LNG Shipping News

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US LNG exports to decline - EIA

US LNG exports will drop by 6% in the second half of this year, according to the US Energy Information Administration (EIA).

US LNG exports have been hit by the Freeport LNG outage

This fall was due to the outage at the Freeport LNG facility, which is expected to last until late 2022. Freeport accounted for 17% of US LNG export capacity before the outage.

US exports will average 10.5 bill cu ft per day during the period, according to the agency's July, 2022 Short-Term Energy Outlook (STEO).

This represents a 14% decrease, compared to EIA's June forecast.

EIA also predicted that the Henry Hub spot price will average $5.97 per MMBtu during 2H22, down 30% from the June forecast.

For the last three quarters of 2023, EIA expects natural gas prices will average $4.36 per MMBtu, up 14% from the June forecast. EIA also expects that more natural gas will be in storage heading into this winter than it had earlier forecast.

Chinese situation

As for China's LNG imports, they are set to fall over 14% year-on-year to 69 mill tonnes in 2022, the largest decline since it began importing, said Wood Mackenzie in a report.

After solid growth in 2021, China's gas and LNG demand is expected to slow down this year. In 2Q22, China's gas demand (sum of production and net imports) decreased 5% year-on-year.

This was due to many factors, including economic slowdown, rising gas import prices, policy support for clean coal and a warmer-than-usual winter.

Wood Mackenzie research director, Miaoru Huang, said: "Gas-fired power was a major contributor to the absolute decline in volumes. In addition to the factors mentioned earlier, the sector was pressured by growth in use of renewables."

On the supply side, domestic production increased by 4.9% year-on-year in the first half of this year, while pipeline imports increased by 11%. LNG imports totalled 31 mill tonnes, down 21% year-on-year.

Huang added: "Chinese buyers have minimised their exposure to costly spot LNG. Spot purchases were muted, and reportedly, some Chinese players resold cargoes into the European market."

While China remains committed to long-term climate goals, the immediate focus is to guarantee energy supply and stabilise energy costs.

In 1H22, the landed prices of LNG imports averaged $15 per MMBtu, almost double the average landed prices in the same period in 2021. Prices of pipeline gas imports increased by 40%, although this rise was more modest due to a longer time lag in indexation to oil prices and a larger share by the lowest-priced Russian pipeline gas.

Based on WoodMac's latest commodity prices outlook, China's gas import prices will remain elevated for the rest of the year. Spot LNG delivered to east coastal provinces would average $43 per MMBtu in 2H22, way above the city-gate benchmarks of around $8 per MMBtu.

Oil-linked pipeline gas and LNG contracts, as well as Henry Hub-linked LNG contracts, will see prices increase from 1H22 levels. However, they remain more economical than spot LNG, with average delivered prices range between $13 and $20 per MMBtu.

Huang said: "Power generation, feedstock use for fertiliser and chemicals, transport and commercial gas demand are expected to decrease from 2021 levels. We still expect industrial fuel gas demand to grow above 2022 levels, but the increments have been downgraded. Residential and space heating will be much less impacted as gas supply to them is prioritised, and prices are protected.

"This will be the largest decline since China began importing LNG in 2006. In 2015, China's LNG imports declined for the first time but by 1% only. Japan will move back to becoming the world's largest LNG importer this year," she said.

Some key gas-consuming provinces, such as Guangdong, Zhejiang and Shandong, have already set gas demand growth targets in their respective regional five-year plans, either in absolute terms or as a share in the energy mix over 2021/2025.

Not all those targets can be met in the face of economic headwinds and high gas costs. However, those plans reveal the potential in China's gas demand growth that could materialise with affordable gas price levels and supply chain support, WoodMac concluded. ■

SHIPPING NEWS AGENDA

NFE joins Apollo - signs Mexican agreements

New Fortress Energy (NFE) is to sell 11 LNG infrastructure vessels to a newly formed joint venture (JV), involving investment vehicle Apollo.

This JV will be financed by funds managed by Apollo and NFE in a transaction valued at around $2 bill. It will be owned about 80% by Apollo funds and 20% by NFE.

Both companies claimed that this transaction will create a global marine infrastructure platform underpinned by long-term contracts, benefiting from NFE's LNG downstream operations and development activities, as well as Apollo's investment and maritime experience.

In addition to serving NFE's projects globally, this platform also serves a diversified customer base of utilities and energy companies worldwide under third-party charters.

The 11-vessel portfolio consists of six FSRUs, two LNGCs and three FSUs.

NFE will receive around $1.1 bill in proceeds after accounting for its share of the JV and paydown of existing debt.

As part of the transaction, NFE has agreed to charter 10 out of the 11 vessels from the JV for up to 20 years commencing either upon close of the transaction or upon expiration of the vessels' existing third-party charter agreements.

Subject to satisfying customary closing conditions, including receipt of certain regulatory approvals and third-party consents, closing of the transaction is expected to occur in the third quarter of this year.

Proceeds are expected to be used to fund NFE's FLNG projects, as well as for ongoing downstream infrastructure and for general corporate purposes.

Mexican agreements

NFE has also signed two agreements with Mexican energy concerns.

The first was signed with Comisión Federal de Electricidad (CFE) and involves (i) expanding and extending NFE's supply of natural gas to multiple CFE power generation facilities in Baja California Sur, (ii) selling NFE's 135 MW La Paz power plant to CFE, and (iii) creating a new LNG hub off the coast of Altamira, Tamaulipas, with CFE supplying the feedgas to two NFE FLNG units using CFE's existing pipeline capacity.


New Fortress has become involved in Mexico

In July, 2021, NFE commenced commercial operations at the LNG regasification terminal in Pichilingue, La Paz, Baja California Sur.

NFE and CFE also plan to jointly create a new LNG hub off the coast of Altamira, Tamaulipas in which, NFE will deploy several FLNG units of 1.4 mill tonnes per annum each.

CFE will also share in the production and marketing of part of the LNG volumes from the new LNG hub.

The second contract signed was with Petróleos Mexicanos (Pemex) aimed at forming a long-term partnership.

This agreement involves the joint development of the Lakach deepwater natural gas field to enable Pemex to supply natural gas to Mexico's onshore domestic market and for NFE to produce LNG for export to global markets.

In addition, NFE has awarded Fluor Corp a full notice-to-proceed (FNTP) contract for the engineering, procurement and fabrication management of the NFE Fast LNG 2 project.

This project is a nominal 1.4 mill tonnes per annum LNG gas treating and liquefaction plant to be placed on fixed offshore platforms.

"Fluor, in conjunction with key licensors and suppliers, provides NFE with an integrated modular mid-scale LNG export solution for these projects," said Jim Breuer, Fluor's Energy Solutions Group President. "The Fluor design and execution plan facilitates repeatable project models that can be used to replicate similar plants in the future."

The Fast LNG 2 project is the second offshore modular mid-scale LNG plant that NFE has awarded to Fluor this year.

NFE awarded the Fast LNG 1 project to the company in the first quarter of this year and is a similar modular mid-scale design being installed on re-purposed drilling jack-up rigs. ■

Engie to take more Algerian gas and LNG

French energy company Engie and Algerian National Hydrocarbon Company SONATRACH have signed a series of agreements for the supply of natural gas.

Under these agreements, SONATRACH will deliver new volumes of natural gas to ENGIE amounting to almost 10 bill cu m over several years.

The first shipments will be dispatched as natural gas into the Trans-Mediterranean pipeline, followed by LNG shipments mainly to the Fos Tonkin LNG terminal, near Marseille, France.

These new contracts expand the long-standing relationship between the two energy companies, they said. ■

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Delfin brings Vitol on board

Delfin Midstream has finalised a binding LNG sale and purchase agreement (SPA) with Vitol Inc (VIC), the company's Americas-based affiliate.

In addition to the SPA, Vitol has invested in the company.

Under the SPA, Delfin will supply 0.5 mill tonnes per annum of LNG on a free on-board (FOB) basis from the Delfin Deepwater Port, located 40 nautical miles off the coast of Louisiana, to VIC for 15 years, indexed to Henry Hub.

The agreement is valued at around $3 bill in revenue over the 15 year period.

"Recent events have only accelerated the need for a wider array of potential buyers to source reliable low-cost energy from the safety of the US at compelling prices and Delfin is perfectly positioned to serve this growing need.

"After evaluating multiple projects and running an extensive diligence process, Vitol's decision to invest demonstrates the strong trust they have in our ability to deliver a reliable source of LNG," Dudley Poston, Delfin CEO, said.

In addition to the VIC agreement, Delfin has signed other HOAs and term sheets that are being finalised into fully termed agreements.

