

LNG Review December 2017
- Recent issues and events -
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Introduction

In the final month of the year, Russia's Yamal LNG project started LNG production and exports as planned, breaking Gazprom's virtual monopoly of gas and LNG exports from the country.

China's imports of pipeline gas and LNG in the year topped 67 million tonnes, up by more than a quarter from a year earlier. LNG imports alone surged more than 50%. China's total gas imports topped Japan's in September and in November in the year.

Asian LNG spot prices, assessed by several price reporting agencies, rose above USD 10 per million Btu in early December 2017 and continued trending up above USD 11 for the rest of the month, driven to a three-year high by demand mostly from China.

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

[Asia Pacific]

According to Japan's trade statistics, the country's average LNG import price in November 2017 was USD 7.88 per million Btu and higher than China's and Chinese Taipei's USD 7.80 and Korea's USD 7.75. Japan imported 6.41 million tonnes of LNG in the month, which was larger than the previous month but 15% less than the same month a year ago and the lowest for the month since 2011. The cumulative import into Japan between April and November of the current fiscal year was 51.44 million tonnes and a 3% decline from 52.96 million tonnes in the same period one year earlier. On the other hand, the payment for the imports in the period in 2017 was JPY 2.438 trillion and 28% more than the same period in 2016.

JAPEX completed construction works and started test operations of the Soma LNG receiving terminal in Fukushima toward commercial operation to be started in March 2018. The first LNG tanker arrived at the terminal from Malaysia in early December 2017.

JERA and EDF Trading (EDFT) signed a non-binding agreement for an LNG optimisation joint venture through JERA Trading Pte. Ltd. (JERAT).

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Mitsui O.S.K. Lines (MOL), Tohoku Electric Power, and Namura Shipbuilding jointly earned an Approval in Principle (AIP) from Lloyd's Register for the design of an LNG-powered coal carrier.

Marubeni started a joint feasibility study with PTT, which aims at implementing LNG bunkering in the Laem Chabang Port in Thailand.

The Philippines is aiming to award the permit to build the country's first LNG receiving terminal in 2018, its energy secretary said.

China's LNG imports in November 2017 were 4.056 million tonnes, the highest in the history and an increase of 52.5% from the 2.659 million tonnes in the same month in 2016. In the first eleven months of 2017 China imported 33.257 million tonnes, 48% or 10.835 million tonnes more than the same period in 2016.

A tanker carried LNG from Japan's Shimizu terminal to the floating storage and regasification unit (FSRU) outside the port of Tianjin in China.

The first truck load of LNG arrived at Weifang, Shandong, on 9 December 2017, under CNOOC's "South Gas North Transport" programme after travelling 2,235 km departing the Guangdong Zhuhai LNG receiving terminal two days earlier. Sinopec also hired trucks to deliver LNG from its Beihai LNG terminal in south Guangxi province to northern China regions. The company's new Tianjin terminal is expected to receive its first LNG cargo in January 2018. The company also started trial operation at the Fuling LNG plant in Chongqing, China's first facility to produce the chilled fuel from shale gas. Chongqing Oil and Gas Exchange is expected to provide a trading platform for domestic output, pipeline gas and LNG imports starting in 2018.

CPC Corporation, Taiwan, of Chinese Taipei said that a revised plan for the third LNG terminal to preserve the reef near the site will be submitted in January 2018. However, as the new scheme has not yet been sent to the Environmental Protection Agency, the completion may be delayed by one year.

Taiwan Power Company is seeking up to 2.4 million tonnes per year of LNG over 15 years from 2023. Under a Request for Expression of Interest (REOI) issued on 29 December 2017, Taipower aims to import LNG via its planned Taichung receiving terminal. Taipower aims to identify potential suppliers the third quarter of 2018.

Commodity traders Vitol, Trafigura and B.B. Energy submits competitive prices in a tender to supply Pakistan with four LNG cargoes in March 2018, according to the evaluation document by Pakistan LNG.

The Asian Development Bank (ADB) approved debt financing and partial risk guarantees totaling USD 583 million to develop the Reliance Bangladesh LNG and Power Project. The project includes a power generation facility in Meghnaghat, near the capital city

of Dhaka, and an LNG Terminal, near Kutubdia Island south of Chittagong.

Summit Power International Singapore subsidiary Summit LNG Terminal awarded a 15-year contract to PSA Marine Bangladesh, which will provide berthing, mooring, and pilot 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 Moheskhali. This project is part of SPI's investment programme to deliver power and gas in Bangladesh.

