

LNG Review March 2018
- Recent issues and events -
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Introduction

During the first two months of 2018, the Northeast Asia's big LNG markets (Japan, China, Korea and Chinese Taipei) imported 37 million tonnes of LNG, 15% or 5 million tonnes more than the same period one year ago. The average landed price in the region in the period was USD 8.9 / million Btu, 16% higher than that of one year ago. Judging from the trend in crude oil prices, to which term-contract LNG prices in the region are still largely pegged, average LNG prices paid by Northeast Asia's consumers are expected to be trending up at least for the next two months (until May).

On the other hand, spot LNG prices in the region, assessed by multiple price reporting agencies, trended down remarkably from the middle of USD 11s in early January to around USD 7 at the end of March 2018.

The second floating LNG production facility in the world is starting up production in Cameroon.

The Dutch government decided to cease production from the largest natural gas field in Europe in the next ten years or so.

In Japan, according to the statistics published by the Ministry of Economy, Trade and Industry (METI), 842 thousand retail city-gas customers (out of 25 million) have switched providers as of the end of March 2018, one year after the introduction of full retail market liberalisation.

This paper looks at some important issues in the LNG industry in March 2018.

[Asia Pacific]

The 7th LNG Producer-Consumer Conference will be held on Monday 22 October 2018 in Nagoya, Japan, jointly hosted by the Ministry of Economy, Trade and Industry (METI) the Asia Pacific Energy Research Centre (APEREC).

Hokuriku Electric Power received its first LNG cargo at its Toyama Shinko LNG receiving terminal on 17 March 2018.

JAPEX's Soma LNG Terminal commenced its operation. The terminal will supply

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regasified LNG to the Niigata-Sendai line via Soma-Iwanuma Gas Pipeline which commenced its operation in November 2017 and will ship out LNG by trucks to mainly wider Tohoku region.

Japan's LNG imports in February 2018 were 8.294 million tonnes, the highest ever for February, and the third highest in the history, shy of the previous monthly highs of 8.434 million tonnes and 8.302 million tonnes in January 2015 and 2017, respectively. The average price was the highest in two years at USD 9.12 / million Btu.

Uyeno Transtech, Sumitomo Corporation, and Yokohama-Kawasaki International Port Corporation (YKIP) concluded a memorandum on conducting a joint study on Ship-To-Ship LNG bunkering in Tokyo Bay.

Korea's LNG imports in February 2018 were 4.588 million tonnes, the fourth highest in the history, shy of the previous monthly highs of 4.934 million tonnes, 4.771 million tonnes and 4.645 million tonnes in January and December 2011 and February 2012, respectively. The average price was the highest in 34 months at USD 10.00 / million Btu.

According to China's customs statistics, the country imported 3.99 million tonnes of LNG in February 2018, nearly 70% more than the same month in 2017. Pipeline gas imports also grew significantly, by 16% from a year ago, to 2.94 million tonnes. According to the NDRC (National Development and Reform Commission), the country's natural gas consumption in the first two months of 2018 was 45.8 bcm, a 17.6% increase from the same period one year earlier.

CNPC plans to increase its total working capacity of natural gas storages to 15 billion cubic metres by 2025, meeting 10% of the peak seasonal demand. CNPC plans to add seven new storage sites, as well as to drill more wells and add compression stations at the existing sites.

Hong Kong utility CLP Power said it was finalizing an environmental impact assessment study for its LNG FSRU (floating storage and regasification unit) project.

Australia's Comet Ridge upgraded its share of gas reserves at the Mahalo gas project in Queensland. The Company has a 40% interest in joint venture with Santos and Australia Pacific LNG (APLNG). The company said that its net share of proved and probable (2P) reserves had jumped 473% to 172 petajoules, while its net share of proved, probable and possible (3P) reserves had risen 71% to 374 petajoules (6,872,250 tonnes).

