LNG Shipping News

AN LNG JOURNAL TITLE ON LNG CARRIERS

30 September 2021

Brazil's record LNG imports impact on Europe

Brazil's LNG imports are set to hit a record this month, data from Refinitiv and consultancy Kpler showed.

US cargoes normally destined for Europe are being diverted to Brazil to address a power shortage.

The worst drought in almost a century has starved the hydropower plants that normally supply nearly two-thirds of Brazil's electricity. As a result, the country has turned to US gas with its LNG purchases helping to drive global gas prices to record levels.

"The strong demand from Brazil means there is less LNG supply being directed to European terminals," said Laura Page, Kpler's senior LNG analyst talking with Reuters.

European gas storage has fallen to its lowest level in at least 10 years, making traders fiercely compete for LNG ahead of the winter heating season in the Northern hemisphere. Prices in Europe and Asia are at record seasonal levels.

More than 80% of Brazil's LNG deliveries this month will come from US Gulf export terminals, Refinitiv data showed.

Overall gas imports are set to hit 1 mill tonnes by the month's end, up nearly 20% over July's record, Kpler estimated.

"The worst month (for demand) will be October," said Rivaldo Moreira Neto, head of Brazilian consulting firm, Gas Energy. "I don't expect any improvement in the next three to six months."

China surpassed

In July, US LNG purchases by Brazil and Argentina combined surpassed China's, taking 62.4 bill cu ft of gas, compared to China's 42.2 bill cu ft, according to the US Department of Energy (DOE).

A record 142 LNGCs arrived in Brazil from the US in the six months to the end of July, the DOE said. Some of the vessels partially discharged in Brazil and then unloaded the remaining cargo in Argentina.

Another 17 cargoes are believed to be heading for the region as of last week.

New LNG terminals that will increase import capacity are opening, as state-controlled Petroleo Brasileiro (Petrobras) relinquishes what was a near-monopoly in natural gas.

A couple of weeks ago, a power plant backed by bp and gas connected to one of the first privately owned LNG import terminals was turned on months ahead of schedule to avoid blackouts.

"Until it rains, and we don't know when it is going to happen, price levels will cause despair," said a trader who buys cargoes for Brazil, Reuters reported. ■

SHIPPING NEWS AGENDA

BUSINESS

MARKETING

FINANCE

TECHNOLOGY

LNG ORDERBOOK

Lack of gas could hit Europe this winter - ICIS

As the winter season approaches, uncertainty reigns over the availability of European natural gas during the next six months.

LNG imports into Zeebrugge could suffer this winter

Typically, the start of winter heralds increased flows into Europe to complement the start of storage withdrawals, analyst ICIS reported.

But this winter is different. Net gas storage across Europe remains 15% points below normal, not helped by empty facilities operated by Russia's Gazprom.

The lower availability of gas stocks could mean that storage withdrawals by others are delayed until later in the winter, putting yet more strain on supply in the opening months of the season.

Imports from key producers are expected to be different, adding yet more complexity to trading the benchmark TTF.

Crucially, results from October delivery capacity auctions showed that northwest Europe could see Russian gas supply drop from around 300 mill cu m per day this month, to just 250 mill cu m in October.

This 17% fall – which led the TTF front-month to an all-time high on 20th September – followed stuttering Russian flows since late July, which have been the subject of much debate, ICIS said.

Currently, the opportunities for Europe to capture additional LNG supply look increasingly slim, ICIS said.

New winter delivery tenders from China's Sinopec and Turkey's BOTAS, coupled with a top-priced spot deal last week into Bangladesh, suggested global demand is still robust, despite indications of consumption being turned down as margins are squeezed.

Perhaps the only reassurance the TTF could find from the global LNG market is that some major European utilities continued to sell spot cargoes into Asia.

The ICIS LNG Global Supply and Demand Forecast showed LNG fourth-quarter imports into northwest Europe, when factoring in the global imbalance, are at just 6.7 mill tonnes, down 25% on the fourth quarter three-year average.

With so many hurdles on the supply side, and even before concerns of weather-driven demand coming into play, the opening months of the winter are set to be the most challenging since Europe's gas markets were liberalised.

TTF price volatility is set to continue. ICIS expects the LNG market to be short through to at least summer 2023, meaning prices are likely to remain well above pre-Covid levels, even when the winter is over. ■

NFE to develop offshore terminal

New Fortress Energy (NFE) and the Sri Lankan Government have signed a definitive agreement to allow NFE to invest in West Coast Power Limited (WCP).

WCP owns the 310 MW Yugadanavi Power Plant based in Colombo. This agreement also includes the rights to develop a new LNG terminal off the coast.

As part of this transaction, NFE will have gas supply rights to the Kerawalapitya power complex, where an additional 700 MW is scheduled to be built, of which 350 MW is planned to be operational by 2023.

NFE will acquire a 40% stake in WCP and plans to build an offshore LNG receiving, storage and regasification terminal off the coast of Colombo.

The company will initially provide the equivalent of an estimated 35,000 MMBtu per day to Sri Lanka, with the possibility of significant growth as new power plants become operational.

"This is a significant milestone for Sri Lanka's transition to cleaner fuels and more reliable, affordable power," said Wes Edens, NFE's Chairman and CEO. "We are pleased to partner with Sri Lanka by investing in modern energy infrastructure that will support sustainable economic development and environmental gains."

The LNG terminal is expected to begin operations in 2023.

Term loan

In addition, NFE has announced that it has executed a term loan facility secured by eight company vessels. An initial borrowing of $430 mill was made out of a possible $725 mill under the shipping facility.

This facility has a three-year term and loans issued will bear interest at an annual rate equal to LIBOR plus 3%, subject to a 0.0% LIBOR floor. It is pre-payable at par at any time without penalty.

Net proceeds will be used to fund the development and construction of the company's energy infrastructure projects worldwide, NFE said.

"We continue to execute the plan we previously laid out to facilitate our growth with asset-level financings. This facility provides additional capital for us to build additional LNG terminals and infrastructure around the world," Edens said. "Our investments in LNG terminals and power infrastructure bring significant economic and environmental benefits to our expanding customer base." ■

LNG Shipping News
2 Prospect Road
St Albans AL1 2AX
United Kingdom
www.lngjournal.com
Tel: +44 (0)20 7253 2700

Publisher
Stuart Fryer

Editor
Ian Cochran
+44 (0)7748 144265
Iancochran74@gmail.com

Ad sales enquiries
Narges Jodeyri
+44 (0)20 7017 3406
narges@lngjournal.com

Subscriptions
Stephan Venter
Tel: +44 (0) 20 7253 2700
venter@lngjournal.com

Production
Vivian Chee
Tel: +44 (0) 20 8995 5540
chee@btconnect.com

Bullish gas prices could temper long-term LNG demand

LNG buyers are still asking for shorter terms, pricing flexibility and, more recently, a commitment to reducing carbon emissions.

