LNG Shipping News

AN LNG JOURNAL TITLE ON LNG CARRIERS

22 June 2023

Asia to top regasification capacity additions

Asia will continue to dominate the world's LNG regasification capacity additions.

This region will contribute about 70% of the total capacity additions between 2023 and 2027, according to data and analytics' company, GlobalData.

GlobalData's latest report, 'LNG Regasification Terminals Capacity and Capital Expenditure (CapEx) Forecast by Region, Key Countries, Companies and Projects (New Build, Expansion, Planned and Announced), 2023-2027', revealed that Asia is expected to account for the highest capacity additions globally, by adding 22.7 trill cu ft capacity from newbuilding and expansion projects during the period.

Bhargavi Gandham, GlobalData Oil & Gas Analyst, said: "India and China will primarily drive the LNG regasification additions in Asia through 2027, accounting for nearly 56% of the total capacity additions by 2027.

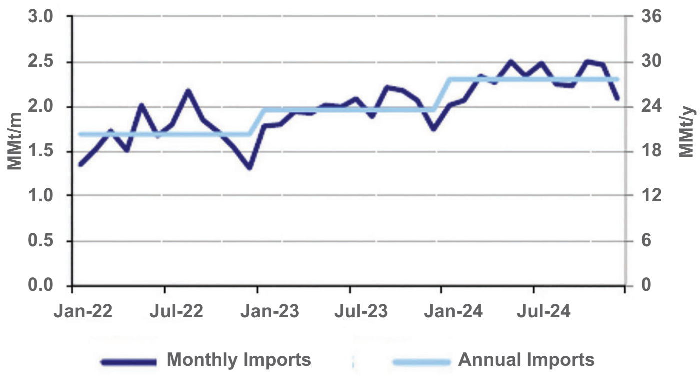
"Growing gas demand from both domestic and industrial sectors and the energy transition targets will be the key drivers of regasification capacity additions in these countries," he said.

China will dominate Asian LNG regasification additions, accounting for nearly 34% of the total capacity increases by 2027. Zhoushan II and Tangshan II are the largest upcoming projects in the country, with a capacity of 584.4 bill cu ft each.

GlobalData identified India as the second highest contributor, accounting for about 22% of the capacity additions by 2027. Gujarat's Jafrabad Floating will be the main driver with a capacity of 487 bill cu ft by 2027.

Bhargavi concluded: "The Philippines ranks third in Asia, contributing about 10% of the region's LNG regasification capacity additions during the outlook period. Santa Rita in Bataan is the largest upcoming regasification terminal in the country with a capacity of 256.2 bill cu ft by 2027."

Southeast Asia LNG Import Forecast



Source: Poten & Partners

Southeast Asia increase

Meanwhile, Southeast Asian LNG imports are forecast to grow by 17% per year through 2024, as population and economic growth will push natural gas demand higher, Poten & Partners said.

The area's power and industrial sectors account for roughly 70% of natural gas consumption in the region and are the key drivers of demand. Production declines, due to reserve depletion and a lack of upstream investment, will also play a critical role in LNG import growth in the future.

LNG imports grew from 16.5 mill tonnes in 2021 to 20.2 mill tonnes last year, as demand ramped up in Thailand, Indonesia and Malaysia. For 2023 and 2024, LNG imports are forecast at 23.7 mill and 27.6 mill tonnes, respectively.

In June, Southeast Asia experienced a heat wave, with record high temperatures, which are forecast to increase natural gas demand over the next few months. For example, demand is forecast to increase to 38.7 bill cu m in the second quarter of this year, compared with 36.3 bill cu m in 1Q23 and 37.8 bill in 2Q22.

Higher demand is forecast to increase LNG imports by roughly 500,000 tonnes in 2Q23 over the previous quarter to nearly 6 mill tonnes and average 2 mill tonnes per month.

LNG is expected to meet roughly 15% of total demand in 2Q23 but will increase to 16% by 3Q23, due to some declines in production and pipeline imports. ■

SHIPPING NEWS AGENDA

TotalEnergies to join Rio Grande LNG project

TotalEnergies has signed a framework agreement with US company NextDecade to participate in the development of the Rio Grande LNG (RGLNG) project.

Under the terms of the agreement, and subject to execution of definitive documentation and final investment decision (FID), TotalEnergies will agree to :

- Hold a 16.7% interest in the first phase of the project, which consists of three liquefaction trains with total annual capacity of 17.5 mill tonnes per annum.
- Offtake 5.4 mill tonnes per year of LNG from this first phase for 20 years, which will bring the company's US LNG export capacity to more than 15 mill tonnes annually by 2030.
- Acquire a 17.5% interest in NextDecade in three tranches for a global amount of $219 mill - the first tranche of 5,06% having already been acquired on June 13, 2023, for $40 million.
- TotalEnergies shall also have a right to participate in further phases of the project and in a carbon capture and storage project (CCS) planned by NextDecade to reduce the emissions generated by the project.

RGLNG's first phase, whose FID is expected in the coming weeks for start-up in 2027, will be developed, besides TotalEnergies by Next Decade as shareholder and operator plus Global Infrastructure Partners (GIP) as majority shareholder.

Fully authorised

The project has already received all the necessary authorisations from FERC, the US Federal Energy Regulatory Commission.

"We are delighted to join forces with NextDecade and GIP on the development of this new US LNG project, for which TotalEnergies will leverage its extensive experience in LNG and technical expertise in major industrial project development," said Patrick Pouyanné, TotalEnergies Chairman and CEO.

"Our involvement in this project will add 5.4 mill tonnes per year of LNG to our global portfolio, strengthening our ability to ensure Europe's security of gas supply, and to provide our Asian customers with an alternative fuel to coal that emits half its CO2 emissions," he said.

"This partnership with TotalEnergies and GIP marks a momentous milestone for NextDecade," said Matt Schatzman, NextDecade Chairman and CEO. "We are excited to work with GIP and TotalEnergies on RGLNG and our proposed CCS project. We are also eager to grow our partnership with GIP and TotalEnergies, focusing on our shared vision to reduce carbon emissions in the energy sector."

"With the world increasingly moving toward sustainable solutions, this partnership among GIP, TotalEnergies and NextDecade reinforces our shared commitment to helping lead the transition and shaping of the future of energy," added Bayo Ogunlesi, GIP Chairman and CEO.

