

LNG Review June 2022
- Recent issues and events -
Hiroshi Hashimoto*

Introduction

There was a fire incident at the Freeport LNG plant in Texas, one of the main LNG export centres in the United States in early June. Although the fire was extinguished quickly causing no substantial damages to LNG production operations, inspections and repairs will prevent the plant from operating until early October. Full plant operations are not expected to resume until late 2022, leading to reduction of 3 - 5 million tonnes of LNG from the global market.

The flow of gas supplied through the Nord Stream (1) pipeline traversing from Russia under the Baltic Sea to Germany was reduced to 40% of the nominal capacity in early June. The operating company of the pipeline cites problems in recovering equipment after its maintenance works. If the magnitude of reduction continues, it would effectively erase volumes equivalent to 20 million tonnes of LNG on an annual basis.

Against these uncertain factors, both European spot gas prices and Asian spot LNG price assessments surged from mid-USD 20s at the beginning of June to around USD 40 per million Btu near the end of the month.

Regarding the LNG production capacity expansion in the medium term, Cheniere Energy, the current largest LNG exporter in the United States, announced a final investment decision on the 10+ million tonne per year Corpus Christi Stage 3 project in late June. Construction is expected to be completed by the end of 2025.

In Qatar, for the ongoing North Field East (NFE) expansion project to add 33 million tonnes per year of LNG supply, QatarEnergy announced four international partners, each of which will own a 25% interest in the four respective new joint ventures, which, in turn, will own a combined 75% interest of the entire expansion project. For the remaining 25% of the project, an announcement is expected in the coming weeks.

The Leaders of the Group of Seven (G7), in their Communiqué in late June in Germany, stressed the important role of LNG and the necessity of investment in the LNG sector.

* 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.

[Asia Pacific]

Toho Gas and Toyota Tsusho Corporation announced on 13 June 2022 that they had agreed with TotalEnergies to commence a business feasibility study on the establishment of a value chain to introduce renewable and low carbon fuels such as hydrogen and synthetic methane to Japan.

Tokyo Gas and Osaka Gas respectively announced on 6 June 2022 that the two companies had signed separate memorandums of understanding (MOUs) with Shell to collaborate on ranges of decarbonization projects, and the three companies had agreed on a joint initiative to explore renewables-based synthetic gas, or methanation.

Korean shipyard Samsung Heavy Industries (SHI) said on 23 June 2022 that it had awarded an order to build 14 LNG carriers in the Bermudas and Africa.

Shell and CMA CGM Group announced on 28 June 2022 that they had signed agreements, including a multi-year LNG supply agreement to supply LNG to CMA CGM's vessels in the Port of Singapore, starting from the second half of 2023.

Saipem announced on 24 June 2022 that on 18 June the Nong Fab LNG Regassification Terminal in Thailand executed in joint venture with CTCI Corporation began offloading the first LNG from an LNG carrier moored at the plant jetty. The scope of work of the project, which kicked off in July 2018, includes the execution on an EPC basis of two 250,000 m³ LNG storage tanks, a regasification facility of 7.5 million tonnes of LNG per year, a 6-kilometer trestle unloading facility, and an administrative building.

China's NDRC (National Development and Reform Commission) said on 28 June 2022 that the nation's natural gas consumption in May was 29.86 bcm, 5.2% down from the same month in 2021. Based on the preliminary figure, gas consumption during the first five months of 2022 was 1% down from the same period in 2021, compared to a 15% increase in 2021.

Shell announced on 28 June 2022 that the company had signed a memorandum of understanding (MOU) with China National Offshore Oil Corporation (CNOOC), the Guangdong Provincial Development and Reform Commission and ExxonMobil to explore the feasibility of developing a carbon capture and storage (CCS) hub in the Daya Bay National Economic and Technological Development Zone in Huizhou, Guangdong province.

GAIL (India) Limited announced on 22 June 2022 its plans to enter into distributed LNG production to cater the demand from off-grid locations and transport sector. GAIL has placed order for two small-scale liquefaction skids capable of producing LNG on a pilot basis. Liquefaction will be achieved through proprietary technology-based mobile liquefaction skids.

Höegh LNG Holdings Ltd announced on 24 June 2022 that Australian Industrial

Energy (AIE) had lifted its final subjects for the FSRU contract which was signed by Höegh LNG and AIE in 2021. The FSRU contract with AIE has a term of 15 years with early termination options for AIE after year 5 and 10. AIE is entitled to time the start-up of the contract between 2023 and 2025.

