

## LNG Review January 2018 - Recent issues and events - Hiroshi Hashimoto\*

### **Introduction**

Japanese imports of LNG in January 2018 are expected to hit their highest in the history, thanks to the cold weather. The level should be higher than 8.434 million tonnes in January 2014.

Asian LNG spot prices, assessed by several price reporting agencies, were traded at around mid-USD 11 per million Btu for February delivery and around mid-USD 10 for March delivery.

China's overall natural gas imports in 2017, combining pipeline gas and LNG imports, were nearly 69 million tonnes, representing a 27% increase from the previous year. LNG imports amounted to 38 million tonnes, an increase by 46%, or around 12 million tonnes.

Corresponding with this, Australia's LNG exports hit 57 million tonnes in 2017, an increase by 26%, or around 12 million tonnes, while the United States is estimated to have exported nearly 15 million tonnes of LNG in the year.

Dominion Energy Cove Point (DECP) began producing LNG at its new liquefaction facility in Maryland in the United States.

This paper looks at some of the important issues in the global LNG industry during the month of January 2018.

### **[Asia Pacific]**

Mitsui O.S.K. Lines (MOL) signed a deal to build an LNG-fuelled tugboat with Kanagawa Dockyard. This marks MOL's first ownership of a tugboat powered by LNG-fuelled engines. It is also Japan's first LNG-fuelled tugboat with the LNG fuel tank mounted on the exposed deck at the stern of the ship. The ship will be deployed in Osaka Bay in April 2019. LNG fuel will be supplied by Osaka Gas using a truck-to-ship system. K Line, Chubu Electric Power, Toyota Tsusho, and NYK Line began joint discussions on the commercialization of a new business to supply LNG as a marine fuel to ships in the Chubu (central region) of Japan.

Tokyo Gas Energy Solutions won a project management consultancy (PMC) contract from Thailand's PTT LNG for the construction of the Nong Fab LNG terminal. A joint venture between Tokyo Gas and Mitsui & Co acquired a 30% equity interest in Gulf WHA MT Natural

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Gas Distribution Co Ltd, a holding company of natural gas distribution firms for industrial estates in Thailand.

PetroVietnam Gas Corporation (PV Gas) may sell 30% of its total shares to a strategic investor in 2020, the firm's chairman said.

The Asian Development Bank (ADB) signed an agreement with PNOC to act as transaction advisor for the Philippines' first LNG hub project in Batangas. Seven foreign firms have submitted unsolicited proposals to the Philippine National Oil Company (PNOC) for a joint-venture partnership to build an LNG terminal, PNOC spokesperson said.

According to China's NDRC (National Development and Reform Commission), the country's natural gas production in 2017 was up 8.5% year on year at 148.7 bcm. Total natural gas imports during the period were 92.0 bcm, up 27.6%, with total natural gas consumption stood at 237.3 bcm, also increasing year on year by 15.3%. China's LNG imports in December 2017 were 5.029 million tonnes, the highest in the history and an increase of 35% from the 3.733 million tonnes in the same month in 2016. In 2017 China imported 38.286 million tonnes, 46% or 12.132 million tonnes more than 2016.

Mitsui O.S.K. Lines (MOL) announced that the LNG carrier CESI Wenzhou, which was ordered by the joint venture of China COSCO Shipping Corporation Limited (CCSC) and China Petroleum & Chemical Corporation (SINOPEC), was delivered at Hudong-Zhonghua Shipbuilding (Group) on 31 January 2018.

Bestsun Energy plans to build an LNG receiving terminal in Suizhong county, Liaoning province, the company said. The company signed a cooperation agreement for the project with the Suizhong local government. The project comprises three phases. The first phase is to have capacity of 2.6 million tonnes per year. For the second and the third phases, Bestsun Energy plans to expand annual capacity to 5 million tonnes per year.

