

## LNG Review May 2020 - Recent issues and events -

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### **Introduction**

Japan imported 5.132 million tonnes of LNG in April 2020, 8.8% less than one year ago, and the smallest for one month since May 2010. China imported 5.097 million tonnes of LNG in April 2020, almost comparable to Japan. During the first four months of the year, the country imported 20.30 million tonnes of LNG, 4.6% more than one year ago. During the same period, the four major markets in Northeast Asia imported 68.42 million tonnes of LNG, 3.0% more than one year ago.

According to China's NDRC (National Development and Reform Commission), the country produced, imported, and consumed 63.27 bcm, 44.62 bcm, and 104.45 bcm of natural gas during the first four months of 2020, increasing year-on-year by 9.3%, 1.5%, and only 3.3%, respectively.

There have been infrastructure development activities to cope with future incremental LNG demand in the country. PipeChina (National Petroleum and Natural Gas Pipeline Network Group) started construction of an LNG receiving terminal project in Shandong in May 2020. This is the first major new energy infrastructure project managed by the group after its establishment in December 2019. Sinopec signed an investment agreement with a local government to build another LNG receiving terminal in Zhejiang.

According to data from PPAC (Petroleum Planning & Analysis Cell of the Ministry of Petroleum & Natural Gas), India's natural gas production decreased by 10.5%, while natural gas consumption and LNG import increased by 3.5% and 37%, respectively, during the first quarter of 2020. However, India's consumption and production of natural gas in April were 4.013 bcm and 2.161 bcm, decreasing year-on-year by 25% and 18.6%, respectively. LNG import in April was 1.947 bcm equivalent, 29.4% lower than the same month in 2019. Elsewhere in Asia, Myanmar imported its first LNG cargo in May.

Qatar Petroleum (QP) entered into agreements with Korean shipbuilders to reserve LNG ship construction capacity in the country to be utilized for QP's future LNG carrier fleet requirements, including those for the ongoing expansion

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\* The writer belongs to Gas Group, Fossil Energy and International Cooperation Unit. Some information pieces that some readers may consider very important may not be included due to different reasons.

projects in the North Field and in the United States, following a similar arrangement with a Chinese shipbuilder in April. QP claims that it has secured approximately 60% of the global LNG shipbuilding capacity through 2027. QP's Golden Pass LNG project - for which an FID was made in February 2019 - asked the regulator in the United States to increase the LNG production capacity to 18.1 million tonnes per year from the previously authorized 15.6.

### **[Asia Pacific]**

Japan's first LNG bunker vessel (LBV) was launched at the Sakaide Works of Kawasaki Heavy Industries (KHI). The LBV is scheduled to be delivered at the end of September 2020 and will be the first LBV to be operated in Japan. The LBV will be based at JERA's Kawagoe Thermal Power Station. In 2018, K Line, JERA, Toyota Tsusho, and NYK Line jointly established Central LNG Shipping Japan Corporation (CLS) to own the LBV.

FueLNG, a joint venture between Keppel Offshore & Marine and Shell Eastern Petroleum, announced the launch of Singapore's first LNG bunkering vessel in Keppel Nantong Shipyard in China. The vessel was moved from land to water on 28 May 2020. Construction of the 7,500 m<sup>3</sup> LNG bunkering vessel is on schedule to be completed in the fourth quarter of 2020.

Thailand's Gulf Energy Development received licences from the government to import up to 1.7 million tonnes of LNG per year. It is the second firm to secure the licences, after the Electricity Generating Authority of Thailand (EGAT).

PETRONAS delivered two LNG cargoes to Yangon, Myanmar in May and June 2020, as part of a Master Sale and Purchase Agreement between PLL and CNTIC VPower that was signed in early 2020. The cargoes were sold on FOB basis, amounting to a total LNG volume of 190,000 cubic metres. The cargoes were loaded at PETRONAS LNG Complex in Bintulu, Sarawak, and were delivered on 7 May 2020, onboard the CNTIC VPower Global, and on 3 June 2020, onboard the Golar Kelvin. PETRONAS facilitated the delivery of the cargoes by granting conditional acceptance to CNTIC VPower Global vessel in allowing for the first multilobe tank comprising two cylindrical tank sections, or better known as Bilobe type LNG vessel, to dock at the Bintulu terminal where cooling-down services were also provided.

