

LNG Review January 2019
- Recent issues and events -
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Introduction

In early February 2019, the year's first final investment decision on a large-scale LNG export project was announced by Qatar Petroleum (QP) and ExxonMobil, to establish liquefaction capacity of 16 million tonnes per year at their site of an LNG import terminal in Texas, United States. The project was sanctioned without attaching specific long-term LNG sales from the project, taking advantage of the partners' extensive presence in the global LNG markets and their strong balance sheets. Construction is expected to begin in the first quarter of 2019 with the facility opening in 2024

On the other hand, other LNG projects are also advancing toward their respective investment decisions, in some cases securing more term LNG sales to established LNG players - as LNG projects have done in the past.

Spot LNG prices in Asia continued falling throughout the month of January, from USD 9 to USD 7 per million Btu, reflecting ongoing growing LNG supply, coming closer to spot gas prices in Northwest Europe. Preliminary data from China shows that the country imported 9.81 million tonnes of natural gas in January 2019, setting a new world record for monthly natural gas imports.

[Asia Pacific]

According to the customs statistics, Japan imported 82.85 million tonnes of LNG in 2018 at USD 9.96 per million Btu on average, among which 2.49 million tonnes coming from the United States at USD 10.38 on average. The largest supplier to Japan was again Australia delivering 28.7 million tonnes at USD 10.22 on average.

There have been some developments in Japan that could increase future LNG demand. Idemitsu, Kyushu Electric Power, and Tokyo Gas agreed to cancel the feasibility study of a coal-fired thermal power plant in Sodegaura, Chiba. The latter two companies continue a feasibility study of an LNG-fired thermal power plant. Shizuoka Gas inked an LNG Sale and Purchase Agreement with China's Clean Energy to deliver LNG from the Shimizu LNG Terminal in ISO tank containers. Mitsui O.S.K. Lines' (MOL) LNG-fueled tugboat Ishin

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bunkered LNG fuel in Sakai Senboku Port for the first time. The LNG fuel was supplied by Osaka Gas using a truck-to-ship LNG bunkering procedure.

Hyundai Heavy Industries (HHI) reached a deal to acquire a controlling stake in Daewoo Shipbuilding & Marine Engineering (DSME). HHI will set up a joint shipbuilding venture with Korean Development Bank who will transfer its 55.7% stake in DSME to the venture in exchange for 7% stake in it. HHI will have a 28% stake in the venture.

Southeast Asia proceeds with plans to use LNG. In Vietnam, PV GAS (PetroVietnam Gas) and PVPower (PetroVietnam Power) signed a framework agreement on supply of regasified LNG to Nhon Trạch 3 & 4 Power Plant. Phoenix Petroleum of Philippines said its joint venture Tanglawan Philippines LNG with China National Offshore Oil Corporation (CNOOC) was granted by the Department of Energy (DOE) the notice to proceed (NTP) to build an LNG terminal in Batangas, Luzon. DOE has separately granted Energy World Corporation (EWC) a permit to construct and operate an LNG terminal in Pagbilao, Quezon. First Gen, in partnership with Tokyo Gas, has also submitted its bid to build its LNG terminal at its Batangas Clean Energy Complex. Excelerate Energy has submitted a proposal to build a floating storage and regassification unit (FSRU) offshore Batangas.

China's natural gas imports in 2018 established a new world record of 90.39 million tonnes, a 32% increase over the previous year, according to data from the country's customs office. Based on numbers published by the NDRC (National Development and Reform Commission), the country's yearly natural gas production and consumption in 2018 were 160 bcm (+7%) and 280 bcm (+18%), respectively. Notably, Sinopec's Fuling shale gas field in southwest China's Chongqing produced 6.02 billion cubic meters of shale gas in 2018.

More terminal plans emerge in the country. Huainan Mining Group won provincial approval to build an LNG terminal along the Yangtze river. The terminal, which the company claims is the first one to be built along the Yangtze, will have a capacity of 2 million tonnes per year. The terminal, to be located in the inland city of Wuhu in Anhui province, is slated for completion in 2022. Huainan Mining is already partnering with China National Offshore Oil Corporation (CNOOC) for a planned LNG receiving terminal at the coastal port of Yancheng in Jiangsu province to be operational by the end of 2020.

Chinese Taipei's LNG imports grew modestly by slightly under 2% in 2018 to reach a record high 17.11 million tonnes. Supply sources were diversified a bit as the top provider Qatar's declined to less than 30%.

There have been also some developments in South Asia to increase capability to use LNG. The LNG terminal built by Indian Oil Corporation (IOC) in Ennore is coming close to be operational. The terminal is the first to be built on India's east coast. Petrobangla through its procurement unit, Rupantarita Prakritik Gas called for expressions of interest (EOI) for

the construction of a land-based LNG terminal at Matarbari. The documents issued by the Rupantarita Prakritik Gas state that the facility is to be built on a build, own, operate and transfer (BOOT) basis for a 20-year term.

