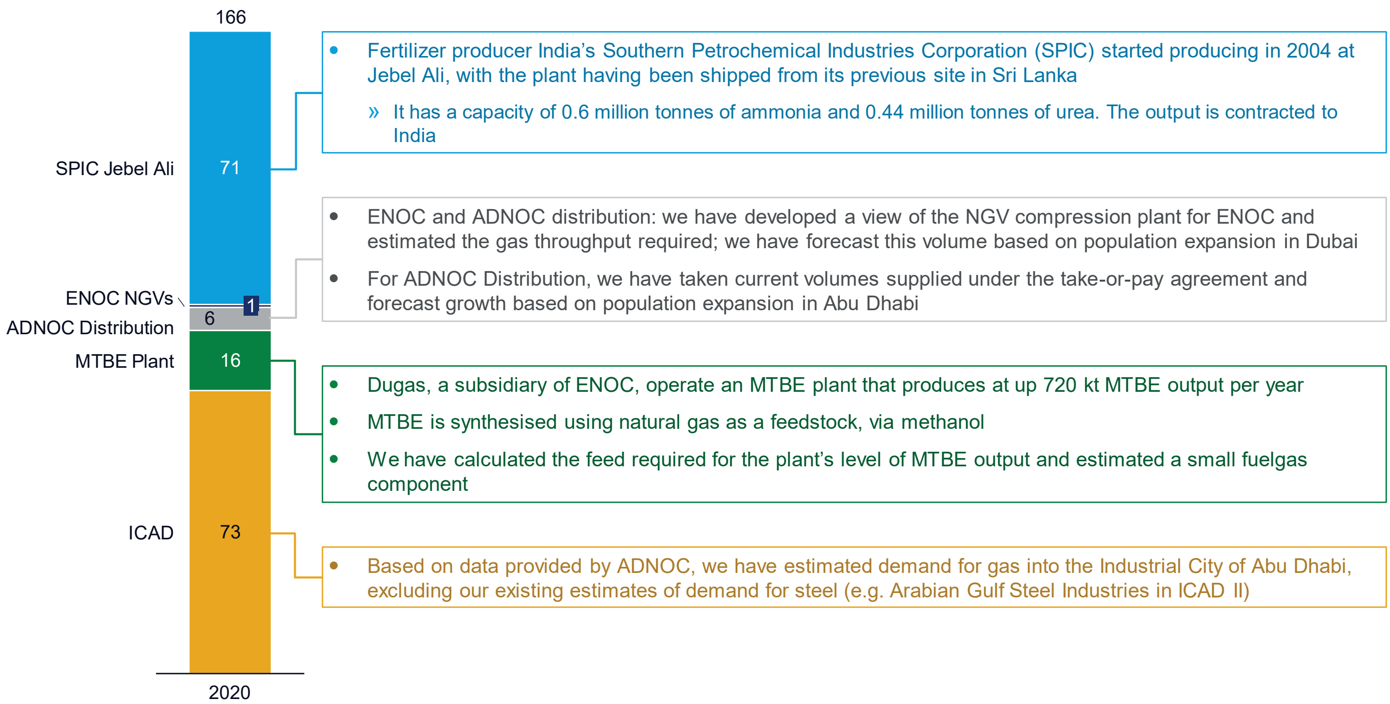



*Source: Wood Mackenzie*

## Other industries

Other industries include various existing demand segments, none of which are forecast to see rapid or substantial growth. We have estimated gas demand from a variety of smaller industrials and off-takers in the UAE. Our base case includes a segment of demand from other industries including fertilizer (excl. ADNOC), an MTBE plant, NGVs and ICAD

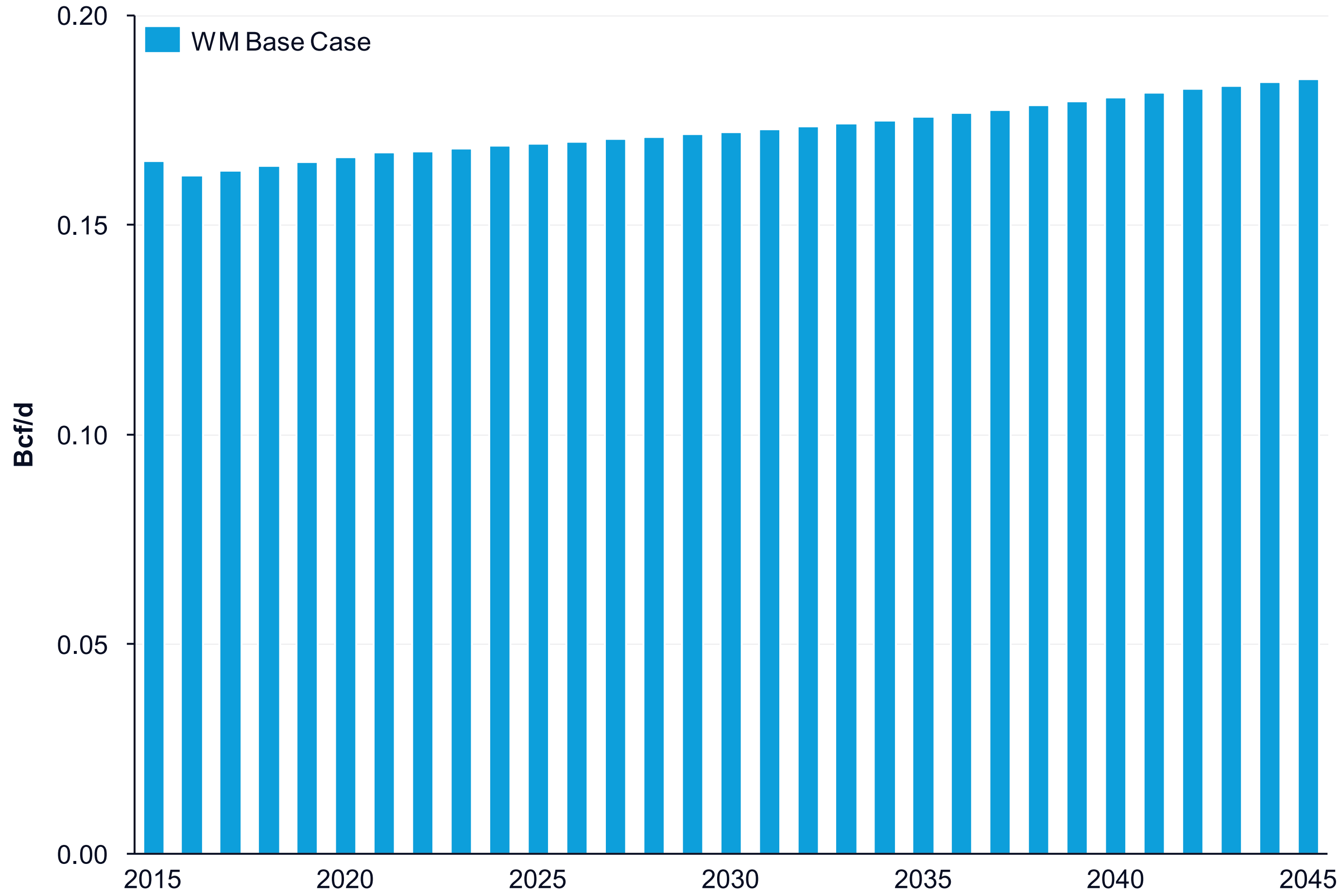
## "Other Industries" Estimated 2020 Demand (mmcf/d)




*Source: Wood Mackenzie*

ADNOC's base case industrial demand forecast expects new demand to develop from the Khalifa Industrial Zone Abu Dhabi (KIZAD) industrial city. The ADNOC forecast is understood to be based on analysis of existing industrial licences taken out by companies interested in building industrial facilities in KIZAD. In the absence of existing demand from this centre, and firm existing commitments from KIZAD to take the gas, we have not included these volumes in our base case forecast, which is presented in the chart below.

Estimated Historical and Forecast Gas Demand from Other Industries




*Source: Wood Mackenzie, ADNOC*

## ADNOC Industries

ADNOC Group's own industrial ventures comprise a significant segment of sales gas demand within the UAE. These include existing ventures and their associated gas demand as well as expected future projects. ADNOC have provided their own forecasts of demand for these industries. These forecasts form the basis of our outlook. We have reviewed and screened them to develop what we consider an independent base case.

ADNOC's own forecast of its industrial subsidiaries' demand can be split into two key categories: existing and future projects. There are seven existing (online) gas-consuming projects in the ADNOC industries sector:

1. ADNOC Gas Processing
2. ADNOC Refining
3. ADNOC Refining General Utilities Plant (GUP)
4. FERTIL
5. Borouge
6. Carbon Black and Delayed Coker
7. BeAAT

We have included all of the existing ADNOC Industries projects in our base case and in total they account for over 7 Tcf of cumulative demand between 2020 and 2040.

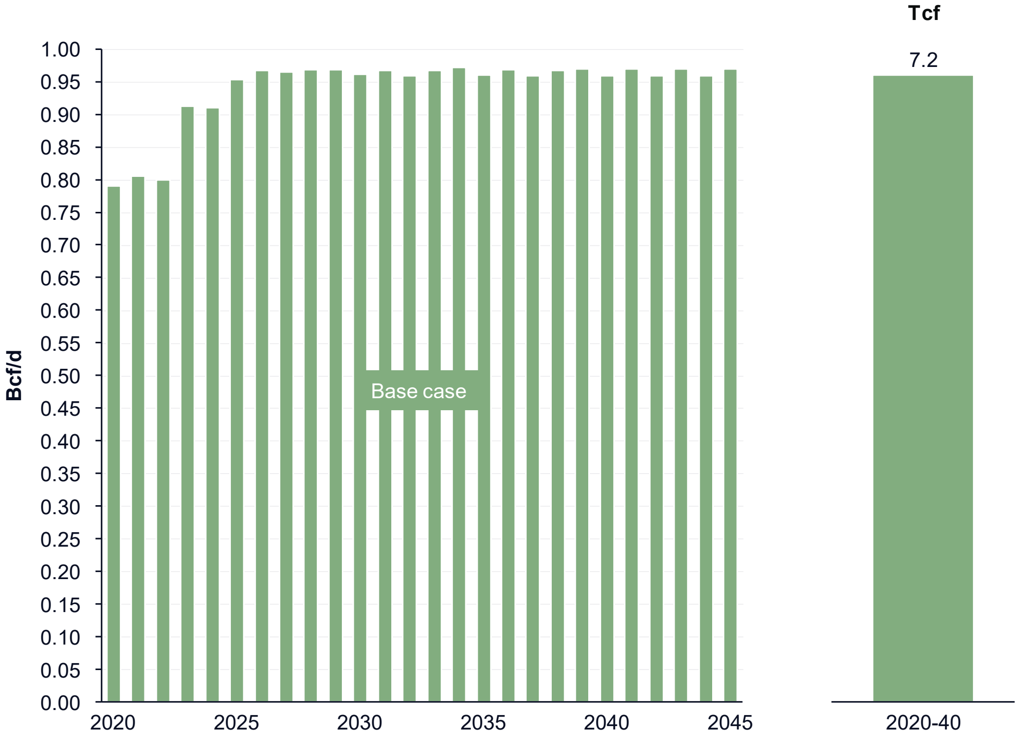
The ADNOC Industries future projects are of various stages of development. We have categorised the ADNOC Industries projects into those we include in our base case, as well as likely and tentative upside. There are three projects that are included in our base case including the Crude Flexibility Project. These projects have either taken FID, final investment decision, or are in FEED, front end engineering design, stage and with strong visibility and public messaging around project development progress.