PetroChina, Shenzhen Yantian Port Group, and Shenzhen Gas entered an agreement to build China's first LNG bunkering point for international vessels able to supply vessels with 230,000 tonnes per year. The bunkering facility will be further expanded to supply 2 million tonnes per year in the future.

Saga LNG Shipping of Singapore and Venerable LNG (VLNG) of India signed a memorandum of understanding (MoU) with the aim to bring LNG to a terminal project of

VLNG. The project targets new end consumers from different storage hubs in the Eastern part of India. The Bay of Bengal's shallow coastline dictates a bespoke shipping solution, for which Saga LNG will be providing one or more LNT45-S design LNG carriers. The 45,000 m<sup>3</sup> newbuildings will feature an LNT A- BOX® Containment system, with no restrictions on partial loading, and have a fully laden draft of 7.8 meters.

Santos announced it had been awarded four new gas exploration permits in the Surat Basin east of Roma in Queensland. Two of the permits are for domestic-only supply and two could supply both domestic and LNG markets.

Western Australia's (WA) environment minister backed an Environmental Protection Authority (EPA) decision to backdate five-year reviews of Chevron's Gorgon LNG project's carbon capture and storage (CCS) element to when the project was supposed to be operational. The authorities expected onshore injection of CO<sub>2</sub> to begin in line with facilities in July 2016 when the first train began exports.

The Pilbara Port Authority (PPA) issued non-exclusive licences to provide ship-to-ship LNG bunkering services at the ports of Port Hedland and Dampier to Woodside.

Woodside awarded a supply and fabrication contract to WA-based engineering company Cimtec for the Pluto - Karratha Gas Plant (KGP) Interconnector project. The Interconnector will transport gas from Woodside's Pluto LNG facility to the North West Shelf Project's KGP via a 5 km pipeline, constructed along the existing Dampier to Bunbury Natural Gas Pipeline corridor. Start-up of the Interconnector is targeted for 2022.

Santos announced that it had completed the acquisition of ConocoPhillips' northern Australia and Timor-Leste assets. Santos' interest in Bayu-Undan and Darwin LNG increases to 68.4%. Santos' interest in the Barossa project to backfill Darwin LNG increases to 62.5%. Santos had previously announced an agreement to sell a 25% interest in Darwin LNG and Bayu-Undan to SK E&S and the signing of a letter of intent (LOI) to sell a 12.5% interest in Barossa to JERA. The sale of interests in Bayu-Undan and Darwin LNG to SK E&S, and in Barossa to JERA, are subject to third-party consents, regulatory approvals and an FID decision on Barossa.

PETRONAS concluded a Sale and Purchase Agreement (SPA) with Tiger Clean Energy Limited (TCEL) for the supply of LNG to TCEL's LNG ISO Tank Filling Facility in Bintulu, Sarawak. Delivery of the LNG to China will be undertaken by TCEL. Siemens Gas and Power was awarded a contract to supply three SGT-300 industrial gas turbine generators (GTG), three mechanical-drive SGT-300 gas turbines and three DATUM centrifugal compressors for the PETRONAS Kasawari Gas Field Development Project offshore Sarawak in Malaysia. The gas will be delivered to the PETRONAS LNG Complex in Bintulu.

### **[North America]**

In 2019, annual energy consumption from renewable sources in the United States exceeded coal consumption for the first time since before 1885, according to the Energy Information Administration's (EIA) Monthly Energy Review.

