

LNG Review May 2024 - Recent issues and events - #101

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Introduction

Abu Dhabi's ADNOC has advanced its LNG plans in its and other countries. ADNOC's Ruwais LNG project in Abu Dhabi issued a Limited Notice to Proceed for early EPC (engineering, procurement, and construction) activities to its contractor in March. With an FID (Final Investment Decision) expected in 2024, the project is set to be the first LNG export facility in the Middle East and North Africa region to run on clean power, making it one of the lowest-emission intensity LNG plants in the world, the project claims. Since December 2023, the project has announced three 15-year LNG sale HOAs (Heads of Agreement) with deliveries expected to start in 2028.

ADNOC announced in May its equity participations in LNG production projects in the United States and Mozambique. ADNOC has acquired a 11.7% stake in Phase 1 (Trains 1 - 3) of NextDecade Corporation's Rio Grande LNG (RGLNG) export project under construction in Texas, United States. ADNOC also announced a 20-year LNG offtake agreement from RGLNG Train 4, subject to an FID on the train. ADNOC will acquire a 10% interest in the Area 4 concession of the Rovuma basin in Mozambique, including the operational Coral South FLNG (Floating LNG) facility, the planned second FLNG development and the planned onshore LNG projects. ADNOC announced in February a new joint venture (JV) with bp in Egypt to develop gas resources. ADNOC in May delivered the world's first certified bulk commercial cargo of low-carbon ammonia to Japan.

The European Union adopted in May a package of regulation and directive establishing common internal market rules for renewable and natural gases and hydrogen and reforming the existing EU gas legislation. The directive stipulates that long-term contracts for unabated fossil gas will no longer be concluded as of 2049. The regulation includes languages ensuring that Member States should be able to limit deliveries from the Russian Federation and Belarus. EU also adopted a regulation on tracking and reducing methane emissions. Methane emissions from the EU's energy imports are also supposed to be traced. The regulation is the world's first to regulate methane emissions from imports. Implications, not only on EU's imports but also on the global market, should be closely watched.

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[Asia Pacific]

Australia's Santos and Japan's Hokkaido Gas announced on 28 May 2024 a binding long-term LNG SPA (Supply and Purchase Agreement) for up to 0.4 million tonnes per year of LNG for 10 years, commencing in 2027, from Santos' LNG portfolio on a DES (delivered ex-ship) basis. Santos and Hokkaido Gas also intend to collaborate to explore carbon sequestration and e-methane opportunities.

Vitol announced on 28 May 2024 that Korea Middle Power Co Ltd (KOMIPO) and Vitol had agreed to extend an existing long-term LNG SPA (Supply and Purchase Agreement). The original deal was signed in 2011, deliveries commenced in 2015, with Vitol supplying KOMIPO with over 4 million tonnes of LNG over 10 years. From 2025 to 2028 Vitol will supply three (3) cargoes per year.

According to China's NBS (National Bureau of Statistics), the country produced 19.8 bcm of natural gas in April and 83.0 bcm during the first four months of 2024, 3.2% and 5.0%, respectively, higher year-on-year. According to the NDRC (National Development and Reform Commission), the country consumed 35.46 bcm of natural gas in April and 143.73 bcm during the first four months of the year, 11.8% and 11.9%, respectively, higher year-on-year. China imported 6.22 million tonnes and 25.91 million tonnes of LNG in April and the first four months of 2024, respectively, 31.5% and 22.7% more than the same periods in 2023, but still 7.6% and 1.1% less than the same periods in 2021.

NYK Line announced on 30 May 2024 that NYK established in December 2023 OPearl LNG Ship Management Company Limited, a ship-management company for LNG carriers, with CMES LNG Shipping Company Limited (CMLNG), a subsidiary of China Merchants Energy Shipping Co., Ltd. (CMES), and CETS Investment Management (HK) Co., Ltd. (CETS), a subsidiary of the CNOOC Group. The three companies held a ceremony on 18 April 2024 to open the Hong Kong office.

Taiwan's new President said in his inauguration speech on 20 May 2024 that people need stable power supply; and the administration would promote the second energy transformation, develop diversified green energy, smart grids, and strengthen the resilience of the power system.

Thailand's PTT plc announced on 9 May 2024 that it had held an opening ceremony of the 5th Onshore Natural Gas Pipeline System Project spanning 417 km from the eastern region to the western region, the longest onshore natural gas pipeline in Thailand.