There are a number of other projects that at the time of the report writing were considered likely or tentative which were not included in our base case. Amongst these projects are the new refinery and Borouge 4 projects which were announced with significant public ceremony and statements of commitment. The new refinery is in pre-FEED; Borouge 4 is in FEED. The likely or tentative projects had longer time horizons than the base case projects, with increased risk of disruption, and therefore were excluded from the base case.

The Ruwais derivatives park is partially dependent on delivery of Borouge 4 as well as dependent on attraction of derivatives players. While business development is underway and certain high-level partnership deals have been announced, no development plans have been provided. The dependencies, long time horizon and early stages of discussion mean we rated this demand as tentative.

Projects that were classified as likely and tentative provide significant upside to the ADNOC Industries demand outlook. Likely projects could deliver up to 2.3 Tcf 2020 to 2040, and tentative, 1.1 Tcf over the same period, these are not included in our base case, presented in the chart below.

ADNOC Industries Annual Gas Demand Forecast and Cumulative 2020 to 2040



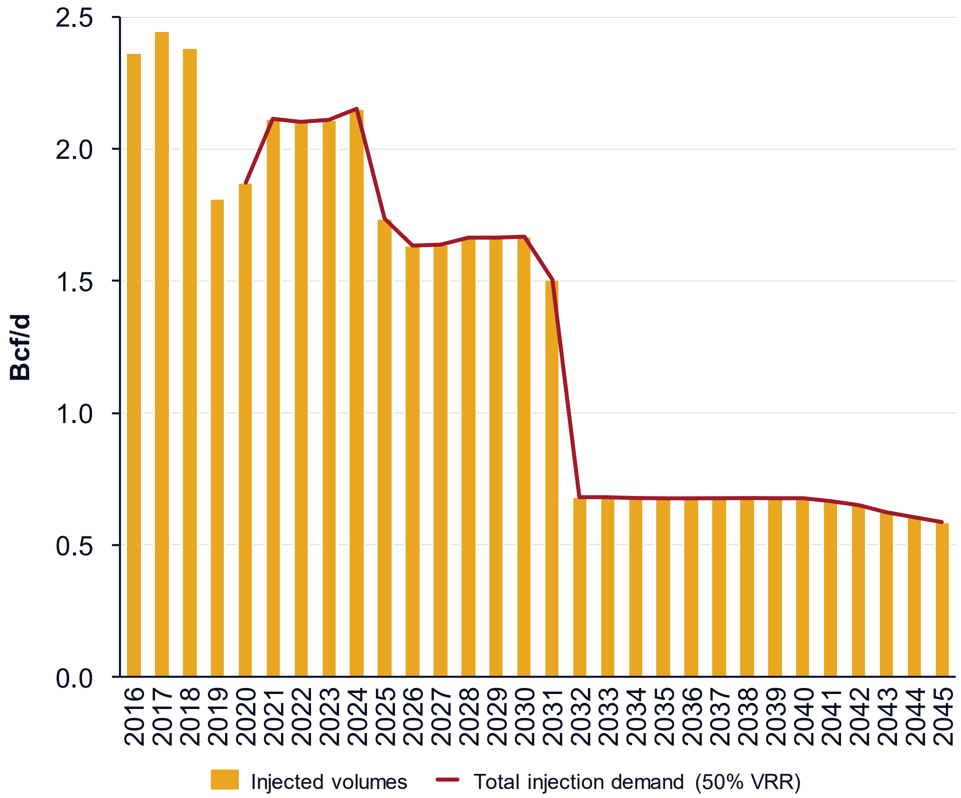

*Source: Wood Mackenzie, ADNOC*

# Injection

Injection of lean/sales gas back into reservoirs to strip condensate and manage demand is a key feature of the gas market in the UAE. Injection plays an important role in revenue generation through liquids stripping but possibly more importantly in its ability to help balance the market in periods of both high and low demand. The amount of lean gas that is injected relative to the feed gas that is extracted over a given period is referred to as the void replacement ration (VRR). The injected volumes are tariffed under Galaxy AssetCo's contractual framework. Lean gas is currently reinjected, principally in two key fields. Forecast reinjection is lower than the realised historic and there is scope for higher injections than in our Base Case in case of excess supply over the forecast period. The potential reduction of reinjection has a key role to play in the potential replacement of any Dolphin pipeline volumes loss.

ADNOC's current plan assumes a 50% VRR, where a minimum of 50% of the produced feed gas volume from the injection fields is reinjected back into the reservoir as processed, sales gas. Historically the VRR has been higher than 50% and this volume can be flexed to manage the gas market.

Sales Gas Reinjection




*Source: Wood Mackenzie, ADNOC. Bars show historic injection volumes which are actuals and forecast reinjection volumes as ADNOC forecast*

# UAE Sources of Gas Supply

Wood Mackenzie's base case gas supply is based on modified volumes from ADNOC's upstream Gas Master Plan and Wood Mackenzie's analysis of supply from other sources.

## ADNOC Gas Supply

ADNOC's Gas Master Plan outlines the raw gas volumes that ADNOC Upstream is committed to provide to the downstream part of ADNOC's gas business. These raw gas volumes have been converted to sales gas using standard system wide conversion factors. This conversion factor takes into account the removal of CO2, H2S and inerts, shrinkage associated with removal of NGLs and fuel use associated with the gas processing. The average conversion factor used between 2020 and 2040 is 65.4%. It is worth noting that the ADNOC gas planning process builds in natural conservatism to ensure that volumes of gas can be realised at each transfer point in the system.

Whilst assessing the contribution to supply from different sources the maturity of development plans has been assessed and those sources that have moderate or high maturity or are longer term plans have been included in our base case. Ruwais and Ghasha are excluded from our base case view of supply. Ruwais and Ghasha are concession areas that are currently being evaluated by ADNOC and its international partners to determine their likely future contribution to the production mix in Abu Dhabi.

Between 2020 and 2040, 42 Tcf of sales gas is available in Wood Mackenzie's base view, excluding volumes utilised by ADNOC LNG. It has been assumed that ADNOC LNG operates at close to full capacity (approximately 6 mmtpa), with refurbishment of Trains 1 and 2 in the next 3 to 4 years, reducing volumes temporarily. ADNOC LNG is amongst the most competitive globally, its breakeven benefitting from advantaged feed gas.

An addition, 9 Tcf would become available with the development of Ruwais and Ghasha but this is not included in our base case view. In addition to the base case and potential upside from Ruwais and Ghasha, future notional volumes, at an early or conceptual stage, could add an additional 8 Tcf between 2020 and 2040.

The WACOG (weighted average cost of gas) of ADNOC supply increases as higher-cost fields come online. However, higher cost gas is mitigated by large volumes from lower cost onshore and offshore. The WACOG is always significantly lower than the predicted price for alternatives, Dolphin and LNG import.

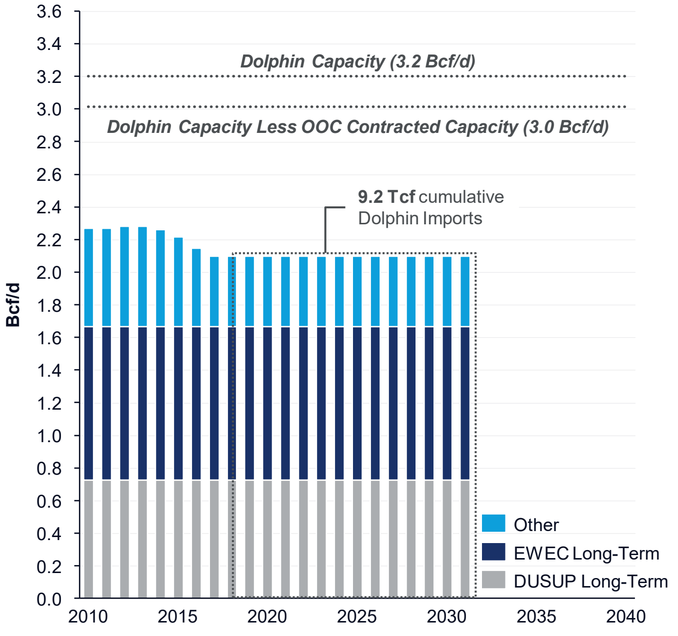
## Non-ADNOC Gas Supply

There are minor contributions to the supply view from a number of different sources outside of ADNOC gas supply. The more material positions include:

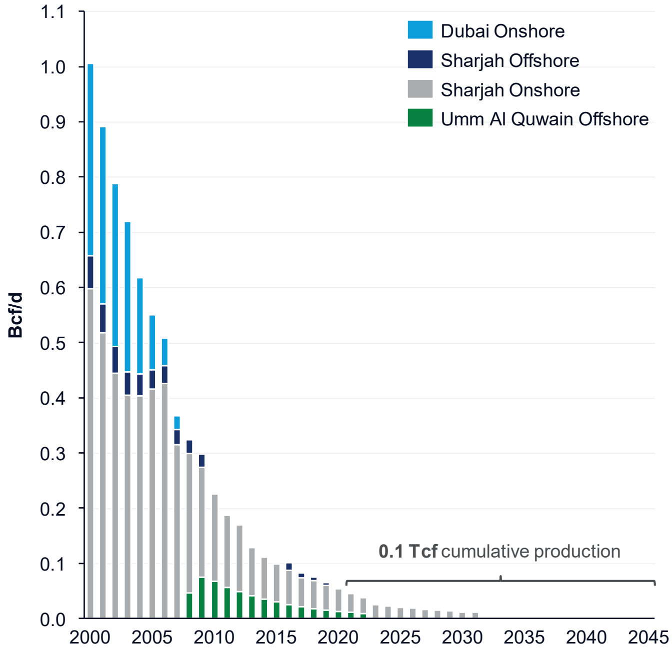
- Abu Al Bukhoosh, which feeds into Das Island, but will cease production at the end of 2020;
- Outside of Abu Dhabi there is minor gas production from Sharjah and Umm Al Qaiwan;
- The UAE's only existing LNG import facility is DUSUP's FSRU at Jebel Ali; a small volume of imports is contracted to 2025; and
- We expect a maximum of 9.2 Tcf imports via Dolphin until 2032 in our base case.

Other than Qatar, UAE has limited access to further pipeline supplies from its neighbours and most GCC countries, except Qatar, are concerned about long term supply security.