According to its SHORT-TERM ENERGY OUTLOOK, EIA forecast that LNG exports will average 5.8 Bcf/d in the second quarter of 2020 and 4.8 Bcf/d in the third quarter of 2020. LNG exports are expected to decline through the end of the summer. Based on the figures, yearly LNG exports from the United States are still expected to grow by 20% a piece to 46 million tonnes in 2020 and to 56 million tonnes in 2021.

As a result of onsite personnel recently testing positive for COVID-19, the Federal Energy Regulatory Commission (FERC) is temporarily delaying the processing of all permitted hard copy submissions mailed/delivered to the Commission's Headquarters at 888 First Street, NE, Washington, DC 20426. This notice will remain in effect for 14 days from the date of its issuance and may be renewed at the conclusion of this period.

Sempra Energy announced that Cameron LNG has begun producing LNG from the third and final liquefaction train of its Phase 1 liquefaction-export project in Hackberry, Louisiana. Commercial operations for Train 3 under Cameron LNG's tolling agreements remain on track to begin in the third quarter of 2020. Cameron LNG in coordination with the United States Coast Guard (USCG) implemented a new "non-contact" LNG loading procedure that allows them to continue to safely operate during the COVID-19 pandemic.

Chiyoda, McDermott, and Zachry announced the beginning of commercial operation of Train 3 of the Freeport LNG project.

FERC granted Elba Island LNG approval to introduce feed gas into Modular Unit No. 8. Six units are in service with two additional units starting commissioning activities, out of 10 units at the facility. Kinder Morgan confirmed that a fire broke out on 11 May 2020 in a mixed refrigerant compressor of the facility's Unit 2 movable modular liquefaction system (MMLS).

Golden Pass LNG, a joint venture of QP (Qatar Petroleum) and ExxonMobil, asked FERC to increase the LNG production capacity by 2.5 million tonnes per year. The total capacity will rise to 18.1 million tonnes per year from the previously authorized 15.6.

NextDecade revealed that a final investment decision (FID) for Rio Grande LNG (RGLNG) is expected in 2021.

Liquefied Natural Gas Limited (LNGL) announced in early May that it had entered into a binding sale transaction in respect of its interest in subsidiary entities that own and operate the Magnolia LNG Project to be sold to Global Energy Megatrend Limited (GEM). Later in the month, LNGL terminated the GEM transaction and entered into a new

transaction under which it has sold its interests in the subsidiary entities to another party, Magnolia LNG Holdings, LLC.

The Pointe LNG Project has engaged Whitehall & Company to raise financing deals to build the mid-scale project, which consists of an LNG facility and associated natural gas pipeline laterals with a total capacity of 6 million tonnes per year. Pointe LNG awarded an engineering and technical services contract to KBR for the facility to be built in Plaquemines Parish, Louisiana.

FERC agreed to alter its construction authorisation for Pembina Pipeline Corp's Jordan Cove LNG project request for pipeline capacity on the proposed Pacific Connector gas pipeline to be contracted 18 months before the expiry of agreements with capacity holders.

Shell reached an agreement with National Fuel Gas Company (NFG) to sell its Appalachia shale gas position. The transaction has an effective date of 1 January 2020 and is and expected to close by end of July 2020. The current net production is ~250 million standard cubic feet per day. The transaction also includes the transfer of the Shell owned and operated midstream infrastructure.

EQT Corporation, the largest natural gas producer in the United States, reported a net loss of USD 167 million for the first quarter 2020, compared to a USD 191 million profit in the same period in 2019. However, the company said it had experienced limited operational impacts as a result of the COVID-19 work from home restrictions or COVID-19 directly. Similarly, the company expects to have limited direct operational impacts from the oil price war.

FERC authorized the Alaska Gasline Development Corporation (AGDC) to liquefy and export LNG produced in the North Slope of the State of Alaska. AGDC is an independent, public corporation of the State of Alaska to site, construct and operate the Alaska LNG Project. The Department of Energy (DOE) has authorized the project to export 20 million tonnes per year of LNG to nations with which the United States has a Free Trade Agreement (FTA). DOE also granted conditional authorization for the exportation of 20 million tonnes per year to nations that do not have an FTA.

