

LNG Review January 2023  
- Recent issues and events -  
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**Introduction**

According to customs statistics information, Japan imported 72 million tonnes and China imported 63 million tonnes of LNG, respectively, in 2022, both decreasing from 2021. Although Japan's import was 3% less than 2021, Japan returned to its position as the world's largest importer of LNG in 2022. While China reduced LNG import by 19.5% year-on-year, the largest reduction since its first LNG import in 2006, with its pipeline gas import increasing by 7.8% from 2021 to 46 million tonnes in 2022, China remained as the largest importer of natural gas at 109 million tonnes, decreasing 9.9% year-on-year. The European Union (EU) and the United Kingdom in total imported 113 million tonnes of LNG in 2022, increasing by 65% or 44 million tonnes from 2021.

The world traded 390 million tonnes of LNG in 2022, an increase of 5% or 19 million tonnes from 2021. Qatar, Australia, and the United States exported 80 million tonnes, 79 million tonnes, and 77 million tonnes, respectively, all the largest ever in their respective histories. Russia, Malaysia, Oman, and Cameroon also registered their respective historical highs in 2022.

The biggest feature of the LNG market in 2022 was the shift of LNG volumes toward Europe. EU and the United Kingdom absorbed the increase of LNG production mainly in the United States and the decrease of LNG imports mainly in China. The share of EU and the United Kingdom combined in the LNG exports from the United States increased to 63% in Q1-Q3 2022 from around 30% in 2020 and 2021.

Spot gas prices have been quickly falling around the world. From the end of November by the end of January, Europe's TTF fell from around USD 40 to less than USD 20, Asian spot LNG prices from around USD 34 to less than USD 20, and the Henry Hub from around USD 7 to around USD 3 per million Btu, respectively. They were largely thanks to relatively warm winter, moderated gas consumption caused by demand reduction and destruction, and better than expected performances of underground gas storages in Europe.

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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.

## **[Asia Pacific]**

Mitsui O.S.K. Lines, Ltd. (MOL), MOL Ferry Co., Ltd., Japan Petroleum Exploration Co., Ltd. (JAPEX) and Hokkaido Gas Co., Ltd. announced on 6 January 2023 that basic agreements had been signed between MOL and JAPEX, and between MOL and Hokkaido Gas for supply of LNG fuel to two newbuilding LNG-fuelled ferries in each port on the Oarai-Tomakomai route operated by MOL Ferry.

IHI announced on 25 January 2023 that it had started looking into converting LNG receiving and storage terminals near gas-fired power plants into ammonia receiving and storage facilities.

The ACCC (Australian Competition and Consumer Commission) said on 27 January 2023 that its latest gas inquiry report forecasts a supply shortfall of 30 petajoules (PJ) (0.55 million tonnes) in Australia's east coast gas market in 2023 if the LNG producers were to export all their uncontracted gas. However, the LNG producers have enough uncontracted gas to prevent a domestic shortfall. In July 2022, the ACCC forecast a 56 PJ supply shortfall in 2023. The report shows that outlook has improved.

Australia's Woodside announced on 25 January 2023 the following progresses on Scarborough - Pluto Train 2 projects: The site was handed over to Bechtel and LNG train module construction commenced in Indonesia; Pipeline manufacturing is 59% complete and 92% of tagged equipment has been ordered for the floating production unit (FPU); and FEED activities for Pluto Train 1 modifications were completed and the project was 25% complete at the end of the period, targeting first LNG cargo in 2026.

Shell Australia announced on 19 January 2023 that LNG cargoes had resumed from the company's Prelude Floating Liquefied Natural Gas (FLNG) facility following a temporary technical outage in December 2022.

Pilbara Clean Fuels Pty Ltd (PCF) announced on 5 January 2023 that the company was studying a concept for a new, mid-scale, low-carbon footprint eLNG plant to be located at Port Hedland in Western Australia along with Oceania Marine Energy Pty Ltd.