Western Australia's Environmental Protection Authority (EPA) has backed a proposal to extend the life of the North West Shelf (NWS) LNG plant by 50 years - on the condition that it achieves net zero emissions by 2050.

Australia's Woodside announced on 21 June 2022 that it had been notified that the Australian Conservation Foundation Incorporated (ACF) had commenced proceedings in the Federal Court of Australia in relation to the environmental assessment of the Scarborough Project. The ACF is seeking an injunction to restrain offshore project activities. The Scarborough Project has been the subject of environmental assessments by regulators including the National Offshore Petroleum Safety and Environmental Management Authority, the Commonwealth Department of Agriculture, Water and the Environment and the Western Australian Environmental Protection Authority. Woodside said that it would defend its position in these proceedings.

Shell confirmed on 28 June 2022 that it had notified customers cancellation of shipments from the Prelude LNG until the middle of July due to an industrial dispute.

Malaysia's PETRONAS announced on 16 June 2022 that it had launched Gentari Sdn. Bhd. to accelerate the adoption and commercialisation of clean energy. The new entity aims to deliver a suite of renewable energy, hydrogen and green mobility solutions.

[North America]

Cheniere Energy, Inc. announced on 9 June 2022 that Cheniere Marketing, LLC had entered into an LNG sale and purchase agreement (SPA) with Equinor ASA. Equinor has agreed to purchase approximately 1.75 million tonnes per year of LNG on a free-on-board (FOB) basis for 15 years. The deliveries will start in the second half of 2026 and reach the full volume in the second half of 2027. Half of the volume is subject to Cheniere making a positive final investment decision (FID) to construct additional liquefaction capacity at the Corpus Christi LNG Terminal beyond the seven-train Corpus Christi Stage III Project.

Cheniere Energy, Inc. announced on 21 June 2022 that its Board of Directors had made a Financial Investment Decision (FID) with respect to the 10+ million tonnes per year of LNG Corpus Christi Stage 3 Liquefaction Project (CCL Stage 3) and had issued full notice to proceed to Bechtel Energy Inc. to continue construction on CCL Stage 3, which began earlier in 2022 under limited notice to proceed. The construction is expected to complete by the end of 2025..

Cheniere Energy, Inc. announced on 22 June 2022 that Sabine Pass Liquefaction, LLC (SPL) and Cheniere Marketing, LLC, had each entered into long-term LNG sale and purchase agreements (SPA) with Chevron U.S.A. Inc. At plateau, Chevron will purchase a combined 2 million tonnes per year of LNG from Cheniere subsidiaries. Chevron agreed to purchase 1 million tonnes per year of LNG from SPL on an FOB basis. Deliveries will begin in 2026, reach the full 1 million tonnes per year during 2027 and continue until mid-2042. Chevron agreed to purchase 1 million tonnes per year of LNG from Cheniere Marketing on an FOB basis with deliveries beginning in 2027 and continuing for 15 years. The latter SPA is subject to Cheniere making a positive final investment decision to construct additional liquefaction capacity at the Corpus Christi LNG Terminal beyond the seven-train Corpus Christi Stage III Project. Cheniere's subsidiary, Sabine Pass LNG, L.P., and Chevron have agreed to terms for the early termination of their LNG Terminal Use Agreement in return for a lump sum payment to be made by Chevron to SPLNG during calendar year 2022. Termination of the TUA is subject to the consent of certain lenders to Cheniere Energy Partners, L.P., expected during the third quarter of 2022.

Sempra Infrastructure and INEOS Energy Trading Ltd. announced on 22 June 2022 that they had entered into a heads of agreement (HOA) for the long-term supply of LNG from Sempra Infrastructure's Gulf Coast LNG portfolio of projects. The HOA provides the framework for a definitive 20-year LNG sale and purchase agreement for approximately 1.4 million tonnes per year of LNG delivered FOB from the proposed Port Arthur LNG project or Cameron LNG Phase 2 project. In May Sempra Infrastructure announced an HOA with Poland's PGNiG for 2 million tonnes per year from Cameron LNG Phase 2 and 1 million tonnes per year from Port Arthur LNG, with an option for PGNiG to reallocate the Cameron LNG Phase 2 volumes to Port Arthur LNG. Sempra Infrastructure also recently announced an HOA with RWE Supply and Trading for 2.25 million tonnes per year from the Port Arthur LNG project.