"This venture marks a critical step in displacing coal usage and upholds GIP's commitment to promoting de-carbonisation, energy security and energy affordability. Our shared vision with TotalEnergies and NextDecade, combined with our capabilities, will undoubtedly help catalyse the development of cleaner energy," he added. ■

Egypt to utilise Jordanian FSRU

Jordan has signed a wide-ranging energy co-operation agreement with Egypt.

As a result, Egyptian energy companies would be able to tap into an FSRU berthed at Aqaba in Jordan.

In a statement, Jordan said that the FSRU would be at the disposal of Egypt during the remaining period of the vessel's charter contract. The unit is under contract to Jordan National Electric Power Corp (NEPCO) until 2025.

Jordan would still have flexibility to import occasional LNG cargoes under the agreement.

The country started importing LNG in May, 2015 when the 160,000 cu m capacity 'Golar Eskimo' FSRU moored at Aqaba.

Since renamed 'Energos Eskimo', the FSRU is currently operated by Energos, a joint venture company involving New Fortress Energy and Apollo infrastructure fund.

She can receive 500 mill cu ft per day with a peak capacity of 750 mill per day.

This agreement followed a meeting in Amman between both countries' energy executives and Ministers. Analysts said that it signals the start of more regional Arab co-operation in natural gas infrastructure for economic development.

Jordan's Minister of Energy and Mineral Resources Saleh Kharabsheh also said that tenders were being issued for a new import terminal hub. ■

NEWS NUDGE

TGE wins Chinese terminal extension work

Engineering company, TGE has won an EPC contract from Shenzhen Gas Corp for an LNG storage and peak shaving expansion project.

The project includes two 160,000 cu m full containment LNG storage tanks, the process plant and a new loading/unloading berth for LNGCs of 3,000 to 217,000 cu m capacity.

Shenzhen's extended plant will have a 2 mill tonnes per year send-out capacity.

TGE will undertake the work in a consortium with CIMC Enric Engineering Technology (CET) and China Construction Second Engineering Bureau (CSCEC). ■

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LNG or blue ammonia exports? That is the question!

As Europe moves away from Russian gas and Asia reduces its dependency on coal, demand and investment in LNG continues to rise.

However, according to Wood Mackenzie's (WoodMac) new report, 'Stick or twist: Should gas resource holders target LNG exports or blue ammonia?', the acceleration of the energy transition means gas resource holders increasingly face a choice - follow the established pathway and develop new LNG export facilities or switch to developing blue ammonia.

"Demand for LNG is expected to grow by just under 70% over the next 25 years to reach 700 mill tonnes per annum by 2050. But neither growth nor revenue is locked in for LNG. As the energy transition gathers pace, gas stakeholders are questioning whether longer-term demand for LNG is so assured," said Giles Farrer, WoodMac's Head of Gas and LNG Asset Research and co-author of the report.

In the consultant's Accelerated Energy Transition (AET-1.5) scenario, the world needs far less new LNG supply. The market will still need 160 mill mill tonnes per annum of new LNG supply to be developed by 2040, but beyond that, developers face the risk of declining prices and underutilisation, as demand reduces to 500 mill tonnes by 2050 under this scenario.

Faced with these challenges, holders of undeveloped gas resources are now starting to consider alternative ways to monetise gas exports. Blue ammonia, produced from low emission hydrogen, generated through gas reforming with carbon capture and combining it with air-sourced nitrogen, has quickly risen to the top of the pile as a credible alternative to LNG for gas monetisation, WoodMac said.

Price increase

With the implementation of Europe's Carbon Border Adjustment Mechanism (CBAM), ammonia prices are expected to increase by 60%, and low-carbon ammonia exports to Europe will become competitive against carbon-intensive alternatives.

"Momentum is building for blue ammonia. We see more and more projects – especially in the US Gulf Coast – looking to export blue ammonia to Europe and in many cases these are backed by major LNG players," said Murray Douglas, WoodMac's Head of Hydrogen Research, and also co-author of the report.

In terms of market size, around $250 bill of additional investment in pre-FID LNG liquefaction projects is required to meet WoodMac's base case forecasts by 2050. In contrast, $24 bill of investment is required for blue ammonia exports. In Wood Mackenzie's AET-1.5 scenario, the case for blue ammonia investment is much stronger, with $80 bill required, compared with $160 bill for LNG.

"For those seeking scale over the next 15 years, the prize is still LNG rather than blue ammonia, but for profitability and value, blue ammonia could prove more attractive, although this of course depends on prices, costs and tax incentives.

"Shorter payback periods for blue ammonia could be particularly attractive for those with first-mover advantage in accessing Europe. And if the world was going to edge closer to Wood Mackenzie's AET-1.5 scenario, lower LNG prices and higher carbon prices would further strengthen the attractiveness of blue ammonia vs LNG," Douglas added.

Blue ammonia is not without its challenges. Green ammonia, produced from electrolytic hydrogen powered by renewables, is overwhelmingly considered the future of low-carbon ammonia.

"The window of opportunity is narrow. Blue ammonia will out compete most green ammonia projects targeting FID this decade, but this gap closes beyond 2030 as the cost of renewable power and electrolysers continue to fall," Douglas concluded.

Bangladesh buys more Omani LNG

Petrobangla, Bangladesh state owned energy company, has signed a second contract with Oman to import another 0.25-1.5 mill tonnes of LNG annually for the next 10 years.

Said Al Maawali, executive director of the Omani company, OQ Trading, and Ruchira Islam, Petrobangla's Board Secretary, signed the deal in Dhaka recently.

OQ Trading is already supplying 1 mill tonnes per annum of LNG to Bangladesh under a 10-year deal signed in 2018.

Under the new Government led deal, OQ will supply four cargoes in 2026, 16 cargoes in 2027 and 2028 each, and 24 cargoes per year from 2029 to 2035.

Without revealing the price, Oman fixed the level considering Bangladesh's socio-economic condition and long-term ties between the two countries, an official told local media.

Bangladesh also has long-term LNG import deals to import Qatari LNG, the first signed in 2017 and the second at the beginning of June this year.

Petrobangla uses LNG supplies from two floating LNG terminals, each with a capacity of 6.5 mill tonnes per annum, currently operating in Maheshkhali. Summit Oil and Shipping manages one, while the other is run by Excelerate Energy.