CPC Corporation's plans to build a third LNG receiving terminal in Taoyuan, Taiwan, suffered a setback on 23 January 2018 when an environmental impact assessment (EIA) subcommittee did not approve the revised blueprint that aimed at easing the project's impact on reefs, coral and other protected marine life at the site. It is increasingly difficult for the company to start construction in June as previously envisioned.

Taiwan Power Company is seeking 1.8 - 2.4 million tonnes per year of LNG over 15 years from 2023. Under a Request for Expression of Interest (REOI) issued in late December 2017, Taipower aims to import LNG via its planned Taichung terminal for a proposed power plant. The terminal and the first unit of the power plant are due to be completed in the second half of 2023. Taipower aims to identify potential long-term LNG suppliers by the end of the third quarter of 2018.

Gail renegotiated the price and volume of a 2.5 million tonne per year LNG contract

with Gazprom originally signed in the year 2012 enabling GAIL to develop incremental gas markets to offtake these volumes thereby mitigating volume risk.

An inland river cargo terminal to be built at Ghazipur in northern India will have an LNG bunkering facility. India's Inland Waterways Authority is behind the project which aims to augment the navigational capacity on the River Ganga in the state of Uttar Pradesh, according to a ministry of shipping statement.

LNG would be added into Bangladesh's national grid from April 2018, officials said, having "signed a long-term agreement with Qatar to import up to 2.8 million tonnes per year." The floating storage regasification unit (FSRU) terminal is being developed offshore the Moheshkhali Island in the Bay of Bengal by Exceleerate Energy.

Summit Power International Singapore subsidiary Summit LNG Terminal awarded a 15-year contract to PSA Marine Bangladesh. PSA Marine Bangladesh will provide berthing, mooring, pilot and personnel transfer services to LNG ships calling at Summit LNG FSRU terminal. PSA Marine Bangladesh targets to commence operations in early 2019. In 2017, Summit LNG received a concession from Petrobangla to develop a floating LNG terminal facility on a build, own, operate, transfer basis in Moheshkhali. A letter of intent (LOI) was signed between Bangladesh's Petrobangla and Indonesia's Pertamina to open talks on imports of LNG.

Australia's resource and energy export earnings are forecast to reach a record AUD 214 billion in 2017-18, driven by growing LNG and iron ore export volumes. In 2018-19, expected price declines are likely to outweigh continued volume increases, with earnings forecast to decline to AUD 200 billion.

Chevron could face tougher emissions curbs at Wheatstone LNG in Western Australia. The state government asked the Environmental Protection Authority (EPA) to review Wheatstone following the repeal of the Clean Energy Act, which took effect in 2012. The original approval terms in 2011, which required Wheatstone to offset 2.6 million tonnes a year of reservoir carbon dioxide emissions, were waived after the Clean Energy Act.

Under Western Australia's reservation policy, 15% of LNG production from certain gas fields has to be offered to local customers. Woodside's fourth-quarter 2017 report stated, "Preparations commenced for the installation of a compressor capable of delivering 10 - 25 TJ/day of gas into the Dampier to Bunbury Natural Gas Pipeline. Following all required approvals, Pluto gas is expected to be supplied to customers in Western Australia from H2 2018." Start-up of the LNG truck-loading facility is targeted in H2 2018, too. "Potential applications include remote power generation and heavy transport fuel," the report stated.

Feasibility studies on small- and mid-scale LNG trains were concluded at Pluto LNG. Studies have commenced on a pipeline connecting Pluto LNG and the North West Shelf

(NWS) Project's Karratha Gas Plant, with the potential to accelerate Pluto area gas reserves, leverage existing Pluto offshore capacity and utilise emerging NWS LNG ullage. Additional synergies are also being considered. The Browse Joint Venture and the NWS Project are progressing commercial discussions and joint technical studies on the feasibility of processing Browse resources through NWS infrastructure. The Scarborough Joint Venture is engaging third party infrastructure owners to explore options to commercialise the Scarborough resources. A Joint Technical Study Agreement was executed with the North West Shelf Project to assess the technical viability of processing gas through NWS infrastructure.