## Dolphin Imports to UAE




## Non-Abu Dhabi UAE Production



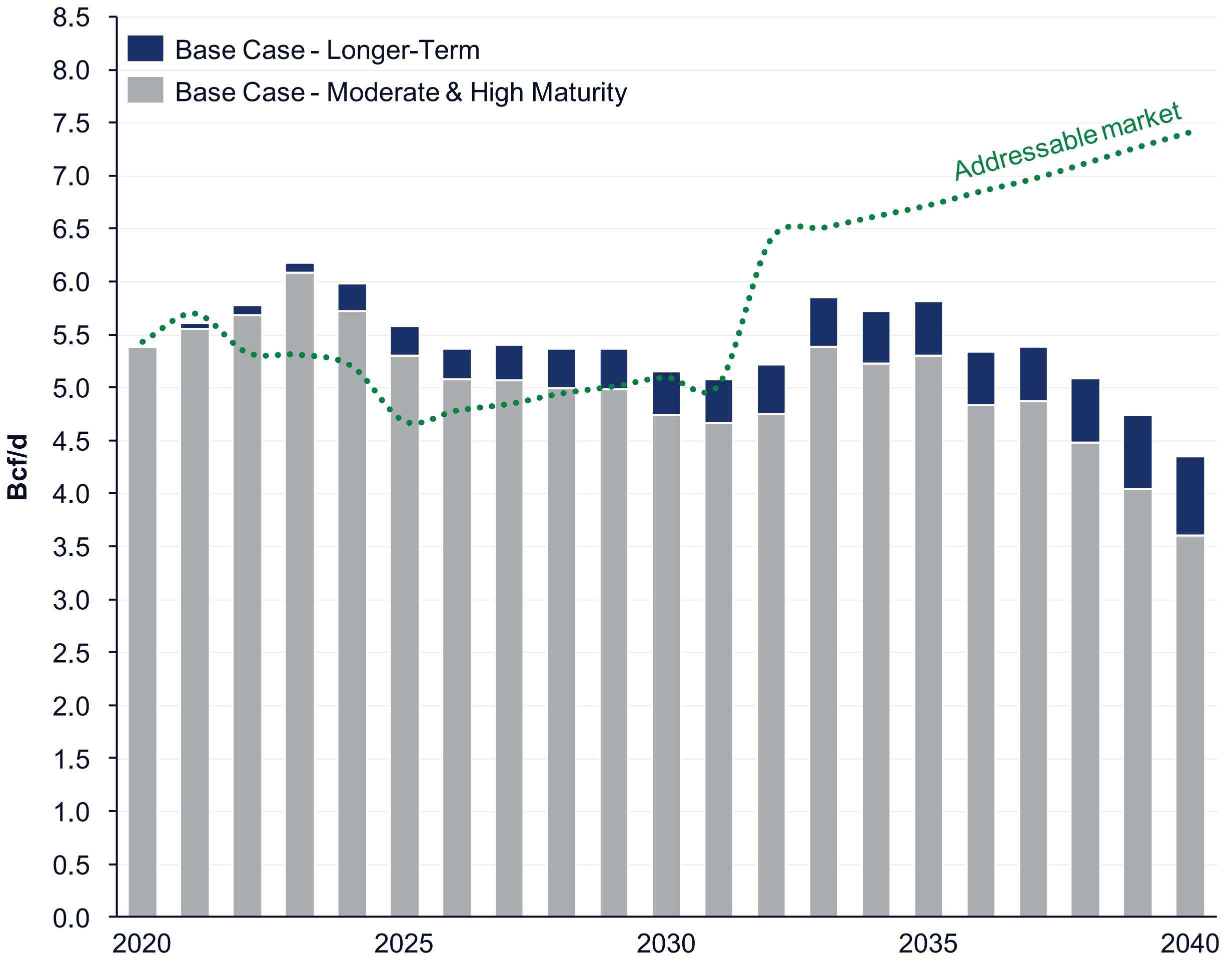

*Source: Wood Mackenzie; OOC contracted capacity refers to the 200 mmcf/d that transits UAE on its way to Oman*

# UAE Gas Supply Demand Balance

From 2020 until 2031, in our base case ADNOC's available supply is higher than our expectations for the addressable domestic market. It is possible that ADNOC will be able to increase processed injection volumes during this period vs our forecast, boosting condensate production. On the assumption that the Dolphin pipeline ceases to supply volumes to the UAE from 2032 onwards, the addressable market jumps by 1.5 Bcf/d in that year. The gap opened up by the potential loss of Dolphin volumes is offset by a drop in injection.

From 2032 onwards, ADNOC would have to tap gas supplies outside of our base case to address the whole market, most likely from potential upside volumes at Ghasha and Ruwais JVs, although other less well-defined upside opportunities exist.

ADNOC Available Supply Outlook vs Addressable Market




*Source: Wood Mackenzie*

# UAE NGL Outlook and Market

The BSF has three components; lean gas, LNG exports and NGLs. NGLs are a component of natural gas which are in gaseous form within the reservoir but can be recovered from the natural gas vapour in a processing plant and kept in liquid state for transportation and sale. It includes ethane, propane, butane, isobutane, and pentane. The heavier fractions in a natural gas reservoir which condense into a liquid as they are produced (i.e. at normal temperature and pressure) are not considered to be NGLs. LPG, or liquefied petroleum gas, can contain the NGL components propane and butane. These products typically contain from two to nine carbon molecules and are sold as heating and cooking fuel, used as feedstock for chemical production, or blended into transportation fuels.

NGLs in Abu Dhabi are separated at the seven gas processing plants and are subsequently transported to the Ruwais facility for fractionation. A system wide average conversion ratio has been assumed. This gives NGL production of between 43,000 tpd and 54,000 tpd.

LPG and naphtha are key products derived from the distillation of NGLs. Both LPG and naphtha are liquids traded on growing global markets and prices are expected to continue to support ADNOC output. Petrochemicals drive our forecast for growing LPG demand globally, with ADNOC's key Asian markets remaining large importers. Likewise, petrochemical expansion drives growing naphtha deficits in Asia.

# UAE LNG Export

The final component of the BSF is LNG exports. It has been assumed that ADNOC LNG operates at close to full capacity (approximately 6 mmtpa), with refurbishment of Trains 1 and 2 in the next 3 to 4 years, reducing volumes temporarily. ADNOC LNG is amongst the most competitive globally, its breakeven benefitting from advantaged feed gas.

# Appendix 1 - Wood Mackenzie Methodology and Approach

There are three key underlying drivers of gas demand growth as follows:

- GDP;
- Population; and
- Per capita energy efficiency.

These assumptions and others used in the formulation of our base case view our outlined below.

## GDP Assumption

We model a growing GDP, although rates of growth are slower than historically observed. In real terms, our base case forecasts UAE GDP growth averaging 3.8% per annum to 2040. Forecast growth is faster early in the period, averaging 4.3% per annum between 2020-30, largely as a result of what we expect to be an oil production ramp up in Abu Dhabi from current levels just above 3 mmbbl/d to 4 mmbbl/d. Growth rates then slow to 3.5% CAGR in the period 2030-40.

This GDP assumption is based on a range of forecast assumptions:

- Long-term Brent oil price of $65 flat in real terms;
- Abu Dhabi oil production climbing to 4 mmbbl/d by 2030 (significantly lower and more conservative than Abu Dhabi targets of a production capacity of 5 mmbbl/d by 2030);
- Stable rates of UAE Government investment and current spending as a proportion of GDP; and
- Global GDP growth averaging 2.5% (real terms) to 2045.

The UAE GDP forecast was split into five distinct sectors; Abu Dhabi oil sector, Abu Dhabi non-oil sector, Dubai oil sector, Dubai non-oil sector and Other Emirates. A GDP forecast was generated for each of these individually based on the key factors influencing each sector.

Abu Dhabi's oil sector currently accounts for approximately a third of Abu Dhabi's overall GDP, and Abu Dhabi's non-oil sector is indirectly influenced by oil related activity, therefore Abu Dhabi's future GDP is highly linked to oil revenue. Abu Dhabi oil sector GDP is strongly correlated with oil revenue which is in turn driven by oil production and oil price. Between 2009-2018, oil revenue grew on average 4% year-on-year and over the same period GDP growth in the Abu Dhabi oil sector also averaged a 4% year-on-year. Wood Mackenzie's view of future oil production in Abu Dhabi and forecast Brent price was used to forecast the oil sector GDP over the next 20 years. Wood Mackenzie assumes oil production will grow significantly over the coming years largely as a result of what we expect to be an oil production ramp up in Abu Dhabi from current levels just above 3 mmbbl/d to 4 mmbbl/d. This results in a 4.3% average growth in Abu Dhabi's GDP between 2020 and 2040.

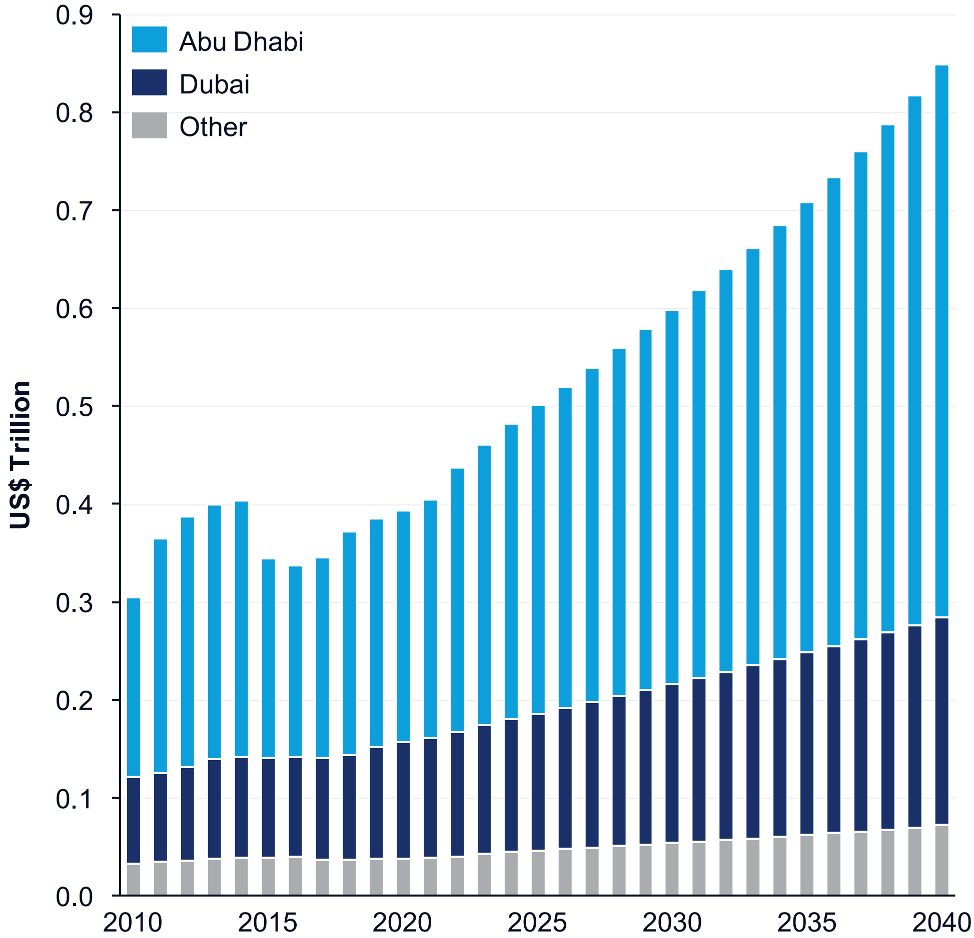
The GDP of Abu Dhabi's non-oil sector is strongly correlated with public capital investment. Capital investment in Abu Dhabi's economy is primarily driven by investment from ADNOC which is in turn driven by oil revenue. As ADNOC production increases so will oil revenue resulting in increased public capital spending. Between 2009 and 2018 public capital investment increased by an average of 3% year-on-year, while Abu Dhabi's non-oil GDP grew on average 7% year-on-year over the same time period. Over the last 10 years, public capital spending was on average 10% of total GDP and it is assumed future capital spending will remain at this level. The historical correlation between non-oil sector GDP and public capital spending as well as the forecast of future public capital spending was used to forecast the GDP of Abu Dhabi's non-oil sector over the next 20 years.