The ACCC (Australia's competition regulator) released its second interim report of its inquiry into the country's wholesale gas supply arrangements, saying that despite increased supply providing important short-term improvements in conditions, the market is still not operating as well as it could.

BHP and Esso provided court enforceable undertakings to separately market their share of gas produced under the Gippsland Basin Joint Venture (GBJV) from January 2019. The GBJV was established in 1964 and has been jointly marketing its gas since 1969.

Under the deal between Arrow and QCLNG uncontracted gas from Arrow's Surat Basin fields would flow to the QCLNG project that would in turn sell gas to local customers and also export it through its plant on Curtis Island.

Santos and GLNG partners signed an agreement to deliver 15 petajoules (PJ) (0.28 million tonnes) of gas into the Australian east coast domestic market in 2018. Origin agreed to purchase this from GLNG from April to October 2018. Origin also signed an agreement to buy up to 14 petajoules (0.26 million tonnes) of gas from the Casino Henry Joint Venture produced from the offshore fields in the Otway Basin from March to December 2018. Origin has secured an additional 69 PJs of gas for 2018, including Casino Henry, 15 PJs of gas from GLNG and 41 PJs from Australia Pacific LNG (APLNG) announced in November 2017.

Australia's Mineral Resources made an all-share bid for domestic gas producer AWE, just topping a sweetened offer from China Energy Reserve and Chemicals Group (CERCG). The suitors were targeting AWE's stake in its Waitsia gas project in Western Australia.

Eni acquired the whole 32.5% interest from Shell Australia in the Evans Shoal gas field, and became the Operator of the Retention Lease NT/RL7 located in the north Bonaparte Basin, offshore Northern Australia. The field is located around 300 km northwest of Darwin, where the Darwin LNG plant is operating.

Petronas agreed for JX Nippon Oil & Gas Exploration (Malaysia) Limited (NOMA) to be entitled to the oil and gas rights of Beryl Gas Field, and approved the Field Development Plan (FDP) in October 2017. The gas is to be supplied to the MLNG Tiga liquefaction plant in Bintulu, Sarawak from November 2018.

With the expiration of the PSC for the Offshore Mahakam Block at the end of 2017, Inpex and Total returned the Mahakam block to the Indonesian government. Thereafter Pertamina holds all interests in the block and take over operatorship. Indonesia's upstream regulator appointed Perusahaan Gas Negara (PGN) to sell the government's share of gas from the Sanga Sanga Block, which will be processed into LNG at the Bontang plant in East Kalimantan.

Chevron began to explore alternatives for the Gendalo-Gehem project, the second stage of the Indonesia Deepwater Development (IDD). The first stage of IDD, the Bangka Project, began production in August 2016, with capacity for 110 million cubic feet of natural gas and 4,000 barrels of condensate per day. Six Bangka LNG cargoes have been delivered from Bontang LNG terminal, as part of the LNG Sale and Purchase Agreement (SPA) with Pertamina from the Bangka Project over 5 years.

[North America]

Japan's LPG imports from the United States are expected to double in 2017 to a record and account for around half of its total purchases, customs statistics showed, approaching 6 million tonnes by the end of 2017.

Cheniere Energy has expanded its shipping fleet with spot charters. Cheniere's Sabine Pass terminal in Louisiana shipped out 22 cargoes in November 2017 and more are expected in December. Corpus Christi Liquefaction filed a report with FERC (Federal Energy Regulatory Commission) covering construction activities at its liquefaction and LNG export terminal at Corpus Christi, Texas, through November 2017, with the total project progressing to 77.4% complete against the plan of 80.8%.

Dominion Energy Cove Point introduced feed gas into its liquefaction facility. Shell NA LNG provided the natural gas needed for liquefaction during the commissioning process and will off-take the LNG that is produced.

CB&I reached a settlement agreement with Cameron LNG. CB&I is constructing the project through CCJV, a joint venture with Chiyoda. The settlement resolves all past commercial issues and increases the certainty of the project schedule, which has all three liquefaction trains producing LNG in 2019.

McDermott and CB&I agreed to combine in an all-stock transaction to create a fully vertically integrated onshore-offshore company, with a broad engineering, procurement, construction and installation (EPCI) service offering. McDermott will own a 53% stake in the combined business, with CB&I to take the rest.