Canada's Pieridae Energy announced that it had negotiated extensions of the key deadlines under its 20-year agreement with Germany's Uniper. These include expected commercial deliveries of gas to Uniper to start between 31 August 2025 and 28 February 2026; and the extension to 30 June 2021 of the deadline to make a positive final investment decision (FID) for Pieridae's proposed Goldboro LNG facility. The 20-year agreement with Uniper is for the LNG produced at Goldboro Train 1 or 4.8 million tonnes per year.

The Alberta Energy Regulator's (AER) denied the application to transfer licences for Shell's Foothills Assets to Pieridae Energy. The two companies are evaluating options on the

transfer applications and will continue to attempt to seek clarity from the regulator to define an appropriate path forward. The Foothills assets remain attractive as the anchor production for Pieridae's Goldboro LNG Project.

### **[Middle East]**

Nakilat commenced the second phase of its fleet management transition from Shell International Trading and Shipping Company, with Q-Max LNG carrier Al Mayeda being the first vessel transitioned. Upon completion of the second phase vessel transition from Shell, NSQL's (Nakilat Shipping Qatar Limited) managed fleet will comprise of 25 vessels (21 LNG and 4 LPG carriers).

Qatar Petroleum (QP) entered into three agreements to reserve LNG ship construction capacity in Korea to be utilized for QP's future LNG carrier fleet requirements, including those for the expansion projects in the North Field and in the United States. QP claimed that it had secured approximately 60% of the global LNG shipbuilding capacity through 2027, which could reach 100+ new vessels.

### **[Africa]**

Algeria's SONATRACH announced the completion of a transaction with Spanish company CEPSA. SONATRACH increased its stake in Société Medgaz SA by 8.04%, from 42.96% to 51%. Medgaz SA operates the offshore gas pipeline directly connecting Algeria to Spain. Naturgy has the remaining 49%. The offshore pipeline is 24" in diameter and 210 km long with an annual transport capacity of 8.2 billion cubic meters, which will be increased during the first quarter of 2021 to 10.2 billion cubic meters by adding a 4th Turbo-Compressor at the Beni-Saf Compression Station in Algeria.

Nigeria LNG (NLNG) signed the engineering, procurement and construction (EPC) contracts for its Train 7 Project with the SCD JV Consortium of Saipem, Chiyoda and Daewoo. The project is expected to increase the capacity of NLNG by 35% from 22 to 30 million tonnes per year. NLNG took the final investment decision (FID) on 27 December 2019. Construction schedules will be finalised once the situation with COVID-19 has stabilised.

In collaboration with Marathon Oil and EG LNG, the Ministry of Mines and Hydrocarbons (MMH) of Equatorial Guinea awarded a contract for the development of a Gas Master Plan to Gas Strategies. The work is part of the development of Equatorial Guinea's Gas Mega Hub, for which Definitive Agreements towards the monetization of the Alen unit were signed in April 2019. The hub will be the first such venture offshore Africa and aims at pooling stranded gas across the Gulf of Guinea by maximizing existing infrastructure at Punta Europa. While key facilities there, such as LNG and methanol plants, have traditionally been

relying on gas feedstock from the Alba Field, where output is declining.

Total said that it had decided not to pursue the completion of the purchase of former Anadarko's Ghana assets. In August 2019, Total and Occidental Petroleum entered into a Purchase and Sale Agreement (PSA) in order for Total to acquire Anadarko's assets in Africa. Total and Occidental have since completed the sale and purchase of the Mozambique and South Africa assets.

Qatar Petroleum (QP) entered into a farm-in agreement with Total to acquire a 45% participating interest in blocks CI-705 and CI-706, located in the Ivorian-Tano basin, offshore the Republic of Côte d'Ivoire.