Vietnam's PV Gas said on 30 April 2024 that it had received the third LNG cargo at its Thị Vải LNG terminal. The LNG carrier Höegh Gandria delivered on 29 April the cargo to the terminal. The LNG shipment came from Bintulu, Malaysia.

Vietnam's PV GAS announced on 16 May 2024 that it had received the 4th LNG cargo at Thị Vải terminal. The Point Fortin ship carried LNG from Bontang, Indonesia, provided by

TotalEnergies Gas & Power Asia Private Limited (TEGPA). The purchase offer was made 20 days before the expected arrival date, PV GAS said.

AG&P LNG announced on 8 May 2024 the start of the commissioning of the Cái Mép LNG terminal project cooperated with Hải Linh Company. The commercial operation of the terminal is targeted for September 2024.

Philippines' First Gen Corporation said on 23 May 2024 that First Gen LNG Holdings Corporation and Tokyo Gas Co. Ltd. had finalized their LNG partnership with the signing of a shareholders' agreement (SHA) and share subscription agreement (SSA). Tokyo Gas will become a shareholder in FGEN LNG, the owner of the interim offshore terminal - the BW Batangas FSRU berthed at the First Gen Clean Energy Complex (FGCEC) in Batangas City. In April, First Gen LNG awarded the contract for the second shipment of the company's LNG supply requirement to CNOOC Gas and Power Trading & Marketing Limited. Morrison Foerster announced on 27 May that it had represented Tokyo Gas on its entry into the agreements for the acquisition of a 20% stake in the LNG import terminal project.

Malaysia's PETRONAS said on 14 May 2024 that Malaysia LNG Group of Companies experienced a power loss at around 11:30 p.m. on 10 May, at the PETRONAS LNG Complex (PLC) in Bintulu. Petronas said that the cause of the power loss had been identified.

GAIL (India) Limited announced on 16 May 2024 a 14-year Time Charter Party with Cool Company Ltd (CoolCo) for a newbuild LNG carrier. The time charter will commence in early 2025 and GAIL will have an option to extend the charter by two years. GAIL has four LNG carriers in its fleet.

GAIL announced on 24 May 2024 that it had installed its first Green Hydrogen Plant at GAIL Vijaipur in Madhya Pradesh. The plant has a capacity of producing 4.3 TPD (tonnes per day) of hydrogen, through 10 MW PEM (Proton Exchange Membrane) Electrolyzer units, by electrolysis of water using renewable power.

The Australian Government released on 9 May 2024 the Future Gas Strategy that establishes the role gas will play in the transition to net zero by 2050, securing affordable gas.

Australia Pacific LNG (APLNG) announced on 21 May 2024 that it had signed gas sale agreements for a total of 5.75 petajoules with three customers. According to the announcement, the agreements bring APLNG's total contributions to the East Coast Market in CY 2024 to 158 PJ (3 million tonnes equivalent).

The Japan Bank for International Cooperation (JBIC) and Australia's Woodside Energy Group Ltd announced on 30 May 2024 a loan agreement amounting to up to USD 1 billion (JBIC portion). The Loan will sit alongside a loan facility from private financial institutions. The Loan together with the loan facility from the private financial institutions amounts to a total of USD 1.450 billion. The Loan is intended to provide funds to assist Woodside in developing the Scarborough Energy Project, which is located off the northwest

coast of Western Australia.

[North America]

U.S. EPA (U.S. Environmental Protection Agency) issued a final rule on 6 May 2024 to strengthen methane emissions reporting requirements for petroleum and natural gas systems under EPA's GHGRP (Greenhouse Gas Reporting Program).

FERC (the U.S. Federal Energy Regulatory Commission) staff notified on 16 May 2024 revised schedule for the completion of the environmental assessment (EA) for the Corpus Christi Liquefaction (CCL) Midscale Trains 8 & 9 Project. The first notice of schedule, issued on 3 November 2023, identified 15 March 2024 as the EA issuance date. However, staff identified additional information needs in response to CCL's full impact air dispersion analysis for criteria air pollutants filed on 5 March 2024, which resulted in a schedule delay for the issuance of the EA. The revised date is 21 June 2024, after CCL provided additional information. The new 90-day Federal Authorization Decision Deadline is 19 September 2024.