Summit recently won governmental approval to establish a third FSRU terminal to be moored at Cox's Bazar.

Petrobangla already has access to two FSRUs including Excelerate's 'Excellence'

Delfin taps into MOL

Delfin Midstream has signed an investment agreement with Mitsui OSK Lines (MOL).

This will accelerate growth and drive future expansion, enabling Delfin to export clean low-cost LNG from North America to customers worldwide, the company said.

As part of the agreement, MOL will invest in Delfin and a MOL representative will join Delfin's Board.

"We are excited to enter into this strategic agreement with MOL, representing another industry leading partnership. Our low-cost, simplified floating liquefaction solution will be significantly enhanced by MOL's extensive marine expertise, creating a world-class partnership with significant benefits for both Delfin and MOL," said Dudley Poston, Delfin CEO.

"Proceeds from MOL's investment will be used to accelerate making final investment decisions (FID) on our first two FLNG vessels this year. MOL has long been a leading LNG infrastructure company while also investing in innovative solutions such as FSRUs," he said.

The agreement also provides MOL with the opportunity to make additional investments directly in Delfin's FLNG units and establishes a framework for MOL to assist in their construction and operation.

"The Delfin team has deep experience successfully converting LNG carriers into both FSRUs and FLNG vessels," added Delfin COO Wouter Pastoor. "Combining that skill set with MOL's capabilities will drive future expansion and enable Delfin to safely and reliably accelerate clean low-cost LNG exports from North America to customers around the world."

MOL completed extensive due diligence of the entire Delfin LNG project, and its investment represents further testament to Delfin's ability to execute on its project objectives, the company further added.

Takeshi Hashimoto, MOL President and CEO, stated: "We are delighted to announce our partnership with Delfin, marking the beginning of a fruitful endeavour together. Drawing on our extensive expertise gained from previous LNG carrier and FSRU projects and other ventures, we anticipate collaborating with Delfin to successfully drive forward this project toward our initial shared goal of quickly making FID on the first FLNG vessel."

Delfin LNG head Dudley Poston

As part of the agreement, Suryan Wirya-Simunovic will join Delfin's Board. He is MOL's Executive Officer for Energy Related Business for Europe, Americas and Africa and has over 30 years of experience in energy and maritime sectors.

Qatar and China seal LNG mega deal

QatarEnergy has signed definitive agreements with China National Petroleum Corp (CNPC), covering the long-term supply of LNG to China and a partnership in the North Field East (NFE) LNG expansion project.

The two parties signed an LNG Sales and Purchase Agreement (SPA) for the delivery of 4 mill tonnes of LNG per annum from NFE to CNPC's receiving terminals in China for 27 years, marking the industry's longest term SPA commitment.

They also signed a share SPA by which QatarEnergy will transfer to CNPC a 5% interest in the equivalent of one NFE train with a capacity of 8 mill tonnes per annum. This will result in CNPC becoming a partner in the NFE project but will not affect the participating interests of any of the other shareholders in the project.

At the signing ceremony, HE Saad Sherida Al-Kaabi, Qatari Minister of State for Energy Affairs and President and CEO of QatarEnergy said: "We are pleased to embark on this partnership with CNPC and to build on the excellent relations between the People's Republic of China and the State of Qatar.

"These agreements demonstrate our unwavering commitment to our customers and partners and to our shared ambition for a sustainable future facilitated by a cleaner, and more eco-friendly energy source that would catalyse substantial socio-economic development," he said.

> **Our collaboration over the NFE project...lays a solid foundation for the energy co-operation ... in the next three decades**
>
> *- Dai Houliang, CNPC Chairman*

Dai Houliang, CNPC Chairman, added: "Our collaboration over the NFE project represents a major achievement and excellent practice of both CNPC and QatarEnergy in delivering on the strategic consensus of the leaders of our countries. It is another milestone in forming a strategic synergy between China's 'Belt and Road' initiative and Qatar's National Vision 2030. It lays a solid foundation for the energy co-operation between the two sides in the next three decades.

"From this brand-new starting point, CNPC will continue to actively discuss with QatarEnergy all-round co-operation across the hydrocarbon industry chain and other areas like green and low carbon energies, so as to build a stable, long-term, and multi-dimensional strategic partnership," he said.

NEWS NUDGE

Mayer Brown advises Hartree on SPA

Law firm Mayer Brown has advised Hartree Partners in connection with a 20-year LNG sale and purchase agreement (SPA) with Delfin LNG.

Under this agreement, Hartree will purchase 0.6 mill tonnes per annum of LNG on a Henry Hub-linked price from the Delfin Deepwater Port LNG export facility off the coast of Louisiana.

Delfin LNG is a brownfield deepwater port expected to consist of four FLNGs producing up to 13.3 mill tonnes per annum of LNG. Delfin expects to take final investment decision (FID) on the first FLNG unit in mid-2023.

The Singapore-based team was led by Nick Kouvaritakis and included partner, Sean Prior, counsel Nick Kendrick, senior associate, Shi Ning Ong, and associates, Kieran McLaughlin and Ling Ern Seow.

Dynagas reports a drop in income

Dynagas LNG Partners has reported income of $9.6 mill for the first quarter of this year, compared to $23.9 mill for the corresponding period of 2022.

The 59.8% decrease was mainly due to a fall in the gain on the company's interest rate swap transaction and the increase in the interest and finance costs, net, which were partly offset by increased voyage revenues and a decrease in drydocking and special survey costs.

Adjusted net income for 1Q23 was $6.5 mill, compared to $10 mill for the same period of 2022- a net decrease of 35%.

Voyage revenues for the quarter were $37.3 mill, compared to $33.3 mill for 1Q22, which represented a net increase of 12%.

This rise was mainly attributable to the increase in the deferred revenue amortisation relating to the new time charterparty agreement with Equinor for 'Arctic Aurora', which will start in September, 2023, as well as the 'Clean Energy's' higher revenue earning days during the period, compared to 1Q22, due to her scheduled drydocking during the first quarter of last year.

Daily hire gross of commissions was about $62,130 per day per vessel in 1Q23, compared to around $63,130 per day per vessel for 1Q22.