Malaysia's Sarawak state government agreed to acquire 10% equity in Petronas LNG 9 Sdn Bhd (PL9SB) which owns the ninth train (Train 9) in Bintulu. A term sheet was signed between the state government and Petronas.

Petronas confirmed that its LNG cargo deliveries were not affected by the gas leak incident at Sabah-Sarawak Gas Pipeline (SSGP) in early January 2018. Petronas said gas supply to customers remained unaffected although gas supply from the Sabah Oil and Gas Terminal (SOGT) to Petronas LNG Complex in Bintulu had been stopped to ensure safety at the incident site.

The first cargo of LNG under Pertamina's operation of the Mahakam Block arrived at the FSRU (Floating Storage Regasification Unit) Nusantara Regas One in the Bay of Jakarta.

The pre-FEED (front end engineering and design) studies on the three components of Horizon Oil's Western LNG (WLNG) - upstream, pipelines and liquefaction facility - are substantially complete. The preliminary results of the pre-FEED studies provide good confirmation of the technical viability and economic attractiveness of the project.

### **[North America]**

Crude oil production in the United States reached 10.038 million barrels per day (b/d) in November 2017, according to EIA (Energy Information Administration). It is the first time since 1970 that monthly production levels surpassed 10 million b/d and the second-highest ever, just below the November 1970 value of 10.044 million b/d.

In November 2017, for the sixth consecutive month, dry natural gas production increased from the same month a year ago. The preliminary level for dry natural gas production in November 2017 was 2,321 billion cubic feet (Bcf), or 77.4 Bcf/day (48 million tonnes). This level was 5.3 Bcf/day (7.4%) higher than the November 2016 level. The average daily rate of dry natural gas production for November 2017 was the highest for any month since EIA began tracking monthly dry production in 1973. In November 2017, the United States exported 2.7 Bcf/day of LNG (1.7 million tonnes) to 11 different countries. The United

States has become a net exporter of natural gas on an annual basis for the first time since at least 1957. Net exports averaged about 0.4 billion cubic feet per day in 2017, flipping from net inflows of 1.8 billion in 2016. The United States exported 182 cargoes, or 13 million tonnes of LNG in the first eleven months of 2017, compared to 3.82 million tonnes for the 12 months in 2016.

Between 24 December 2017 and 3 January 2018, daily temperatures in the Lower 48 states averaged 27° Fahrenheit (F) (-2.8°C), which was 9°F lower than the 30-year (1981 - 2010) average for the same period. Estimated total natural gas consumption posted a new single-day record on 1 January 2018, topping the previous record set on 7 January 2014. Total estimated consumption provided by PointLogic, which includes power burn, industrial, residential/commercial, and pipeline and LNG feedstock gas, reached 150.7 Bcf (3.14 million tonnes) on the day, compared with the previous high of 143.3 Bcf in 2014. Natural gas spot prices were traded at as high as USD 175/million Btu in New York City.

The United States Energy Information Administration (EIA) in its latest monthly Short-Term Energy Outlook, projects that LNG gross exports will average 3.0 bcf/d (22.8 million tonnes) in 2018, up from 1.9 bcf/d in 2017. EIA expects Dominion Energy's Cove Point LNG terminal in Lusby, Maryland, to ramp up to full capacity and, at the Elba Island LNG facility near Savannah, Georgia, 6 of the 10 small modular trains, each with a capacity of 0.03 bcf/d, are expected to enter service. The first liquefaction train (capacity 0.7 bcf/d) at the Freeport LNG terminal on Quintana Island, Texas, is also expected to come online by the end of 2018. EIA projects gross LNG exports to average 4.8 bcf/d (36.457059 million tonnes) in 2019 when the four remaining modular trains at Elba Island come online and the remaining two trains at Freeport LNG enter service. Two trains at Corpus Christi, Texas, and three trains at Cameron LNG's terminal in Louisiana, are also expected to enter service in 2019.