The Federal Energy Regulatory Commission (FERC) issued the notice of schedule for environmental review of Driftwood LNG, a proposed 27.6 million tonnes per year LNG export

facility, and Driftwood Pipeline (DWPL), a proposed 96-mile (154 km), 4 billion cubic feet a day (Bcf/d) pipeline. FERC will issue its final Environmental Impact Statement (EIS) in October 2018, and has established a 90-day Federal Authorization Decision Deadline on 10 January 2019. Tellurian expects that this schedule will allow it to begin construction of Driftwood LNG in early 2019. Tellurian's proposed Tellurian Pipeline Network would include DWPL and two additional pipelines - Permian Global Access Pipeline (PGAP) and Haynesville Global Access Pipeline (HGAP).

Liquefied Natural Gas Limited (LNGL) extended the validity period of its binding engineering, procurement, and construction (EPC) contract with KSJV (a KBR - SKE&C joint venture led by KBR) for its subsidiary, Magnolia LNG. The binding lump sum turnkey (LSTK) EPC contract is now valid through June 2018. The initial agreement with KSJV was signed in November 2015.

Kyushu Electric Power will acquire an indirect 11.1% equity stake in "Birdsboro Power Plant", a natural gas-fired power plant, from Sojitz. The Birdsboro power plant, which utilizes a combined-cycle generating system (488 MW), is currently under construction in Pennsylvania. This power plant is expected to start commercial operation in 2019.

Tokyo Gas executed the Letter of Intent (LOI) on the LNG Project in Alaska, developed by Alaska Gasline Development Corporation (AGDC) owned by the State. The project is to treat natural gas produced from the North Slope field, and to transport the gas to the Nikiski LNG plant to produce around 20 million tonnes per year of LNG.

KBR was selected to carry out Pre-Notice to Proceed (Pre-NTP) services for the Woodfibre LNG Project in British Columbia, Canada. The selection follows the successful completion of a competitive front-end engineering design (FEED) process, which was announced in October of 2016. The services include additional FEED work and cost optimization as well as a proposal for an engineering, procurement and construction (EPC) contract.

The Mackenzie gas project joint-venture participants decided not to proceed with the project at this time and are dissolving the joint venture. Since work on the project was initiated in 2000, the North American natural gas market has changed significantly. The joint-venture participants in the project include Imperial Oil, ConocoPhillips, ExxonMobil and the Aboriginal Pipeline Group.

InterGen entered into an agreement with Actis to sell its business interests in Mexico for an enterprise value of USD 1.256 billion. InterGen's Mexico portfolio includes 2.2 GW in operation with six combined-cycle gas turbine projects and a 155 megawatt wind project with partner IEnova. InterGen also owns and operates three gas compression stations and one 65-km gas pipeline in Mexico.

[Middle East]

Qatargas signed a new Sale and Purchase Agreement (SPA) with Austria's OMV. Qatargas will deliver up to 1.1 million tonnes per year of LNG for five years from 2019 from Qatargas 4, a joint venture between Qatar Petroleum (70%) and Shell (30%), to the Gate Terminal in the Netherlands.

Russia's Gazprom and Iran's Ministry of Petroleum signed the Memorandum of Understanding (MOU) for strategic cooperation in developing Iranian gas fields.

Kuwait Petroleum Corporation (KPC) signed a 15-year LNG import deal with Shell starting in 2020. Shell has already supplied Kuwait with LNG since 2010.

Ministers of Energy from Israel, Cyprus, Greece and Italy signed a memorandum of understanding (MoU) for the laying of an underwater gas pipeline from Israel to Italy.

[Africa]

Eni produced its first gas from the Zohr field in Egypt. The discovery, which is located in the Shorouk Block, has a potential in excess of 30 Tcf of gas in place.

ExxonMobil signed production sharing contracts (PSCs) with the government of Mauritania for three deepwater offshore blocks. Societe Mauritanienne des Hydrocarbures et de Patrimoine Minier holds a 10% interest. Kosmos Energy completed drilling the Lamantin-1 exploration well located in Block C-12 offshore Mauritania. The Campanian reservoir objective was water bearing with some residual hydrocarbons. The well will be plugged and abandoned.

The Coral South FLNG multi-sourced project financing achieved financial close, for a total amount of USD 4.6755 billion.

Tohoku Electric Power entered into a Heads of Agreement (HOA) with Mozambique LNG 1 for the purchase of LNG from Mozambique LNG Project. Tohoku will purchase a maximum of 0.28 million tonnes per year for 15 years from the start of production, which is anticipated to occur in the early part of the next decade.