Short-term supply needs versus long-term demand uncertainty – and how new projects will be able to secure financing without the right balance – were just some of the major issues discussed at last week's Gastech exhibition and conference held in Dubai.

"I think current prices, if they continue, will be a burden on many countries and we will not see the demand side on the long-term be ready to take such prices," UAE Energy Minister, Suhail al-Mazrouei, told the media on the sidelines of the conference, S&P Global Platts reported.

He said that the right balance must also consider the return developers need for their projects to be viable; "What is sustainable, I think the market will dictate it."

S&P Global Platts' JKM, the benchmark for spot-traded LNG delivered to Northeast Asia, has quintupled from a year ago, while in Europe, the Dutch TTF day-ahead contract has jumped more the six-fold over the same timeframe.

New long-term North American supply offtake deals have been limited to only a few operators and developers, even with the hike in end-user prices.

That has caused some US projects to be scrapped, postponed or further delayed. The likelihood that the US liquefaction build-out won't be as extensive as was once forecast raises the potential for a tighter global supply situation around the middle of the decade.

UAE's Energy Minister Suhail al-Mazrouei highlighted the high as prices at Gastech

Supply diversification

Based on ongoing commercial discussions and its own internal demand, Glenfarne Group believed it will be able to take a final investment decision (FID) on its Texas LNG project in Brownsville by the end of 2022 and its Magnolia LNG project in Louisiana by the end of 2023, Project Director, John Baguley told Platts at the conference.

Supply diversification is a factor in the long-term calculation.

Engie's Deputy CEO, Didier Holleaux, told the conference that US LNG supplies were only a part of the overall picture in Europe.

"The people who believe that US LNG can be a replacement for Russian gas are not getting the full reality of what the European market is, the need for gas in the European market is huge," Holleaux stressed.

At the conference, Qatar's Energy Minister, Saad al-Kaabi, said he was concerned over the global gas market balance heading into the winter.

"People are realising now that there is a crunch, there is a supply crunch," Kaabi said. "But the thing that is actually worrying me more is that we are now going into the winter season – which is the heavier period of demand for gas."

Qatar, the world's largest LNG exporter, currently has an LNG production capacity of some 77 mill tonnes per year, with plans to increase this to 110 mill tonnes by adding of four more trains, and up to 126 mill tonnes per year with the addition of two further trains.

The country's involvement also includes the under construction Golden Pass liquefaction project, which Qatar Petroleum is building with ExxonMobil.

Thanks to the financial status of its backers, Golden Pass was able to move to a FID without the announcement of any long-term offtake contracts tied to the export facility.

Shell-backed LNG Canada was also sanctioned without firm supply contracts in place at the time of its decision.

This type of risk-taking remains the exception rather than the rule in a rapidly evolving market, Platts pointed out. Most developers still rely on offtake agreements to finance construction of terminals costing billions of dollars.

"There are challenges for financing new projects especially for the IOCs," Mazrouei explained. "We need to have a realistic view on easing such restrictions to finance new projects. For a new LNG project, you need a long-term supply agreement." ■

Calcasieu Pass to come online soon

Venture Global LNG's Calcasieu Pass export terminal in Louisiana is nearing completion and will begin production within months, the company's CCO, Tom Earl, said at Gastech.

Earl did not give a specific date for production, suggesting that output could start later this year or early next.

According to US regulator filings, Calcasieu Pass has begun early commissioning activities at the facility. However, it has not yet received approval to pump feedgas into its liquefaction trains, which would be a precursor to beginning production.

"Calcasieu Pass is completing about now, and as we go through the coming months, we'll start production shortly at that site," Earl said.

The 10 mill tonnes per year capacity facility is being built using a modular train system, which is smaller than the traditional liquefaction units used at other US facilities. The modular trains are being built in Italy and shipped to the site and plugged in one at a time.

Earlier this year, the company said full operations at the export terminal were expected in mid-2022, following a phased startup period. In his comments, Earl did not mention a tender that Venture Global issued earlier this year for at least 12 cargoes from Calcasieu Pass for delivery starting during the autumn.

One of the other projects that the company is developing, Plaquemines LNG, which would be built in two phases and will have a production capacity of up to 20 mill tonnes per year, has not yet been formally sanctioned, although Earl said at Gastech that initial construction activities would begin "imminently." He added that there had been "mobilisation on site recently." ■

Calcasieu Pass could be coming online before the year end

Höegh agrees long term charter

Höegh LNG Partners has chartered the 'Höegh Gallant' for 10 years to a subsidiary of New Fortress Energy (NFE).

She will operate as an FSRU and the charter is due to start during the fourth quarter of this year.

In addition, the Partnership has agreed to suspend the existing charter with a subsidiary of Höegh LNG Holdings, with effect from the commencement of the NFE charter.

The new charter rate is in line with the current market, but will be lower than under the existing charter. However, under an suspension agreement, Höegh LNG's subsidiary will compensate the Partnership monthly for the difference between the two charter rates with the addition of a modest increase until 31st July, 2025 - the expiry date of the existing charter.

After that, the Partnership will be paid the agreed charter rate by NFE for the remaining period.

'Hoegh Gallant' has been fixed to NFE to operate as an FSRU

Under the suspension agreement, certain capital expenditures incurred to ready and relocate the 'Höegh Gallant' will be shared equally between Höegh LNG and the Partnership, subject to the Partnership's maximum obligation.

The Partnership's Board and the Conflicts Committees have approved both the new charter and the suspension agreement. The committee hired an outside financial and legal advisors to assist with the agreements' evaluation.

CEO Sveinung Støhle, commented: "The new long-term FSRU contract entered into with New Fortress is an important development for the Partnership, as it extends the Partnership's contract coverage and average charter length and broadens our customer base and global footprint.

"The 'Höegh Gallant' will serve the Old Harbour facility in Jamaica, where its size and performance will enable New Fortress to further optimise its already highly successful operation," he explained. ■

Oman LNG Train 1 back on line

Oman LNG's Train 1 is back to full capacity after outages.

The company is currently undertaking de-bottlenecking to increase total capacity beyond last year's production of 8.8 mill tonnes per year, the CEO told newswires last week.

"The plant (LNG train 1) is running. It's almost a week now (since it restarted)," Hamed al-Naamany told reporters on sidelines of the Gastech conference.

Oman LNG has three trains with a total nameplate capacity of 10.4 mill tonnes per year.