Australia's NOPSEMA (National Offshore Petroleum Safety and Environmental Management Authority) directed Santos on 13 January 2023 notify NOPSEMA at least 10 days before commencement of any future activities covered by the Barossa Gas Export Pipeline Installation Environment Plan, to carry out an assessment to identify any underwater Indigenous cultural heritage places along the Barossa pipeline route, update the existing environment plan, and provide weekly progress reports of the assessment.

Japan's JGC Holdings Corporation announced on 6 January 2023 that JGC Corporation, the overseas Engineering, Procurement and Construction (EPC) business of the JGC Group, as the leader of a consortium with Samsung Heavy Industries (SHI), had been

awarded the Engineering, Procurement, Construction, Commissioning (EPCC) contract for a nearshore Floating Liquefied Natural Gas (FLNG) facility project in Malaysia planned by Petroliam Nasional Berhad (PETRONAS). The facility will be the first nearshore FLNG in the world as well as the third floating LNG plant to be constructed for offshore gas fields in Malaysia, with a minimum production capacity of 2 million tonnes of LNG per year and scheduled for completion in 2027. JGC's main responsibilities will cover the engineering, procurement and commissioning work for the FLNG topside, the associated onshore facilities, as well as the management of the overall project. SHI will be responsible for the FLNG hull EPC work and the modular fabrication of the topside.

### **[North America]**

Sempra Infrastructure announced on 25 January 2023 that it had entered into a long-term sale and purchase agreement (SPA) with PKN ORLEN S.A., which recently acquired the Polish Oil & Gas Company (PGNiG), for the supply of LNG from the Port Arthur LNG Phase 1 project under development in Jefferson County, Texas. PKN ORLEN has agreed to purchase approximately 1 million tonnes per year of LNG on a free-on-board basis for 20 years. Sempra Infrastructure has previously announced it has entered into long-term agreements with each of ConocoPhillips, INEOS, ENGIE and RWE for the sale and purchase of LNG from the proposed Phase 1 project. Port Arthur LNG Phase 1 is fully subscribed with 10.5 million tonnes per year under binding long-term agreements. The company aims to make a final investment decision for the project in the first quarter of 2023, with first cargo deliveries expected in 2027. The Phase 1 project is expected to include two natural gas liquefaction trains and LNG storage tanks and associated facilities capable of producing, under optimal conditions, up to approximately 13.5 million tonnes per year of LNG. A similarly sized Port Arthur LNG Phase 2 project is also under marketing and development.

Freeport LNG on 22 January 2023 asked FERC (Federal Energy Regulatory Commission) for permission "to commence cool-down of its Loop 1 transfer pipeline and reinstate the facility's boil-off gas (BOG) management compressors and associated pipeline" - initial steps to restart the facility. Freeport LNG confirms in the letter that repairs have been completed and measures have been implemented to address management failures.

Freeport LNG on 26 January secured approval from FERC to start introducing LNG into the piping system at the plant. FERC said that "additional authorization to restart operations is necessary to reinstate service for Loop 1 LNG circulation to enable ship loading to Dock 1 and to cooldown, recommission, and reinstate service of the liquefaction trains, including rundown piping to tanks."

NextDecade Corporation announced on 19 January 2023 the execution of a 15-year

sale and purchase agreement (SPA) with Itochu Corporation (Itochu) for LNG from NextDecade's Rio Grande LNG (RGLNG) export project in Brownsville, Texas. ITOCHU will purchase 1 million tonnes per year of LNG indexed to Henry Hub on a free-on-board basis.

EOG Resources, Inc. announced on 4 January 2023 that the company had joined the Oil and Gas Methane Partnership 2.0 (OGMP 2.0), UNEP's flagship oil and gas reporting and mitigation program. EOG claims that the company has reduced its methane emissions by 85% since 2017. In 2021, EOG piloted iSenseSM, a proprietary continuous methane monitoring solution which uses methane sensing technology to continuously monitor facilities and provide real-time alerts to a central control room.