The GDP of Dubai's oil sector is strongly correlated with Dubai's oil revenue which is in turn driven by oil production and oil price. From 2008 to 2017, Dubai's oil sector GDP decreased by an average of 1% year-on-year and over the same period oil revenue decreased by an average of 4% year on year. The Wood Mackenzie view on future oil production from Dubai and Brent price out to 2040 was used to forecast Dubai's oil sector GDP. We assume oil production in Dubai will decline on average 18% per year as fields continue to mature, this therefore results in an average 8% year-on-year decline in oil related GDP from 2020 onwards.

Dubai's non-oil sector GDP is strongly linked to external factors and so future changes in GDP have been correlated against our Global GDP forecast. Between 2008 and 2017, Dubai's non-oil sector GDP grew on average 3% year-on-year, while Global GDP grew on average 4% each year.

The Other Emirates GDP is forecast using the Dubai and Abu Dhabi GDP forecast as historically there has been a strong correlation between these factors. Between 2008 and 2017, the annual growth rate of the Other Emirates GDP grew on average 6% year-on-year and over the same period the combined Abu Dhabi and Dubai GDP also grew by an average of 6% year-on-year.

GDP Forecast (2014 Real) – Excludes COVID-19 and H1 2020 Oil Price/Demand Impact




*Source: Wood Mackenzie, IMF, World Bank*

## Population Assumption

We forecast a growing population driven by GDP-linked Government expenditure. We forecast population growth at an average 4% per annum over the period to 2040. Growth is faster during the first few years in line with the economic growth in this period, driven by an expected ramp-up in oil production.

The UAE population forecast was assessed on an Abu Dhabi and Dubai individual basis. In both emirates population changes are driven by the ex-pat population. In Abu Dhabi, government expenditure was used as a proxy for forecasting future changes in population; increased public spending is expected to create new jobs which will require more workers and so the ex-pat population is expected to grow. In Dubai, non-oil GDP growth was used as a proxy for population growth as non-oil GDP growth reflects a growth in industry and so a requirement for more workers, primarily ex-pats.

Expats currently make up around 70% of the UAE's population in total, around 75% in Abu Dhabi and over 90% in Dubai. Growth of this expat population is driving the extremely high overall growth rate seen in the UAE since 2000, with multiple years of 15%+ growth and an overall CAGR of over 7%. Historically, the growth of the expat population can be linked heavily to the rate of job creation in the UAE. We have used our economic forecast for the UAE to project job creation rates in each of the Emirates.

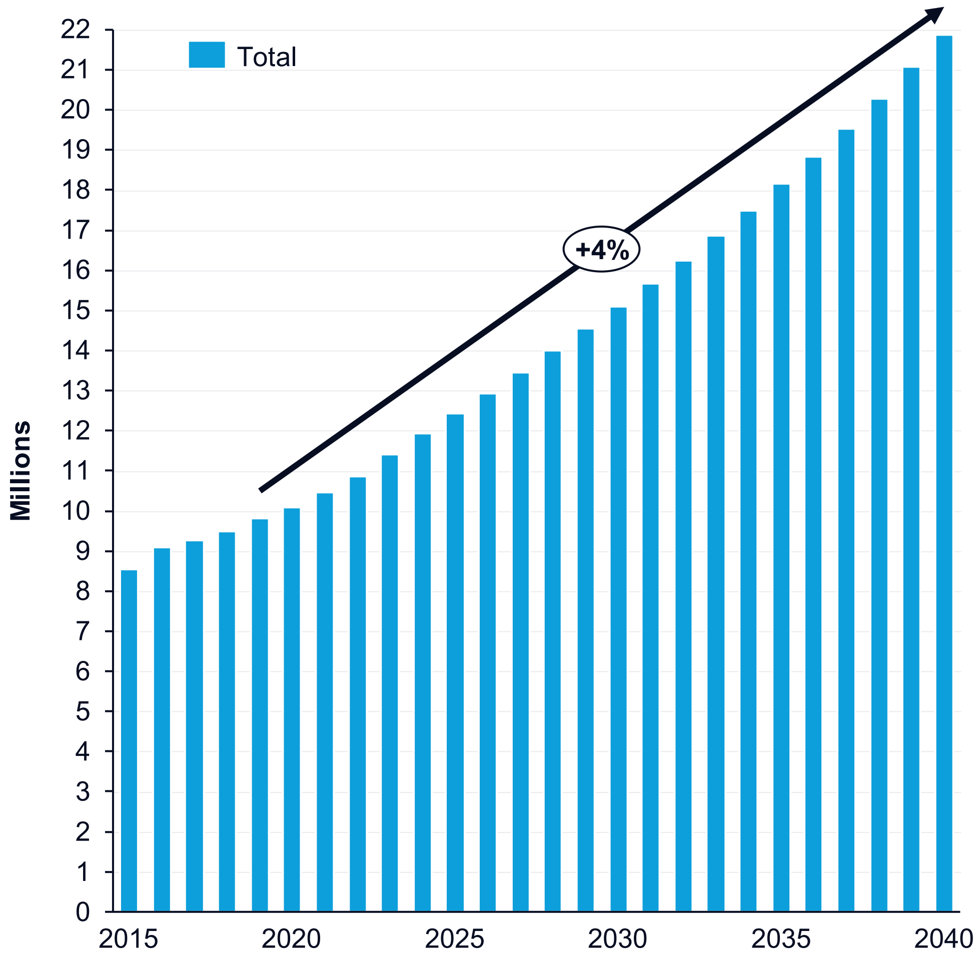
Key inputs include the assumption that the Emirates continue to spend heavily as a proportion of GDP and a rate in line with those historically observed.

We assume the citizen (Emirati) population of the UAE grows at a natural growth rate.

Our forecast for the UAE's population sits significantly above the UN's 2019 "medium" forecast, however the UN forecast for UAE population is a flat profile in which population growth averages under 1% to 2030 and begins to enter decline thereafter. Within this forecast is an assumption that net immigration levels return to a level last seen in the 1980s and we do not believe this population forecast is compatible with our base case outlook for economic growth in which economic expansion and job creation have gone hand-in-hand.

Our forecast represents a probable base case founded upon reasonable assumptions and demonstrable historical trends. Our population view is driven by the relationship with GDP which in turn is driven by oil related revenue. It is not conceivable that with the projected oil revenue and therefore associated non-oil related GDP impact related to government investment can proceed without an increase in population forecast.

### UAE Population Forecast




*Source: Wood Mackenzie, UAE 2019 State of Energy Report*

## Per capita energy efficiency

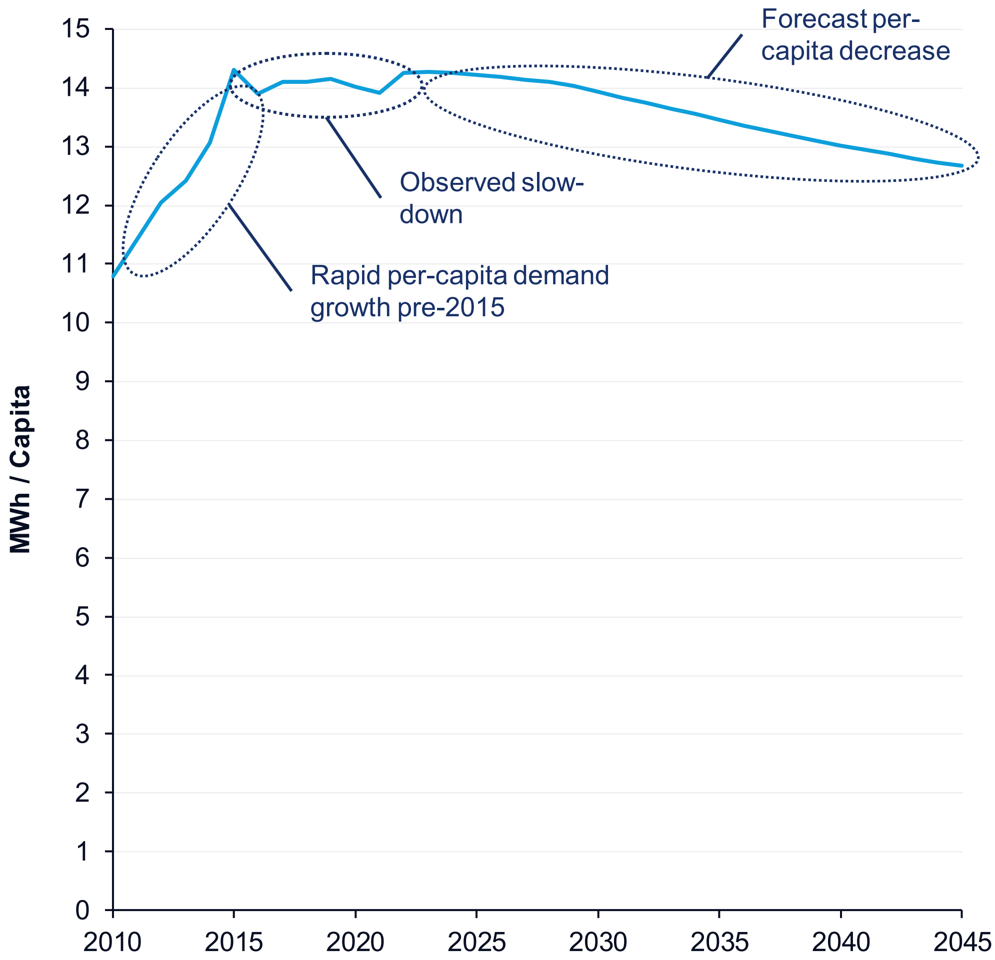
We model a soft decrease in electricity consumption per capita, without the major demand-side savings the Government targets.