The company has been undertaking de-bottlenecking for the past two years to raise the capacity of its current facilities. Omani LNG exports were essentially at full capacity between 2018/2020, when they averaged about 12 bill cu m per year, according to S&P Global Platts Analytics.

However, de-bottlenecking will allow Omani LNG exports to expand by about 2 bill cu m annually. Platts Analytics expects Omani exports to be around 14 bill cu m per year over the coming five years.

Oman LNG is also looking to sell more carbon neutral cargoes after signing an agreement with Shell this year to deliver the sultanate's first carbon neutral LNG cargo.

"Carbon credits and green cargoes are definitely great for all of us. We're working on it with our partners," Naamany said.

Oman LNG has also started talks to renew the Oman LNG concession, which is due to expire in 2025.

The Omani Government is Oman LNG's biggest shareholder at 51%, followed by Shell with a 30% stake, TotalEnergies with 5.54% and Korea LNG with 5%. Other shareholders include Mitsubishi Corp, Partex and Mitsui & Co.

"We are in discussions among [our] partners. We have started gradually, but it takes time," he explained. ■

Edison wins Qatargas arbitration

Italian energy company Edison has won an arbitration case against Qatargas over an LNG price review.

This involved a long-term contract to purchase LNG from Qatar.

The International Chamber of Commerce (ICC) had notified both parties of the decision.

Proceedings were started in 2019 by Qatargas against Edison in an attempt to obtain an increase in the LNG contract price.

Fully accepting Edison's arguments, the arbitration board decided to reject all Qatargas' requests for a price increase of several hundred million euros during the period.

Through the Qatargas contract, Edison imports about 6.5 bill cu m of LNG per year to Italy through the Rovigo regasification terminal. ■

NEWS NUDGE

Anthony Veder to fit Techross BWMS

Engineering company Techcross' Europe office is to install ballast water management systems (BWMS) on Dutch shipping company Anthony Veder's small scale gas carrier fleet.

Some 13 of Anthony Veder's vessels will be equipped with a direct electrolysis BWMS, Electro-Cleen System (ECS). The equipment will be delivered by 2024 with the first fitted from the third quarter of this year.

Currently, Anthony Veder manages 31 gas carriers, transporting LPG and/or LNG and in order to comply with the IMO's BWM Convention, various BWMS were deemed candidates since 2019 and the suitable equipment was thoroughly reviewed.

According to Techcross, the main determinant was the low maintenance and operating cost (opex). ■

Beach to supply LNG to Singapore

Beach Energy (Perth Basin), a subsidiary of Beach Energy Limited, has signed a Heads of Agreement (HOA) with bp Singapore Pte to supply LNG from Waitsia Gas Project Stage 2.

The HOA contains the terms and conditions for bp to purchase all 3.75 mill tonnes of Beach's expected LNG volumes from the project, with supply due to commence in the second half of 2023.

Annual contract volumes and supply terms are aligned to the provisions in the executed North West Shelf (NWS) gas processing and lifting agreements.

The terms include built-in flexibility around the supply startup to ensure alignment with the completion of construction and commissioning activities.

LNG will be delivered on a Free on Board (FOB) basis from the NWS facilities in Karratha, Western Australia, which leverages bp's LNG trading and shipping capability. bp is a participant in the NWS joint venture.

The agreed LNG price is linked to both Brent and Japan Korea Marker (JKM) price indices (with full upside exposure to each) and includes a downside price protection mechanism.

This hybrid pricing structure is expected to provide Beach with favourable price movements during North Asia winter periods, the company said.

Beach and bp are targeting the signing of a fully termed LNG Supply and Purchase Agreement (SPA) in the second half of next year.

In other cargo news, Unipec Singapore, the trading arm of China's Sinopec, is believed to be seeking 11 LNG cargoes.

The cargoes are to be delivered to China between November and March next year, according to industry sources talking with newswires.

One cargo was said to be needed in November, three in December, three in January, one in February and three in March.

The tender was due to close on 24th September.

Elsewhere, Spanish energy company Naturgy has received delivery of its first carbon neutral LNG cargo in Spain.

The LNGC 'Castillo de Merida' arrived at Barcelona's receiving terminal recently from Qatar.

Naturgy offset the carbon footprint of the LNG cargo from wellhead to discharge terminal, the company said.

In another deal announced this week, Qatar Petroleum (QP) is to supply China with an annual 3.5 mill tonnes of LNG over a 15 year period.

A long-term Sale and Purchase Agreement (SPA) was signed with CNOOC Gas and Power Trading & Marketing, a subsidiary of China National Offshore Oil Corp (CNOOC).

Deliveries are to start in January, 2022, QP confirmed.

The SPA was signed during a virtual ceremony by H E Saad Sherida Al-Kaabi, Qatar's Minister of State for Energy Affairs and QP's President and CEO, and Wang Dongjin, CNOOC's Chairman.

The Minister commented; "We are pleased to further build upon our strong relationship with CNOOC with the signing of this new long-term LNG supply agreement.

"We are especially proud to continue to meet the People's Republic of China's growing need for cleaner energy that LNG provides, and are thankful to CNOOC for partnering with us as their trusted LNG supplier," he said.

Qatar undertook its first LNG shipment to the Chinese major in September, 2009 and, as of August, 2021, 715 LNG cargoes had been delivered to China, of which 270 cargoes (more than 24 mill tonnes of LNG) were taken by CNOOC, QP said. ■

Reduce US exports says IECA

In a letter sent to the US Department of Energy (DOE), Industrial Energy Consumers of America (IECA) demanded that LNG terminals reduce their exports to fill domestic winter natural gas storage.

In addition, IECA called for the establishment of LNG export volume limits and to put public interest safeguards in place.

"We urge you to take immediate action under the Natural Gas Act (NGA) to prevent a supply crisis and price spikes for consumers this winter by requiring LNG exporters to reduce export rates in order to allow US inventories to reach the five-year average storage levels. US consumers, the health of the economy, and national security should take priority over LNG export profits.

"Secondly, we urge you to place a hold on all existing, pending, and pre-filling permits and approvals on LNG export facilities in the lower 48, and conduct a review of whether these facilities are in the public interest under the NGA. We are certain that they are not," IECA said in the letter.

The US Henry Hub winter strip natural gas price was $5.50 per MMBtu last week, more than double that of a year ago, which on an annualised basis costs US consumers around $109 bill.

The letter also pointed out that the US Energy Information Administration (EIA) reported that working natural gas stocks totalled 3,006 bill cu ft, which is 17% lower than the level seen a year ago and 7% lower than the five-year (2016/2020) average for last week.

To increase storage inventories to the five-year average by November, the US would have to inject more than 90 bill cu ft each week, a rate that is more than 40% higher than the five-year average weekly buildup rate.