### **[Middle East]**

Abu Dhabi's ADNOC announced on 10 January 2023 the formation of ADNOC Gas, effective 1 January 2023, its new gas processing, operations and marketing company. The flagship company combines the operations, maintenance and marketing of the ADNOC Gas Processing and ADNOC LNG businesses. ADNOC intends to proceed with an initial public offering (IPO) of a minority stake in ADNOC Gas on the Abu Dhabi Securities Exchange (ADX). According to the latest announcement, existing Joint Venture (JV) partners to ADNOC LNG (Mitsui & Co, bp and TotalEnergies) and ADNOC Gas Processing (Shell, TotalEnergies and PTTEP) will continue in their respective JV partnerships with ADNOC Gas.

Oman's Energy Ministry tweeted on 10 January 2023 that Oman LNG Company and Shell International Trading Middle East had signed a binding agreement for LNG supply from Oman LNG to Shell for 0.8 million tonnes per year for 10 years, starting from 2025.

Oman LNG announced on 18 January 2023 the signing of binding term-sheet agreements with PTT Global LNG Company Limited from Thailand and TotalEnergies from France to supply 1.6 million tonnes per year of LNG starting from 2025. The agreements will see Oman LNG supplying PTT Global LNG Company Limited with a total volume of 0.8 million tonnes per year of LNG under a 9-year contract from 2026, and 0.8 million tonnes per year to TotalEnergies for 10 years from 2025.

TotalEnergies announced on 20 January 2023 the start of gas production from the Mabrouk North-East field in the onshore Block 10. TotalEnergies holds a 26.55% interest in Block 10, with OQ holding 20% and Shell, operator, holding 53.45%. Gas production is expected to reach 0.5 bcf per day by mid-2024. The gas will supply the Omani gas network, feeding both local industry and LNG export facilities. TotalEnergies also announced an agreement with Oman LNG for the purchase of 0.8 million tonnes per year of LNG over ten years from 2025.

Oman LNG announced on 30 January 2023 the signing of binding term-sheet

agreement with Turkish BOTAS Petroleum Pipeline Corporation (BOTAS) to supply 1 million tonnes per year of LNG, for 10 years from 2025.

### **[Africa]**

Eni announced on 15 January 2023 a gas discovery at the Nargis-1 exploration well in Nargis Offshore Area Concession, in the Eastern Mediterranean Sea, offshore Egypt. Chevron Holdings C Pte. Ltd. is the operator of the Nargis Offshore Area concession with a 45% interest, while Eni's wholly owned Affiliate IEOC Production BV holds a 45% and Tharwa Petroleum Company SAE holds a 10% interest.

bp announced on 23 January 2023 the floating production, storage and offloading (FPSO) vessel for the Greater Tortue Ahmeyim (GTA) LNG project had started its journey towards the project site off the coasts of Mauritania and Senegal. The FPSO set sail on 20 January 2023 from Qidong, China after successfully completing a series of sea trials following construction over the past three and half years, via Singapore to its final destination - around 40 km offshore on the maritime border of the neighbouring countries. The GTA development also includes subsea development of gas fields and near-shore floating LNG (FLNG) facilities. The project's first phase is set to produce around 2.3 million tonnes of LNG per year.

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

Intercontinental Exchange, Inc. (ICE) announced on 27 January 2023 how it intended to implement the European Union's Market Correction Mechanism Regulation (MCM Regulation) and related price cap on TTF natural gas derivatives, in time for entry into force of the regulation. ICE Endex, based in the Netherlands and operator of a trading venue for TTF natural gas futures and options, plans to change its Rulebook to promote compliance with the MCM Regulation, effective 15 February 2023. Then the Rules of ICE Endex will forbid market participants from submitting orders to the exchange order book in TTF derivatives above the price cap when the correction mechanism is activated, unless clients are eligible to make use of the exemptions granted in the Regulation. ICE is preparing to launch a parallel market for TTF futures and options contracts on its London-based exchange ICE Futures Europe from 20 February 2023.