Cheniere Marketing entered into an LNG sale and purchase agreement (SPA) with Trafigura, under which Trafigura agreed to purchase approximately 1 million tonnes per year of LNG on a free on board (FOB) basis for a term of 15 years beginning in 2019.

Dominion Energy Cove Point (DECP) began producing LNG with its new liquefaction facility undergoing commissioning in Lusby, Maryland. With a cost of USD 4 billion, it is the largest construction project ever thus far for Maryland and for Dominion Energy. Dominion Energy agreed with SCANA Corporation to combine in a stock-for-stock merger.

Tellurian engaged Goldman Sachs and Société Générale to serve as financial advisors for Driftwood Holdings LLC, a subsidiary of Tellurian formed to own and operate Tellurian's gas producing assets, pipeline assets, and the Driftwood LNG export facility.

TransCanada announced its Leach XPress (LXP) project was placed in-service on 1

January 2018, and that the Federal Energy Regulatory Commission (FERC) has issued a certificate of public convenience and necessity for its Mountaineer XPress (MXP) and Gulf XPress (GXP) projects on 29 December 2017. All three projects provide links between Appalachian natural gas supply and markets.

JERA sold 6% out of its equity interest in Cricket Valley Energy Center, the operating company of a natural gas-fired thermal power generation project in New York State. The purchaser, the Development Bank of Japan, is an existing investor in the Project. Prior to the sale, JERA held approximately a 44% interest in the Project.

OneOK announced plans to build the Elk Creek Pipeline to transport Bakken natural gas plant liquids (NGPL) from eastern Montana to Bushton, Kansas. Once complete in 2019, the pipeline will allow for more natural gas production in the Bakken region, reduce natural gas flaring, and support higher recovery of high-value NGPL.

Following the decision of not proceeding with the Pacific NorthWest LNG Project which had pursued the possibility of producing LNG from the shale gas in the upstream project, Japex decided to recognize CAD 750 million (JPY 68 billion) of impairment loss as an extraordinary loss in the third quarter of the fiscal year ending March 2018.

#### **[Middle East]**

Qatar Petroleum (QP) announced the official start of operations of the new Qatargas following the completion of the integration with RasGas.

Oman LNG and BP Singapore signed a sales and purchase agreement to supply 1.1 million tonnes per year of LNG to the latter over seven years from January 2018.

#### **[Africa]**

Egypt plans to stop importing LNG by the end of the 2017/18 fiscal year in June as it speeds up production at recent gas fields, the country's Petroleum Minister said.

Anadarko Petroleum said it is in discussions with Chinese companies for potential sales from the Mozambique LNG project.

#### **[Europe / Russia]**

Électricité de France (EDF) has offered up to 3 bcm/year of regasification capacity at the Dunkirk LNG import terminal in northern France for 18 years from January 2019, it said in a market notice. The remaining 10 bcm/year capacity has already been booked by other shippers, EDF said.

The Dutch minister for the economy said in early January 2018 that output at the Groningen gas field should be reduced "by as much as possible" during the current

government term through 2021. The government proposed in 2016 capping production at the field at 21.6 bcm per year for five years. That reduction, the justification for which is currently under a legal review, would be down from 24 bcm in the production year 2016-17 and 39.4 bcm in 2015-16. The government aims to adopt a recommendation by the regulator to cut production at the field by nearly half to 12 billion cubic meters per year "as quickly as possible," the minister later said. Meanwhile the country's Gate terminal performed the first-ever transshipment of a cargo sourced from the Yamal LNG project.