Sempra said on 7 May 2024 that while the DOE pause had received a lot of press, the company remained confident in its ability to deliver projects that offer long-term, secure, and cleaner energy to customers.

JAPEX (Japan Petroleum Exploration Co., Ltd.) announced on 30 May 2024 that JAPEX would acquire a 15% equity interest in GCLH (Gulf Coast LNG Holdings LLC). GCLH has a 25.7% interest in Freeport LNG Development, L.P. (FLNG).

Freeport LNG Development L.P. reported to the TCEQ (Texas Commission on Environmental Quality) that Train 2 at the Freeport LNG plant tripped on 16 and 30 May 2024 due to issues with the compressor system. Freeport LNG Development, L.P. revealed in a letter of 31 May 2024 to FERC (Federal Energy Regulatory Commission) that TCEQ had fined USD 330,750 to Freeport LNG for violations to TCEQ's rules and the Texas health and safety code which TCEQ discovered in August 2023.

Zachry Holdings, Inc. (ZHI) announced on 21 May 2024 that ZHI had initiated a voluntary court-supervised Chapter 11 process that should provide ZHI with time and flexibility to resolve issues related to the Golden Pass LNG (GPX) export project. According to the announcement, the process provides ZHI "mechanisms to initiate a structured exit from the GPX project."

Tellurian Inc. and Aethon Energy Management LLC announced on 29 May 2024 an agreement for Aethon to acquire Tellurian's integrated upstream assets, alongside an HOA (Heads of Agreement) for Aethon to purchase 2 million tonnes per year of LNG from Tellurian's Driftwood LNG plant. The transaction is expected to close during the second quarter of 2024.

FERC (Federal Energy Regulatory Commission) Chairman said in a letter to U.S.

House members of 17 May 2024 that Commission staff sent an Environmental Information Request to Venture Global (VG) on 26 March 2024, seeking a demonstration that air pollution from the CP2 LNG Project would not exceed the new standard established by EPA (Environmental Protection Agency). VG has responded to the request. According to the letter, "Later, Commission staff learned that Venture Global told Louisiana's air quality agency in March 2023, but never told the Commission, that Venture Global's CP1 LNG Project will emit more air pollution than first reported." The emissions from CP1 LNG will add to the cumulative impact of emissions from the CP2 LNG Project. Commission staff sent an Environmental Information Request to VG on 15 May, seeking an updated cumulative impact analysis using the revised emission rates. VG has responded to this request. Commission staff are reviewing the responses.

Abu Dhabi's ADNOC announced on 20 May 2024 the acquisition of a 11.7% stake in Phase 1 (Trains 1 - 3) of NextDecade Corporation's Rio Grande LNG (RGLNG) export project in Texas, United States. ADNOC and NextDecade announced a 20-year LNG offtake agreement from RGLNG Train 4. The Phase 1 RGLNG equity stake has been acquired through an investment vehicle of Global Infrastructure Partners (GIP). The offtake agreement is for 1.9 million tonnes per year on an FOB (free on board) basis at a price indexed to Henry Hub, subject to an FID (Final Investment Decision).

Texas LNG Brownsville LLC, a Glenfarne Energy Transition company, submitted on 24 May 2024 a request to FERC (Federal Energy Regulatory Commission) for request for extension of time until 22 November 2029 to complete construction and place the project in service. The filing said that "continued litigation challenges have delayed the project".

FERC (Federal Energy Regulatory Commission) granted on 23 May 2024 the developers of the proposed Gulf LNG export project along the Mississippi coast another five years to complete the project.

Gulfstream LNG Development LLC, an onshore LNG export project in Plaquemines Parish, Louisiana, received on 16 May 2024 FERC (Federal Energy Regulatory Commission) approval to begin the pre-filing permitting process for Gulfstream's proposed 4 million tonne per year modular export plant. The plant is expected to include two gas processing trains, three electric-drive liquefaction trains each with an average base LNG production capacity of about 1.4 million tonnes per year, one 200,000 m³ LNG storage tank, two marine loading berths (one capable of receiving smaller barges and vessels, and one for servicing ocean-going LNG carriers), and an on-site gas-fired power generation plant. Gulfstream LNG is also evaluating CO₂ capture, use and storage options.

ConocoPhillips and Marathon Oil Corporation announced on 29 May 2024 that they had entered into a definitive agreement pursuant to which ConocoPhillips will acquire Marathon Oil in an all-stock transaction with an enterprise value of USD 22.5 billion,

inclusive of USD 5.4 billion of net debt.