The EIA supply data makes clear that increased production will not be forthcoming. As natural gas prices rise, so does the cost of natural gas liquids (NGLs), which are feedstock raw material for production of plastics and chemicals that are vital to the industrial energy consumers of America supply chain for production of thousands of consumer products, therefore adding to inflation.

Low storage levels are the result of higher year-on-year exports, IECA said. According to the EIA, the US has exported about 10% of its natural gas, a 41% increase from a year ago.

As offshore LNG demand and prices were high, S&P Global Platts calculated that Henry Hub prices would have to increase to $10 per MMBtu to provide an incentive to fulfill domestic natural gas demand, which could cause manufacturing demand destruction.

"Excessive LNG export volumes are inflationary and threaten the competitiveness of trillions of dollars of manufacturing capital assets, millions of jobs, and economic growth by driving up the cost of natural gas, natural gas liquids feedstock, and electricity.

"We support a reasoned volume of exports as long as it does not negatively impact US consumers and the economy as intended under the NGA.

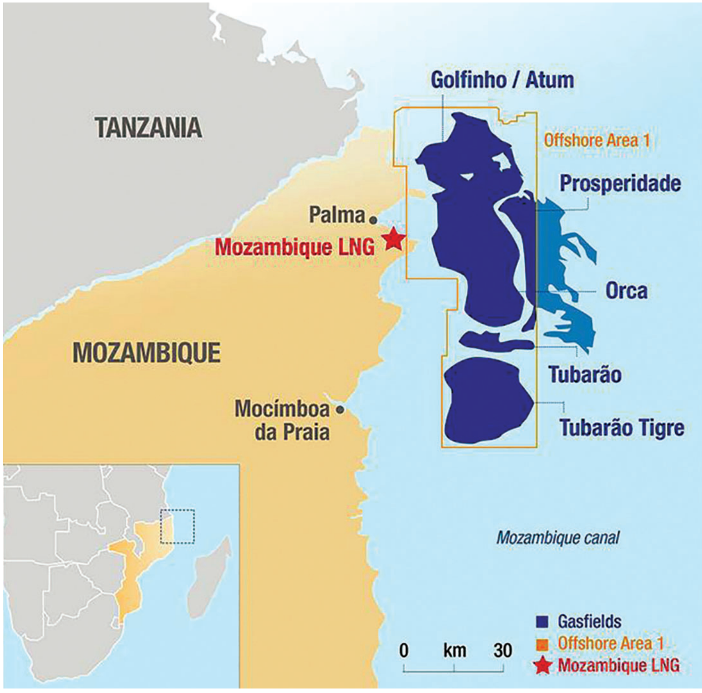
"Due to the DOE's decisions, the US continues to export the majority of LNG to NFTA countries, the same countries that often impose trade restrictions on domestic manufacturers. From February, 2016 to June, 2021, 69% of all shipments were to NFTA countries," IECA's letter said. ■

Total finalises Mozambique LNG shareholding purchase

French energy major, TotalEnergies has finalised the acquisition of Anadarko's 26.5% operational interest in the Mozambique LNG project for $3.9 bill.

This closing comes after the company reached a binding agreement with Occidental on 3rd May, 2019, to acquire Anadarko's assets in Africa - Mozambique, Algeria, Ghana and South Africa. It signed the subsequent Purchase and Sale Agreement on 3rd August of that year.

This follows the receipt of all the requisite approvals by the relevant authorities and partners.



TotalEnegies has finalised the purchase of Anadarko's stake in Mozambique LNG

"Mozambique LNG is one of a kind asset that perfectly fits with our strategy and expands our position in liquefied natural gas," said Patrick Pouyanné, TotalEnergies' Chairman & CEO. "As the new operator, we are fully committed to the Mozambique LNG project and we will bring the best of our human, technical, marketing and financial capacities to further strengthen its execution.

"Total will of course work on the strong foundations established by the previous operator and its partners, in order to implement the project in the best interest of all those involved, including the government and the people of Mozambique," he said.

Mozambique LNG is the country's first onshore LNG development and includes the development of the Golfinho and Atum fields located within Offshore Area 1 and the construction of a two-train liquefaction plant with a capacity of 12.9 mill tonnes per year.

A Final Investment Decision (FID) on Mozambique LNG was announced on 18th June, 2019, and the project is expected to come into production by 2024.

The project is largely derisked, as nearly 90% of the production has already been committed through long-term contracts with LNG buyers in Asia and Europe.

Closing operations are still ongoing regarding Anadarko's assets in Algeria, Ghana and South Africa. ■

NEWS NUDGE

Cameron's Ahrabi to retire

Cameron LNG CEO, Farhad Ahrabi, is to retire at the end of January, 2022.

Ahrabi, who started his career at Cameron in 2014, oversaw the development of the first phase of the Cameron LNG export facility in Hackberry, La, from the construction process to full commercial operations.

California-based Sempra and its partners, including the French oil major TotalEnergies, joined together to construct the $10 bill export facility in 2014.

The terminal includes three liquefaction trains with a projected LNG export capacity of 12 mill tonnes per year.

In 2016, Cameron LNG received regulatory approval to expand the facility. If undertaken, this expansion project will involve two additional full containment LNG storage tanks and two more liquefaction trains.

Cameron LNG's Board is working with a search firm to find Ahrabi's replacement, the company said.

FERC agrees feedgas for Sabine Pass Train 6

The US Federal Energy Regulatory Commission (FERC) has authorised the introduction of feedgas to Cheniere's Sabine Pass Train 6.

FERC authorised the use of feedgas for the commissioning of 'certain portions' of the 5 mill tonnes per year capacity train.

Train 6 is expected to begin production by the end of this year barring any downtime during the hurricane season, Cheniere had earlier said.

New Vietnamese LNG terminal

PetroVietnam Gas is to form a joint venture company with AES Corp to operate an LNG terminal in Vietnam.

The joint venture, LNG Son My, is part of a $1.3 bill LNG-to-power complex in the central province of Binh Thuan,

PetroVietnam said that it will annually supply 3.6 mill tonnes of LNG to two power plants in the complex to be operational from 2025. ■

Mark Gyetvay

In respect of recent US court hearings regarding Deputy Chairman of PAO NOVATEK's Management Board, Mark Gyetvay's alleged tax fraud, circulating in the media, the company has made a statement.

As far as known from US law enforcement reports, currently Gyetvay is the subject of a court hearing regarding alleged personal tax evasion, NOVATEK explained.

The company claimed that it was not involved in the litigation and does not have any details of the court hearings. It is monitoring the situation and will give all necessary support.

For many years, Gyetvay has been the company's main representative for the professional and investment community, making invaluable contribution to NOVATEK's success.