[Europe / Russia]

The CMA (Competition and Markets Authority) of the United Kingdom confirmed its decision to remove undertakings from Rough gas storage. Agreement to the closure by the Oil and Gas Authority is still required.

Skangas signed a Letter of Intent (LoI) with National Grid Grain LNG. Skangas is to source LNG at the Grain LNG import terminal on the Isle of Grain in the United Kingdom. The facility will include an extension to existing jetties to cater for break bulk marine LNG

carriers up to 20,000 m³.

The shareholders of First Utility, the largest independent energy and broadband provider in the United Kingdom, agreed to sell the business to Shell.

Engie is aiming to switch all of its gas operations to biogas and renewable hydrogen by 2050, according to its chief executive.

Total and CMA CGM signed an agreement covering the supply of around 300,000 tonnes of LNG a year for 10 years starting in 2020. The volume will fuel CMA CGM's nine newbuild container ships, scheduled for delivery beginning 2020 onwards.

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.

Galp completed, at the port of Funchal, Madeira, the first LNG vessel refuelling carried out at a Portuguese port, and the first on any Atlantic island. The AIDAprima is one of the most environmentally friendly cruise ships in the world and the first LNG-powered cruise liner. The LNG used in this operation is transported through containers.

Italy at one point declared a state of emergency for its energy supplies following an explosion at Austria's main gas pipeline hub. On the same day the Austria's operator brought gas supplies to neighbouring countries back to normal.

Poland's PGNiG made a binding commitment for the Norwegian Corridor capacity for the period between October 2022 and September 2037. The corridor will bring natural gas from Norwegian continental shelf and the North Sea to Poland.

The EU will invest €101.4 million in the construction of the LNG terminal in Krk, Croatia. A grant agreement under the Connecting Europe Facility (CEF) was signed.

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. Gazprom's gas production rose by 12.4% to 471 bcm. Government data showed that output jumped 7.9% to beat a 2011 record, reaching 690.5 billion cubic meters.

Yamal LNG shipped the first LNG cargo which was sold to PETRONAS LNG UK and was offloaded at the Isle of Grain. LNG sales according to the long-term contracts will commence in April 2018.

Russia's Novatek will spend RUB 2.5 - 2.8 trillion (USD 42.5 - 47.6 billion) by 2030 on LNG projects in the Arctic. Novatek said it planned to build a second production facility nearby, with production from the Arctic LNG 2 project expected to start in 2023. The company also plans to sell stakes in the Arctic LNG 2 project, which will produce 18.3 million tonnes per year.

Gazprom and CNPC signed the Heads of Agreement (HOA) for natural gas to be supplied from Russia's Far East to China. The document outlines the basic parameters of future supplies, namely the volumes, the term of the contract, the starting date of supplies, the surge period, and the cross-border point. The corresponding contract is expected to be inked in 2018.

Rosneft and its shareholder BP agreed to jointly develop oil and gas deposits in Russian Arctic Yamal-Nenets region, covering the Kharampurskoe and Festivalnoye license areas with total reserves exceeding 880 billion cubic meters (bcm) of gas.

[South America]

According to the Panama Canal Authority (ACP), in the fiscal year of 2017 (September to October), a total of 163 LNG carriers passed through the canal, compared with the passage of only 17 such vessels a year earlier. Out of the 163 transits, 96 carried LNG cargoes of 6.351 million tonnes, of which 88 transits (carrying 5.894 million tonnes) were southbound and 8 transits (carrying 0.457 million tonnes) were northbound.

[Global issues]

Excelerate Energy and Exmar concluded the acquisition by Excelerate Energy of the full 50% shares held by Exmar in owners of four FSRUs (Floating Storage and Regasification Units) under a long-term time charter to Excelerate Energy.

Exmar has taken final delivery of the world's first barge-based floating LNG storage and re-gasification unit (FSRU) from the Wison Shipyard in Nantong, China. The unit has a regasification capacity of up to 0.6 bcf/d and a storage capacity of 26,000 m³ of LNG. The company says long-term employment for the FSRU has been secured starting in the middle of 2018.

Reference: Company and agency announcements, Reuters, Bloomberg, Interfax, Liberty Times, TEMPO.CO, Kontan, The National, Bahrain Times, Globe Israel, Cyprus Mail, Cedigaz News Report.

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