Australia exported 70 million tonnes of LNG in 2018, a 22% increase over the previous year. According to data from Gladstone Ports Corporation, LNG exports from the East Coast of Australia, all from Gladstone, increased only slightly by 1.7% in 2018 but reached an all time high of 20.58 million tonnes.

The country also sees some developments to utilise more natural gas, along with LNG project development. The Australian Gas Infrastructure Group (AGIG) commissioned the Pluto Inlet Station connecting the Pluto LNG Project to the Dampier to Bunbury Natural Gas Pipeline (DBNGP). The inlet facility has the capacity to supply up to 25 terajoules per day (0.17 million tonnes per year). Sheffield Resources secured a 15-year agreement with Woodside Energy and Energy Developments (EDL) for the supply of 1,950 terajoules (36,000 tonnes) per year of LNG to the Thunderbird Mineral Sands Project in northern Western Australia. LNG will be supplied from Woodside's Pluto LNG Truck Loading Facility.

Woodside awarded four contracts for front-end engineering design (FEED) activities for the proposed Scarborough Project. Woodside's preferred concept for development of the Scarborough gas resource (Woodside 75%) is through new offshore facilities connected by an approximately 430 km export pipeline to the Burrup Peninsula with onshore processing at the expanded Pluto LNG facility.

Malaysia's Sapura Energy subsidiary Sapura Fabrication has been awarded a contract from PETRONAS Floating LNG 1 (L) Ltd to undertake Engineering, Procurement, Construction and Commissioning (EPCC) works for the relocation and tie-in of the PFLNG Satu (PETRONAS Floating Liquefied Natural Gas), currently located in the Kumang Cluster, offshore Sarawak.

[North America]

Natural gas production, consumption, and exports in the United States all reached record levels in 2018. Natural gas consumption growth was driven primarily by increases in the electric power sector. Natural gas storage stocks reached extremely low levels in 2018. Natural gas storage inventories ended the heating season on 31 March at their lowest level since 2014, and they did not refill during the summer injection season as quickly as in previous years. LNG exports from the United States in December 2018 set another record, with 36 exported cargoes, after Train 5 at Sabine Pass and Train 1 at Corpus Christi began producing LNG.

Excelerate Energy said its Northeast Gateway LNG import terminal, offshore

Boston, reported the highest-ever peak send-out flow rate of over 800,000 million Btu (15,510 tonnes) per day on 1 February 2019.

Along with LNG production capacity, LNG shipping capacity is also expanding. GasLog provided details on the new charter party agreements, each for a firm period of seven years, with Cheniere Energy. To fulfil the Charters, two 180,000 cubic meter LNG carriers have been ordered from Samsung Heavy Industries (SHI) in Korea, with expected delivery in the middle of 2021. Two LNG carrier ships, which JERA separately owns with NYK and MOL, were named in January 2018. Both ships will be used to transport LNG from the Freeport LNG Project in Texas.

The Federal Energy Regulatory Commission (FERC) Staff issued the final environmental impact statement (EIS) for Sempra Energy's Port Arthur LNG project in Jefferson County, Texas, and interconnected pipelines, and for Tellurian's 27.6 million tonne per year LNG export facility and an associated 96-mile (154 km) pipeline (Driftwood project), proposed near Lake Charles, Louisiana. Tellurian is expected to make a final investment decision (FID) in the first half of 2019, with the first LNG expected in 2023.

NextDecade began the pre-filing process of its proposed Galveston Bay LNG export facility and the supporting Galveston Bay Pipeline with FERC in October 2018. The plant would produce up to 5.5 million tonnes per year of LNG. NextDecade is expected to file its formal application for the project during the fourth quarter of 2019. If approved, the project could be in service by the second quarter of 2027.

Venture Global LNG said in its filing to FERC that it was ready to commence construction of the Calcasieu Pass project as soon as authorized by FERC. Venture Global, which is also developing the Plaquemines LNG export facility in Louisiana, said it expects Calcasieu Pass to enter service in 2022 and Plaquemines in 2023.

The National Energy Board of Canada (NEB) in 2018 launched a process to determine whether the proposed Coastal GasLink natural gas pipeline should undergo further regulatory review. The pipeline would transport natural gas for export. LNG Canada announced that it has thus far approved over CAD 937 million in contracts and subcontracts with First Nations enterprises and other businesses across Canada.

[Middle East]

Eni and Oman Oil Company Exploration and Production (OOCEP) entered into an Exploration and Production Sharing Agreement (EPSA) for Block 47 in of Oman. Eni also signed with the Ministry of Oil & Gas and with BP a Head of Agreement (HoA) that sets up the principles for the acquisition of the Exploration and Production rights of Block 77 onshore.