Taking FID

As a modular project requiring only 2 to 2.5 mill tonnes per year of long-term contracts to begin construction, Delfin is on schedule to make a final investment decision (FID) on the first FLNG by the end of this year, the company confirmed.

Wouter Pastoor, Delfin COO, explained: "Delfin has completed permitting work with a positive 'record of decision' from the Maritime Administration with a 13 mill tonnes per annum non-FTA DoE export license.

"In addition, Delfin has completed front end engineering and design with Samsung Heavy Industries and Black & Veatch, which puts us on pace to execute our project this year and to commence operations in 2026," he said.

Delfin has also purchased the UTOS pipeline, the largest natural gas pipeline in the Gulf of Mexico region.

Later, Delfin announced in a filing that it had asked the US Federal Energy Regulatory Commission (FERC) for a fourth extension of permits to complete its onshore facilities.

The company requested that FERC extend the deadline for the onshore completion of its LNG facilities to 28th September, 2023.

Delfin has already been awarded a deepwater port licence by the US Maritime Administration (MARAD), has also been approved by the US Coast Guard and gained approval from the US Department of Energy for long-term exports of LNG to countries that do not have a Free Trade Agreement with the US for up to 13 mill tonnes per annum.

Delfin is additionally seeking to construct, operate and maintain certain onshore metering, compression, and piping facilities located onshore in Cameron Parish in Louisiana.

Delfin's CEO Dudley Poston

The authorised onshore facilities, which consist of just over 2 miles of pipeline, new compression and appurtenant facilities within the fence-line of an existing gas facility, and a new metering and regulation station - will exclusively transport and deliver natural gas to Delfin LNG's planned deepwater port to be located in the Gulf of Mexico around 37.4 to 40.8 nautical miles off the coast of Cameron Parish, the company explained in its filing. ■

PetroChina to take more Cheniere LNG

Cheniere Marketing has entered into a long-term LNG sale and purchase agreement (SPA) with PetroChina International Co Ltd (PCI).

Under the SPA, PCI has agreed to purchase up to around 1.8 mill tonnes per annum of LNG from Cheniere Marketing on a free-on-board (FOB) basis.

Deliveries under the SPA will begin in 2026, reaching the full 1.8 mill tonnes in 2028, continuing through 2050.

Cheniere's Jack Fusco

The purchase price will be indexed to the Henry Hub price, plus a fixed liquefaction fee. Half of the total volume, or about 0.9 mill tonnes, 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 3 project.

"We are pleased to build upon our existing and successful long-term relationship with PetroChina and sign our first LNG contract that crosses over into the second half of this century," said Jack Fusco, Cheniere's President and CEO. "PetroChina is a leading energy company in one of the largest and fastest growing markets for LNG. This SPA increases Cheniere's long-term sales to PetroChina to approximately 3 mill tonnes per annum, and we are proud to support China's progress toward a lower-carbon future with our reliable, cleaner burning LNG."

Tian Jinghui, PCI Executive Chairman, added: "Natural gas continues to play a vital role in enabling energy transition in China. We are pleased to further expand our co-operation with Cheniere in delivering LNG, one of the cleanest fuel choices to our millions of customers for many years to come." ■

NEWS NUDGE

Prelude return delayed

Shell's giant FLNG 'Prelude' will be unable to supply LNG cargoes, due to industrial action, which has been extended to 21st July.

A Shell spokesperson told newswires that the company had sent customers an - 'inability to supply notice for all future cargoes, due to inability to complete offtakes following increased impacts related to the ongoing Protected Industrial Action (PIA).'

The inability to supply notice is aligned with the current period of protected action, which has been extended to 21st July, the spokesperson added. The stoppages began on 10th June. ■

Shell to supply Eemshaven FSRUs

Dutch energy company Gasunie's subsidiary, EemsEnergyTerminal has signed up the first company to supply LNG via FSRUs to be moored at Eemshaven, near Delfzijl.

ČEZ and Shell Western LNG have jointly contracted 7 bill cu m of capacity.

Gasunie said that this was an important pre-condition for the security of supply of LNG. EemsEnergyTerminal expects the remaining 1 bill cu m capacity to be sold in the coming months.

Dutch Minister for Climate and Energy Policy, Rob Jetten, said; "This is an important part of our approach to becoming less dependent on Russian gas, as soon as possible, but also to preparing for the coming winter. I am pleased that there is considerable market interest in making use of this infrastructure and importing more liquid gas."

Until this year, the Netherlands only had the Gate LNG import terminal at Rotterdam.

The Eemshaven project, plus the upgrade of the Rotterdam terminal will double the Dutch LNG import capacity.

Eemshaven will consist of two FSRUs, Exmar's 'S188' and the 'Golar Igloo'. The 'S188' recently arrived at Rotterdam where she will be prepared for service.

Both FSRUs are expected to arrive at the northern Dutch port at the end of August. The 'Golar Igloo' will be the first to be connected to the Dutch natural gas grid, followed by the 'S188'.

Together, the two FSRUs will have a throughput capacity of around 8 bill cu m per year.

Ulco Vermeulen, member of Gasunie's Executive Board, said; "We welcome the first customers of EemsEnergyTerminal and are very happy with their support and co-operative attitude. The agreements were concluded in record time and we realise that this is only possible on the basis of trust, partnership and a common goal to have the first LNG flowing through the grid in the autumn. Together we will do everything we can to make the project a success."

During the next five years, the Eemshaven terminal will also be able to store LNG.

Exmar's FSRU 'S188' seen arriving in Rotterdam for preparatory work

Gate expansion

As for Gate, following modifications, investments and successful tests, the terminal will be able to continue offering its expanded send-out capability through the winter.

The annual capacity is now 12 bill cu m per annum on a firm basis and another 4 bill on an interruptible basis.

Gate terminal has started working on permit application, regulatory conditions and technical feasibility with the aim of launching an open season on about 15th August to increase the firm annual capacity by 4 bill cu m.

The expansion project would include the installation of a fourth tank. Subject to the co-operation of all stakeholders, the increased capacity could become continuously available between 1st October, 2025 and 1st October, 2026. ■

NEWS NUDGE

WFW advises Snam on FSRU acquisition

Watson Farley & Williams (WFW) has advised Snam Group on its acquisition of 100% of the share capital of FSRU I Limited of Bermuda from BW Gas Cyprus Limited (BW).

As a result, by the expected closing date of end 2023, Snam will own as its sole asset the FSRU 'BW Singapore'.

The acquisition will be financed by the San Donato Milanese Group with about $400 mill of its own funds, to be paid in two tranches.

The vessel, which was built in 2015, has been deployed as an FSRU, but can also operate as an LNGC. She has a storage capacity of around 170,000 cu m of LNG and a nominal continuous regasification capacity of 5 bill cu m per year.

It is expected that the 'BW Singapore', which is currently under a charter, which expires in November 2023, will be located off Ravenna in north eastern Italy and will be operational by summer 2024 once the authorisation and regulatory process has been finalised, and the work necessary for mooring and connecting to the transportation network has been completed.

The FSRU's northern Adriatic location will allow it to cater for potential new LNG flows from North Africa and the Eastern Mediterranean. ■

MPL signs up Shell

Shell Eastern Trading and a subsidiary of Mexico Pacific Limited (MPL) have signed a sales and purchase agreement (SPA) to offtake 2.6 mill tonnes per year of LNG.

The LNG will be shipped from the first two trains of MPL's LNG export facility located in Puerto Libertad, Sonora, Mexico.

Under the SPA, Shell will purchase LNG on a free on-board (FOB) basis for 20 years. When fully operational, the facility will have three trains and a combined capacity of 14.1 mill tonnes per annum.

The facility is expected to commence commercial operations in 2026, Shell said.

"We are delighted to welcome Shell as a foundation customer at our anchor LNG facility," said Douglas Shanda, MPL's President and CEO. "Their recognition of the advantages our location offers, including access to low-cost Permian gas, avoidance of the Panama Canal to ensure a shorter shipping distance to Asia, and lower landed pricing, demonstrates the value of West Coast North American LNG.

"We are equally delighted that Shell has chosen to work with us as we continue to pursue LNG production growth to meet increasing energy security needs," he said.

"Energy security remains paramount for the world. The demand for LNG is set to continue to rise with further LNG required to ensure security of supply and progress the energy transition," added Steve Hill, Shell Executive Vice President of Energy Marketing. "We look forward to continuing to work with Mexico Pacific as they advance to bring more LNG online." ■


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El Musel gains government authorisation

Enagás' Gijon El Musel regasification plant has received 'administrative authorisation' from the Spanish Ministry of Ecological Transition and Demographic Challenge.

This authorisation, which was granted following a favourable report from the Spanish National Commission on Markets and Competition (CNMC), is a key step in the start-up of the LNG terminal after the Ministry approved its Environmental Impact Statement (EIS) in May, 2021.