The Board of Directors of the Export-Import Bank of the United States (EXIM) amended the agency's previously approved September 2019 direct loan supporting exports for the development and construction of an integrated LNG project in Mozambique. The latest amendment expands the scope of EXIM's financing of the project from exclusively the onshore portion of the LNG plant and related facilities to also allocate an estimated USD 1.8 billion of the estimated total of USD 4.7 billion to support the project's offshore production.

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

National Grid's Grain LNG import terminal in the United Kingdom launched the second phase of an on-going Open Season, during which the market is invited to bid for up to 300 GWh/d (7.2 million tonnes per year) of redelivery capacity and 380,000 m<sup>3</sup> of associated storage, to be made available from mid-2025. The capacity on offer is a combination of new build and existing capacity which comes out of contract in 2025. The expansion will increase the size of the Grain LNG terminal, located on the Isle of Grain in Kent, to approximately 1.2 million cubic metres.

InfraStrata announced that it had entered into a term sheet with West Face Long Term Opportunities Global Master L.P., conditional on final investment decision (FID), for the acquisition of Meridian Holdings Company, under which sits a proposed Floating Storage and Regasification Unit (FSRU) project in Barrow-in-Furness, northwest England. The proposed FSRU project will be the first to be developed and commercialised in the United Kingdom.

PitPoint.LNG reopened its renovated LNG station in Zwolle, The Netherlands. The station has four times more LNG storage capacity than before. This first and oldest public LNG station in the Netherlands has been transformed into the country's newest LNG station. The new station will operate 24/7, has two LNG pumps and three staging areas for trucks that run on LNG.

During the first quarter 2019, Total's cash flow decreased by 31% to USD 4.5 billion.

Adjusted net income decreased by 35% to USD 1.8 billion, it said. The Integrated Gas, Renewables & Power (iGRP) segment generated USD 0.9 billion of cash flow, an increase of 40% year-on-year thanks to a growth in LNG sales of nearly 30% and to the resilience of the sales price of its LNG production. The group continues entering into renewable projects with gross installed capacity of more than 6 GW, particularly in India, Qatar and Spain. Total announced its ambition to get to net-zero emissions by 2050.

In early May 2020, the Port of Marseille Fos, Shell and Carnival carried out the first ship-to-ship LNG bunkering operation in France on the Costa Smeralda, one of the world's first LNG-powered cruise ships operated by Costa Cruises of the Carnival Group.

In the middle of May, the LNG carrier ELISA LARUS, owned by France LNG Shipping (owned by NYK and Geogas LNG) and under a long-term charter contract for up to 20 years with EDF LNG Shipping, was delivered. The vessel was built at Hyundai Samho Heavy Industries.

A truck loading bay at the Dunkirk LNG terminal entered into service at the beginning of June 2020 with a loading capacity of 3,000 slots per year.

MOL (Mitsui O.S.K. Lines) and Uniper subsidiary LTW (LNG Terminal Wilhelmshaven) signed a contract to build and charter an FSRU (Floating Storage and Regasification Unit) for the planned LNG terminal in Wilhelmshaven on the North Sea. The FSRU of 263,000 m<sup>3</sup> storage capacity will be built by DSME (Daewoo Shipbuilding Marine Engineering).

Hamburg based LNG supplier Nauticor, a subsidiary of Gasum, conducted the first ship-to-ship LNG bunkering operation for the product tanker "Ramelia" in the port of Brunsbüttel at the river Elbe. Gasum plans to open a new filling station serving heavy-duty vehicles in Southwest Finland in summer 2020. Located in the Avanti business and industrial area of Lieto, the station will provide LNG and liquefied biogas (LBG). Gasum partnered up with Samskip, a Rotterdam-based shipping company, which owns two vessels powered entirely by LNG. Samskip is expected to bunker LNG in Risavika, Norway.

HAM Group opened a service station of compressed natural gas (CNG) and LNG in Castilla-La Mancha. Grupo HAM currently has 47 gas stations that allow refueling CNG and / or LNG, distributed in different parts of Spain and Europe.