[Africa]

Sonatrach and China Harbour Engineering Company (CHEC) signed a deal on a study and construction of a new LNG jetty at the Skikda hydrocarbon port.

Ophir Energy announced that it has received notification from the Equatorial Guinea Ministry of Mines and Hydrocarbons that the Block R Licence, which contains the Fortuna gas discovery, will not be extended following expiry of the licence at the end of 2018.

Progress is reported toward a final investment decision (FID) during the first half of 2019 in Mozambique. Anadarko announced in early February 2019 Mozambique LNG1 Company's LNG sales to CNOOC for 1.5 million tonnes per year for 13 years, Tokyo Gas and Centrica for 2.6 million tonnes per year from the start-up of production until the early 2040s and Shell for 2 million tonnes per year for 13 years. Those SPAs take the projects total long-term sales to more than 7.5 million tonnes per year, Anadarko said.

[Europe / Russia]

France's gas network operator GRTgaz recorded an overall 5% decrease in gross natural gas consumption on its transmission network in 2018 to 442 TWh. However, the country's LNG imports increased to 117 TWh (7.75 million tonnes), GRTgaz said. That is an increase by 15%. Elengy and its subsidiary Fosmax LNG received 215 LNG cargoes and conducted 21 LNG transshipment operations (berth to berth) and 19 reloading of standard LNG carriers (from shore to vessel) at their three terminals.

Uniper entered into a Heads of Agreement (HOA) with ExxonMobil in respect of a long-term booking of regasification capacity in Uniper's FSRU (Floating Storage and Regasification) project in Wilhelmshaven, Germany. The facility could be in operation as early as the second half of 2022. In December 2018 Uniper entered into an agreement with Mitsui O.S.K Line (MOL), who will own, finance and operate the FSRU.

The National Regulatory Authorities (NRAs) of France and Spain, the Commission de Régulation de l'Energie (CRE) and the Comisión Nacional de los Mercados y la Competencia (CNMC), following their joint assessment of the investment request submitted by the concerned transmission system operators in France and Spain, Teréga and Enagás respectively, have rejected an investment plan for an EU (European Union) -backed cross-border 7.5 bcm per year natural gas STEP interconnector due to the lack of market demand and because its costs outweigh any perceived benefits.

Enagás agreed to participate in the development of a green hydrogen generation plant in Mallorca with the Ministry of Industry, Trade, and Tourism and the Government of the Balearic Islands, ACCIONA, and CEMEX. The project involves the development of a green hydrogen generation plant from renewable energy to supply a fleet of public transport

buses. Spanish shipping company Baleària said its first LNG-fueled ferry, Hypatia de Alejandría, completed its first commercial trip between Barcelona and Palma.

A final investment decision (FID) on the floating LNG terminal on Krk Island was made by LNG Croatia. Golar will convert the 2005 built Golar Viking LNG tanker to the FSRU vessel. Delivery is scheduled in October 2020. The binding process for booking the capacity (Open Season) resulted in capacity booking of 0.52 bcm (382,200 tonnes) per year.

The European Commission hosted Ukraine-EC-Russia negotiations on gas transit through Ukraine after 2019 when the current transit contract between Naftogaz and Gazprom expires. The Commission proposed that Ukraine sign a ten-year transit contract with Russia, which would provide for transit volumes that would be economically viable for a high-profile European investor, NJSC Naftogaz's press service said.

Gazprom is set to develop a natural gas liquefaction facility in the Poronaysk district, the Sakhalin Region government said. Details have not been confirmed yet.

[South America]

EXMAR's Floating Liquefaction Unit (FLNG), to be renamed Tango FLNG, has berthed in Bahía Blanca, Argentina where it will stay and produce LNG for export for YPF over a ten-year period. After contract signing in November 2018, the unit was transported from China to Argentina on-board a heavy lift vessel. Departure of the first fully-loaded conventional LNG carrier is expected in the second quarter of 2019.

Wärtsilä commenced site work for a new 378 MW power plant under an engineering, procurement and construction (EPC) contract in El Salvador. This facility, ordered by Energía del Pacífico, will one of the first in Central America to be fired by LNG. A dedicated floating LNG import terminal will be built at the same location.

[Global issues]

Significant LNG production capacity is expected to reach final investment decisions (FIDs) in 2019. Physical LNG supply is also expected to grow significantly by around 30 million tonnes, or 8% - 10% in 2019, mostly from the United States. Shell, the largest private sector LNG player, sold 71.21 million tonnes of LNG in 2018, according to its annual performance report.

Reference: Company announcements, Reuters, Philippine Star, China Coal News, New Indian Express, Energy Magazine, Houston Chronicle, CBC Canada, РИА Новости, Cedigaz News Report.

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