For its definitive start-up, the processing of the recognition of the economic regime by the CNMC — so that it can be used as a plant for LNG logistics services — continues and with the commencement order by the Ministry and with the technical set-up of the terminal by Enagás.

Enagás CEO, Arturo Gonzalo, said: "Once this process is completed, the plant could be operational for logistics use within six to eight months. More than 100 LNG carriers a year can be unloaded and loaded at the Gijón terminal, which represents a contribution of up to 8 bill cu m."

Enagás' El Musel facility gains recognition

El Musel regasification plant will contribute to the security of supply in Europe, which is particularly relevant in the current European context of reducing dependence on Russian gas, as envisaged in the European document REPowerEU, Enagás said.

It will cater for the discharging of LNGCs from various suppliers and for the fast transhipments to other European destinations.

The plant has a storage capacity of 300,000 cu m of LNG. It also has berthing and unloading facilities designed for the world's largest LNGCs - the Q-Max, of up to 266,000 cu m capacity. ■

Klaipeda terminal looks to expand

AB Klaipėdos Nafta (KN) is to evaluate technical infrastructure studies to assess the possibilities of expanding the annual regasification capacity at its Klaipėda FSRU LNG terminal.

The company plans to undertake two feasibility studies to jointly assess technical changes to the LNG terminal infrastructure in order to increase annual regasification volumes.

One study will address the possibility of expanding the technical capacity of the LNG terminal berth infrastructure and the associated pipeline, while the second study will assess the increase of the LNG terminal's FSRU's regasification capacity.

Both studies will analyse infrastructure development taking in two possible scenarios - if the LNG terminal's annual regasification capacity grows to 5 bill cu m and if the annual capacity is increased to 6.25 bill cu m.

Currently, the annual LNG terminal regasification capacity is 3.75 bill cu m.

"Europe as a whole is turning to LNG terminals as the preferred alternative to secure a reliable supply of natural gas independent of Russia. Accordingly, the importance of the Klaipėda LNG terminal, which is currently the only gas supply alternative in the Baltic region, has increased significantly this year, with demand for the terminal's capacity far exceeding supply.

"Our analysis of the terminal's technical capacity development aims to ensure that the LNG terminal's full potential is exploited and that we secure natural gas supplies that best meet the needs of Lithuania and the region.

"With the results of the studies, we will be able to more accurately assess the scope and feasibility of such a project," said Mindaugas Navikas, KN's COO.

Both technical capacity development studies are expected to be completed by the end of this year. ■

NextDecade signs second Chinese SPA

NextDecade Corp has announced a second sale and purchase agreement (SPA) with a Chinese energy company in recent weeks.

Under the latest SPA, Guangdong Energy Group will purchase around 1 mill tonnes per annum of LNG indexed to Henry Hub and delivered on an ex-ship (DES) basis for 20 years.

The LNG will be supplied from Rio Grande LNG Train 1, which is expected to start commercial operations in 2026. Guangdong also has the right to purchase an additional 0.5 mill tonnes from RGLNG under the SPA.

"We are pleased to announce this SPA with Guangdong Energy, one of the largest power generation companies in Guangdong Province in Southeastern China," said Matt Schatzman, NextDecade Chairman and CEO. "RGLNG's differentiated offering of a lower carbon-intensive LNG continues to drive our commercial momentum and we look forward to working with Guangdong Energy over the coming years to help further reduce their greenhouse gas emissions."

"The signing of the SPA represents a long-term and deep relationship between Guangdong Energy Group and NextDecade," said Liu Bo, Deputy General Manager of Guangdong Energy Group. "We will make full use of our respective advantages to strengthen the relationship between our companies. Thus, benefiting and contributing to building a safe, clean, low-carbon, and modern energy system, a system that will help grow the Guangdong economy and foster sustainable development."

Based on current expected demand for LNG and assuming the achievement of further LNG contracting and financing, NextDecade anticipates making a positive final investment decision (FID) on up to three trains of the Rio Grande export project in the second half of this year, with FIDs of its remaining trains to follow. ■

ConocoPhillips invests in Sempra project

ConocoPhillips has invested in a new large-scale LNG facility under development by Sempra Infrastructure in Jefferson County, Texas.

The US energy major has signed a Heads of Agreement (HoA) with Sempra to acquire a 30% direct equity holding in Port Arthur Liquefaction Holdings and an LNG offtake equivalent to about 5 mill tonnes per annum from Sempra's Port Arthur LNG project.

The project's first phase is fully permitted and expected to include two liquefaction trains and LNG storage tanks, as well as associated facilities capable of producing, under optimal conditions, up to around 13.5 mill tonnes per year of LNG.

Under the terms of the HoA, ConocoPhillips will supply the gas for the project's 5 mill tonnes offtake and may provide additional gas supply services to Port Arthur LNG.

Sempra's Chairman and CEO Jeffrey Martin

In addition, ConocoPhillips will have the option to acquire LNG offtake and equity ownership from future planned LNG trains at Port Arthur, where a similarly sized Phase 2 project is also under development.

"ConocoPhillips has been a driving force in the LNG industry since we helped open the Atlantic LNG market beginning in the 1950s, and then the Asia/Pacific market by delivering the first LNG cargo to Tokyo Bay in 1969," said Ryan Lance, the energy major's Chairman and CEO.

"The decision to enter into this agreement with Sempra provides us with a ground-floor opportunity to participate in premier LNG developments, reinforcing our commitment to helping solve the world's energy supply needs as we transition to a lower-carbon future.

"Sempra brings a long history of successful LNG project development, and we look forward to working together to provide reliable LNG to support the energy transition and strengthen US and global energy security," he said.

"At Sempra, we believe bold new partnerships will be central to solving the world's energy security and de-carbonisation challenges," said Jeffrey Martin, Sempra's Chairman and CEO. "That is why we are excited to announce this proposed partnership with ConocoPhillips, a leading global energy producer that also shares our vision of responsibly developing and delivering cleaner energy resources."

CCS plans

The companies will also evaluate the development of low-carbon projects, including a carbon capture and storage (CCS) facility for Port Arthur LNG and Sempra Infrastructure would have the opportunity to participate in carbon capture and sequestration projects developed by ConocoPhillips in Texas or Louisiana in connection with the project.

In addition, the HoA provides an opportunity for ConocoPhillips to acquire offtake and equity participation in Sempra's development of the Energia Costa Azul LNG Phase 2 project to be located north of Ensenada, Baja California, Mexico. ■

Flex LNG gives financial update

Flex LNG gave an update on the market, employment and revenue guidance during a recent presentation at Arctic Securities.

Given the recently announced timecharter agreements for 'Flex Rainbow', 'Flex Enterprise' and 'Flex Amber', which have secured a total of 24 years fixed hire employment, Flex LNG made the following positive adjustments to its revenue guidance for the year:

- Expected revenues in 2Q22: ~$85 mill vs $80 mill.
- Expected revenues in 3Q22: ~$90 mill vs $82-92 mill.
- Expected revenues in 4Q22: ~$90-100 mill vs $85-105 mill.

Flex LNG also forecast higher revenues and TCEs in 2023 than in 2022, due to repricing of its employment portfolio and significantly reduced spot exposure, which dragged down revenues in 1Q22, due to the pull on US cargoes to Europe during the period.

Furthermore, the company has also initiated Phase 2 of its balance sheet optimisation programme with the aim of increasing its available liquidity by a further $100 mill.

This comes on top of the expected free liquidity as of 30th June, 2022, of about $285 mill.

In total, Phase 1 of the programme is expected to have released an aggregate $137 mill when the 'Flex Endeavour' refinancing is completed in 3Q22, compared with the forecast of $100 mill when announced in November, 2021. ■

FSRU could replace Nord Stream gas

Germany's Deutsche ReGas has signed an agreement with French energy major TotalEnergies to install and operate an FSRU at Lubmin, the German entry point of the Nord Stream pipelines from Russia.

The FSRU is expected to be operational as early as December, 2022 and feed up to 4.5 bill cu m of natural gas annually into the German gas transmission network.

Due to depth restrictions at Lubmin and in the local area, Deutsche Regas is to moor an FSU in the Baltic at which LNGCs with a capacity of up to 170,000 cu m would be able to berth alongside to tranship LNG into smaller vessels for onward transport to the FSRU.

Deutsche Regas said it could also connect the FSRU to underwater pipelines if the necessary legal requirements are met and add up to two additional units to deliver a total of over 15 bill cu m of gas per year.