Vessel operating expenses were $7.3 mill, which corresponded to a daily rate per vessel of $13,511, compared to $7.6 mill, or $13,998 per day per vessel in 1Q22. This drop was mainly down to the lower planned technical maintenance and supply costs on the six vessels.

Adjusted EBITDA for the period was $23.6 mill, compared to $22.9 mill for 1Q22.

On 27th March, 2023, in agreement with all lenders of the $675 mill credit facility, the company made a voluntary prepayment of $31.3 mill. Outstanding debt as of 31st March, 2023 under the $675 mill credit facility amounted to $456.6 mill, gross of unamortised deferred loan fees and including $48 mill, which was repayable within a year.

All six LNGCs are operating under their respective long-term charters with an average remaining contract term of 6.1 years. As of 20th June, 2023, Dynagas' estimated contracted revenue backlog was $0.96 bill. ■

UK's Grain claims record sendout – to auction more capacity

Europe's largest LNG terminal, the UK's National Grid's Grain LNG (GLNG), has claimed a new utilisation record.

From 1st June, 2022 to 31st May, 2023, the terminal handled 111 vessels, importing LNG from many countries.

Simon Culkin, Grain LNG's Importation Terminal Manager, said: "Given the UK's energy integration with Europe, the last 12 months have seen high levels of exports via the interconnectors.

"For our customers, Grain LNG provides the ability to store the gas and send it out when the market conditions are right. With the ability to swing from minimum to maximum flows within a short period of time, it is also an ideal partner to intermittent renewables," he said.

GLNG has also launched a market consultation for an auction of 375 Gwh/d (about 9 mill tonnes per annum) of existing capacity.

The initial Auction of Existing Capacity phase started on 14th June and will run until 26th July.

GLNG said that it had used the positive feedback received from the recent 'expression of interest' exercise and subsequent market engagement to offer three lots of capacity:

- Each lot will be entitled to 42 berthing slots, 200,000 cu m of storage and 125 GWh/d (about 3 mill tonnes per annum) of regasification capacity from January, 2029.
- This product is specifically designed for parties who wish to acquire a substantial stake in a major terminal in Northwest Europe, at a reduced cost and with shorter contract lengths when compared to newbuild projects.
- As the terminal's capacity already exists, parties involved will not be subjected to FID approvals or potential delays that can arise from construction issues commonly associated with newbuild terminals.

Culkin said: "We are really pleased with the high level of interest shown by the market at a time of significant geo-political influence on our energy markets. It has allowed us to engage with potential customers and shape our offering to best meet their needs, whilst optimising access to this strategic asset."

The consultation period will enable participants to contribute valuable feedback on various aspects, including operational requirements, infrastructure enhancements, and environmental considerations, GLNG said. ■

Saverex moves ahead with Exmar takeover

On 6th June, the Belgian Financial Services and Markets Authority (FSMA) approved Saverex's prospectus for the voluntary and conditional public takeover bid for all of Exmar's shares and share options not already controlled by the holding company.

The bid's initial acceptance period opened on 8th June, 2023 and lasts until 6th July. The bid price is €12.10 per share and €2.48 per share option.

Following the decision of Exmar's annual general meeting of 16th May, 2023 to pay a gross dividend of €1 per share with ex-dividend date on 22nd May, 2023, the bid price per share and the bid price per share option will be reduced accordingly by €1 and consequently the bid price ex-dividend amounts to €11.10 per share and €1.48 per share option.

The results of the initial acceptance period will be announced on 13th July, 2023.

Paying Agent Bank Saverex is being assisted in this bid by KBC Securities and BNP Paribas Fortis as financial advisors, by Belfius Bank as centralizing and receiving agent (Paying Agent Bank) and by Argo Law as legal advisor.

Exmar's independent directors are being assisted by Allen & Overy (Belgium) as legal advisor and have appointed Degroof Petercam Corporate Finance as independent expert in accordance with article 23 of the Takeover Decree.

Saverex is a holding company controlled by the Nicolas Saverys family. ■

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LNGC friendly genset launched

MAN Energy Solutions (MES) has unveiled its latest engine, an auxiliary MAN 35/44DF CD type.

Developed in co-operation with STX Engine and solely for production by MAN licensees, the new engine is aimed at the LNGC and containership market.

The genset was developed with the aim of cutting capex and opex costs, and for being future-proof over the coming decades.

It is based on the mature MAN 35/44DF CR and MAN 32/44CR engines – well-proven in a multitude of applications over many years with millions of running hours – that form the basis for its operational safety and low maintenance requirements.

The 35/44DF CD comes with a number of features for reducing greenhouse gas emissions, such as methane slip, which it reduces by up to 85%, compared with market standards.

MES said that it expected the first delivery by mid-2024, with the first unit in commercial operation from 2025.

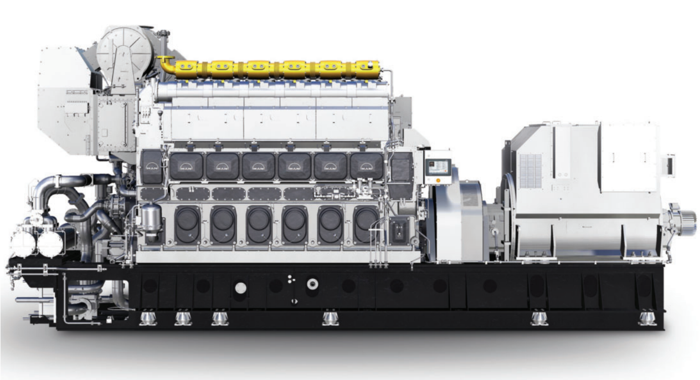
Sephardim Koblenz, MES' Head of Licensing, said: "We specifically developed the MAN 35/44DF CD in close collaboration with STX Engine to optimise the requirements of an auxiliary engine.

"Among other characteristics, both shipyards and shipowners greatly appreciate auxiliary engines that are easily installed and maintained, while reliability and cost-optimisation are also key," he said.

Alexander Knafl, MES' Head of R&D Engineering, 4-Stroke, added: "A major advantage of the 35/44DF CD, besides its powerful output, is its focus on cutting methane slip and positioning itself as future-fuel ready. This includes being ready for dual-fuel methanol operation by 2026."