Wood announced on 29 June 2022 that it had been awarded a contract to perform owner's engineering services for the Cameron LNG expansion project in Louisiana, United States. The contract will cover activities relating to the development of a fourth LNG train, with a planned production capacity of 6.75 million tonnes per year, and improved production from the first three trains of combined 12 million tonnes per year of LNG export capacity.

Freeport LNG Development, L.P. provided on 14 June 2022 the update on the fire incident of 8 June at its Quintana Island liquefaction facility. According to the company on 30 June, it is estimated that the resumption of partial liquefaction operations will be early October 2022. The company continues to target year-end for a return to full production.

Tellurian and Baker Hughes announced on 29 June 2022 that Baker Hughes had

been awarded a contract by Driftwood Pipeline LLC, a subsidiary of Tellurian Inc., to provide electric-powered Integrated Compressor Line (ICL) technology and turbomachinery equipment for Lines 200 and 300, a natural gas transmission project, proposed to be located in Beauregard and Calcasieu Parishes, in southwest Louisiana. This contract marks the first time Baker Hughes will install its ICL decarbonization technology for pipeline compression in North America.

Venture Global announced on 22 June 2022 the execution of two long-term Sales and Purchase Agreements (SPAs) for the purchase of 2 million tonnes per year of LNG for 20 years. Chevron U.S.A. Inc. will purchase 1 million tonnes per year from the Plaquemines LNG facility and 1 million tonnes per year from CP2 LNG. Plaquemines LNG has been under full construction since August of 2021 and the construction of CP2 LNG is expected to commence in 2023.

Venture Global LNG and Germany's EnBW announced on 21 June 2022 the execution of two long-term Sales and Purchase Agreements (SPAs) for 1.5 million tonnes per year of LNG from Venture Global's Plaquemines and CP2 facilities, starting in 2026 for 20 years.

Energy Transfer LP and China Gas Holdings Limited announced on 5 June 2022 that China Gas Hongda Energy Trading Co., LTD. had entered into an LNG Sale and Purchase Agreement with Energy Transfer LNG Export, LLC, related to the Lake Charles LNG project. Energy Transfer LNG will supply 0.7 million tonnes of LNG per year to China Gas on a free-on-board (FOB) basis for 25 years, commencing as early as 2026.

Southwestern Energy Company announced on 14 June 2022 a multi-year, certified Responsibly Sourced Gas (RSG) sales agreement to the North American subsidiary of Germany's Uniper. Southwestern Energy will supply Uniper with RSG for its U.S. midstream gas portfolio as well as natural gas for liquefaction and export to global LNG markets.

Eagle LNG Partners LLC announced on 14 June 2022 that it had partnered with the Royal Caribbean Group to provide LNG bunkering for the cruise company's LNG ships, including the first ship debuting in 2023 - Icon of the Seas, the first ship in the Icon Class for the company's Royal Caribbean International brand. Eagle LNG says that it has plans of multiple purpose-built LNG vessels equipped for marine bunkering and gas delivery throughout the Caribbean. The LNG supply will be sourced from Eagle LNG's liquefaction facilities in Jacksonville, Florida.

Permian Highway Pipeline, LLC (PHP) announced on 29 June 2022 a final investment decision (FID) to proceed with its expansion project. The project will increase PHP's capacity by 0.55 bcf/d. The target in-service timing is anticipated to be November 2023. PHP is jointly owned by subsidiaries of Kinder Morgan, Inc. (26.7%), Kinetik Holdings Inc.

(53.3%) and ExxonMobil (20%).

Alaska Governor announced on 6 June 2022 that he had concluded a trade mission to Japan, meeting with Japanese companies, utilities, and government ministries about procuring Alaska's natural gas.

Naftogaz of Ukraine announced on 13 June 2022 that it had entered into an agreement with the Canada's Symbio Infrastructure to purchase LNG and green liquid hydrogen (LH₂) from Quebec, Canada. The parties signed a Memorandum of Understanding (MoU) on 5 June. Symbio claims that, through its subsidiary GNL Québec, it is developing Énergie Saguenay, the world's first large-scale, carbon-neutral LNG export facility in Quebec. The facility will export 10.5 million tonnes per year of LNG to Europe. The projects are scheduled to commence operations in 2027.