The UAE's 2050 Energy Strategy includes ambitious demand-side management targets, for example aiming to reduce electricity consumption per capita in Abu Dhabi by 20% by 2030. Abu Dhabi's Tarsheed program, run under the DoE umbrella, aims to achieve reduction through a combination of education, technology, standards and financial incentives – "without sacrificing productivity". The program will apply to industrial, commercial and residential electricity consumers.

Dubai, similarly, aims to reduce electricity consumption by 30% by 2030. Dubai's Taqati program, out of the DSCE and DEWA, places a strong emphasis on building regulations, new electricity tariff rates and appliance labelling to provide 85% of their total proposed electricity savings versus a business-as-usual case. While Taqati has reported success in some detail, it is not entirely clear the extent to which lower electricity demand versus their base case demand forecast has come as a result of economic and population growth slowdown since the oil price downturn rather than DSM success.

We have built 0.5% p.a. reductions in residential electricity consumption per capita across the Emirates into our forecast. We believe that with as-yet relatively unproven DSM policies and initiatives, and economic growth that has gone hand-in-hand with energy consumption, more significant overall energy savings should not be included in our base case.

UAE Electricity Consumption Per Capita




*Source: Wood Mackenzie, UAE 2019 State of Energy Report*

## Summary of approach taken in creating this report

In the creation of this report Wood Mackenzie has had access to information from within and outside ADNOC to develop the forecasts.

We have used a combination of:

- WM proprietary data;
- information received from ADNOC on both supply and demand which was then checked vs WM expectations and discussed and verified through extensive discussions with the ADNOC gas supply and demand teams; and
- primary research substantiated with interviews with key offtakers (EWEC, EGA, DoE, Taqa).

ADNOC provided access to its own forecasts of gas sales to ADNOC customer categories. ADNOC develops these forecasts, where possible, in collaboration with the customers themselves. Since these only apply to ADNOC customers, they do not reflect a full view of UAE gas demand (current or future). We used ADNOC's data as the basis of our forecast of ADNOC Industries demand, but otherwise replaced ADNOC's view with our own. We also conducted discussions with ADNOC's downstream gas team, whose knowledge on developments in the sector helped inform some of the assumptions we made in our independent modelling efforts.

Wood Mackenzie independently arrived at a macroeconomic, GDP and population forecast based on modifications to our UAE macroeconomic outlook and through more detailed analysis of UAE and Abu Dhabi specific trends.

## Utilities

Summary of approach:

- Developed bottom-up forecast of gas demand

- Included macroeconomic model to develop Emirate-by-Emirate GDP and population outlook that feed into electricity demand forecast

- Developed hourly power demand and generation model to determine view of call on gas generation in Abu Dhabi, Dubai, Sharjah and Other Emirates

- Considers buildout of different generation capacity types including (but not limited to) nuclear and PV solar

## Industries

Summary of approach:

- Developed bottom-up forecast of gas demand

- Sector-by-sector forecasts for Aluminium, Steel and Cement sectors, focusing on developing demand baseline and outlook for industries' future production (and therefore gas consumption)

- Provided forecast for "other" industrial demand, including Fertilizer, MTBE, and ICAD (Industrial City of Abu Dhabi); outlook for these industries is held largely flat

    - Also included outlook for gas demand into NGVs

## ADNOC Industries

Summary of approach:

- ADNOC's own forecasts form the basis of our outlook

- Projects are divided into existing and future

- For existing projects, we have used ADNOC's forecast of demand, modified where necessary after discussions with ADNOC and through reference to other sources to confirm volumes.

- For future projects, we have categorized projects according to their development status and likelihood to provide "base", "likely" and "tentative" cases of future demand

    - In certain cases, we have also revised the demand forecast or project timing according to Wood Mackenzie's published views

## Injection

Summary of approach:

- ADNOC's forecast for injected processed gas volumes has been used as the base case

## Supply

The gas supply presented in this report is based upon information received from ADNOC or from Wood Mackenzie's own research. All supply information received from ADNOC was extensively analysed and discussed with ADNOC to ensure applicability for inclusion in our base case.

# Appendix 2 – Definitions and Glossary

ADNOC Sole Risk (ASR) – Oil and gas fields or assets where ADNOC is the sole participant;

Associated gas – Natural gas initially in solution in oil within the reservoir. The gas comes out of solution and is present as a separate phase at the lower temperature and pressure conditions at the surface;

Bcf/d – Billion cubic feet of gas production per day;

Blowdown - A final phase of production from some oil reservoirs that have significant volumes of gas forming a 'cap' which overlies the oil column. During blowdown the wells are recompleted to produce from gas zone and the production pressure at the wellhead reduced to maximise the extraction of the gas reserves;

Borouge - A joint venture between the Abu Dhabi National Oil Company (ADNOC) and Austria based Borealis focused on petrochemical production;

DEWA – Dubai Electricity and Water Authority;

DoE – Abu Dhabi Department of Energy;

Dolphin - The Qatar to Abu Dhabi subsea pipeline known as Dolphin;

DSM – Demand side management, the process by which energy efficiency in end users is managed and optimised;

DUBAL – Dubai Aluminium;

DUSUP - Dubai Supply Authority;

EMAL – Emirates Aluminium;

EWEC - Emirates Water and Electricity Company;

FEED – Front End Engineering Design;

Feed gas – Gas in its raw form before undergoing processing to make it more suitable to end user applications;

FEWA - Federal Electricity and Water Authority;

FID – Final investment decision;

FRSU – Floating regasification storage unit;

Ghasha JV – Oil and gas concession that is located offshore Abu Dhabi and consists of three major gas and condensate development projects Hail, Ghasha and Dalma as well as other offshore oil, gas and condensate fields including Nasr, SARB and Mubarraz;

GWdc – Gigawatts direct current;

Injection – The process by which lean/sales gas is injected back into liquids rich reservoirs. Once in the reservoir the gas comingles and the lean gas becomes liquids rich and can be extracted to the surface for the valuable liquids component to be removed. In Abu Dhabi this serves the dual purpose of managing demand variation in the market and providing a valuable revenue stream from the extraction of liquids;

IWPP – Independent water and power producers;

Jebel Ali - Jebel Ali is a large commercial port and business hub on the southern outskirts of Dubai, in the United Arab Emirates;

JV – JVs or joint ventures are the most common business arrangement for oil and gas companies engaging in exploration, appraisal, development and production operations;

Lean gas – or sales gas, is the processed gas which is actually sold. Feed gas is processed and the processed gas is called lean gas or sales gas. This excludes any losses through processing and gas used for fuel;

LPG – Liquefied petroleum gas, a mixture of light hydrocarbons which is gaseous at normal temperatures and pressures. LPG is held in a liquid state for transport and storage purposes. LPG is composed mainly of propane ($C_3H_8$) and butane ($C_4H_{10}$) in varying proportions. Extracted from natural gas liquids;

Mmtpa – Million tonnes per annum;

Mt – Million tonnes;

MTBE – Methyl tert-butyl ether;

Naphtha – A volatile, flammable liquid hydrocarbon, a product of crude oil or condensate refining. Intermediate between motor gasoline and kerosene in composition. Frequently used as a feedstock in the petrochemical industry, also as a solvent or fuel. Extracted from natural gas liquids;

Non-associated gas - Natural gas present as gas within the reservoir;

Ruwais JV – The Ruwais Diyab unconventional gas concession;

SEWA - Sharjah Electricity and Water Authority;

Tcf – Trillion cubic feet of gas;

TWh - Terawatt-hour;

Void Replacement Ratio (VRR) – Process by which lean gas is injected back into a reservoir. The ration refers to the volume of lean gas that is injected as a percentage of the original feed gas extracted.

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## ANNEX C2: WOOD MACKENZIE INDUSTRY REPORT ADDENDUM

# Galaxy Bond Addendum

05 February 2021



This is an addendum to the report completed by Wood Mackenzie as part of GalaxyCo's bond offering in Q4 2020. That report provided Wood Mackenzie's H1 2020 assessment of the gas demand and supply outlook for the UAE.

The purpose of this addendum is to provide a summary update based on key developments and considerations on how 2020 unfolded, not to fully refresh the original report.

Given the limited nature of this addendum we have not provided a full supply demand balance or investigated areas outside of those highlighted in this report.

Whilst reading this report is important to keep in mind Abu Dhabi's ambitions for its oil and gas sector which have been articulated in ADNOC 2030 Strategy and can be summarised as follows:

- More Profitable Upstream – Increasing production capacity, driving cost efficiency, exploring for new resources, reenergizing mature fields, and protecting market share;
- More Sustainable & Economic Gas Supply – Improving operational efficiency, increasing sour gas production and utilizing CO2 in enhanced oil recovery to free natural gas to meet the power needs of the UAE; and
- More Valuable Downstream – Stretching the margin of each refined barrel of oil, expanding petrochemical production, developing new high value products to meet growing demand and increasing refining capacity.

All of the above increase the importance and strategic focus on the gas sector within the UAE.

# Table of Contents

# Executive Summary

At a macro level, 2020 saw disruptions from both the COVID-19 global pandemic and the oil price slump. The initial analysis for the October Bond Report was carried out whilst both were still unfolding, and it was difficult to predict what 2020 in its entirety would look like. However, in February 2021, we are now in a position to comment on some of the outcomes. Without a doubt these two influences will have the biggest impact on our gas demand forecast specifically in utilities' gas demand. Wood Mackenzie models a negative 7.7% GDP growth for the UAE in 2020, which is a less drastic than previously modelled in part due to slightly higher oil prices and in part due to better than anticipated activity (tourism, construction, production) throughout 2020. To understand how GDP might recover from this, in this addendum we have modelled two updated short-term GDP scenarios: one which sees a rapid recovery in 2021 and another which sees a slower return to normalized growth rates. The two modelled GDP forecasts see a 6% and 8.2% reduction in gas demand from utilities in the short term i.e. 2020-2022 after which GDP growth is expected to return to the trajectory previously modelled. These short-term changes lead to 0.2-0.24 tcf less demand from the forecast 4.01 tcf in the initial three-year period. Our modelling shows that utilities gas demand excluding injections will not recover to the initial position but will see recovery at a similar growth rate which might lead to a reduction of up to 16.1% or 4.37 tcf between 2020 and 2040.

Another update to the outlook comes from the announcement that Nawah achieved 100% of the rated power for Barakah 1, which was a key step for starting commercial operations in "early 2021". Based on this information, we now assume Barakah 1 to be fully operational from July 2021. Assuming the remaining reactors coming online with one-year intervals, cumulative gas demand from the utility sector will see a 0.16 tcf reduction between 2020-2040 – a 0.6% reduction to total base case utilities gas demand.