The MAN 35/44DF CD is characterised by:

- CAPEX/OPEX-optimised design.
- Easy integration by shipyards, low engine-room investment.
- Full digitalisation and connectivity with state-of-the-art cyber security.
- Methane slip reduction technology as standard, delivering up to 85% lower methane slip, compared to market standards.
- Compact footprint with multiple layout options for engine-room flexibility.
- Highest power output in segment with 560 kW/cylinder; leading to fewer cylinders or even engines for same power output per vessel.
- Fuel flexibility, including biofuels, gas and also future-fuel methanol-ready. ■



MAN has introduced a new LNGC friendly Genset

TMS teams up with Orca AI

Automated situational awareness platform developer, Orca AI, has partnered with TMS group to enhance the safety of its fleet.

The Orca AI platform has been rolled out across TMS Cardiff Gas's fleet of 11 LNGCs from its 2020-2021 newbuilding programme, plus nine tankers from the TMS Tankers fleet.

TMS group was seeking a solution to enhance its crews' situational awareness capabilities, with a focus on navigation in congested areas and in low visibility conditions.

In addition, TMS wanted to improve compliance with its safety policy (SMS) and develop further understanding of the navigational challenges that the fleet is facing and how they are managed.

The partnership began in June, 2021 and since installation, the TMS Cardiff Gas fleet has reduced the number of its close encounter events by 25% and increased the average minimum distance from other vessels by 19%, it was claimed.

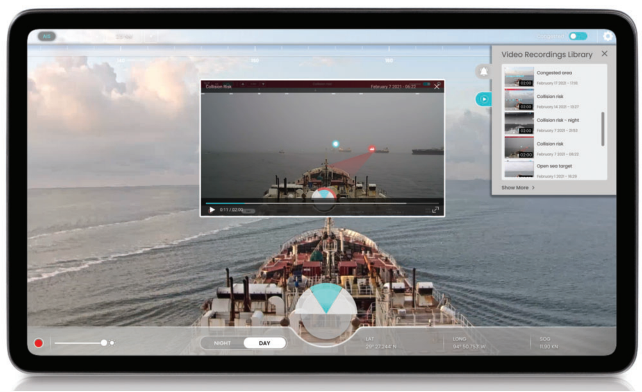
By leveraging Orca AI's automated watchkeeper, TMS crews will gain enhanced situational awareness as well as optimise fleet performance under high-risk navigational scenarios.

The platform will connect TMS' vessels and shoreside operations, enabling fleet management teams to receive actionable insights on vessel performance, identify navigation trends that pose a risk and take preventative actions to make fleet operations more efficient and decrease downtime, whilst guaranteeing timely arrivals, the company said.

Alexandros Politis-Kalenteris, Deputy COO of TMS Cardiff Gas, said: "Orca AI helps us to take our zero incidents and damage to environment approach to the next level. Our crew members are now able to make better navigational decisions in real-time which reduces the probability of having a safety event.

"At the same time, our management has greater visibility and understanding of how our vessels operate in high-risk situations and we are able to turn those insights into preventative actions," he said.

Yarden Gross, Orca AI CEO and co-founder, concluded: "We're delighted to partner with TMS Tankers and TMS Cardiff Gas to improve their safety performance, and are honoured to be part of their journey to be a central player in the shipping industry's ongoing digital revolution." ■



TMS Gas has fitted Orca AI's software

NEWS NUDGE

Deutsche ReGas Phase II binding open season

Deutsche ReGas has announced a binding open season for Phase II of the LNG terminal Deutsche Ostsee, which will start on 29th June.

The German energy company plans to build and operate Deutsche Ostsee Phase II at Mukran. It is planned to start in December, 2023.

The Mukran floating LNG terminal will consist of two FSRUs, connected via a pipeline to be built between Mukran and Lubmin.

Phase II's planned annual throughput capacity is up to 13.5 bill cu m. ■

Three AiPs announced in LNG space

First, LNT Marine and Shanghai Merchant Ship Design and Research Institute (SDARI) received approval in principle (AIP) from ABS for the latest variant of their patented LNT A-BOX LNG containment system.

This new design is for a 175,000 cu m LNGC, a significant increase in capacity from the earlier 45,000 cu m design installed on the ABS-classed 'Saga Dawn' operated by Saga LNG Shipping.

An LNT A-BOX system features self-supporting IMO Type-A tanks mounted within an insulated hold space.

Second, Korean Register (KR) has awarded an AiP to HD Hyundai Heavy Industries (HD HHI) for a new type of tank shape designed for various liquefied gases and fuels.

The new tank shape, developed by HD HHI, is designed to improve safety and productivity.

It also aims to address the challenge of sloshing that impacts the transportation of liquefied gases, such as LNG. Sloshing refers to the wave-like movement of liquid inside a tank during sea transport.

Sloshing addressed

It is crucial to ensure structural stability by minimising sloshing flow caused by the ship's motion, as excessive sloshing can exert significant impact forces on the tank walls, jeopardising its structural integrity. HD HHI has optimised the shape of the liquefied gas tank, effectively reducing the sloshing effect and enhancing stability.

Furthermore, the innovative tank design incorporates an improved layout, leading to enhanced work efficiency and productivity.

HD HHI plans to expand the application of the new tanks to various liquefied gas carriers and propulsion ships in the future.

Finally, Bureau Veritas (BV) has awarded an AiP to Hyundai Heavy Industries - Hyundai Global Service, TotalEnergies Gas & Power and Mitsui OSK Lines (MOL), for wind assisted ship propulsion (WASP) on an LNGC and a VLCC.

This marked the successful completion of a joint development project (JDP) between the four companies to better understand and validate the potential for WASP on these ship types.

Three wind propulsion technologies were focused upon within the JDP, two of which were wing sails and the other a rotor sail system.

ABS hands over AiP to LNT at Nor-Shipping

The project's principal conclusion and the subsequent issuance of the AiP demonstrate that all of these systems are compatible with existing class rules and regulations for VLCCs and LNGCs, thereby paving the way for more detailed work to address specific risks that would enable detailed design and arrangement work to proceed, BV said.

In March, 2021, the class society released an update to its rule note for WIND PROPULSION SYSTEMS (WPS) - NR206.

NR206 provides load cases and coefficients for all types of wind propulsion technologies, including free standing rigs, wing sails, kite sails, suction sails, and rotors. ■

Wärtsilä to extend Croatian terminal regasification capacity

Wärtsilä has been contracted to extend the capacity of the regasification system installed on board the FSRU 'LNG Croatia' by fitting a new module.