The Economics Minister of Mecklenburg-Western Pomerania, Reinhard Meyer, said: "In these challenging times, we need pragmatic solutions to further secure the energy supply for Germany. Lubmin in Western Pomerania can play a key role in this. LNG is an important element in further reducing dependence on Russian gas supplies. The aim is to continue to make us independent of third parties. With the signing, both companies are taking an important and necessary step together." ■


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LNGC carbon capture study completed

Climate technology company, Ionada GmbH has completed a detailed on board LNGC carbon capture feasibility study.

Ionada has conducted a feasibility study on CCS systems fitted on an LNGC

The study concluded that on board carbon capture is a viable solution to reduce carbon emissions and ensure EXXI and CII regulatory compliance.

CO_2 reductions are a challenge that affects both shipowners, who must meet the IMO and EU ETS requirements and charters whose products and cargo are tagged with the emissions.

To meet the need for significant CO_2 reductions head-on, an EU oil major partnered with Ionada to produce a detailed feasibility study for the installation and operation of the company's carbon capture technology.

Requiring as little as 50% of the space, and 30% of the power of conventional marine solution carbon capture systems, the study showed how the feasibility of Ionada's HFCM technology, will succeed in disrupting the current status of marine carbon capture, thus, providing compact, economical CO_2 reduction for the marine industry.

This study was believed to be the first to include a detailed analysis of all aspects of the installation of the system on board an LNGC, including, installation, operation, draft implications, stability, on board CO_2 storage and discharge, and analyses of the actual CO_2 reduction, from on board capture to discharge.

Together with Ionada's experience with class and flag approved HFMC SOx scrubber and recent HFMC CO_2 scrubber Approval in Principle (AiP) from Bureau Veritas, the study will be a huge step for shipowners to meet the necessary regulations required to continue operations of their vessels, the company claimed.

The initial conclusion was that the vessel used in the study would meet EEXI compliance with a carbon capture rate of around 1/3, the design case.

It concluded that there was a significant economic benefit for on board carbon capture and that the vessels can be fitted with carbon capture systems without significant impact on operations or safety.

Ionada is a global climate technology company that develops, manufactures, and markets post-combustion carbon capture systems to reduce greenhouse gas emissions. ■

NEWS NUDGE

OLT appoints new Chairman and CEO

OLT Offshore LNG Toscana's Board has approved a new governance, which provides for the appointment of Elio Ruggeri as Chairman and the confirmation of Giovanni Giorgi in the role of CEO.

Giorgi replaces Maurizio Zangrandi.

GTT to design another seven LNGC cargo tanks

GTT has received an order from Samsung Heavy Industries for the tank design of three new LNGCs, on behalf of an Asian shipowner.

The 174,000 cu m LNGCs will be fitted with the Mark III Flex membrane containment system, a technology developed by GTT.

Deliveries of the vessel are scheduled for the third quarter of 2025 and the first quarter of 2026.

Another two orders were received from Hyundai Heavy Industries for tank designs on behalf of a European shipowner.

The 174,000 cu m vessels will also each be fitted with the Mark III Flex membrane containment system.

Deliveries of these vessels are scheduled for the second quarter of 2025.

Finally, GTT announced that it has received another order from Hyundai Samho Heavy Industries for the tank design of two new LNGCs, on behalf of a European shipowner.

The 174,000 cu m vessels will also be fitted with the Mark III Flex membrane containment system.

Deliveries of the last two are scheduled for the first quarter of 2026.

Construction starts on Taiwan's largest LNG storage tanks

Bechtel, Taiwan's CPC Corp, and MRY broke ground on the building of LNG tanks for the CPC Taichung Phase III LNG import terminal at Taichung, Taiwan.

To enhance the stability of natural gas supplies in Taiwan, CPC is expanding this facility to include two full containment tanks and associated regasification facilities.

Bechtel will undertake engineering, procurement, and construction (EPC) of two 180,000 cu m full containment LNG tanks that will be Taiwan's largest storage tanks when built. ■

Liquefaction train status analysis launched

Wood Mackenzie (WoodMac) and Ball Corp have launched Global LNG Liquefaction Monitoring.

This tool provides near real-time market intelligence on the status of liquefaction trains.

This initiative is a combination of Ball's satellite expertise and remote sensing data analytics capabilities and WoodMac's proprietary ground-based monitoring of US liquefaction sites, the companies said.

Lucas Schmitt, WoodMac's Principal Analyst - Global LNG Liquefaction Monitoring, explained: "The number of liquefaction plant outages has increased significantly in recent years – and these events impact market prices. With LNG cargoes trading at record high prices, having access to timely and accurate data is critical."

WoodMac's proprietary dataset alerts users to train outages and restarts. For example, the company's algorithms detected maintenance on two Qatari trains in early February, 2022 with a seven-day lead time before any other indicators, the company claimed.

"Our alerts flag disruptions, so customers can react quickly and identify potential trading opportunities. Additionally, the high granularity of the data allows clients to understand train-level dynamics to derive valuable insight on companies involved in these assets" Schmitt added.

Kendall Ackerman, director of Ball's satellite analytics business, commented: "Through our collaboration with Wood Mackenzie, we are identifying new and exciting applications for our proprietary satellite analytics. The opportunity to provide the industry with time-critical data that will help drive decisions in the global LNG markets is ground-breaking." ■

Consultancy helps LNG terminal operator rethink strategy

An LNG terminal operator turned to a consultancy when needing a new commercial and regulatory strategy after the expiry of initial long-term contracts.

FTI Consulting used its LNG market modelling and regulatory analyses to help get a clear view of the options available and to select an effective optimised approach for an improved regulatory regime and increased commercial revenues.

The undisclosed LNG terminal operator had to rethink its commercial and regulatory strategy after 15 plus years operating exclusively under long-term contracts.

Long-term client commitment expiries led the terminal to sell capacity on a short-term basis, ask for regulatory burdens to be lightened and to consider a new phase of long-term contracting.

FTI was engaged to support the terminal operator's commercial and regulatory strategy for both short-term and long-term sales.

For the long-term sales, the consultancy built a benchmark of competitor terminals to assess the attainable price, and a financial model that considered different capacity settings, as well as terminal expansion, to assess the achievable rate of return.

In support of discussions with the national energy regulator, FTI provided (1) a recommended design for the long-term open season process, and (2) a detailed international analysis on the appropriate level of return that should be considered for the terminal in this new phase.

Finally, to support long-term discussions with potential clients, the consultancy provided an independent view on the outlook for the national gas market over the next 20 years.

For the short-term sales, (1) a review of competition and spot cargoes market dynamics was undertaken, and (2) a quantitative model to value the products offered by the terminal to short-term shippers.

As a result, the terminal operator was able to secure a more favourable regulatory setting and launch an open season process for long-term capacity. In addition, the operator was able to optimise its short-term sales through better clients' targeting and value estimation. ■

NEWS NUDGE

Kenai LNG export project - more time needed

Marathon Petroleum Corp's Trans-Foreland Pipeline unit has requested more time to convert the Kenai LNG export plant in Alaska into an import terminal.

A US Federal Energy Regulatory Commission (FERC) notice said that Trans-Foreland sought an extension until December, 2025 to complete the facility.

In December 2020, FERC had approved Trans-Foreland's request to build the plant and gave the company until December, 2022 for operations to begin.

Shell to participate in Qatar's LNG expansion

Shell has joined the ranks of energy majors appointed by QatarEnergy as a partner in the North Field East (NFE) expansion project.

Similar to the other stakeholders, Shell will hold a 25% share in a joint venture company, which in turn will own 25% of NFE's expansion project, including the four mega LNG trains with a combined nameplate LNG capacity of 32 mill tonnes per annum.

NFE will also include carbon capture and sequestration to reduce emissions.

Woodfibre turns to Siemens

Siemens Energy is to be the single systems supplier for the all-electric Woodfibre LNG project near Squamish, in British Columbia, Canada.

The environmentally friendly LNG facility will be located at the site of a former pulp and paper operation. It will be designed to produce 2.1 mill tonnes of LNG per annum and use clean, renewable hydroelectricity, to reduce its greenhouse gas emissions by more than 80%.

Siemens Energy's involvement will include all equipment associated with the main refrigeration trains, including compressors, synchronous motors, variable speed drives, converter transformers, harmonic filters, and numerous powerhouses.

Woodfibre is expected to reach substantial completion in 2027 and begin commercial operations by September of that year, the company said.

Ships - Newbuildings

The spate of new ordering continues unabated.

As *LNG Shipping News* went to press, news was circulating that Samsung had won orders for 14 LNGCs.

No other details were revealed.

Elsewhere, eight of the vessels ordered at Hyundai for the Qatari project were believed to be contracted by Knutsen, according to brokers' reports.

This would bring Knutsen's involvement in the Qatar project to 10 LNGCs.

The price was said to be $215 mill per ship and the delivery dates were quoted as 2025/2026.