The Australian competition regulator ACCC said it would allow Chevron, INPEX, Shell, and Woodside Petroleum to coordinate maintenance activities at their LNG facilities in Western Australia and the Northern Territory.

Woodside's acquisition of ExxonMobil's interest in the Scarborough gas field has been completed. Woodside has acquired an additional 50% interest in WA-1-R (which

contains the majority of the Scarborough gas field), and now holds a 75% interest in WA-1-R and a 50% interest in WA-61-R, WA-62-R and WA-63-R. These retention leases cover the Scarborough, Thebe and Jupiter gas fields, which are estimated to contain gross (100%) contingent resources (2C) of 9.2 Tcf of dry gas. Woodside will operate all of these retention leases.

INPEX announced that commissioning of the Ichthys LNG Project's first train at the onshore plant, Floating Production Storage and Offloading (FPSO) facility (Ichthys Venturer) and subsea production systems has been completed. The Project has already completed drilling the production wells required for the startup of production, and the 890 km-long gas export pipeline is also complete. Between April and May 2018, the Project will complete commissioning required for production startup at the Central Processing Facility (Ichthys Explorer) and commence production of gas.

Australia's National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) assessed the environmental impacts and risks of activities over the 25-year life of the Barossa-Caldita Offshore Project and accepted the Joint Venture's project proposal. The approval paves the way for the submission of activity-specific Environment Plans to supply gas to Darwin LNG. Joint venture partners are ConocoPhillips (37.5% and operator), SK E&S (37.5%) and Santos (25%).

Tokyo Gas and Malaysia LNG concluded a Heads of Agreement (HOA) regarding a new LNG sale and purchase agreement for a period of up to 13 years, starting in April 2018. The supply will be approximately 0.5 million tonnes per year for the first six years, with the possibility of a volume increase of up to 0.9 million tonnes per year for the remaining extension period. Tokyo Gas believes that the destination clause in the deal is in line with the recommendation by the Japan Fair Trade Commission in June 2017.

Mubadala Petroleum, PETRONAS Carigali, and Sarawak Shell reached the Final Investment Decision (FID) for the Pegaga gas field development in Block SK 320, offshore Malaysia. The first gas is expected by third quarter of 2021. The produced fluids will be evacuated through a new subsea pipeline tying in to an existing offshore network and subsequently to the onshore Malaysia LNG plant in Bintulu. Joint venture partners are Mubadala (55% and operator), PETRONAS Carigali (25%) and Sarawak Shell (20%).

INPEX is set to commence Pre-FEED work for the Abadi onshore LNG Project, the Masela Block, in the Arafura Sea, Indonesia. INPEX will formulate a revised plan of development (POD) contingent on the results of the Pre-FEED work and ongoing discussions with the Indonesian authorities. The work is based on an onshore LNG development scheme with an LNG production capacity of 9.5 million tonnes per year.

The Papua New Guinea LNG (PNG LNG) project did not produce an LNG cargo in

March 2018, following a 7.5 magnitude quake on 26 February, although it brought in an LNG cargo to keep the plant cold in early April.

[North America]

In January 2018, for the eighth consecutive month, dry natural gas production increased year-to-year from the same month a year ago. The preliminary level for dry natural gas production in January 2018 was 2,400 billion cubic feet (Bcf), or 77.4 Bcf/day and 49.9 million tonnes. This level was 6.8 Bcf/day (9.6%) higher than the January 2017 level of 70.6 Bcf/day. The average daily rate of dry natural gas production for January was the highest for the month since EIA began tracking monthly dry production in 1973.

As previously reported, the United States exported 14.7 million tonnes of LNG in 2017, compared to 3.82 million tonnes in 2016. More than half (53%) of LNG exports in 2017 were shipped to three countries: Mexico, Korea, and China. Almost 60% was sold on a spot basis to more than 20 countries.

INGAA (The Interstate Natural Gas Association of America) called on the Trump administration to exempt the steel products used to build natural gas transmission pipelines from steel tariffs because of a scarcity of domestic supply and national security considerations.