In 2014, Gyetvay left NOVATEK's Board as CFO, and according to an internal order, was not subsequently involved in the company's financial activities, including attracting financing.

This situation has no effect on NOVATEK's operational and financial activities, the company stressed. ■

LNGC digital twin technology MoU signed

Last week at Gastech, Lloyd's Register (LR), Korea Shipbuilding & Offshore Engineering (KSOE) and Hyundai Heavy Industries (HHI) signed a Memorandum of Understanding (MoU).

The MoU is aimed at developing digital twin technology to support the digitalisation of the maritime industry and the growing demand for large scale LNGCs.

As part of the MoU, KSOE and HHI will further develop its Hyundai Intelligent Digital Twin Ship (HIDTS) for a type 'B' gas containment tank suitable for an 174,000 cu m LNGC.

LR's role is to perform audit, review, risk assessment, verification and validation activities to support KSOE and HHI with the successful development and implementation of the digital twin, the class society explained.

LR's ShipRight Procedure for Digital Compliance will be applied to the HIDTS, including stages Digital Twin READY, the certification of KSOE and HHI as Digital Twin Developers, and Digital Twin APPROVED, the verification of HIDTS.

The class society will then apply stages Digital Twin COMMISSIONED, which requires a risk-based, resiliency analysis of HIDTS, and Digital Twin LIVE, the validation of HIDTS.

LR's approach will cover the entire life cycle of the digital twin technology, from the conceptual design stage to HIDTS' operation and large scale commercialisation.

Luis Benito, LR's Director of Innovation, said: "Leading our industry's transformation starts with partnerships like this, aligned and focused on the goal to transition the maritime industry towards the digital economy. We are proud to work together with KSOE and HHI in creating this future.

"Building upon the technical expertise of each party involved, the MoU will fast track digital twin technology solutions needed to help maritime successfully and safely digitalise. By applying LR's innovative ShipRight Procedure for Digital Compliance, HHI, KSOE and their end user customers can be confident of deploying digital twins that are safe, dependable, and effective to generate business outcomes," Benito concluded.

"With the maritime industry focused on ensuring safety and efficiency, it's important we look at digitalisation, such as digital twin technology, which not only helps shipowners and operator optimise operational costs but also improve safety. We're proud to work with HHI and KSOE on this digital twin ship development for an 174,000 cu m LNG carrier design – a first for a large scale digital twin LNG carrier," added Sung-Gu Park, LR's Northeast Asia Area Manager.

LR's Luis Bonito

"The HIDTS solution creates a digital twin environment in a cyber space, which is identical to the maritime environment where a vessel is operated and tests the performance of key equipment and facilities of LNG carriers, such as the dual fuel engine, gas supply system and power and control systems.

"Spurred by the development of this HIDTS virtual commissioning solution, we plan to launch the new digital shipmanagement solution that covers artificial intelligence technologies, such as asset management, energy optimisation and risk assessment," said Byoung-Hoon Kwon, KSOE Vice President.

"This is a meaningful step in the advancement of future digital ships that surpasses existing technology. We believe that our own digital twin technology will contribute to the global de-carbonisation effort as well as the realisation of autonomous ships. In addition, our co-operation with Lloyd's Register will reduce the time and cost to provide this high-tech ship to customers," said Dong Jin Lee, HHI Vice President.

This MoU follows LR's Approval in Principle Digital Twin READY awarded to KSOE for its HIDTS earlier this year.

> **"With the maritime industry focused on ensuring safety and efficiency, it's important we look at digitalisation, such as digital twin technology"**
>
> *- Luis Benito, Director of Innovation, Lloyd's Register*

Monthly Large LNGC Values*

Newbuildings (174,000 cu m)	$192.53 mill
Five years old (160,000 cu m)	$146.76 mill
Total Fleet (529 ships)	$61.04 bill
Orderbook (144 ships)	$29.12 bill

Source: VesselsValue (23/09/21)

**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	$62,000	+$3,500
West of Suez	$80,000	+$18,500
12 mos T/C	$93,000	-

**Since last report (16/09/21)*

Source: Fearnleys (29/09/21)

Svanehøj acquires Wärtsilä Tank Control Systems

Svanehøj has acquired Wärtsilä Tank Control Systems (TCS), which employs more than 50 people in the UK, Singapore, and France.

This is the second major acquisition announced in less than a year and expands its OEM activities and adds new skills to its rapidly growing service department for gas tankers, the company said.

Wärtsilä TCS, formerly known as Whessoe, brings Svanehøj skills in the production, sale, and service of high-end measurement systems for LNGC gas tanks and land-based LNG facilities.

"Gas is one of the biggest driving forces in the green transition. Liquefied natural gasses, such as LNG and LPG, are already cleaner alternatives to oil and coal today. And with Power-to-X, we will see green electricity from solar power and wind converted into climate-friendly fuel for aircraft, ships, lorries and industry in a few years.

"The acquisition of Wärtsilä TCS is an expression of our desire to make Svanehøj a globally leading specialist in producing and servicing equipment for handling all types of liquefied gas – natural gas, biogas and not least the Power-to-X-based fuel of the future," said CEO, Søren Kringelholt Nielsen.

This acquisition opens new opportunities for Svanehøj's rapidly growing service business, which has almost tripled its revenue since 2018.

Svanehoj is already a leading provider of cargo system service for LPG carriers, and the intention is to use the acquisition to achieve a similar position within the larger LNGC segment, the company explained.

"With this acquisition, Svanehøj will now be the preferred service provider for about 500 LNG vessels with tank measurement systems from Wärtsilä TCS. Once on board, it will be attractive for many customers to consolidate their service jobs and make use of our competencies within servicing pumps, compressors, valves, and instrumentation," added Morten Christian Larsen, Svanehøj.Director, Service & After sales.

With an expected increase in activity of initially 30-40%, the plan is to employ additional staff to support the offices in Denmark and Singapore.

In November last year, Svanehøj took over the service specialist FORCE Technology Marine Equipment Service.

Following the Wärtsilä acquisition, Svanehøj Denmark now employs around 230 people and has activities in Denmark, the UK, France, Singapore, China, and Japan.

The transaction is still the subject of the fulfilment of closing conditions. ■

Stena Power introduces integrated barge

Stena Power and LNG has unveiled a floating integrated power barge (IPB).

The barge is fitted with an LNG receiving, storage, regasification and distribution facility, coupled with competitive and flexible power generation.

It can handle demand for 100-300 MW of power generation, while opening viable and economical access to the wider distribution and utilisation of LNG, Stena claimed.

Stena acquired the rights to the IPB from Blystad Energy Management, a Norwegian LNG to Power company owned by Robert Løseth and Thomas Blystad, who have both joined Stena Power & LNG Solutions as Engineering Manager and Commercial Manager, respectively.