The FSRU is owned by Zagreb based LNG Hrvatska, operating as the company's LNG terminal on Krk island.

The new module will supplement the vessel's existing Wärtsilä regasification system and increase the terminal's capacity with 212 mill cu ft per day, or 250,000 cu m per hour.

"The existing Wärtsilä regasification module on board the 'LNG Croatia' has been efficient and reliable. We are pleased therefore to once again turn to Wärtsilä for this new unit that will allow us to meet our expansion plans," said Ivan Fugaš, LNG Hrvatska's Managing Director.

"The expansion project for the Krk terminal is very significant in strengthening Croatia's energy security and gas supply. We at Wärtsilä are very proud to support this project with our advanced regasification technology.

"This latest order reflects the fact that our systems represent an industry benchmark in terms of energy efficiency, robustness, and operational flexibility," added Kjell Ove Ulstein, Sales and Marketing Director, Wärtsilä Gas Solutions.

In addition to the new regasification train, Wärtsilä will also supply the engineering for the capacity conversion. The plant will be installed during the summer of 2025. ■

NEWS NUDGE

Ships - newbuildings, charters

What is believed to be the first LNGC orders for 2028 delivery, Samsung Heavy Industries (SHI) has won a Won659.2 bill contract for two vessels.

Although not confirmed, the owner was thought to be Chevron Shipping.

The LNGCs will be delivered by February 2028, SHI said in a regulatory filing.

There were also thought to be up to four options attached to the deal.

As for charters, Mitsui OSK Lines (MOL) has signed of a long term charter contract for a newbuilding LNGC with a vessel operation management company funded by JERA.

This is the fifth contract with JERA, following a timecharter for four LNGCs that was signed earlier.

The latest LNGC will be built at the Geoje Shipyard of Hanwha Ocean and is scheduled for delivery in 2025.

She will be managed by MOL and will be equipped with an ME-GA propulsion system.

Dutch-based independent clean fuel supplier, Titan has signed a long-term timecharter contract with Fratelli Cosulich, the Italian maritime transportation group, to operate the new LNG bunker vessel, 'Alice Cosulich'.

'Alice Cosulich' will join Titan's fleet in the fourth quarter of this year and will operate in Europe.

The vessel has an LNG and liquified biomethane (LBM) bunkering capacity of 8,200 cu m, as well as smaller parcels of biodiesel.

MOL's FSRU receives first cargo

MOL's giant FSRU moored in Hong Kong has received its first LNG cargo.

'MOL FSRU Challenger', the world's largest FSRU, owned by a wholly owned subsidiary MOL FSRU Terminal (Hong Kong) Limited, received a commissioning cargo.

The project will soon begin full commercial operations and supply gas to power plants in Hong Kong. The FSRU's name will be changed to 'Bauhinia Spirit'.

In addition, MOL's LNGC 'LNG Venus', managed by MOL LNG Transport, received the Director General Award from the Japan Meteorological Agency (JMA) for a significant contribution to development of meteorological service.

This was achieved by observing and reporting of weather and sea conditions. ■

Joint LNGC life cycle study announced

Lloyd's Register (LR), Knutsen, HD Korea Shipbuilding and Offshore Engineering (HD KSOE) and HD Hyundai Heavy Industries (HHI) are conducting a study to measure carbon emissions through the entire life cycle of a newbuilding LNGC.

This joint development project (JDP) is claimed to be the first maritime industry study to measure carbon emissions for the entire life cycle of a ship from raw material extraction to her decommissioning/recycling, including equipment & component manufacture, its transportation to the shipyard, construction and commissioning, operation and the maintenance of the ship.

The lifecycle assessment will provide the detailed environmental impact of an undisclosed LNGC and her carbon emissions, quantifying each construction stage's raw material usage, energy inputs and environmental releases, as well as the emissions for the vessel's operations and eventual disposal.

It will determine the environmental output of the vessel build process, helping organisations to improve their regulatory readiness and provide estimations on the impacts of future regulations, along with data to provide the basis for sustainability strategies.

In addition, it will lay the groundwork for LR rule sets, requirements and guidance on how to assess carbon emission in the entire lifecycle of a ship.

Andy McKeran, LR's CCO, said: "As part of the de-carbonisation of our sector, maritime organisations need to ensure that they rethink the sustainability of the design, build and operation of vessels.

"This first of its kind study will provide stakeholders with the unique opportunity to collect quantifiable data that measures the environmental impact of the shipbuild process and analysis across a vessel's entire life cycle. This is vital information that will help organisations to determine their future sustainability strategies," he said.

Kwanghean An, President & COO, HD KSOE, added: "As the global environmental regulations are expanding to the entire value chain, our joint development project for the life cycle assessment of ships will be a crucial step for both shipbuilding and shipping industries.

"By measuring a ship's environmental impact through its life cycle, we can effectively determine improvement priorities and sustainable business strategy," he said.

Jarle Østenstad, Knutsen's Director Newbuilding and Innovation, commented: "We have for a long time been interested in finding out lifetime CO2 emissions from a ship.

"This project will give interesting results to be used for further optimisation of the fleet and to do more qualified assessments for deciding whether to extend the lifetime of vessels, do conversions/upgrades or build new vessels in order to minimise emissions.

"We are very happy to be a partner with Lloyd's Register and KSOE on this project and look forward to seeing the end results of the study," he concluded. ■

The signing took place at the British Embassy during Nor-Shipping

Air Products wins another Qatari project contract

LNG technology and equipment supplier, Air Products is to provide its proprietary AP-X LNG process technology and equipment to Qatargas for the North Field South (NFS) project in Ras Laffan.

The contract includes the supply of two new LNG process trains, adding to the four trains currently being fabricated for the North Field East (NFE) LNG project, each with an additional production capacity of 8 mill tonnes per annum.

These mega LNG trains will utilise AP-X liquefaction technology, which enables significantly higher LNG production, the company claimed.

"Once again, we are very pleased to have our LNG technology selected for the newest liquefaction expansion project in Qatar's North Field. Air Products' proven AP-X process technology enables significantly higher LNG production, while having flexible operation over a wide range of production capacities.