Exelon Generation announced an agreement to purchase ENGIE North America's LNG import terminal to ensure the continued reliable supply of fuel to Mystic Units 8 and 9. Exelon also plans to continue providing LNG to gas utilities, marketers, and other market participants throughout New England. Transaction closure is dependent upon regulatory review by the Department of Energy (DOE) for LNG import authorization and, as necessary, authorization from the Department of Justice. The transaction is expected to close in the fourth quarter of 2018.

Cheniere Energy and GAIL (India) commenced their 20-year Sale and Purchase Agreement (SPA) to supply LNG to India from Cheniere's Sabine Pass liquefaction facility in Louisiana on 1 March 2018. Cheniere shall sell GAIL approximately 3.5 million tonnes per year of LNG.

A ship carrying the first cargo of LNG departed on 1 March 2018, from the Dominion Energy Cove Point LNG plant. Shell NA LNG is providing the natural gas needed for liquefaction during the commissioning process and is off-taking by ship the LNG that is produced. When commissioning is complete, DECP will produce LNG for ST Cove Point, the joint venture of Sumitomo Corporation and Tokyo Gas, and for Gail Global (USA) LNG under 20-year contracts.

Freeport LNG Expansion, L.P. and FLNG Liquefaction 4, LLC filed an application with the United States Department of Energy (DOE) for authorization to export 262.8 Bcf (5.58 million tonnes) of LNG over 20 years to countries with and without a Free Trade Agreement (FTA) with the United States in connection with the proposed Train 4 Project.

Venture Global LNG's subsidiary, Venture Global Calcasieu Pass, agreed with Shell to increase their existing sales and purchase agreement (SPA), under which Shell will purchase 2 million tonnes per year of LNG from Venture Global Calcasieu Pass' LNG export facility under development in Cameron Parish, Louisiana. Together with an SPA previously executed by Venture Global Calcasieu Pass with Edison, brings the facility's total committed capacity under binding contracts to 3 million tonnes per year.

The United States Department of Energy (DOE) has issued an order authorizing Fourchon LNG to export up to 260 bcf/year (5.41 million tonnes) of LNG from its proposed liquefaction facility to be located on Port Fourchon, Louisiana. Fourchon LNG is authorized to export the LNG over a 30-year period to Free Trade Agreement (FTA) nations and over a 20-year period to non-FTA nations.

FERC (Federal Energy Regulatory Commission) issued its schedule for the environmental review of the proposed Alaska LNG project. FERC plans to issue a draft environmental impact statement (EIS) in March 2019 and a final EIS on 9 December 2019. Other federal agencies having jurisdiction over the project will have until 8 March 2020 to complete their review.

The LNG Canada project is on track for a final investment decision (FID) in 2018, a British Columbia trade official said. British Columbia's New Democratic government said it would repeal the province's LNG tax, while giving LNG companies tax breaks during construction and access to cheaper power.

20 LNG containers are currently being filled for CERCG (China Energy Reserve and Chemicals Group) at FortisBC's Tilbury facility and will set sail for China shortly. More LNG shipments are being planned throughout 2018.

[Middle East]

Qatar Petroleum (QP) chose Chiyoda Corporation for front-end engineering and design (FEED) of the onshore facilities of the North Field expansion. The FEED scope of work will provide the basic design for the addition of three mega-trains of LNG production with associated pre-investment to add a 4th LNG train in the future. Separately, QP announced raising the non-Qatari ownership limit in the energy sector companies and in its subsidiaries listed on the Qatar stock Exchange to 49%, and raising the shareholder ownership limits in these companies to no more than 2%.

Iranian President Hassan Rouhani said that gas production at South Pars increased from 285 million cubic meters per day to 555 million cubic meters in the past Iranian calendar year.

Kuwait's oil minister said that Kuwait Petroleum Corporation (KPC) had signed an agreement with an international firm for long-term supply of LNG, state news agency KUNA reported.