ACER (European Union Agency for the Cooperation of Energy Regulators) announced on 13 January 2023 that it had made its LNG price assessment report available on a daily basis. ACER collected 9 transactions, of which 2 were eligible. According to the methodology, the LNG market data reported for the price assessment during the relevant rolling time window was not sufficient. It was not possible to calculate a single daily LNG price indication on the day.

Enagás announced on 16 January 2023 that the company had reached an agreement with Germany's Uniper to acquire a 20% stake in the Dutch BBL Company, owner of a 235-kilometre gas interconnection linking the United Kingdom and the Netherlands. The share ownership of BBL will be as follows: Gasunie (60%), Fluxys (20%) and Enagás (20%). The undersea gas pipeline has a maximum capacity of 15 bcm/y of direct flow between Balgzand in the Netherlands and Bacton in the United Kingdom and 5 bcm/y in the reverse direction.

TotalEnergies announced on 12 January 2023 that it had launched its eighteenth biogas production unit in France, which will be the largest in the country with a maximum capacity of 160 gigawatt hours (GWh) (around 10 thousand tonnes). Named BioBéarn and located in Mourenx in the southwest of France, the new unit, fed with organic waste, has begun feeding its first cubic meters of biomethane - a renewable, decarbonized and locally produced gas - into the natural gas transmission network operated by Téréga. It will produce 69 GWh in 2023.

SEFE Securing Energy for Europe (SEFE) announced on 18 January 2023 that it had signed an agreement with Hanseatic Energy Hub (HEH) for regasification capacity in Stade. Starting in 2027, the company plans to import at least 4 bcm per year of LNG via the terminal. The capacities were booked for 20 years and with future flexibility to switch to ammonia as a hydrogen-based energy source. This option is open to all Hanseatic Energy Hub customers with a long-term contract of more than 10 years.

Germany's Uniper announced on 3 January 2023 that Uniper had brought the country's first full cargo of LNG to the new LNG terminal, operated by Uniper, in Wilhelmshaven. The LNG ship Maria Energy, owned by Tsakos Energy Navigation, was loaded in Calcasieu Pass, USA, at the liquefaction facility of Venture Global Calcasieu Pass, LLC, on 19 December 2022.

Höegh LNG Holdings Limited announced on 19 January 2023 that it had signed the second binding 10-year Time Charter Contract with the German Federal Ministry for Economic Affairs and Climate Action. The floating storage and regasification unit (FSRU) Höegh Gannet is allocated to the contract. The vessel will be located at the Elbehafen LNG project in Brunsbüttel operated by Deutsche Energy Terminal GmbH. The Elbehafen LNG project is developed by RWE and its subsidiary Elbehafen LNG in cooperation with its partners Höegh LNG.

TotalEnergies announced on 13 January 2023 the start-up of the Deutsche Ostsee LNG import terminal operated by Deutsche ReGas and located in Lubmin on the German Baltic Sea coast. TotalEnergies is contributing a floating storage and regasification unit (FSRU) and supplying LNG to the project. In December 2022, TotalEnergies delivered the Neptune floating storage and regasification unit to Deutsche ReGas. Following Deutsche

ReGas's open season procedure, in October 2022, TotalEnergies also contracted regasification capacity of 2.6 bcm per year. With the start-up of the terminal, TotalEnergies said it would be able to increase its imports to Europe to over 20 million tonnes per year.