Goran Hermansson, Stena Power & LNG Solutions Chairman, said: "At Stena Power and LNG Solutions we offer viable solutions to facilitate safe, reliable and cost-effective import/export LNG transfer as well as regasification and power delivery.

"The introduction of the Integrated Power Barge to our portfolio as a complement to our Self-installing Power Platform, further evidences our commitment to provide an all-encompassing, cost-effective range of technologies that will satisfy the global, varied demands for power generation.

"We are delighted to welcome Robert and Thomas to Stena; their extensive industry knowledge and experience will be invaluable as we continue our strategic growth," he said.

Blystad, added: "I am excited about joining Stena Power & LNG Solutions, and establishing a solid basis for the IPB, alongside the innovative Jettyless solutions.

"The critical mass of the IPB's power generation enables the utilisation of natural gas in the form of LNG in locations where it is not currently readily available. Similarly, the IPB can ensure flexible and load-following generation capacity, balancing variability in supply during the expanding presence of renewable power generation," he said.

The IPB expands upon the company's current offering of the Jettyless Floating Terminal (JFT), Self-installing Regas Platform (SRP) and the Self-installing Power Platform (SPP).

Løseth commented: "Within Stena we have a comprehensive range of engineering experience and capability spanning the LNG sector.

"The IPB is based on reliable and safe LNG and power generation technologies, further enhanced by our wide-ranging internal design, construction supervision and operational competence," he said. ■

Stena Power has invested in a power barge concept

Trelleborg wins LNG Indian equipment certification

Trelleborg's Marine and Infrastructure's quick release hook mooring systems have received certification from the Indian Petroleum and Explosives Safety Organisation (PESO).

PESO sets the requirements for equipment containing electrical systems at new or upgraded LNG facilities in the country.

This certification identifies Trelleborg as the largest PESO-accredited docking and mooring equipment manufacturer in the region.

Richard Hepworth, Trelleborg's Marine and Infrastructure Operation President, said: "We set out on a 12-month initiative with our certification agent and support from key supply chain partners, to record technical documentation regarding all electrical systems and enclosures needed to be assessed by PESO for hazardous area operation suitability.

"As a result, we are delighted that Trelleborg quick release hook mooring systems are now PESO-certified for use in the Indian market, and are therefore fully compliant with Indian laws and regulations that govern the operation of LNG facilities.

"As the largest PESO-accredited docking and mooring equipment manufacturer, customers in the region requiring quick release hooks can be confident that our equipment is certified and meets all safety standards. Additionally, this accreditation means that EPCs and terminal owners can avoid unforeseen budget overruns and schedule delays due to compliance issues," he said.


Trelleborg head Richard Hepworth

NEWS NUDGE

GTT wins more design contracts

GTT has received an order from Hyundai Samho Heavy Industries (HSHI) for the tank design of two new LNGCs ordered by a European shipowner.

GTT will provide the design and engineering services for the 174,000 cu m vessels' tanks.

They will be fitted with the GTT Mark III Flex membrane containment system.

Deliveries of the vessels are scheduled for the third quarter of 2024.

In addition, at Gastech, GTT and naval architecture and engineering firm Deltamarin, received an Approval in Principle (AiP) from ABS for their new design of an LNG fuelled Aframax tanker.

This new LNG-fuelled tanker design employs membrane tank technology design and developed by GTT, while its integration into the vessel was studied by Deltamarin.

ABS' AiP certified that the on board integration of the membrane fuel tank solution is technically feasible for an LNG-fuelled tanker and that it complies with all safety regulations.

Cove Point closes for annual maintenance

Berkshire Hathaway-operated Cove Point liquefaction terminal was shut down on 20th September for scheduled maintenance.

Cove Point's annual maintenance, including a comprehensive inspection, was expected to last about three weeks, according to the company talking with newswires.

The Maryland terminal underwent annual maintenance about the same time in 2018, 2019 and 2020.

Separately, around 400 mill cu ft per day of current receipts into the Cove Point pipeline was taken offline on the same day for eight days of scheduled work at the Pleasant Valley compressor station.

Three engines at the compressor station will also be unavailable during additional work from 29th September to 10th October, according to a notice to customers.

Maintenance is also scheduled at the Loudoun compressor station between 4th and 6th October.

Cove Point has long-term agreements to supply LNG to Gail India and a joint venture between Japan's Sumitomo and Tokyo Gas.

Shanghai's spot LNG price index online

The Shanghai Petroleum and Natural Gas Exchange has launched a spot pricing index for LNG imports.

Unveiled this week, this is the first marker of its kind in China as the country seeks greater global pricing power over LNG.

China should have its own pricing mechanism to better reflect local market fundamentals, government officials said at a seminar in Shanghai that was broadcast online.

"Currently, China's imports are primarily linked to foreign indexes that don't reflect Chinese demand and supply, and we're passive recipients of those prices," said Wang Zhiqiang, an energy official with the Shanghai Development and Reform Commission.

Shanghai's state-backed exchange has started to publish daily fixed-price quotes for spot imports over the next three months.

The index, in US dollars per MMBtu, will track prices on a delivered, ex-ship basis for shipments of between 90,000 and 210,000 cu m of LNG.

Daily quotes are produced in co-operation with the General Administration of Chinese Customs, which tracks China's LNG imports on a weekly basis.

Earlier, the exchange had said that a China-based spot price had the support of majors like PetroChina, Sinopec and CNOOC, as well as from smaller importers.

Separately, Wang Fenghai, Shanghai Futures Exchange President, told the Platts Asia Pacific Petroleum Conference on Tuesday that his exchange was accelerating preparations for the launch of natural gas futures. He did not give a timeline.