[Africa]

Total announces first gas from the Timimoun field in southwestern Algeria. The production complex with a capacity of around 5 million cubic meters per day at plateau, is jointly operated by Sonatrach (51%), Total (37.75%) and Cepsa (11.25%).

Golar LNG said LNG production had started at its floating LNG production platform in Cameroon, the world's second working example of the nascent technology. Gazprom Marketing and Trading has purchased the entire 1.2 million tonne per year output from the Hilli Episeyo for eight years. The deal was agreed in late 2015 between Golar, Gazprom Marketing and Trading, Cameroon's SNH (Société Nationale des Hydrocarbure) and Perenco Cameroon.

Anadarko Petroleum received official approval from the Government of Mozambique for the Golfinho/Atum Field Development Plan. The Development Plan outlines the integrated onshore project from the reservoir to the LNG market. The Mozambique LNG project will be Mozambique's first onshore LNG development, initially consisting of two LNG trains with total nameplate capacity of 12.88 million tonnes per year. This foundational project paves the way for significant future expansion of up to 50 million tonnes per year from Offshore Area 1. The Golfinho/Atum Project will also supply initial volumes of approximately 100 million cubic feet of natural gas per day for domestic use in Mozambique. Anadarko Moçambique Área 1, Lda, operates Offshore Area 1 with a 26.5% working interest. Co-venturers include ENH Rovuma Área Um, S.A. (15%), Mitsui E&P Mozambique Area1 Ltd. (20%), ONGC Videsh (10%), Beas Rovuma Energy Mozambique Limited (10%), BPRL Ventures Mozambique B.V. (10%), and PTTEP Mozambique Area 1 Limited (8.5%).

[Europe / Russia]

In 2017 EU (European Union) gas consumption was 491 bcm, 6% more than in 2016 and the highest level since 2010. In December 2017 Europe received its first cargo from Novatek's new Yamal LNG facility which means that, for the first time, a company other than Gazprom supplied Russian gas to the EU. EU LNG imports increased by 16% year-on-year in the last quarter of 2017.

A study commissioned by the Council of European Energy Regulators (CEER) and carried out by DNV GL found that gas can contribute to the EU's decarbonization targets, but that there is a need for clearer policy on the role that gas is expected to play in a lower-carbon future. The study concluded that proposals for potential future regulatory initiatives may be needed to reflect developments in the European gas sector, especially around renewable gas.

Snam and Fluxys acquired the 33.5% stake in Interconnector UK pipeline that is currently owned by Canadian pension fund Caisse de dépôt et placement du Québec (CDPQ). Fluxys holds just over 76% in Interconnector UK while Snam a 23.7% stake.

ENGIE signed a partnership agreement with regard to Energy Observer, the first ship in the world powered by hydrogen and renewable energies only, able to produce its own hydrogen on board, by combining renewable energies (wind, solar, hydrokinetics) and sea water.

Natural gas extraction from the Groningen field will be terminated. The extraction level will be reduced to below 12 bcm no later than October 2022 and possibly even one year sooner. Depending on the impact of the measures, extraction after October 2022 is expected to decrease to at least 7.5 bcm and possibly to substantially less than that. In subsequent years, it will gradually be reduced to zero.

[South America]

Argentina's Enarsa awarded part of its 22-cargo LNG purchase tender for May-August 2018 delivery to Trafigura, Gunvor, BP and Vitol, sources said.

[Global issues]

According to the latest annual report by the GIIGNL, global LNG imports reached 289.8 million tonnes in 2017, increasing by 26.2 million tonnes or 9.9% compared to the previous year, the strongest growth rate since 2010. No new country joined the LNG producing community in 2017, the number of exporting countries remaining at 19. One country imported LNG for the first time (Malta), bringing the total number of importing countries to 40.

Reference: Company and agency, government announcements, Reuters, Bloomberg, KUNA, GIIGNL, Cedigaz News Report.

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