Macquarie Capital announced on 27 January 2023 that the 'Deutsche Ostsee' LNG import terminal, supported by Macquarie Capital, had received its operating licence. Deutsche Ostsee, which delivered first volumes of natural gas in January, was developed by Deutsche ReGas and is Germany's first privately funded LNG terminal. Macquarie Capital and its 100% owned portfolio company, WaveCrest Energy, supported the project with two rounds of investment into Deutsche ReGas. In addition to providing development and construction capital to the project, WaveCrest integrated with the Deutsche ReGas team to help bring the terminal to completion by providing critical technical, operational and commercial capabilities. The first phase of the project, a floating storage and regasification unit (FSRU), small-scale LNG shuttle vessels, and other associated infrastructure, are in the final stages of commissioning. Deutsche ReGas is planning to install a second floating LNG terminal by the end of 2023 which, alongside a number of potential capacity upgrades, could increase import capacity up to 13.5 bcm of natural gas per year.

Gasgrid Finland announced on 16 January 2023 that the company's LNG floating terminal in the harbour at Inkoo, Finland, was fully ready for use. The FSRU Exemplar reached Inkoo on 28 December 2022 and has been integrated into Gasgrid Finland's gas transmission network.

Bulgaria's Energy Ministry announced on 3 January 2023 that an agreement had been signed, granting Bulgargaz EAD access to the gas transmission infrastructure including LNG terminals of the Turkey's BOTAS. The agreement has a duration of 13 years. It enables 1.5 bcm per year of gas to be transferred between the two countries during the period.

Estonia's Eesti Gaas announced on 17 January 2023 that on the order of Eesti Gaas, the Equinor gas tanker Isabella delivered the year 2023's first shipload of LNG from the United States to the port of Klaipėda in Lithuania. Eesti Gaas has an agreement regarding the next LNG cargo in March through Klaipėda. In the 2nd and 3rd quarters, when the Inkoo terminal has started working properly in Finland, Eesti Gaas plans to bring gas through there as well. In 2022, Eesti Gaas procured five cargoes of LNG through the port of Klaipėda. Eesti Gaas started using the small LNG terminal in Klaipėda, Lithuania in 2017. In 2019 a contract was signed with Klaipėda Nafta, after which LNG was purchased through the Klaipėda Independence floating terminal. Eesti Gaas operates in Finland, Latvia, Lithuania and Poland under the Elenger brand name.

France's GTT announced on 2 January 2023 that after an in-depth analysis of European sanction packages N° 8 and 9 prohibiting engineering services with Russian

companies, it was ceasing its activities in Russia, by suspending its contract with Zvezda Shipbuilding Complex as of 8 January. GTT's interventions will be limited, on the two most advanced LNG carriers, to ensuring the safety of the projects and the integrity of the technology, in compliance with the international sanctions in force. With regards to the GBS projects, the terms of GTT's departure are being finalised. GTT has been involved in Russia in the tank design of 15 ice-breaking LNG carriers under construction by Zvezda, as well as in the design of three GBSs (Gravity Based Structure units). Other orders under construction in Asian shipyards, relating to six ice-breaking LNG carriers and two FSUs, are intended specifically for Russian Arctic projects. To date, these projects are proceeding normally. Eight conventional LNG carriers ordered by international shipowners, under construction in Asian shipyards, are also intended for Russian Arctic projects, but can operate in all types of conditions.

According to a report on 10 January 2023 from IEEFA (Institute for Energy Economics and Financial Analysis), the European Union has reduced the volume of natural gas from Russian pipelines, but its imports of LNG have increased sharply. Imports of Russian LNG rose 12% in 2022. France was the top importer of LNG from Russia.

### **[Global issues]**

GIIGNL announced on 24 January 2023 that the LNG industry was making progress in adopting the comprehensive framework developed by GIIGNL aimed at promoting verified and consistent quantification of Greenhouse Gas (GHG) emissions based on established standards and methodologies. The announcement follows Shell Eastern LNG's delivery of a pilot GHG neutral LNG cargo from the Gorgon Project in Australia to CPC Corporation, Taiwan which is aligned to the GIIGNL's Monitoring, Reporting and Verification (MRV) and GHG Neutral Framework launched in November 2021.

Reference: Company announcements, Cedigaz News Report.

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