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 Independence	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

For more information please visit http://small-lng.com
*Includes multi-gas, ethylene and LNG bunker ships with 40,000 cubic metres LNG cargo capacity or less
TBN = To Be Nominated indicates ships are still at construction/planning stage
** = project shelved † =Data to be verified Data last updated = 1st September 2021

Small-LNG.com

Built	Name	CBM	Cargo Type	Trading area	Trading in LNG?	Ship Owner / Operator
2018	LNG London	3,000	LNG	Northwest Europe	Yes	Shell
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	ENN TBN	8,500	LNG	China	Yes	ENN
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	Avenir Ascension	7,500	LNG		Yes	Avenir LNG
2021	Avenir Allegiance	20,000	LNG	Worldwide	Yes	Avenir LNG
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	PE TBN	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	Veder TBN	30,000	LNG	Worldwide	Yes	Anthony Veder
2022	Avenir Achievement	20,000	LNG	Worldwide	Yes	Avenir LNG
2022	Kuntsen TBN	5,000	LNG	Spain	Yes	Knutsen OAS
2022	Clean Cañaveral	5,400	LNG	USG	Yes	PNE
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	K Line TBN	18,000	LNG	Korea	Yes	K Line
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 ?
2026	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG
2026	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG

For more information please visit http://small-lng.com
*Includes multi-gas, ethylene and LNG bunker ships with 40,000 cubic metres LNG cargo capacity or less
TBN = To Be Nominated indicates ships are still at construction/planning stage
** = project shelved † =Data to be verified Data last updated = 1st September 2021

WORLD LNG CARRIER ORDERBOOK

Name	Containment system	Propulsion	Yard	Delivery date	Capacity	Primary Owner
Energy Intelligence	GTT 96 GW	MEGI	DSME	01/06/2021	174000	Alpha Gas
Minerva Limnos	GTT 96 GW	MEGI	DSME	01/06/2021	173400	Minerva Marine
Mu Lan	GTT 96 L03+	XDF	Hudong-Zhonghua	01/06/2021	174000	CSSC
Yiannis	GTT 96 GW	MEGI	DSME	01/06/2021	174000	Maran Gas Maritime
Maran Gas Isabella	GTT 96 GW	XDF	DSME	01/07/2021	174000	Maran Gas Maritime
Minerva Chios	GTT MK III Flex+	XDF	Samsung	01/07/2021	174000	Minerva Marine
Mol Hestia	Unknown	MEGI	DSME	01/07/2021	174000	MOL
Adamastos	GTT MK III Flex	XDF	Hyundai	01/08/2021	174000	Capital Gas
Attalos	GTT MK III Flex	XDF	Hyundai	01/08/2021	174000	Capital Gas
Celsius Carolina	Unknown	XDF	Samsung	01/08/2021	180000	Celsius Shipping
Gaslog Winchester	GTT MK III Flex+	XDF	Samsung	01/08/2021	180000	GasLog
Asklipios	GTT MK III Flex	XDF	Hyundai	01/09/2021	174000	Capital Gas
Diamond Gas Victoria	GTT MK III Flex	XDF	Hyundai	01/09/2021	174000	NYK
Global Sea Spirit	GTT 96 GW	XDF	DSME	01/09/2021	173400	Nakilat
Hellas Athina	GTT MK III Flex	XDF	Hyundai	01/09/2021	174000	Latsco Shipping
Lng Enterprise	GTT MK III Flex	XDF	Samsung	01/09/2021	174000	NYK
Maran Gas Kalymnos	GTT 96	XDF	DSME	01/09/2021	174000	Maran Gas Maritime
Hyundai Ulsan 2939	GTT MK III Flex	XDF	Hyundai	01/10/2021	180000	SK Shipping
Lng Endeavour	GTT MK III Flex	XDF	Samsung	01/10/2021	174000	NYK
Maran Gas Ithaca	GTT 96 GW	XDF	DSME	01/10/2021	174000	Maran Gas Maritime
Daewoo 2506	GTT 96	MEGI	DSME	01/11/2021	174000	Maran Gas Maritime
Global Sealine	GTT 96 GW	XDF	DSME	01/12/2021	173400	Nakilat
Lng Endurance	GTT MK III Flex	XDF	Samsung	01/12/2021	174000	NYK
Samsung 2336	GTT MK III Flex	XDF	Samsung	01/12/2021	174000	JP Morgan
Tenergy	GTT MK III Flex	XDF	Hyundai	01/12/2021	174000	Tsakos Energy Navigation
Vivit City Lng	GTT MK III Flex	XDF	Hyundai	01/12/2021	174000	H-Line
Grace Emilia	GTT MK III Flex	XDF	Hyundai	01/01/2022	174000	NYK
Gui Ying	GTT 96 L03+	XDF	Hudong-Zhonghua	01/01/2022	174000	CSSC
Elisa Aquila	GTT MK III Flex	XDF	Hyundai	01/03/2022	174000	NYK
Hudong-zhonghua H1829a	GTT 96 L03+	XDF	Hudong-Zhonghua	01/03/2022	170520	CSSC
Maran Gas Kythira	Unknown	XDF	DSME	01/03/2022	174000	Maran Gas Maritime
Samsung 2319	GTT MK III Flex	XDF	Samsung	01/03/2022	174000	JP Morgan
Clean Cajun	Unknown	XDF	Hyundai	01/04/2022	200000	Dynagas
Hudong-zhonghua H1788a	GTT 96	XDF	Hudong-Zhonghua	01/04/2022	79960	K-Line
Hudong-zhonghua H1789a	GTT 96	XDF	Hudong-Zhonghua	01/05/2022	79960	K-Line
Grace Freesia	GTT MK III Flex	XDF	Hyundai	01/06/2022	173000	NYK
Hudong-zhonghua H1830a	GTT 96 L03+	XDF	Hudong-Zhonghua	01/06/2022	170520	CSSC
Vivit Arabia Lng	GTT MK III Flex	XDF	Hyundai	01/06/2022	174000	H-Line
Clean Copano	Unknown	XDF	Hyundai	01/07/2022	200000	Dynagas
Samsung 2337	GTT MK III Flex	XDF	Samsung	01/07/2022	174000	JP Morgan
Bw Iris	GTT 96 GW	MEGI	DSME	01/08/2022	174000	BWGas