Gasunie LNG Holding B.V., Oiltanking GmbH and Vopak LNG Holding B.V. are in the process of establishing the joint venture "German LNG Terminal GmbH". The purpose of the joint venture is to build, own and operate an LNG import terminal in northern Germany. The companies announce that the Open Season starts on 17 January 2018.

Norway's Gassco transported 117.4 billion cubic metres in 2017 through the pipeline system from the Norwegian continental shelf (NCS) to continental Europe and the United Kingdom. That represented an increase of 8% from 2016, and set a new record in volume terms for the four decades since Norwegian gas exports began.

Spain's natural gas demand rose 9.1% year on year in 2017 to 351 TWh (32 Bcm), according to data published by grid operator Enagás. Natural gas demand for power generation grew by 27%. The figure is influenced by low levels of hydroelectricity generation, down by approximately 48%. LNG imports increased by 20% to 12 million tonnes.

Spain's Repsol said buyout group CVC and others were interested in its 20% stake in Gas Natural. Repsol and Criteria Caixa, the holding company that owns Caixabank which in turn owns 24% of Repsol, agreed in 2016 to each sell a 10% stake in Gas Natural to Global Infrastructure Partners. That deal took Repsol's stake down to 20%.

Russia's gas exports increased by 8.1% to a record high 193.9 billion cubic meters (bcm) in 2017, the head of Gazprom said. The company's gas production rose by 12.4% to 471 bcm, he said. Government data showed that the country's overall gas production jumped 7.9% to 690.5 billion cubic meters in 2017 to beat a 2011 record.

Nord Stream 2 AG received the construction and operation permit for the planned pipeline in German territorial waters and the landfall area in Lubmin, near Greifswald. The Stralsund Mining Authority issued the official approval for the 55-km section of the pipeline in accordance with the Energy Industry Act (EnWG).

Yamal LNG's first commercial cargo was offloaded at the Isle of Grain in the United Kingdom in December 2017. In January 2018, the *Gaselys* tanker was loaded with a cargo at the terminal. Engie said the tanker was headed for its LNG import terminal at Everett, Massachusetts.

Russia's Sakhalin 2 LNG export plant is seeking to sell a total of eight cargoes split

between two tranches from May 2018 to March 2019, sources said. Four cargoes will be offered with pricing to be linked to S&P Global Platts' so-called Japan Korea Marker (JKM) spot LNG price assessment benchmark, they said. Four cargoes will be linked to oil prices, they added.

### **[South America]**

Argentina's Ministry of Energy is calling for public input on draft regulations that would allow companies to import LNG through two terminals that are exclusively used by state-owned Enarsa, which would maintain the priority capacity right under the proposed regulations. The ministry called for "proposals, observations or modifications" to be submitted before 28 February 2018.

Sources said Golar LNG Partners entered into the deal with New Fortress Energy to deploy a floating storage and regasification unit (FSRU) to Jamaica for up to 15 years from the fourth quarter of 2018. New Fortress Energy has supplied Jamaica's power utility JPS with LNG since October 2016, using one of Golar's LNG tankers.

### **[Global issues]**

According to Cedigaz, it is estimated that global gas consumption grew by 3% in the first three quarters of 2017, compared to the same period in 2016. Global coal consumption would have increased at a similar pace, driven by Asian countries. As in 2016, Europe and China were the fastest growing gas markets in 2017.

Reference: Company announcements, Reuters, Bloomberg, Interfax, Viêt Nam News, Business Mirror, Malaya, 经济形势分析 (中华人民共和国国家发展和改革委员会), 上海证券报, TVBS Taiwan, Bangladesh Sangbad Sangstha(BSS), Energy Bangla, West Australian, Seeking Alpha, Bernama, Borneo Post, SINDOnews.com, Kontan, Natural Gas Monthly by the Energy Information Administration of the United States, Natural Gas Intelligence, Muscat Daily, Expansión, LNG World News, Natural Gas World, Maritime Executive, Ship & Bunker News, EnergyQuest Australia, Cedigaz News Report.

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