[Middle East]

TotalEnergies announced on 12 June 2022 that the company had been awarded a 25% interest in a new joint venture (JV), alongside QatarEnergy (75%) for a 25% interest in the 32 million tonne per year North Field East (NFE) LNG project. The NFE, launched by QatarEnergy in summer 2019, is under construction. It is intended to increase Qatar's total LNG export capacity from 77 million tonnes per year to around 110 million tonnes per year by 2027. The native CO₂ from natural gas production will be captured and sequestered in a saline aquifer. The facilities will be connected to the country's electrical grid, which will supply a growing portion of renewable electricity thanks to the Al Kharsaah solar power plant, which is scheduled to come on stream in 2022 with TotalEnergies as a partner.

Eni announced on 19 June that it had been selected by QatarEnergy as a new international partner in the NFE project. The two companies signed the partnership agreement for the creation of the new Joint Venture company. QatarEnergy will hold a 75% interest while Eni the remaining 25% interest. The JV will hold 12.5% interest in the entire NFE project.

QatarEnergy announced on 20 June that it had selected ConocoPhillips as a partner in the NFE expansion project. QatarEnergy and ConocoPhillips will become partners in a new joint venture company (JV), in which QatarEnergy will hold a 75% interest while ConocoPhillips will hold the remaining 25% interest. The JV in turn will own 12.5% of the entire NFE project.

ExxonMobil and QatarEnergy announced on 21 June that the companies had signed an agreement to further develop the NFE project. QatarEnergy and ExxonMobil will become partners in a new joint venture company (JV), in which QatarEnergy will hold a 75% interest with ExxonMobil holding the remaining 25% interest. The JV will own 25% of the entire NFE

project.

QatarEnergy announced on 27 June that QatarEnergy had joined the Aiming for Zero Methane Emissions Initiative, an industry-led initiative aiming to reach near zero methane emissions from operated oil and gas assets by 2030. QatarEnergy is the first company to join the initiative outside its twelve existing signatories: Aramco, bp, Chevron, CNPC, Eni, Equinor, ExxonMobil, Occidental, Petrobras, Repsol, Shell and TotalEnergies.

Iran's Ministry of Petroleum said on 26 June 2022 that the country's daily gas production had exceeded 1 bcm helped by the surge in gas production at the South Pars Gas Field, which set a record of 705 mcm per day in January 2022 thanks to new phases of the South Pars becoming operational.

[Africa]

Suez Canal Authority revealed on 12 June 2022 that rebates on canal tolls for LPG and LNG carriers had been extended from July until the end of 2022. LNG tankers operating between the American Gulf and the "Arabian Gulf", ports west of India and at Kochi will receive a rebate of 30% on the canal's normal tolls. LNG tankers operating from ports east of Kochi to Singapore will receive a rebate of 55%, and from Singapore ports east will have a rebate of 70%, it added.

African Export-Import Bank (Afreximbank) announced on 20 June 2022 that it had executed a project preparation facility financing head of terms with UTM Offshore Limited (UTM). UTM Offshore plans to develop a Floating LNG platform of a nameplate LNG processing capacity of 1.2 million tonnes per year and a storage capacity of 200,000 cubic meters, to be located off the coast of Nigeria.

ENI announced on 18 June 2022 as the Upstream Operator of Area 4 on behalf of its partners ExxonMobil, CNPC, GALP, KOGAS and ENH, that the Coral South Project had achieved the introduction of hydrocarbons to the Coral Sul Floating Liquefied Natural Gas (FLNG) plant from the Coral South reservoir offshore Mozambique. Coral Sul FLNG plans to achieve its first LNG cargo in the second half of 2022.

Tanzania's Energy Ministry announced on Saturday 11 June 2022 a framework agreement with Equinor and Shell on an LNG export project. The Energy Ministry said that it expected a final investment decision in 2025 on the project.

[Europe / Russia]

The United Kingdom's North Sea Transition Authority (NSTA) announced on 8 June 2022 that it had received applications for Gas Storage Licences in the Southern North Sea of the United Kingdom Continental Shelf (UKCS) - including the Rough storage - and the

East Irish Sea of the UKCS.

Shell said on 7 June 2022 that responsibly produced local gas plays an essential role in the United Kingdom's energy security and transition to net-zero emissions, after the national regulators approved the Jackdaw gas project in the North Sea in the preceding week.