"The unrivalled performance, reliability, and efficiency of our equipment, coupled with responsive technical service and support, enable customers to optimise a facility's overall performance with safe and sustainable solutions," said Dr Samir Serhan, Air Products' COO.

Air Products has supplied equipment and technology for all of Qatar's existing LNG trains at Ras Laffan, including the initial units, which started production in 1996 using Air Products' patented AP-C3MR LNG process technology; six AP-X LNG process trains, which started up between 2009 and 2011; four AP-X LNG process trains currently in fabrication; and the two new AP-X LNG process trains for NFS.

Air Products will supply Qatargas with its natural gas liquefaction process technology and equipment plus the associated technical services.

The equipment will include main cryogenic heat exchangers (MCHEs), sub-cooling heat exchangers (SCHEs), Rotoflow turbomachinery companders and nitrogen economiser cold boxes.

All of the engineering and design will be undertaken in Air Products' corporate headquarters office in Allentown, Pennsylvania, and the MCHE and SCHE manufacture will be executed at Air Products' LNG equipment manufacturing facility located on the west coast of Florida, less than a mile from the deepwater Port Manatee.

Air Products opened its Port Manatee facility in January, 2014 and completed a 60% expansion project in October, 2019 to meet the needs of the ever-growing LNG industry.

In October, 2018, a new LNG equipment test facility was opened, which enables Air Products to continually improve the reliability and yield produced from its LNG equipment and to design new equipment. ■

LNG publication addresses SIRE 2.0

Last May, Witherby Publishing Group issued 'Ship Vetting and its Application to LNG - 3rd Edition'*.

This edition outlines the history of LNG shipping and provides an overview of the various types of engines, propulsion systems, gas management and cargo containment systems currently in use within the industry.

Witherby's latest LNGC vetting advice

It details the ship/shore compatibility process for LNG ship/shore and ship-to-ship cargo transfer operations.

The book sets out relevant sections of the SIRE 2.0 CVIQ and suggests practices and processes for taking advantage of new opportunities for assessment derived from the introduction of the SIRE 2.0 inspection regime.

It also describes changes introduced by the SIRE 2.0 programme to assist stakeholders understand the impact on their vetting processes.

In addition, it introduces the concepts of continuous improvement, resilience and the human element and considers their impact on the vetting of LNGCs.

The introduction of the SIRE 2.0 inspection regime gives the opportunity to significantly expand the depth and quality of marine assurance data gathered during vessel inspections. This will allow for more in-depth reporting outcomes and comprehensive assessments of the quality of a vessel and its crew on an ongoing basis.

To successfully transition to SIRE 2.0, companies' IT and marine assurance departments should review these changes and understand the impact on their vetting processes.

This publication describes and suggests risk assessment practices to take advantage of the new opportunities derived from the introduction of the SIRE 2.0 inspection regime.

The book has been revised by Capt Juan Presedo, a Master Mariner who has an MBA in Oil and Gas and a BSc in Marine Transportation. He also served for over 10 years at sea, predominantly on LNGCs.

Since 2014, Capt Presedo has been an accredited OCIMF SIRE inspector and is an LR certified ISO 9001/14001 lead auditor. He was selected by OCIMF in 2021 as a Trial Inspector for the SIRE 2.0 inspection programme.

He was also the Vice Chair of the OCIMF Navigation and Routeing Sub-committee and took part in TMSA 3 and ECDIS working groups. ■

**Ship Vetting and its Application to LNG - 3rd Edition, published by Witherby Publishing Group, 341 pp, price £350, edited and revised by Capt Juan Presedo.*

NEWS NUDGE

Fluxys offer cargo slots

Fluxys LNG is offering five slots to unload, store and regasify LNG cargoes at the Zeebrugge LNG receiving terminal.

These start on 2nd, 22nd and 30th August and on 2nd and 9th September this year.

For these cargoes, Fluxys LNG has upgraded the standard slot size and is offering to bundle the rights to unload, store and regasify up to 165 000 cu m of LNG over 10 days.

Auctions will take place via a dedicated auction website.

GTT wins four ship order and three AiP

GTT has received an order from HD Hyundai Heavy Industries for the tank design of four new 174,000 cu m LNGCs, on behalf of an Asian shipowner.

GTT will design the tanks of these four vessels and they will be fitted with the Mark III Flex membrane containment system.

They are due to be delivered between the first and third quarters of 2027.

GTT has also been granted three concept Approvals in Principles (AiPs) from DNV, two of which were developed with the support of the Finnish ship designer Deltamarin.

They were:

- An LNG dual-fuel Suezmax tanker developed in collaboration with Deltamarin, fitted with a LNG fuel tank of 5,500 cu m equipped with GTT's Mark III system.
- An LNG dual-fuel VLCC also developed with the support of Deltamarin, fitted with a LNG fuel tank of 12,500 cu m and equipped with GTT's Mark III system.
- A Mark III LNG fuel tank with NH3 ready notation that includes material compatibility with NH3, risk assessment and boil-off gas (BOG) management. ■

Monthly Large LNGC Values*

Newbuildings (174,000 cu m)	$257.34 mill
Five years old (174,000 cu m)	$221.36 mill
Total Fleet (566 ships)	$91.34 bill
Orderbook (321 ships)	$84.97 bill

**Source: VesselsValue (20/06/23)*

**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	$70,000	+ $22,000
West of Suez	$75,000	+ $35,000
12 mos T/C	$120,000	-

**Since last report (08/06/23)*

Source: Fearnleys (21/06/23)