Meanwhile, TMS Cardiff Gas was believed to have ordered two 174,000 cu m LNGCs at Hyundai Samho for a rather high $245 mill each.

They will be fitted with ME-GI engines, air lubrication systems (ALS) and shaft generators. Their delivery date was reported as 2024.

Brokers also reported that Alpha Gas had taken over some if not all of the cancelled Sovcomflot LNGC contracts at Daewoo, mentioned in the last *LNG Shipping News*. ■

Monthly Large LNGC Values*

Newbuildings (174,000 cu m)	$225.78 mill
Five years old (174,000 cu m)	$176.75 mill
Total Fleet (546 ships)	$69.80 bill
Orderbook (228 ships)	$53.09 bill

Source: VesselsValue (22/06/22)

The above is updated each month courtesy of VesselsValue

LNG rate assessments

Spot market (155,000-165,000 cu m)

Region	This week	Change*
East of Suez	$53,000	-$2,000
West of Suez	$45,000	-$1,000
12 mos T/C	$133,000	-$2,000

Since last report (07/07/22)

Source: Fearnleys (20/07/22)

WORLD LNG CARRIER ORDERBOOK

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Minerva Amorgos	Minerva Marine	Samsung	1/1/2019	174,000	XDF	Q4, 2022
Clean Cajun	Dynagas	Hyundai Heavy	5/22/2019	200,000	XDF	Q2, 2022
Clean Copano	Dynagas	Hyundai Heavy	5/22/2019	200,000	XDF	Q3, 2022
Orion Star	JP Morgan	Samsung	6/1/2019	174,000	XDF	Q2, 2022
Orion Sun	JP Morgan	Samsung	6/1/2019	174,000	XDF	Q2, 2022
Prism Diversity	SK Shipping	Hyundai Heavy	6/29/2019	180,000	XDF	Q3, 2022
Asterix I	Capital Gas	Hyundai Heavy	8/1/2019	174,000	XDF	Q1, 2023
Hudong-zhonghua H1829a	CSSC	Hudong-Zhonghua	8/1/2019	174,000	XDF	Q1, 2024
Hudong-zhonghua H1830a	CSSC	Hudong-Zhonghua	8/1/2019	174,000	XDF	Q2, 2024
Alexey Kosygin	Smart LNG	Zvezda SSK	9/1/2019	172,600	TFDE - Azipod	Q1, 2023
Pyotr Stolypin	Smart LNG	Zvezda SSK	9/1/2019	172,600	TFDE - Azipod	Q3, 2023
Sergei Witte	Smart LNG	Zvezda SSK	9/1/2019	172,600	TFDE - Azipod	Q4, 2023
Zvezda 044	Smart LNG	Zvezda SSK	9/1/2019	172,600	TFDE - Azipod	Q4, 2023
Zvezda 045	Smart LNG	Zvezda SSK	9/1/2019	172,600	TFDE - Azipod	Q4, 2023
Bw Cassia	BWGas	DSME	10/1/2019	174,000	MEGI	Q3, 2022
Bw Iris	BWGas	DSME	10/1/2019	174,000	MEGI	Q3, 2022
Samsung 2364	MISC	Samsung	10/10/2019	174,000	XDF	Q1, 2023
Samsung 2365	MISC	Samsung	10/10/2019	174,000	XDF	Q1, 2023
Vivit Arabia Lng	H-Line	Hyundai Samho	12/1/2019	174,000	XDF	Q2, 2022
Alicante Knutsen	Knutsen	Hyundai Samho	12/18/2019	174,000	XDF	Q4, 2022
Huelva Knutsen	Knutsen	Hyundai Samho	12/18/2019	174,000	XDF	Q4, 2022
Malaga Knutsen	Knutsen	Hyundai Samho	12/18/2019	174,000	XDF	Q3, 2022
Santander Knutsen	Knutsen	Hyundai Samho	12/18/2019	174,000	XDF	Q2, 2022
Sm Albatross	Korea Line	Hyundai Heavy	12/18/2019	174,000	XDF	Q3, 2022
Sm Bluebird	Korea Line	Hyundai Heavy	12/18/2019	174,000	XDF	Q4, 2022
Lng Prosperity	JP Morgan	Hyundai Heavy	12/19/2019	174,000	XDF	Q4, 2022
Orion Song	JP Morgan	Hyundai Heavy	12/19/2019	174,000	XDF	Q4, 2022
Grace Freesia	NYK	Hyundai Samho	12/27/2019	173,000	XDF	Q2, 2022
Lagenda Serenity	K-Line	Hudong-Zhonghua	1/1/2020	79,960	XDF	Q2, 2022
Lagenda Suria	K-Line	Hudong-Zhonghua	1/1/2020	79,960	XDF	Q2, 2022
Hudong-zhonghua H1831a	ULT	Hudong-Zhonghua	6/30/2020	174,000	XDF	Q3, 2022
Hudong-zhonghua H1832a	ULT	Hudong-Zhonghua	6/30/2020	174,000	XDF	Q1, 2023
Hudong-zhonghua H1833a	ULT	Hudong-Zhonghua	6/30/2020	174,000	XDF	Q2, 2023
Lng Harmony	JP Morgan	Hyundai Heavy	7/20/2020	174,000	XDF	Q3, 2023
Orion Sage	JP Morgan	Hyundai Heavy	7/20/2020	174,000	XDF	Q3, 2023
El Ferrol Knutsen	Knutsen	Hyundai Samho	7/30/2020	174,000	XDF	Q4, 2022
Extremadura Knutsen	Knutsen	Hyundai Samho	7/30/2020	174,000	XDF	Q1, 2023
Daewoo 2514	Sovcomflot	DSME	8/1/2020	172,500	TFDE - Azipod	Q1, 2023
Daewoo 2515	Sovcomflot	DSME	8/1/2020	172,500	TFDE - Azipod	Q2, 2023
Daewoo 2516	Sovcomflot	DSME	8/1/2020	172,500	TFDE - Azipod	Q3, 2023
Daewoo 2517	MOL, COSCO	DSME	8/1/2020	172,500	TFDE - Azipod	Q3, 2023
Daewoo 2518	MOL, COSCO	DSME	8/1/2020	172,500	TFDE - Azipod	Q4, 2023
Daewoo 2519	MOL, COSCO	DSME	8/1/2020	172,500	TFDE - Azipod	Q4, 2023
Zvezda 046	Smart LNG	Zvezda SSK	8/1/2020	172,600	TFDE - Azipod	Q3, 2024
Zvezda 047	Smart LNG	Zvezda SSK	8/1/2020	172,600	TFDE - Azipod	Q3, 2024
Zvezda 048	Smart LNG	Zvezda SSK	8/1/2020	172,600	TFDE - Azipod	Q4, 2024
Zvezda 049	Smart LNG	Zvezda SSK	8/1/2020	172,600	TFDE - Azipod	Q4, 2024
Zvezda 050	Smart LNG	Zvezda SSK	8/1/2020	172,600	TFDE - Azipod	Q4, 2024

DFDE = dual fuel diesel engines, STRH = steam turbine reheat / ultra steam turbine, MEGI = marine electric gas injection, DRL = slow speed diesel, FSRU = vessel with regas capacity, FLNG = floating LNG production unit
Data last updated = 12th April 2022