Centrica and Equinor announced on 16 June 2022 an agreement to deliver an additional 1 bcm of gas supplies to the United Kingdom for each of the next three winters. Centrica will now buy a total of 10 bcm of gas per year from Equinor.

SENER announced on 22 June 2022 that it had selected by Gate Terminal BV to carry out engineering, procurement and construction management (EPCM) in the Extra Send-Out (ESO) project. The project consists of increasing the plant's send-out capacity with an additional 1.5 bcm per year, bringing the total nameplate capacity from 13.5 bcm per year. The expansion works consist of the installation of a vaporizer and a high-pressure LNG pump together with all its associated facilities. In addition, a new seawater pump will also be supplied.

France's TotalEnergies, Engie and EDF called for the public to reduce energy consumption in an open letter published on the Le Journal Du Dimanche on 25 June 2022.

Even with Nord Stream 1 pipeline flows to Germany down by 60%, Germany is injecting gas into storage, albeit at a slower pace than previously possible, according to the regulator's daily update on 27 June 2022.

Equinor announced on 2 June 2022 that Hammerfest LNG at Melkøya was back in production after the fire in September 2020.

Flex LNG, Ltd. announced on 23 June 2022 new Time Charter Agreements for Flex Rainbow, Flex Enterprise and Flex Amber. Flex LNG and a supermajor - the Charterer of Flex Enterprise and Flex Amber - have agreed to replace the existing variable Time Charters which are due October 2023 and March 2024 with new fixed hire Time Charters. The commencement of the new Time Charters will be in the third quarter of 2022 with expiry in third quarter of 2029. Flex LNG and the Charterer of Flex Rainbow, a large global trading company, have agreed a new ten-year fixed rate Time Charter for Flex Rainbow which will commence in direct continuation of the existing Time Charter which expires in January 2023.

Snam announced on 1 June 2022 that the company and Golar LNG Limited had signed an agreement for the Snam Group to acquire 100% of the share capital of Golar LNG NB 13 Corporation, whose sole asset is a floating storage and regasification unit (FSRU), named "Golar Tundra", for USD 350 million (about €330 million). The Golar Tundra can operate both as an LNG carrier and as an FSRU. In order to maximise its regasification capacity, the vessel will be located in central-northern Italy, close to the areas with greatest gas consumption. The Golar Tundra is expected to start operations as an FSRU during the

spring of 2023.

Estonia's Elering announced on 8 June 2022 that construction activities by Connecto AS had started for pipeline connection for the Paldiski LNG terminal.

According to preliminary data, Gazprom produced 226 billion cubic meters of gas during the first five months and fifteen days of 2022, 6.4% (15.5 bcm) less than last year. Exports to non-CIS countries amounted to 65.6 billion cubic meters, 28.9% (or 26.7 bcm) less than the same period of 2021.

Gazprom said on 14 June 2022 that gas supply to the Nord Stream gas pipeline is reduced to 100 million cubic meters per day compared to the capacity of 167 mcm per day. Gazprom said only three gas compressor units were used at the Portovaya compressor station (CS) due to the untimely return of gas compressor units from repair by Siemens. Gazprom said on 16 June that another gas turbine at the Portovaya CS had stopped operation due to periodical maintenance, resulting in further reduction of throughput of the CS to 67 million cubic meters per day.

Gazprom and CNPC on 16 June 2022 signed a technical agreement on the Eastern route for Russian gas supplies to China.

According to a Russian President's decree on 30 June 2022, all the property of the Sakhalin 2 project will be transferred to the ownership of the Russian Federation. The operatorship of the project will be transferred from Sakhalin Energy to a newly created Russian company, the shareholders of which will be Gazprom and foreign participants in Sakhalin-2. Unless they express intention to stay in the project under the new conditions within a month, their share will be sold, and the money from the sale will be frozen in the Russian Federation.

[Global issues]

On 22 June 2022, the IEA released its annual World Energy Investment report (WEI 2022). WEI 2022 observes that spending on liquefaction projects exceeded pre-pandemic levels to reach USD 23 billion in 2021, with the United States accounting for nearly 50%.

Reference: Company announcements, Cedigaz News Report.

Contact: report@tky.ieej.or.jp
<https://eneken.ieej.or.jp/en/>