Pembina Pipeline Corporation said on 16 May 2024 that Cedar LNG expected an FID (final investment decision) in June 2024.

New Fortress Energy (NFE) said on 8 May 2024 that the company had completed the construction of its first FLNG unit, with first LNG expected in May and first full cargo expected in June.

DOE (U.S. Department of Energy) acknowledged on 16 May 2024 an application filed by Gato Negro Permittum Uno, S. de R.L. de C.V. (Gato) which requested long-term authorization to export natural gas via pipeline to Mexico in a volume up to approximately 236 billion cubic feet (Bcf) per year (Bcf/yr) (0.647 Bcf per day), and to re-export approximately 203 Bcf/yr (0.556 Bcf per day) as LNG to FTA (Free Trade Agreement) countries for 20 years commencing in September 2027. Gato seeks to re-export the LNG by vessel from its proposed liquefaction project, the Gato Negro Manzanillo plant in the State of Colima, Manzanillo, Mexico. The project would include up to four liquefaction trains capable of producing up to approximately 4 million tonnes per year of LNG.

[Middle East]

Abu Dhabi's ADNOC announced on 14 May 2024 that it had delivered the world's first certified bulk commercial shipment of low-carbon ammonia enabled by carbon capture and storage (CCS) to Mitsui & Co., Ltd. for clean-power generation in Japan.

ADNOC announced on 8 May 2024 a 15-year HoA (Heads of Agreement) with Germany's EnBW Energie Baden-Württemberg AG (EnBW) for 0.6 million metric tonnes per year of LNG. The LNG will primarily be sourced from ADNOC's Ruwais LNG project. The agreement marks the third long-term LNG supply agreement from the project. The deliveries are expected to start in 2028.

QatarEnergy announced on 8 May 2024 a long-term agreement with Qatar Gas Transport Company Limited (Nakilat). Pursuant to the deal Nakilat will own and operate nine "QC-Max" (Qatar-China Max) class LNG vessels. The nine QC-Max vessels, with a capacity of 271,000 cubic meters each, constitute half of the 18 advanced QC-Max class LNG vessels that will be constructed at China's Hudong-Zhonghua Shipyard. QatarEnergy's fleet expansion program has included shipbuilding contracts and time charter agreements for 104 conventional and 18 QC-Max class LNG vessels, for a total of 122, with the first ship expected to be delivered by the end of the third quarter of 2024. The latest agreement follows February's selection of Nakilat as the owner and operator of 25 conventional-size LNG vessels. It also follows the signing of similar agreements with three Chinese ship owners for the operation of nine QC-Max class LNG vessels. QatarEnergy moves forward with the expansion of its LNG production capacity from the North Field to 142 million tonnes per year by 2030.

CB&I, a subsidiary of McDermott, announced on 8 May 2024 that it had been awarded a contract by Marsa Liquefied Natural Gas LLC, a joint venture between TotalEnergies and OQ for the EPC (engineering, procurement, construction) of a 165,000 m³ full containment LNG storage tank in the Port of Sohar. Work is expected to commence with construction activities in the fourth quarter of 2024, targeting for completion in 2028.

[Africa]

Baker Hughes announced on 23 May 2024 that it was awarded a contract from Algeria's SONATRACH for a gas-boosting project for the Hassi R'Mel field. The contract is part of a broader order awarded to a consortium between Baker Hughes and Tecnimont.

Höegh LNG Holdings Ltd. announced on 2 May 2024 an agreement between Höegh LNG, Australian Industrial Energy Pty Ltd (AIE) and Egyptian Natural Gas Holding Company (EGAS) for the deployment of the FSRU (Floating Storage and Regasification Unit) Hoegh Galleon. The FSRU will be located in Ain Sokhna, Egypt for a likely period of 19 - 20 months, after which it is expected to be deployed to AIE's LNG terminal under construction at Port Kembla, Australia. Höegh LNG and AIE announced a 15-year FSRU charter agreement for Hoegh Galleon in June 2022.

Technip Energies said on 24 May 2024 that its floating production storage and offloading unit (FPSO) had arrived at the Greater Tortue Ahmeyim (GTA) field offshore Mauritania and Senegal, operated by bp. The FPSO will produce oil and gas, with gas sent to the Gimi FLNG unit to be turned into LNG. Kosmos Energy said on 7 May that first gas was expected in the third quarter, with first LNG expected in the fourth quarter of 2024.