Fearnley LNG

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Zvezda 051	Smart LNG	Zvezda SSK	8/1/2020	172,600	TFDE - Azipod	Q3, 2025
Zvezda 052	Smart LNG	Zvezda SSK	8/1/2020	172,600	TFDE - Azipod	Q3, 2025
Zvezda 053	Smart LNG	Zvezda SSK	8/1/2020	172,600	TFDE - Azipod	Q4, 2025
Zvezda 054	Smart LNG	Zvezda SSK	8/1/2020	172,600	TFDE - Azipod	Q4, 2025
Zvezda 055	Smart LNG	Zvezda SSK	8/1/2020	172,600	TFDE - Azipod	Q4, 2025
Sm Golden Eagle	Korea Line	Hyundai Heavy	8/12/2020	174,000	XDF	Q3, 2023
Sm Kestrel	Korea Line	Hyundai Heavy	8/12/2020	174,000	XDF	Q4, 2023
Grazyna Gesicka	Knutsen	Hyundai Heavy	10/30/2020	174,000	XDF	Q2, 2023
Lech Kaczynski	Knutsen	Hyundai Heavy	10/30/2020	174,000	XDF	Q1, 2023
Samsung 2425	Maran Gas Maritime	Samsung	11/1/2020	174,000	XDF	Q3, 2023
Hyundai Samho 8100	Knutsen	Hyundai Samho	12/14/2020	174,000	XDF	Q3, 2024
Orion Sky	JP Morgan	Hyundai Heavy	12/14/2020	174,000	XDF	Q4, 2024
Hyundai Ulsan 3221	Pan Ocean	Hyundai Heavy	12/15/2020	174,000	XDF	Q3, 2024
Hyundai Ulsan 3222	Pan Ocean	Hyundai Heavy	12/15/2020	174,000	XDF	Q4, 2024
Samsung 2426	Pan Ocean	Samsung	1/1/2021	174,000	XDF	Q2, 2023
Jules Verne	Sovcomflot	Hyundai Samho	1/8/2021	174,000	XDF	Q2, 2023
Hudong-zhonghua H1837a	Shenzhen Gas	Hudong-Zhonghua	3/21/2021	79,960	XDF	Q1, 2023
Hyundai Ulsan 3294	Hyundai LNG Shipping	Hyundai Heavy	4/15/2021	174,000	XDF	Q1, 2024
Hyundai Ulsan 3295	Hyundai LNG Shipping	Hyundai Heavy	4/29/2021	174,000	XDF	Q2, 2024
Hyundai Ulsan 3296	Hyundai LNG Shipping	Hyundai Heavy	4/29/2021	174,000	XDF	Q3, 2024
Hyundai Samho 8139	Knutsen	Hyundai Samho	4/30/2021	174,000	XDF	Q4, 2023
Jiangnan H2637	Jovo Energy	Jiangnan	5/1/2021	79,800	XDF	Q4, 2023
Samsung 2473	Maran Gas Maritime	Samsung	5/1/2021	174,000	XDF	Q3, 2024
Samsung 2474	Maran Gas Maritime	Samsung	5/1/2021	174,000	XDF	Q3, 2024
Daewoo 2521	Hyundai LNG Shipping	DSME	5/28/2021	174,000	MEGI	Q3, 2023
Hyundai Ulsan 3290	Dynagas	Hyundai Heavy	5/31/2021	200,000	ME-GA	Q4, 2023
Hyundai Ulsan 3291	Dynagas	Hyundai Heavy	5/31/2021	200,000	ME-GA	Q4, 2023
Hyundai Ulsan 3292	Dynagas	Hyundai Heavy	5/31/2021	200,000	ME-GA	Q1, 2024
Hyundai Ulsan 3293	Dynagas	Hyundai Heavy	5/31/2021	200,000	ME-GA	Q3, 2023
Daewoo 2520	MOL	DSME	6/1/2021	174,000	MEGI	Q4, 2023
Amore Mio I	Capital Gas	Hyundai Heavy	6/18/2021	174,000	ME-GA	Q4, 2023
Axios II	Capital Gas	Hyundai Heavy	6/18/2021	174,000	ME-GA	Q4, 2023
Alexandre Dumas	Sovcomflot	Hyundai Samho	7/1/2021	170,520	XDF	Q1, 2024
Hyundai Samho 8147	H-Line	Hyundai Samho	7/1/2021	174,000	XDF	Q3, 2023
Samsung 2459	Celsius Shipping	Samsung	7/1/2021	180,000	ME-GA	Q2, 2023
Samsung 2460	Celsius Shipping	Samsung	7/1/2021	180,000	ME-GA	Q3, 2023
Samsung 2461	Celsius Shipping	Samsung	7/1/2021	180,000	ME-GA	Q4, 2023
Victor Hugo	Sovcomflot	Hyundai Samho	7/1/2021	170,520	XDF	Q3, 2024
Hyundai Samho 8101	Knutsen	Hyundai Samho	7/13/2021	174,000	XDF	Q4, 2023
Hyundai Samho 8102	Knutsen	Hyundai Samho	7/13/2021	174,000	ME-GA	Q3, 2025
Hyundai Ulsan 3320	JP Morgan	Hyundai Heavy	7/13/2021	174,000	ME-GA	Q3, 2025
Hyundai Ulsan 3321	JP Morgan	Hyundai Heavy	7/13/2021	174,000	ME-GA	Q3, 2025
Hyundai Ulsan 3224	Pan Ocean	Hyundai Heavy	7/14/2021	174,000	ME-GA	Q4, 2024
Hyundai Ulsan 3225	Pan Ocean	Hyundai Heavy	7/14/2021	174,000	ME-GA	Q4, 2024
Daewoo 2522	Hyundai LNG Shipping	DSME	7/15/2021	174,000	MEGI	Q2, 2024
Hyundai Samho 8148	Knutsen	Hyundai Samho	7/22/2021	174,000	XDF	Q1, 2024
Hyundai Samho 8149	Knutsen	Hyundai Samho	7/22/2021	174,000	ME-GA	Q1, 2024
Hyundai Ulsan 3297	Hyundai LNG Shipping	Hyundai Heavy	7/22/2021	174,000	XDF	Q2, 2024
Hyundai Ulsan 3298	Hyundai LNG Shipping	Hyundai Heavy	7/22/2021	174,000	XDF	Q4, 2024
Hyundai Ulsan 3299	Hyundai LNG Shipping	Hyundai Heavy	7/22/2021	174,000	XDF	Q1, 2025

DFDE = dual fuel diesel engines, STRH = steam turbine reheat / ultra steam turbine, MEGI = marine electric gas injection, DRL = slow speed diesel, FSRU = vessel with regas capacity, FLNG = floating LNG production unit
Data last updated = Data last updated = 12th April 2022

Fearnley LNG

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Samsung 2579	Celsius Shipping	Samsung	7/26/2021	180,000	ME-GA	Q1, 2024
Samsung 2584	Celsius Shipping	Samsung	8/1/2021	180,000	ME-GA	Q3, 2024
Samsung 2585	Celsius Shipping	Samsung	8/1/2021	180,000	ME-GA	Q3, 2024
Hudong-zhonghua H1838a	K-Line	Hudong-Zhonghua	9/1/2021	79,960	XDF	Q3, 2023
Hyundai Samho 8140	Capital Gas	Hyundai Samho	9/1/2021	174,000	ME-GA	Q3, 2024
Daewoo 2523	MOL	DSME	9/14/2021	174,000	ME-GA	Q1, 2024
Daewoo 2524	MOL	DSME	9/14/2021	174,000	ME-GA	Q2, 2024
Daewoo 2525	MOL	DSME	9/14/2021	174,000	ME-GA	Q3, 2024
Daewoo 2526	MOL	DSME	9/14/2021	174,000	ME-GA	Q4, 2024
Daewoo 2527	MOL	DSME	10/1/2021	174,000	ME-GA	Q3, 2024
Hudong-Zhonghua QP #1	Qatar Petroleum	Hudong-Zhonghua	10/1/2021	175,000	XDF	Q3, 2024
Hudong-Zhonghua QP #2	Qatar Petroleum	Hudong-Zhonghua	10/1/2021	175,000	XDF	Q1, 2024
Hudong-Zhonghua QP #3	Qatar Petroleum	Hudong-Zhonghua	10/1/2021	175,000	XDF	Q4, 2024
Hudong-Zhonghua QP #4	Qatar Petroleum	Hudong-Zhonghua	10/1/2021	175,000	XDF	Q1, 2025
MOL 23	MOL	DSME	10/1/2021	174,000	ME-GA	Q3, 2023
MOL 25	MOL	DSME	10/1/2021	174,000	ME-GA	Q3, 2025
MOL 26	MOL	DSME	10/1/2021	174,000	ME-GA	Q3, 2026
Samsung 2580	NYK	Samsung	10/1/2021	174,000	XDF	Q3, 2023
Samsung 2581	NYK	Samsung	10/1/2021	174,000	XDF	Q4, 2023
Samsung 2582	NYK	Samsung	10/1/2021	174,000	XDF	Q4, 2023
Samsung 2583	NYK	Samsung	10/1/2021	174,000	XDF	Q1, 2024
Samsung 2592	JP Morgan	Samsung	10/1/2021	174,000		Q2, 2024
Samsung 2593	JP Morgan	Samsung	10/1/2021	174,000		Q3, 2024
Samsung 2594	JP Morgan	Samsung	10/1/2021	174,000		Q4, 2024
Samsung 2595	JP Morgan	Samsung	10/1/2021	174,000		Q1, 2025
Hyundai Ulsan 3341	Capital Gas	Hyundai Heavy	11/4/2021	174,000	ME-GA	Q2, 2024
Hyundai Ulsan 3342	Capital Gas	Hyundai Heavy	11/4/2021	174,000	ME-GA	Q2, 2024
Qatar DSME 1/4	Qatar Petroleum	DSME	11/7/2021	174,000	MEGI	Q1, 2025
Qatar DSME 2/4	Qatar Petroleum	DSME	11/7/2021	174,000	MEGI	Q3, 2025
Qatar DSME 3/4	Qatar Petroleum	DSME	11/7/2021	174,000	MEGI	Q2, 2025
Qatar DSME 4/4	Qatar Petroleum	DSME	11/7/2021	174,000	MEGI	Q4, 2025
Qatar SHI 1/2	Qatar Petroleum	Samsung	11/7/2021	174,000	ME-GA	Q1, 2025
Qatar SHI 2/2	Qatar Petroleum	Samsung	11/7/2021	174,000	ME-GA	Q1, 2025
Daewoo 2528	Maran Gas Maritime	DSME	11/10/2021	174,000	MEGI	Q3, 2024
Daewoo 2529	Maran Gas Maritime	DSME	11/10/2021	174,000	MEGI	Q4, 2024
Daewoo 2530	BWGas	DSME	11/25/2021	174,000	MEGI	Q1, 2025
Daewoo 2531	BWGas	DSME	11/25/2021	174,000	MEGI	Q2, 2025
Qatar HHI 1	Qatar Petroleum	Hyundai Heavy	11/29/2021	174,000		Q1, 2025
Qatar HHI 2	Qatar Petroleum	Hyundai Heavy	11/29/2021	174,000		Q1, 2025
Qatar HHI 3	Qatar Petroleum	Hyundai Heavy	11/29/2021	174,000		Q2, 2025
Qatar HHI 4	Qatar Petroleum	Hyundai Heavy	11/29/2021	174,000		Q3, 2025
Samsung 2600	JP Morgan	Samsung	12/1/2021	174,000		Q3, 2024
Samsung 2601	JP Morgan	Samsung	12/1/2021	174,000		Q1, 2025
Samsung 2598	Celsius Shipping	Samsung	12/7/2021	180,000	ME-GA	Q1, 2025
Samsung 2599	Celsius Shipping	Samsung	12/7/2021	180,000	ME-GA	Q2, 2025
Hudong-zhonghua H1834a	ULT	Hudong-Zhonghua	12/8/2021	174,000	XDF	Q3, 2024
Hudong-zhonghua H1835a	ULT	Hudong-Zhonghua	12/8/2021	174,000	XDF	Q4, 2024
Hudong-zhonghua H1836a	ULT	Hudong-Zhonghua	12/8/2021	174,000	XDF	Q1, 2025
Samsung 2604	NYK	Samsung	12/27/2021	174,000	XDF	Q4, 2024
Daewoo 2532	GasLog	DSME	1/1/2022	174,000	MEGI	Q2, 2024