2020 impacted industrial gas demand in various ways: For Emirates Global Aluminium (EGA), the largest industrial gas consumer, COVID-19 and the oil price slump had little to no impact on production and gas demand. However, the UAE steel industry was impacted by lower levels of activity in the construction sector which resulted in production ~18% below 2019 levels. As a result of what has transpired in 2020, demand from Industries is expected to stay robust with a maximum modelled decrease of 0.098 tcf between 2020 and 2040. Potential upside might be seen from surge in steel demand and production as well as additional firming of plans at the Khalifa Industrial Zone Abu Dhabi (KIZAD).

Changes to projects related to ADNOC Industries saw certain projects assume a later commissioning date while others are now assuming higher gas demand. On balance, cumulative demand by ADNOC Industries in our base case is 0.1 tcf lower than our original forecast, however, 2020 saw certain projects such as the Ruwais Derivatives Park taking important steps towards commercial certainty which would provide upside to our base view.

Injection is the final, but key demand sector. Injection demand increased in 2020 with injection acting as a buffer to lower gas demand. Through conversation with ADNOC we understand that injected volumes were higher than forecast by 0.09 tcf, proving that the injection of lean gas acted as expected in providing a balancing item to the market. Injected lean gas volumes are tariffed under Galaxy AssetCo's contractual framework. Longer term demand from injection, inline with historical averages, would result in an increase by more than 3tcf between 2020 and 2040.

Material changes to ADNOC's gas supply outlook have occurred at the ADNOC Onshore Sole Risk fields and ADNOC Offshore. In both these instances there has been an increase in expected gas supply vs our previous view. Revised forecasts show a potential additional 4.1 tcf of gas between 2020 and 2040, above the 42 tcf previously forecast.

In summary, whilst 2020 undoubtably tested the robustness of gas supply and demand overall the changes that have been modelled show a maximum reduction of 1.64 tcf of demand over the 2020 to 2040 forecast period but an increase in supply of 4.1 tcf. A few sources of potential upside to demand could be realised in the Industries and ADNOC Industries segments, including hydrogen projects and the Ruwais Derivatives Park, which could add >3 tcf of gas demand within the forecast period.

# UAE Gas Demand

## Utilities Gas Demand and the Macro view

In H1 2020, Wood Mackenzie finalized two reports covering the UAE gas supply-demand balance; the first presented the base case pre-COVID and the second a view of what impact COVID-19 and the oil price slump may have on gas demand in the short and long term. The second report, also known as April 2020 Stress Test Modelling, showed the impact of two scenarios in addition to the original base case. One scenario was the extreme case and the other was the oil price recovery case:

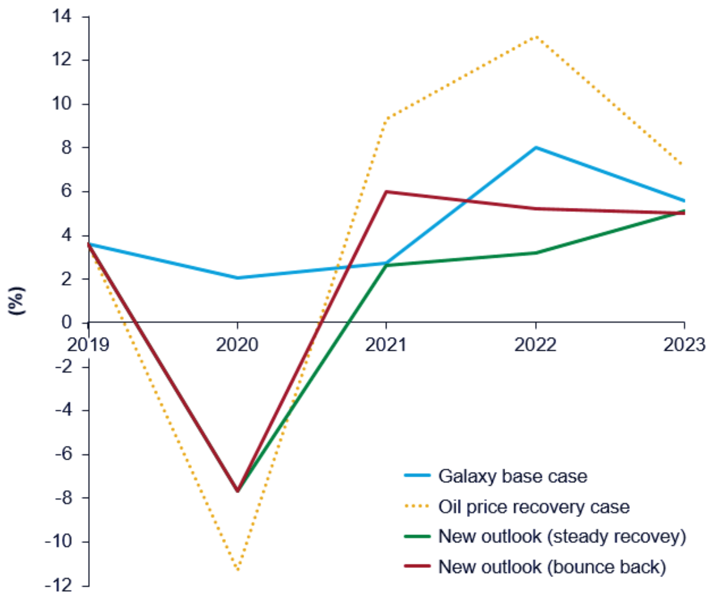
- The “extreme case” modelled the impact of a global recession as a result of the COVID-19 pandemic combined with limited oil price recovery from the low observed in Q1 2020 (note this oil price forecast is lower than reality and current expectations); and
- The “oil price recovery case” modelled the impact of a global recession combined with more rapid oil price recovery.

Looking back at 2020 it is clear that the “oil price recovery case” from the Bond Prospectus Report (page 7) is the case that best describes what transpired and characterises the short term i.e. 2021-2025. However, a few adjustments should be noted:

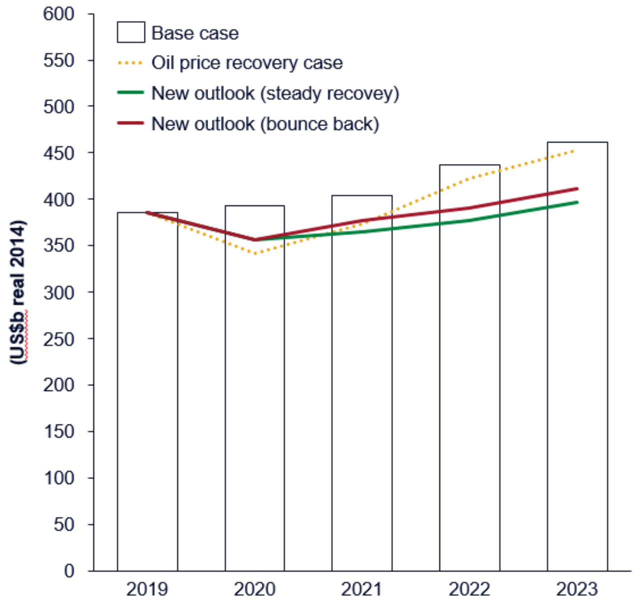
- Firstly, average Brent prices in 2020 were 41.6 US$/bbl compared to our modelled 35 US$/bbl; and
- Secondly, a rapid GDP growth recovery from COVID-19 in 2021 and 2022 is looking less likely.

To understand the impact that COVID-19 and the oil price has had and is likely to have on gas demand from utilities, we have modelled two additional short-term GDP scenarios. The two scenarios model two pathways from the 2020 dip to normalized GDP growth by 2023. Both scenarios model oil price rising to 53 US$/bbl in 2021 and 60 US$D/bbl in 2022 where it remains for the outlook.

### UAE GDP growth scenarios (%)



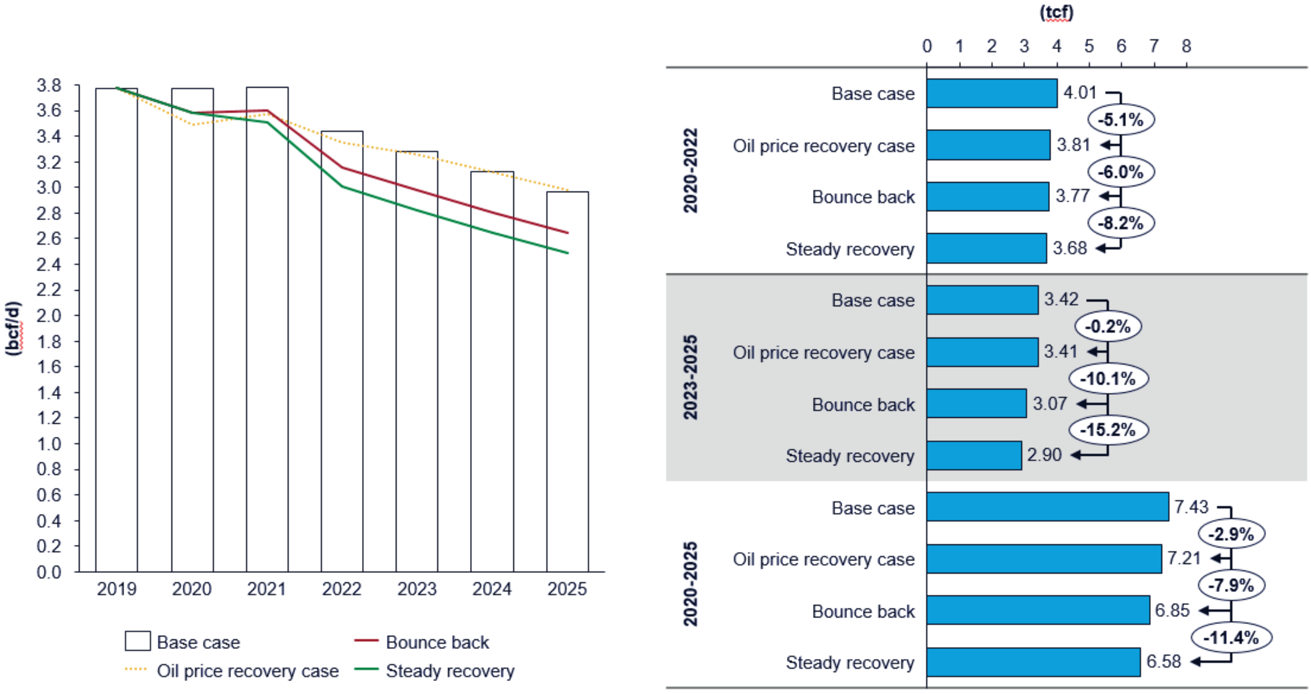

### UAE GDP growth scenarios (US$bn)




The two new outlooks assume a slightly less severe impact on 2020 GDP growth for the UAE than previously modelled which was negative 11.3% when combining the impacts from COVID-19 and the oil price expectations at the time. In part due to slightly higher oil prices and in part due to better than anticipated activity (tourism, construction, production) throughout 2020. Thus, we are modelling a negative 7.7% growth rate in 2020 (based on Wood Mackenzie’s Q4 2020 GDP forecast). Whether the coming years will follow the previously modelled rapid recovery in 2021 (although less drastic) or slower return to normalized growth rates will depend on the extent that vaccines and other initiatives in H1 2021 will have on commercial activities. It is worth mentioning that the UAE has seen the most rapid deployment of vaccines in the world only trailing Israel. At an average of 3.6% newly vaccinated citizens per week, the UAE is moving swiftly.

The two modelled GDP forecasts see a 6% and 8.2% reduction in gas demand from utilities in the short term i.e. 2020-2022 respectively after which GDP growth is expected to normalize. This results in a 0.2-0.24 tcf reduction from the forecast 4.01 tcf in the initial three-year period. As gas demand from utilities is impacted by GDP through public spending in the non-oil sector, gas demand in the longer term is likely to be negatively impacted as well due to lower population growth. Our modelling shows that this might lead to a reduction of up to 16.1% or 4.37 tcf between 2020 and 2040.