Air Products announced on 6 May 2024 that its dual mixed refrigerant LNG Process technology (AP-DMR™) and equipment, deployed at the Coral South FLNG (Floating LNG) plant in Mozambique, had passed its performance test achieving LNG production above 3.4 million tonnes per year.

Abu Dhabi's ADNOC announced on 22 May 2024 the acquisition of Galp's 10% interest in the Area 4 concession of the Rovuma basin in Mozambique. The concession includes the operational Coral South FLNG facility, the planned Coral North FLNG development and the planned Rovuma LNG onshore facilities.

CNOOC Limited announced on 24 May 2024 that its subsidiaries had entered into petroleum exploration and production concession contracts (EPCCs) with the Ministry of Mineral Resources and Energy of Mozambique (MIREME) and Empresa Nacional de Hidrocarbonetos (ENH) for 5 offshore blocks in Mozambique.

[Europe / Surrounding regions]

The Council of the European Union adopted on 21 May 2024 a regulation and a

directive establishing common internal market rules for renewable and natural gases and hydrogen and reforming the existing EU gas legislation. The directive stipulates that long-term contracts for fossil gas will no longer be concluded as of 2049. The regulation includes languages ensuring that Member States should be able to limit deliveries from the Russian Federation and Belarus.

The Council of the European Union on 27 May 2024 adopted a regulation on tracking and reducing methane emissions. Energy importers will have to report, from 2025 onwards, on methane emissions data, including from countries and companies exporting to the EU. As of January 2027, the Regulation further requires that new import contracts can be only concluded if the same monitoring, reporting and verification obligations are applied by exporters as for EU producers. To preserve security of supply, failure to meet the requirements of the regulation will not lead to an import ban on oil, gas or coal to the EU market. Instead, a system of penalties will be put in place and enforced by the Member States for infringements of this regulation.

National Grid announced on 23 May 2024 its intention to sell the Grain LNG terminal in the United Kingdom.

Netherlands' energy infrastructure company VTTI announced on 8 May 2024 an agreement with Ancala to acquire its 50% shareholding of Dragon LNG Group Limited, the owner of the Dragon LNG import terminal in the United Kingdom. Dragon Energy Limited, a subsidiary of Dragon LNG Group Limited, has also developed a solar farm at the facility and is developing additional renewable power projects at the site.

Dragon LNG, a receiving terminal for LNG in South-West Wales, announced on 16 May 2024 that it had launched an Expression of Interest (EOI) process for its 9 bcm per year capacity, available from September 2029.

Norway's Equinor said on 24 May 2024 that the Troll partners had decided to invest just over NOK 12 billion to further develop the gas infrastructure in the Troll West gas province. According to the announcement, the investment will accelerate production from the reservoir and thus maintain the current high gas export levels from the Troll and Kollsnes value chain leading up to 2030.

Finland's Gasgrid announced on 28 May 2024 that the Inkoo LNG terminal had sold 95% of its reservation capacity for 2024. Sale of the LNG terminal's reservation capacity for 2025 will begin in July 2024.

Austria's OMV revealed on 21 May 2024 that OMV Gas Marketing & Trading GmbH (OGMT) had learned about a foreign court decision obtained by a major European energy company which, if enforced in Austria against OGMT, would require OGMT to make payments under its gas supply contract with Gazprom Export to such European energy company (instead of Gazprom Export). In case of such an enforcement, OGMT considers it

likely that Gazprom Export will halt supplying gas under the gas supply contract with OGMT. In the case of such a scenario, OGMT would still be able to supply its contractual customers with gas from alternative, non-Russian sources.

Türkiye's BOTAS announced on 9 May 2024 an LNG purchase agreement with ExxonMobil to receive up to 2.5 million tonnes per year of LNG for 10 years, following an announcement by the country's Minister of Energy and Natural Resources on the signing ceremony on the preceding day.

[South America]

Türkiye's Karpowership announced on 7 May 2024 an MoI (Memorandum of Intent) with Brazil's Petrobras to combine their expertise in the natural gas and power sectors.

Black & Veatch announced on 8 May 2024 that it had completed a feasibility study for the planned Andes Energy Terminal, LNG regasification terminal and power plant near the port city of Buenaventura on Columbia's Pacific coast.

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