DFDE = dual fuel diesel engines, STRH = steam turbine reheat / ultra steam turbine, MEGI = marine electric gas injection, DRL = slow speed diesel, FSRU = vessel with regas capacity, FLNG = floating LNG production unit
Data last updated = Data last updated = 12th April 2022

Fearnley LNG

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Daewoo 2533	GasLog	DSME	1/1/2022	174,000	MEGI	Q3, 2024
Daewoo 2534	GasLog	DSME	1/1/2022	174,000	MEGI	Q2, 2025
Daewoo 2535	GasLog	DSME	1/1/2022	174,000	MEGI	Q3, 2025
NYK 2	NYK	Hyundai Samho	1/1/2022	174,000	XDF	Q1, 2025
Qatar SHI 3	Qatar Petroleum	Samsung	1/1/2022	174,000	ME-GA	Q1, 2025
Qatar SHI 4	Qatar Petroleum	Samsung	1/1/2022	174,000	ME-GA	Q2, 2025
Hyundai Samho 8173	SK Shipping	Hyundai Samho	1/4/2022	174,000	ME-GA	Q3, 2024
Daewoo 2537	Maran Gas Maritime	DSME	1/6/2022	174,000	MEGI	Q3, 2025
Daewoo 2538	Maran Gas Maritime	DSME	1/6/2022	174,000	MEGI	Q4, 2025
Hudong-zhonghua H1880a	MOL	Hudong-Zhonghua	1/7/2022	174,000	XDF	Q4, 2024
Hudong-zhonghua H1881a	MOL	Hudong-Zhonghua	1/7/2022	174,000	XDF	Q3, 2025
Hudong-zhonghua H1882a	MOL	Hudong-Zhonghua	1/7/2022	174,000	XDF	Q4, 2025
Hudong-zhonghua H1883a	MOL	Hudong-Zhonghua	1/7/2022	174,000	XDF	Q1, 2026
Hudong-zhonghua H1884a	MOL	Hudong-Zhonghua	1/7/2022	174,000	XDF	Q2, 2026
Hudong-zhonghua H1885a	MOL	Hudong-Zhonghua	1/7/2022	174,000	XDF	Q3, 2026
Samho Jan		Hyundai Samho	1/10/2022	174,000	ME-GA	Q1, 2025
Daewoo	MOL	DSME	1/17/2022	174,000	ME-GA	Q4, 2024
Daewoo 2539	Maran Gas Maritime	DSME	2/7/2022	174,000	MEGI	Q4, 2025
Daewoo 2540	Maran Gas Maritime	DSME	2/7/2022	174,000	MEGI	Q4, 2025
Bono Samho 1	Bono Energy	Hyundai Samho	2/10/2022	174,000	ME-GA	Q1, 2025
Bono Samho 2	Bono Energy	Hyundai Samho	2/10/2022	174,000	ME-GA	Q1, 2025
Qatar DSME 5	Qatar Petroleum	DSME	2/15/2022	174,000	MEGI	Q2, 2025
Qatar HHI 5	Qatar Petroleum	Hyundai Heavy	2/15/2022	174,000		Q3, 2025
Qatar HHI 6	Qatar Petroleum	Hyundai Heavy	2/15/2022	174,000		Q4, 2025
Qatar SHI 5	Qatar Petroleum	Samsung	2/15/2022	174,000	ME-GA	Q2, 2025
HL 1	H-Line	Samsung	2/16/2022	174,000		Q1, 2025
HL 2	H-Line	Samsung	2/16/2022	174,000		Q2, 2025
HL 3	H-Line	Samsung	2/16/2022	174,000		Q3, 2025
HL 4	H-Line	Samsung	2/16/2022	174,000		Q3, 2025
Glovis Samho	Hyundai Glovis	Hyundai Samho	2/21/2022	174,000		Q4, 2024
Samsung 1		Samsung	2/24/2022	174,000		Q2, 2025
Samsung 2		Samsung	2/24/2022	174,000		Q2, 2025
Samsung 3		Samsung	2/24/2022	174,000		Q3, 2025
Samsung 4		Samsung	2/24/2022	174,000		Q3, 2025
Jiangnan ADNOC 1	ADNOC	Jiangnan	3/1/2022	175,000	XDF	Q1, 2025
Jiangnan ADNOC 2	ADNOC	Jiangnan	3/1/2022	175,000	XDF	Q2, 2025
HHI 1	Dynagas	Hyundai Heavy	3/3/2022	200,000	ME-GA	Q1, 2025
HHI 2	Dynagas	Hyundai Heavy	3/3/2022	200,000	ME-GA	Q2, 2025
HHI 3	Dynagas	Hyundai Heavy	3/3/2022	200,000	ME-GA	Q4, 2025
BW DSME 3	BWGas	DSME	3/18/2022	174,000	MEGI	Q4, 2025
BW DSME 4	BWGas	DSME	3/18/2022	174,000	MEGI	Q4, 2025
VG DSME 1	Venture Global LNG	DSME	3/24/2022	200,000		Q3, 2025
VG DSME 2	Venture Global LNG	DSME	3/24/2022	200,000		Q4, 2025
VG DSME 3	Venture Global LNG	DSME	3/24/2022	200,000		Q4, 2025
Dalian Merchant 1	China Merchant	Dalian Shipbuilding	3/31/2022	175,000	XDF	Q3, 2025
Dalian Merchant 2	China Merchant	Dalian Shipbuilding	3/31/2022	175,000	XDF	Q2, 2026
Samho 1	Knutsen	Hyundai Samho	3/31/2022	174,000	ME-GA	Q1, 2026
Samho 2	Knutsen	Hyundai Samho	3/31/2022	174,000	ME-GA	Q2, 2025
Samsung Apr	Celsius Shipping	Samsung	3/31/2022	180,000	ME-GA	Q4, 2025

DFDE = dual fuel diesel engines, STRH = steam turbine reheat / ultra steam turbine, MEGI = marine electric gas injection, DRL = slow speed diesel, FSRU = vessel with regas capacity, FLNG = floating LNG production unit
Data last updated = Data last updated = 12th April 2022