### Updated utilities gas demand for alternate GDP scenarios

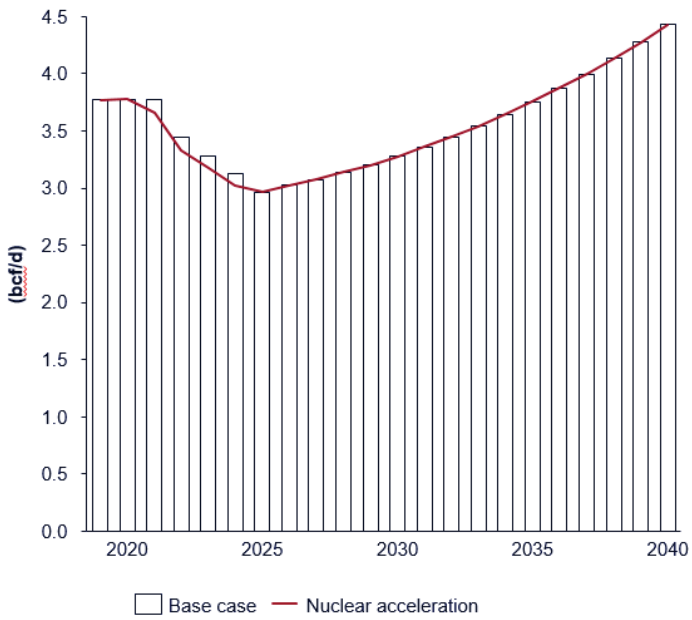


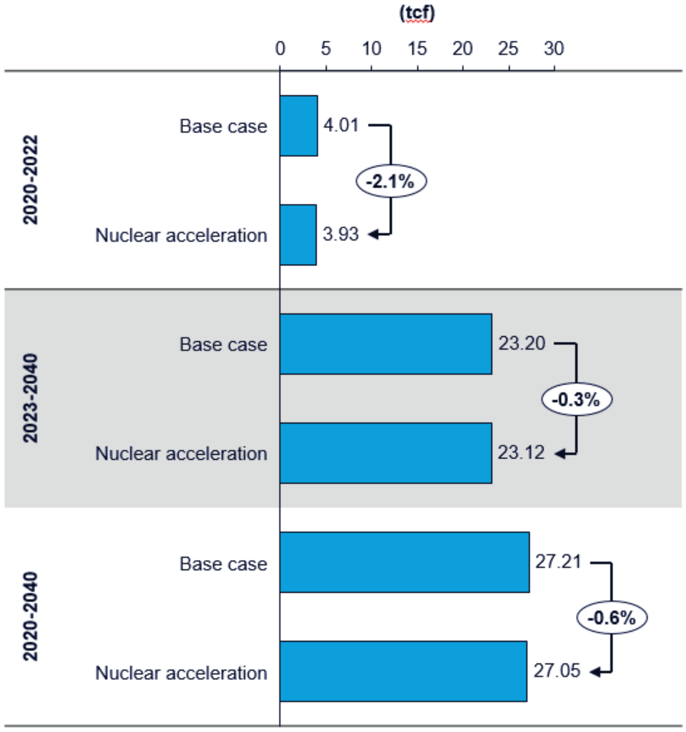

Finally, in conversation with ADNOC, Wood Mackenzie understands that plans towards UAE gas self sufficiency are on track, incl. connectivity plans to the Northern Emirates, despite 2020 disruptions.

## Utilities Gas Demand and the Evolving Role of Nuclear and Solar

In 2020, Wood Mackenzie's modelling assumed that each of the four Barakah nuclear reactors would come online with one-year intervals starting at the end of 2021. However, in December 2020 ENEC announced that Nawah achieved 100% of the rated power for Barakah 1, which was a key step for starting commercial operations in "early 2021". Based on this information, we now assume Barakah 1 to be fully operational from July 2021. Given progress at the remaining three reactors, we expect the units to come online in one-year intervals i.e. July 2022, 2023, and 2024. This means that each unit will be online for six months longer than expected over the forecast period thus reducing cumulative gas demand from the utility sector by a very small amount, a 0.16 tcf reduction between 2020-2040 – a 0.6% reduction to total base case utilities gas demand.

## Updated utilities gas demand for revised nuclear commissioning scenario




2020 saw a decline in solar PV projects connected to the grid compared to previous expectations. Wood Mackenzie, however, assumes the market will make up for this in 2021. EWEC who had to postpone the auction for the 2GW Al Dhafra project at the beginning of 2020 awarded the project in the summer, and the project secured funding in December 2020, in time for a 2022 grid connection as expected. The third phase of the Mohammed bin Rashid Al Maktoum (MBR) solar project went operational in Dubai marking the first ~1GW of the 5GW project. Both projects were part of our base case assumption for the UAE and have so far remained unaffected.

In the longer term, the case for PV remains strong in line with previous forecasts. In addition to already strong market fundamentals and resources, certain market shifts act as potential upside and/or buffer to sustain the current view of future deployment; one such upside is recently announced green hydrogen ambitions at the national level which strengthen the case for PV by ensuring power supply doesn't exceed power demand. Another reason for assuming a steady and strong outlook for future PV deployment is slowly materializing; corporates are showing increasing interest in limiting their carbon footprint and securing green power through corporate PPAs and other ways. The recent announcement by EGA detailing their agreement to offtake power from the MBR solar park to produce 40,000 tpa is an example.

Thus, aside from 620MW delayed from 2020 to 2021 with negligible impact on gas demand, we maintain the previous PV forecast of 37.5GW installed capacity by 2040 up from 1.95GW in 2019.

One area we are watching closely is the combination of solar with storage and the impact this can have on gas demand and potentially on increasing the penetration of solar power into a market. Storage allows solar capacity to produce at maximum utilisation during the middle of the day, with energy stored in batteries and then released throughout the evening. The effect would be the further displacement of gas-fired capacity from the evening "shoulder" of solar generation. It is worth noting that electricity demand in the UAE exhibits a slightly flatter curve than many countries for instance in Europe and solar does produce in line with peak demand as opposed to wind power, which arguably makes the often-observed mismatch less pronounced.

We previously modelled as sensitivities the capacity needed and impact of energy storage to prevent solar generation exceeding demand in peak hours of the day. These and other sensitivities are shown in the Bond Report (page 20). However, between the modelled maximum and minimum lies a range of sensitivities. By looking at various solar buildout scenarios in combination with various electricity demand scenarios, we were able to forecast the need (in MWh) for storage and the impact on gas demand. The two relevant scenarios modelled were: A) base case PV buildout with Energy Storage Systems (ESS) and our base case electricity demand (3.9% CAGR 2018-2040), and B) base case PV buildout with ESS and intermediate to low electricity demand (2.4% CAGR 2018-2040).

Scenario A modelled 3.7 GWh of ESS which have the potential to displace 0.2 tcf in 2020-2040 while scenario B models 6.6 GWh of ESS which may displace up to 5.1 tcf over the forecast period. The difference between the level of impact between the two is due to the difference in power demand which dictates how often and for how long solar generation will exceed demand. While ESS have picked up in many key power markets across the globe, markets such as the UAE have seen limited deployment to date due to ESS costs and their inability to compete with low priced natural gas, this is with a >85% decline in ESS costs since 2010. ESS would be expected to compete with new build CCGTs in the UAE by 2023, if actual gas prices were to increase slightly. However, given the market's vast amount of low-cost gas fired capacity which provides flexibility to the power system, we maintain that it is still some way before large-scale ESS is seen in the UAE. Thus, the sensitivities discussed above serve as a measure to understand what the impact of ESS deployment might be if and when market conditions allow.

In summary, the largest impact to our base case for utilities' gas demand comes from changes to GDP expectations in the short term. Of the modelled 0.41 decrease in gas demand from the utilities in 2020-2022, 0.33 (80%) is from the COVID-19 and oil price induced change to GDP while the balance is from the earlier commissioning of the Barakah nuclear power plant. This puts utilities gas demand at 3.6 tcf between 2020-2022 compared to the previous 4.01 tcf as presented in the October Bond Report.

## Gas Demand from Industries

In our base case, presented in the Bond Report (page 21), total gas demand from Industries is 10 tcf between 2020 and 2040. Demand in this sector is from aluminium, steel, cement, and other industrial demand such as KIZAD, ENOC, and SPIC.

Emirates Global Aluminium (EGA) was responsible for approximately 67% of gas demand from industries in 2019. Despite more challenging market conditions for product offtake in 2020, production stayed flat and gas consumption likewise as EGA switched to products where demand remained stronger.

From conversations with EGA, Wood Mackenzie has learned that EGA, as included in previous analysis, took steps towards efficiency gains from the installation of an H-class gas turbine at Jebel Ali in 2020. This will be fully operational in H1 2021 operations. At the same time, in line with our previous analysis, the 2 Mtpa refinery was fully operational by the end of 2020 effectively balancing out the impact of the efficiency gains. This was all considered in our previous analysis and leads us to maintain the 6.4 tcf demand from the aluminium sector between 2020 and 2040.

COVID and the oil price slump in 2020 had little to no impact on the largest industrial gas consumer. However, certain sectors such as cement and smaller industry have historically seen production, and hence gas demand, heavily correlated with GDP. These may see a cumulative reduction of 0.09 tcf between 2020 and 2040 – the equivalent of an ~8% reduction compared to the base case, but only 0.9% of total Industries demand.

Lower levels of activity in the construction sector resulted in reduced demand in the steel sector in 2020, lower steel demand led to lower steel production. 2020 saw production ~18% below 2019 levels. However, fundamental drivers to UAE steel demand and production remain intact and construction recovery in the short term is expected with levels above 2019. In the longer term, the market is set to increasingly demand green and/or lower emission steel products which favours the UAE as advantaged natural gas based direct reduced iron (DRI) represents the majority of production. Aside from being cleaner than coal-based production methods, natural gas based DRI furthermore eases the potential shift to hydrogen-based production fit for a lower emission reality. Thus, steel production sees a potential upside of 1-5% annually from the levels modelled previously representing an increase of 0.007 tcf between 2020-2040. The current plants can meet such an increase in demand so no additional capacity build would be required.

Finally, gas demand from KIZAD remains a potential upside to demand of an assumed 0.2 bcf/d by end of the forecast period. Concrete projects and initiatives are still at relatively early stages, but the recent signing of an MoU between Abu Dhabi Ports and Manufacturer's Association of Israel adds momentum to future developments.

As a result of what has transpired in 2020, demand from Industries is expected to stay robust with a maximum modelled decrease of 0.098 tcf between 2020 and 2040. Potential upside might be seen from a surge in steel demand and production as well as additional firming of plans at KIZAD.

## Gas Demand from ADNOC Industries

Previously we forecast a long-term annual demand from ADNOC Industries of ~1bcf/d. This demand was made up primarily from projects that were existing or onstream with only 3 future projects considered in our base case.

Since our previous analysis, and following conversations with ADNOC, several projects have changed, some have been removed whilst others have become firmer and/or proven to be larger demand centres than initially projected.

The original base case forecast was 7.2 tcf of demand between 2020 and 2040 from ADNOC Industries. With changes modelled this demand has reduced very slightly to 7.1 tcf.