Total in Spain acquired the Energias de Portugal's portfolio of 2.5 million B2C customers and two gas-fired combined cycle power plants, which represent an electricity generation capacity of nearly 850 megawatts. This transaction follows Total's entry into the country's solar market in February 2020 with the acquisition of a portfolio of almost 2 gigawatts of renewable power projects to be developed. Total will become the 4th largest supplier of gas and power in the country with residential market share of 12% and 6%



respectively.

Italy's gas system operator Snam said that it had achieved a 5.3% year-on-year growth in net profits in the first quarter of 2020 to €298 million. Snam gained from tariff adjustments that led to a growth in its regulated revenues, but non-regulated revenues were also higher thanks to increased contributions from the company's international business and its energy transition activities.

PGNiG (Polish Oil and Gas Company) will be able to import 6.2 bcm in 2022 - 2023 and 8.3 bcm from 2024 onwards equivalent of LNG via the Świnoujście LNG terminal, as the terminal will be expanded. The new regasification capacity has been booked by the company for 17 years. PGNiG has 5 bcm of regasification capacity booked at the terminal at present.

According to Poland's Gaz-System, a transmission contract concluded with Russia's Gazprom expired on 17 May 2020. Capacity booking for the Polish section of the Jamal-Europe gas pipeline will be carried out in accordance with the European Union regulations, or by means of auctions for midday, daily, monthly and quarterly products.

Sweden's government approved construction of Baltic Pipe gas pipeline in the Swedish Exclusive Economic Zone in the Baltic Sea. The complete set of administrative decisions had been obtained in Poland and Denmark. The whole offshore route will be approximately 275-km long. Execution of works related to laying the gas pipeline on the Baltic seabed has been entrusted to Saipem under a contract of 30 April 2020. The pipeline handover for operation is planned in October 2022.

Gazprom and Greece's Mytilineos entered into a long-term contract for natural gas supplies from 2020 to 2030. The cooperation between the companies began in 2017 on the basis of short-term contracts.

Germany's Federal Network Agency Bundesnetzagentur rejected the application of Nord Stream 2 AG for derogation from regulation for the section of the Nord Stream 2 pipeline located in German territory. Bundesnetzagentur granted to the Nord Stream pipeline a derogation from the application of the primary provisions of the EU Gas Directive.

The General Court of the European Union declared that the actions brought by Nord Stream AG and Nord Stream 2 AG against Directive 2019/692, which extends certain rules of the internal market in natural gas to pipelines from third countries, are inadmissible.

The basic design solutions, as well as the specifications for feedstock and commercial products, have been agreed upon for an integrated complex for natural gas processing and liquefaction in the Leningrad Region (the Gas Processing Complex as part of the Complex for processing ethane-containing gas near Ust-Luga). The complex will have of gas processing capacity of 45 bcm per year and LNG production capacity of 13 million tonnes per year. In addition to LNG, its commercial products will include ethane fraction, LPG, and pentane-

hexane fraction. In March 2019, Gazprom and RusGazDobycha made a decision on the final configuration of the project.

Yamal LNG announced the scheduled maintenance of the second and third LNG trains with consecutive shutdowns for 12 days each from 21 May to 15 June 2020. The regular maintenance will not affect the planned LNG production volume for the year.

NOVATEK announced that the Arc7 ice-class LNG tanker "Christophe de Margerie" of Sovcomflot transited the Eastbound ice-covered part of the Northern Sea Route (NSR) and reached the Bering Strait in only 12 days. The voyage took place before the traditional start of the summer navigation season in average ice conditions.

### **[Global issues]**

CEDIGAZ, the International Association for Natural Gas, released its "First Estimates 2020". Slower economic growth, Chinese policy changes and a mild winter caused global gas demand growth to slow from 5% in 2018 to 2.3% in 2019.

According to its result reporting, Gunvor delivered 16 million tonnes of LNG in 2019.

Reference: Company announcements, Cedigaz News Report.

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