Fearnley LNG

WORLD SMALL SCALE LNG FLEET*

Built	Name	CBM	Cargo Type	Trading area	Trading in LNG?	Ship Owner / Operator
1974	Seagas	187	LNG	Sweden	Yes	AGA
1988	Kayoh Maru	1,517	LNG	Japan	Yes	Daiichi
1993	Aman Bintulu	18,928	LNG	Malaysia - Japan	Yes	Perbadanan/NYK
1996	Surya Aki	19,475	LNG	Indonesia - Japan	Yes	MCGC
1997	Aman Sendai	18,928	LNG	Malaysia - Japan	Yes	Perbadanan/NYK
1998	Pelita Energy	18,800	LNG	Malaysia - Japan	Yes	Perbadanan/NYK
2000	Triputra	23,096	LNG	Indonesia - Japan	Yes	MCGC
2003	Pioneer Knutsen	1,100	LNG	Norway	Yes	Knutsen
2003	Shinju Maru No.1	2,540	LNG	Japan	Yes	Shinwa
2005	North Pioneer	2,500	LNG	Japan	Yes	Japan Liquid Gas
2007	Sun Arrows	19,531	LNG	Malaysia - Russia - Japan	Yes	Mitsui
2008	Kakurei Maru	2,536	LNG	Japan	Yes	Hogaki Zosen
2008	Shinju Maru No.2	2,540	LNG	Japan	Yes	Shinwa
2009	Coral Methane	7,551	LNG/LPG/Ethylene	Northwest Europe/Baltics	Yes, sometimes	Anthony Veder
2010	Coral Favia	10,000	LNG/LPG/Ethylene	Worldwide	No	Anthony Veder
2010	Coral Fraseri	10,000	LNG/LPG/Ethylene	Worldwide	No	Anthony Veder
2011	Coral Furcata	10,000	LNG/LPG/Ethylene	Worldwide	No	Anthony Veder
2011	Coral Fungia	10,000	LNG/LPG/Ethylene	Worldwide	No	Anthony Veder
2011	Akebono Maru	3,556	LNG	Japan	Yes	Chuo Kaiun
2011	Vision Spirit	12,000	LNG/LPG/Ethylene	Worldwide	No	Teekay
2011	Unikum Spirit	12,000	LNG/LPG/Ethylene	Worldwide	No	Teekay
2012	Coral Energy	15,600	LNG	Northwest Europe/Baltics	Yes	Anthony Veder
2013	Coral Anthelia	6,500	LNG/Ethylene			Anthony Veder
2013	JX Energy TBN	2,500	LNG	Japan	Yes	JX Energy
2013	Kakuyu Maru	2,500	LNG	Japan	Yes	Tsurumi Sunmarine
2015	JS Ineos Ingenuity	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2015	JS Ineos Insight	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2015	JS Ineos Intrepid	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2015	LNG Barge TBN	3,000	LNG	US Coast	Yes	LNG America
2015	PetroChina TBN	30,000	LNG	China		PetroChina
2016	Hai Yang Shi You 301	30,000	LNG	Bali FSU	Yes	CETS (CNOOC)
2016	Clean Jacksonville	2,200	LNG	US Coast	Yes	CME
2016	JS Ineos Indepence	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	JS Ineos Innvovation	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	JS Ineos Inspiration	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	LNG Prime	2,250	LNG	Northwest Europe	Yes	Veka Deen LNG
2017	Coralius	5,800	LNG	Northwest Europe/Baltics	Yes, for Skangas	Anthony Veder
2017	Coral EnergICE	18,000	LNG	Northwest Europe/Baltics	Yes	Anthony Veder
2017	Coral Encanto	30,000	LNG	China	Yes	Anthony Veder
2017	JS Ineos Invention	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2017	JS Ineos Intuition	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2017	Oizmendi	600	LNG	Spain	Yes	Itsas Gas
2017	LNG-Gorskaya TBN	7,300	LNG	Russia	Yes	LNG-Gorskaya
2017	LNG-Gorskaya TBN	7,300	LNG	Russia	Yes	LNG-Gorskaya
2017	LNG-Gorskaya TBN	7,300	LNG	Russia	Yes	LNG-Gorskaya
2017	Green Zeebrugge	5,000	LNG	Northwest Europe	Yes	NYK
2017	New Frontier 1	6,500	LNG	Northwest Europe	Yes	Shell
2018	Kairos	7,500	LNG	Baltic	Yes	Bernhard Schulte
2018	LNG London	3,000	LNG	Northwest Europe	Yes	Shell

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Built	Name	CBM	Cargo Type	Trading area	Trading in LNG?	Ship Owner / Operator
2018	Shell Bunker Barge TBN 2	6,500	LNG	Northwest Europe	Yes	Shell
2018	Shell Bunker Barge TBN 3	6,500	LNG	Northwest Europe	Yes	Shell
2018	Bunker Breeze	1,200	LNG	Barcelona	Yes	Suardiaz Energy Shipping
2018	HUA XIANG 8	13,720	LNG	China	Yes	Zhejiang Huaxiang
2019	SM Jeju LNG1	7,500	LNG	Korea	Yes	Korea Line
2019	Gas Agility	18,600	LNG	NWE	Yes	MOL
2019	Flexfueller 001	1,480	LNG	Amsterdam	Yes	Titan LNG
2020	Avenir Advantage	7,500	LNG	Mediterranean	Yes	Avenir LNG
2020	Avenir Accolade	7,500	LNG	Mediterranean	Yes	Avenir LNG
2020	Avenir Aspiration	7,500	LNG		Yes	Avenir LNG
2020	Kaguya	3,500	LNG	Japan	Yes	CLS
2020	CNTIC VPOWER Global	28,000	LNG	Myanmar	Yes	Dalian Inteh Group
2020	Ecobunker Tokyo Bay	2,500	LMG	Japan	Yes	Ecobunkers
2020	Optimus	6,000	LNG	NWE	Yes	Elenger
2020	FueLNG Bellina	7,500	LNG	Singapore	Yes	FuelLNG
2020	SM Jeju LNG2	7,500	LNG	Korea	Yes	Korea Line
2020	Q-LNG 4000	4,000	LNG	US Coast	Yes	Q-LNG Transport/Harvey Gulf
2020	Flexfueller 002	1,480	LNG	Antwerp	Yes	Titan LNG
2021	Xin Ao Pu Tuo Hao	8,500	LNG	China	Yes	ENN
2021	Avenir Ascension	7,500	LNG		Yes	Avenir LNG
2021	Hai Gang Wei Lai	20,000	LNG	China	Yes	SSES
2021	Bergen LNG	850	LNG	Norway	Yes	Bergen Tankers
2021	Dmitry Mendeleev	5,800	LNG	Russia	Yes	Gazprom Neft
2021	JMU TBN	2,500	LNG	Japan	Yes	JMU
2021	Ravenna Knutsen	30,000	LNG	Mediterranean	Yes	Knutsen OAS
2021	Brassavola	12,000	LNG	Singapore	Yes	MOL
2021	Gas Vitality	18,600	LNG	Mediterranean	Yes	MOL
2021	TG TBN	500	LNG	Korea	Yes	Trans Gas
2021	Titan Hyperion	8,000	LNG	Benelux	Yes	Titan LNG
2022	Coral Nordic	30,000	LNG	Worldwide	Yes	Anthony Veder
2022	Avenir Achievement	20,000	LNG	Worldwide	Yes	Avenir LNG
2022	Haugesund Knutsen	5,000	LNG	Spain	Yes	Knutsen OAS
2022	Clean Cañaveral	5,400	LNG	USG	Yes	PNE
2022	K.Lotus	18,000	LNG	Korea	Yes	K Line
2023	Cryopeak TBA	4,000	LNG	West Canada	Yes	Cryopeak
2023	Kuntsen TBN	12,500	LNG	Spain	Yes	Knutsen OAS
2023	SM Jeju LNG3	7,500	LNG	Korea	Yes	Korea Line
2023	Pan Ocean TBN	18,000	LNG	USG	Yes	Pan Ocean Co
2023	Krios	4,200	LNG	Benelux	Yes	Titan LNG
2023	Fratelli Cosulich TBN	8,000	LNG	Mediterranean	Yes	Fratelli Cosulich
2023	Kanfer TBN	6,000	LNG	Worldwide	Yes	Kanfer Shipping
2023	Kanfer TBN	6,000	LNG	Worldwide	Yes	Kanfer Shipping
2023	PNE TBN	5,500	LNG	USG	Yes	PNE
2024	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG
2024	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG
2024	TBN	30,000	LNG	Australia	Yes	Anthony Veder ?
2024	Crowley TBN	12,000	LNG	US Coast	Yes	Crowley Maritime
2024	CNOOC TBN	12,000	LNG	China	Yes	CNOOC
2024	TBN	12,500	LNG	Worldwide	Yes	???
2024	Keys TBN	3,500	LNG	Japan	Yes	Keys Bunkering West Japan Co
2026	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG
2026	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG

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