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 = 23rd June 2021

Fearnley LNG

Name	Containment system	Propulsion	Yard	Delivery date	Capacity	Primary Owner
Santander Knutsen	Unknown	XDF	Hyundai	01/08/2022	174000	Knutsen
Sm Albatross		XDF	Hyundai	01/08/2022	174000	Korea Line
Bw Cassia	GTT 96 GW	MEGI	DSME	01/09/2022	174000	BWGas
Prism Diversity	Unknown	XDF	Hyundai	01/09/2022	180000	SK Shipping
Malaga Knutsen	Unknown	XDF	Hyundai	01/10/2022	174000	Knutsen
Sm Bluebird		XDF	Hyundai	01/10/2022	174000	Korea Line
United Prosperity	Not Applicable	XDF	Hudong-Zhonghua	01/10/2022	174000	China LNG Shipping
Alicante Knutsen	Unknown	XDF	Hyundai	01/11/2022	174000	Knutsen
Minerva Amorgos	GTT MK III Flex+	XDF	Samsung	01/11/2022	174000	Minerva Marine
Orion Song		XDF	Hyundai	01/11/2022	174000	JP Morgan
Daewoo 2514	Unknown	TFDE - Azipod	DSME	01/12/2022	172500	Sovcomflot
Huelva Knutsen	Unknown	XDF	Hyundai	01/12/2022	174000	Knutsen
Hyundai Ulsan 3243	Unknown	XDF	Hyundai	01/12/2022	174000	Knutsen
Orion Sage		XDF	Hyundai	01/12/2022	174000	JP Morgan
Asterix I	GTT MK III Flex	XDF	Hyundai	01/01/2023	174000	Capital Gas
Hudong-zhonghua H1837a	GTT 96 L03+	XDF	Hudong-Zhonghua	01/01/2023	79960	Shenzhen Gas
Samsung 2364	GTT MK III Flex+	XDF	Samsung	01/01/2023	174000	MISC
United Glory	Unknown	XDF	Hudong-Zhonghua	01/01/2023	174000	China LNG Shipping
Hyundai Repsol	GTT MK III Flex	XDF	Hyundai	15/01/2023	174000	Hyundai LNG Shipping
Samsung 2365	GTT MK III Flex+	XDF	Samsung	01/02/2023	174000	MISC
Samsung 2426	Unknown	XDF	Samsung	01/03/2023	174000	Pan Ocean
Zvezda 041	GTT MK III	TFDE - Azipod	Zvezda SSK	01/03/2023	172600	Smart LNG
Daewoo 2515	Unknown	TFDE - Azipod	DSME	01/04/2023	172500	MOL
Hudong-zhonghua H1833a	Unknown	XDF	Hudong-Zhonghua	01/04/2023	174000	China LNG Shipping
El Ferrol Knutsen	Unknown	XDF	Hyundai	01/05/2023	174000	Knutsen
Extremadura Knutsen	Unknown	XDF	Hyundai	01/06/2023	174000	Knutsen
Hyundai Ulsan 3244	Unknown	XDF	Hyundai	01/06/2023	174000	Knutsen
FSRU now LNGC	GTT NO 96	MEGI	DSME	15/06/2023	174000	MOL
Daewoo 2516	Unknown	TFDE - Azipod	DSME	01/07/2023	172500	Sovcomflot
Hyundai Ulsan 3189	Unknown	XDF	Hyundai	01/07/2023	174000	JP Morgan
Samsung 2425	Unknown	XDF	Samsung	01/07/2023	174000	Maran Gas Maritime
Hyundai Samho 8105	GTT MK III Flex	XDF	Hyundai	01/08/2023	174000	Sovcomflot
Hyundai Ulsan 3190	Unknown	XDF	Hyundai	01/08/2023	174000	JP Morgan
Daewoo 2517	Unknown	TFDE - Azipod	DSME	01/09/2023	172500	Sovcomflot
Sm Golden Eagle	Unknown	XDF	Hyundai	01/09/2023	174000	Korea Line
Zvezda 042	GTT MK III	TFDE - Azipod	Zvezda SSK	01/09/2023	172600	Smart LNG
Daewoo 2518	Unknown	TFDE - Azipod	DSME	01/10/2023	172500	MOL
Sm Kestrel	Unknown	XDF	Hyundai	01/10/2023	174000	Korea Line
Zvezda 043	GTT MK III	TFDE - Azipod	Zvezda SSK	01/10/2023	172600	Smart LNG
Greek owner 1/4		ME-GA	Hyundai	15/10/2023	200000	Dynagas
HLS	GTT NO 96	MEGI	DSME	15/10/2023	174000	Hyundai LNG Shipping

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 = 23rd June 2021

Fearnley LNG

Name	Containment system	Propulsion	Yard	Delivery date	Capacity	Primary Owner
Hyundai European Owner	GTT MK III Flex	XDF	Hyundai	15/10/2023	174000	
Zvezda 044	GTT MK III	TFDE - Azipod	Zvezda SSK	01/11/2023	172600	Smart LNG
Daewoo 2519	Unknown	TFDE - Azipod	DSME	01/12/2023	172500	MOL
Jiangnan H2637	GTT MK III Flex	XDF	Jiangnan	01/12/2023	79800	Jovo Energy
Zvezda 045	Unknown	TFDE - Azipod	Zvezda SSK	01/12/2023	172600	Smart LNG
Greek owner 2/4		ME-GA	Hyundai	15/12/2023	200000	Dynagas
Hyundai Ulsan 3294	Unknown	XDF	Hyundai Inds - Ulsan	01/01/2024	174000	Hyundai LNG Shipping
Greek owner 3/4		ME-GA	Hyundai	15/03/2024	200000	Dynagas
Hyundai Ulsan 3295	Unknown	XDF	Hyundai Inds - Ulsan	01/04/2024	174000	Hyundai LNG Shipping
Hyundai Ulsan 3296	Unknown	XDF	Hyundai Inds - Ulsan	01/06/2024	174000	Hyundai LNG Shipping
Greek owner 4/4		ME-GA	Hyundai	15/06/2024	200000	Dynagas
Zvezda 046	Unknown	TFDE - Azipod	Zvezda SSK	01/08/2024	172600	Smart LNG
Hyundai Ulsan 3221	Unknown	XDF	Hyundai	01/09/2024	174000	Pan Ocean
Maran 1	GTT MK III Flex	XDF	Samsung	01/09/2024	174000	Maran Gas Maritime
Maran 2	GTT MK III Flex	XDF	Samsung	01/09/2024	174000	Maran Gas Maritime
Zvezda 047	Unknown	TFDE - Azipod	Zvezda SSK	01/09/2024	172600	Smart LNG
Hyundai Ulsan 3222	Unknown	XDF	Hyundai	01/10/2024	174000	Pan Ocean
Zvezda 048	Unknown	TFDE - Azipod	Zvezda SSK	01/10/2024	172600	Smart LNG
Hyundai Samho 8100	Unknown	XDF	Hyundai	01/11/2024	174000	Knutsen
Hyundai Ulsan 3223	Unknown	XDF	Hyundai	01/11/2024	174000	JP Morgan
Zvezda 049	Unknown	TFDE - Azipod	Zvezda SSK	01/11/2024	172600	Smart LNG
Zvezda 050	Unknown	TFDE - Azipod	Zvezda SSK	01/12/2024	172600	Smart LNG
Zvezda 051	Unknown	TFDE - Azipod	Zvezda SSK	01/08/2025	172600	Smart LNG
Zvezda 052	Unknown	TFDE - Azipod	Zvezda SSK	01/09/2025	172600	Smart LNG
Zvezda 053	Unknown	TFDE - Azipod	Zvezda SSK	01/10/2025	172600	Smart LNG
Zvezda 054	Unknown	TFDE - Azipod	Zvezda SSK	01/11/2025	172600	Smart LNG
Zvezda 055	Unknown	TFDE - Azipod	Zvezda SSK	01/12/2025	172600	Smart LNG

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 = 23rd June 2021

Fearnley LNG