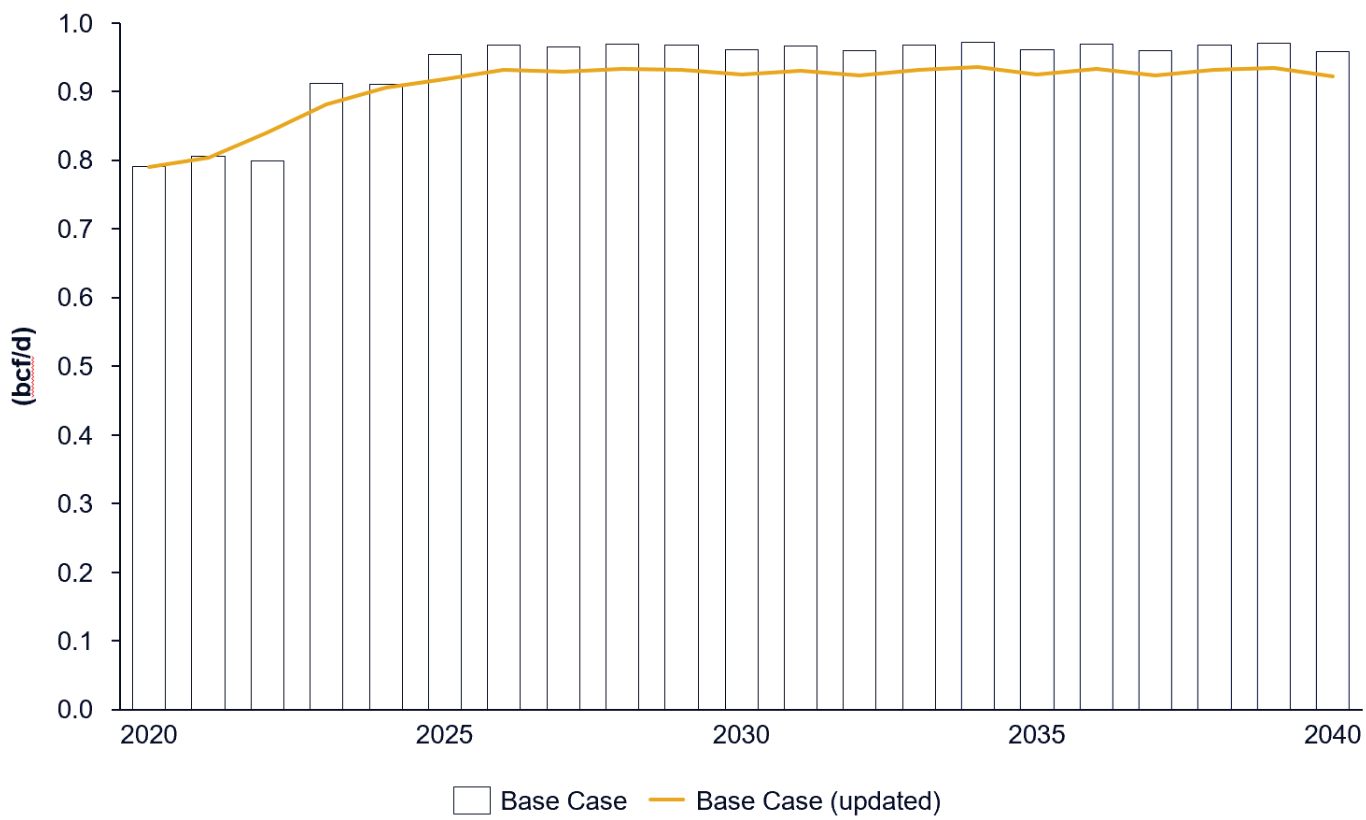
Outside of our base case was 3.3 tcf of gas demand from likely and tentative projects. The most noteworthy changes to the forecast of this category is:

- The Ruwais Derivatives Park which has seen significant progress towards realization in 2020 as ADNOC and ADQ announced their JV “TA’ZIZ” in November 2020 with an expected capital expenditure of 5 bn US$ and start-up in 2025. Although this is the catalyst to advance the project, the actual configuration of the park and consequent gas demand are still uncertain and thus the project remains in the ‘tentative’ category, albeit tentative with strong indications of significant demand upside.

A potential upside exists in ADNOC’s hydrogen ambitions. As a key step toward cutting a quarter of carbon emissions in the UAE, ADNOC envisions utilizing its low-cost gas in combination with carbon storage systems (CCS) to produce blue hydrogen. Blue hydrogen can further lower emissions from the utilities sector as well as from hard-to-decarbonize sectors.

On the balance, cumulative demand by ADNOC Industries is 0.1 tcf lower than our original forecast, however, with certain projects such as the Ruwais Derivatives Park taking important steps towards commercial certainty.

### ADNOC Industries Gas Demand



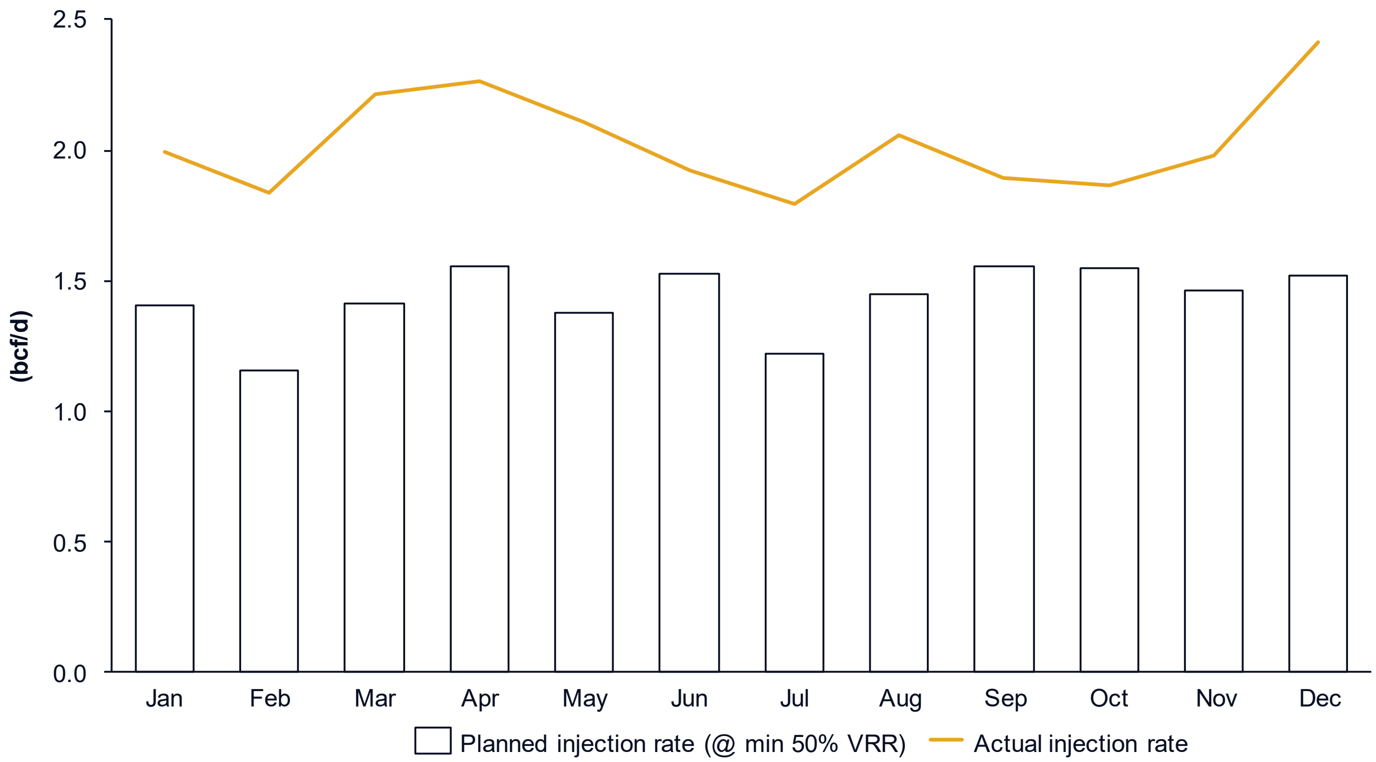
## Gas Demand from Injection

As highlighted in the previous report, injection of lean/sales gas back into reservoirs to strip condensate and manage demand is a key feature of the gas market in the UAE and understanding how this performed in 2020 gives a strong indication on how robust supply and demand projects were in the face of unprecedented forces in the market.

Through conversation with ADNOC we understand that injected volumes were higher than forecast, proving that the injection of lean gas acted as expected in providing a balancing item to the market. It is key to remember that injected lean gas volumes are tariffed under Galaxy AssetCo's contractual framework.

Demand for injection comes from two sources. Injection into oil reservoirs as a secondary recovery technique for improved oil recovery ("IOR") and injection into reservoirs to maximise liquid recovery, specifically condensates as part of the void replacement ratio (VRR) scheme. In 2020 IOR injection volumes proceeded as planned but injection volumes for condensate recovery (i.e. the VRR scheme), hence gas demand, was higher than planned. Typically, the plan envisions a minimum 50% VRR, i.e. a minimum of 50% of the produced feed gas volume from the injection fields is reinjected back into the reservoir as processed, sales gas. In 2020 this VRR was 77%, which is inline with higher levels witnessed historically. Longer term ADNOC expects surplus gas until 2034 or 2035 and it is expected the VRR will be around 70%, broadly in line with historical level, for a longer period of time. An increase from 50% to 70% VRR would provide significant additional demand, a minimum of 3 tcf over our base case between 2020 and 2035.

### 2020 Gas Demand VRR scheme (planned vs actual)



# UAE Gas Supply

## ADNOC Gas Supply

The long lead times associated with the capital investments required for major field developments provide insulation from short term fluctuations in the market and therefore limited change would be expected in the gas supply outlook. In this section we summarise the changes to ADNOC's gas supply that have occurred since our last report.

In our previous report certain elements of ADNOC's Gas Master Plan were previously unsanctioned and these have experienced delays. However, these elements were not part of our base supply view and therefore the change does not impact the supply demand outlook associated with Galaxy AssetCo's contractual framework.

Material changes to ADNOC's gas supply outlook have occurred at the following units ADNOC Onshore Sole Risk fields and ADNOC Offshore. In both these instances there has been an increase in expected gas supply vs our previous view.

- At the ADNOC Onshore Sole Risk fields there is a significant change post 2024. At this point additional volumes are expected from the Thamama F reservoir.
- At ADNOC Offshore additional volumes are expected from the Zakum West Super Complex that were not included in our previous outlook. These volumes will provide additional optionality around previous bottlenecks in the offshore system and are available due to the progress ADNOC has made in the provision of electricity to offshore facilities from onshore.

From these two units a potential additional 4.1 tcf of gas between 2020 and 2040 is forecast versus our previous assessment of gas supply, 42 tcf, associated with Galaxy AssetCo's contractual framework.

In summary the supply view remains the same until 2024 and after this point there is more supply than previously thought as part of Galaxy AssetCo's contractual framework, resulting in the prior forecast representing a conservative estimate.

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