WORLD LNG CARRIER ORDERBOOK

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Hudong-Zhonghua H1829a	CSSC	Hudong-Zhonghua	01/08/2019	174,000	XDF	01/01/2024
Wen Cheng	CSSC	Hudong-Zhonghua	01/08/2019	174,000	XDF	01/04/2024
Alexey Kosygin	Smart LNG	Zvezda SSK	01/09/2019	172,600	TFDE - Azipod	01/03/2024
Pyotr Stolypin	Smart LNG	Zvezda SSK	01/09/2019	172,600	TFDE - Azipod	01/09/2024
Samsung 2315	SinoKor	Samsung	01/12/2019	173,400	XDF	01/12/2023
Samsung 2316	SinoKor	Samsung	01/12/2019	173,400	ME-GA	01/12/2026
Samsung 2317	SinoKor	Samsung	01/12/2019	173,400	ME-GA	01/03/2027
Samsung 2318	SinoKor	Samsung	01/12/2019	173,400	ME-GA	01/06/2027
Kun Lun	ULT	Hudong-Zhonghua	30/06/2020	174,000	XDF	01/04/2023
Lng Harmony	JP Morgan	Hyundai Heavy	20/07/2020	174,000	XDF	01/07/2023
Orion Jessica	JP Morgan	Hyundai Heavy	20/07/2020	174,000	XDF	01/06/2023
Daewoo 2517	MOL, COSCO	DSME	01/08/2020	172,500	TFDE - Azipod	01/11/2023
Daewoo 2518	MOL, COSCO	DSME	01/08/2020	172,500	TFDE - Azipod	01/02/2024
Daewoo 2519	MOL, COSCO	DSME	01/08/2020	172,500	TFDE - Azipod	01/05/2026
Sm Golden Eagle	Korea Line	Hyundai Heavy	12/08/2020	174,000	XDF	01/09/2025
Sm Kestrel	Korea Line	Hyundai Heavy	12/08/2020	174,000	XDF	01/10/2023
Grazyna Gesicka	Knutsen	Hyundai Heavy	30/10/2020	174,000	XDF	01/06/2023
Samsung 2425	Maran Gas Maritime	Samsung	01/11/2020	174,000	XDF	01/08/2023
Hyundai Samho 8100	Knutsen	Hyundai Samho	14/12/2020	174,000	ME-GA	01/11/2024
Orion Sky	JP Morgan	Hyundai Heavy	14/12/2020	174,000	XDF	01/11/2024
New Brave	Pan Ocean	Hyundai Heavy	15/12/2020	174,000	XDF	01/09/2024
New Nature	Pan Ocean	Hyundai Heavy	15/12/2020	174,000	XDF	01/10/2024
Energy Fidelity	Alpha Gas	Hyundai Samho	08/01/2021	174,000	XDF	01/04/2023
Puteri Saadong	Hyundai LNG Shipping	Hyundai Heavy	15/04/2021	174,000	XDF	01/02/2024
Puteri Santubong	Hyundai LNG Shipping	Hyundai Heavy	29/04/2021	174,000	XDF	01/06/2024
Puteri Sejinjang	Hyundai LNG Shipping	Hyundai Heavy	29/04/2021	174,000	XDF	01/07/2024
Gordon Waters Knutsen	Knutsen	Hyundai Samho	30/04/2021	174,000	XDF	01/06/2023
Mulan Spirit	Jovo Energy	Jiangnan	01/05/2021	79,800	XDF	01/12/2023
Samsung 2473	Maran Gas Maritime	Samsung	01/05/2021	174,000	XDF	01/09/2024
Samsung 2474	Maran Gas Maritime	Samsung	01/05/2021	174,000	XDF	01/09/2024
Daewoo 2521	Hyundai LNG Shipping	DSME	28/05/2021	174,000	MEGI	01/09/2023
Clean Destiny	Dynagas	Hyundai Heavy	31/05/2021	200,000	ME-GA	01/11/2023
Clean Future	Dynagas	Hyundai Heavy	31/05/2021	200,000	ME-GA	01/03/2024
Clean Resolution	Dynagas	Hyundai Heavy	31/05/2021	200,000	ME-GA	01/09/2023
Clean Vitality	Dynagas	Hyundai Heavy	31/05/2021	200,000	ME-GA	01/02/2024
MOL Coral	MOL	DSME	01/06/2021	174,000	ME-GA	01/10/2023
Amore Mio I	Capital Gas	Hyundai Heavy	18/06/2021	174,000	ME-GA	01/10/2023
Axios II	Capital Gas	Hyundai Heavy	18/06/2021	174,000	ME-GA	01/12/2023
Celsius Geneva	Celsius Shipping	Samsung	01/07/2021	180,000	ME-GA	01/07/2023
Energy Fortitude	Alpha Gas	Hyundai Samho	01/07/2021	174,000	XDF	01/05/2024
Hyundai Samho 8106	Alpha Gas	Hyundai Samho	01/07/2021	174,000	XDF	01/07/2024
Hyundai Samho 8147	H-Line	Hyundai Samho	01/07/2021	174,000	XDF	01/11/2023
Samsung 2460	Celsius Shipping	Samsung	01/07/2021	180,000	ME-GA	01/10/2023
Samsung 2461	Celsius Shipping	Samsung	01/07/2021	180,000	ME-GA	01/02/2024
Hyundai Samho 8101	Knutsen	Hyundai Samho	13/07/2021	174,000	ME-GA	01/12/2023
Hyundai Samho 8102	Knutsen	Hyundai Samho	13/07/2021	174,000	ME-GA	01/09/2025
Orion Gaugin	JP Morgan	Hyundai Heavy	13/07/2021	174,000	ME-GA	01/09/2025
Orion Hugo	JP Morgan	Hyundai Heavy	13/07/2021	174,000	ME-GA	01/07/2025
New Green	Pan Ocean	Hyundai Heavy	14/07/2021	174,000	ME-GA	01/10/2024
New Oasis	Pan Ocean	Hyundai Heavy	14/07/2021	174,000	ME-GA	01/12/2024

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 = 28 March 2023

Fearnley LNG

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Daewoo 2522	Hyundai LNG Shipping	DSME	15/07/2021	174,000	MEGI	01/05/2024
Ignacy Lukasiewicz	Knutsen	Hyundai Samho	22/07/2021	174,000	ME-GA	01/03/2024
Puteri Ledang	Hyundai LNG Shipping	Hyundai Heavy	22/07/2021	174,000	XDF	01/05/2024
Puteri Mahsuri	Hyundai LNG Shipping	Hyundai Heavy	22/07/2021	174,000	XDF	01/11/2024
Puteri Mayang	Hyundai LNG Shipping	Hyundai Heavy	22/07/2021	174,000	XDF	01/01/2025
Saint Barbara	Knutsen	Hyundai Samho	22/07/2021	174,000	ME-GA	01/02/2024
Samsung 2579	Celsius Shipping	Samsung	26/07/2021	180,000	ME-GA	01/04/2024
Samsung 2584	Celsius Shipping	Samsung	01/08/2021	180,000	ME-GA	01/08/2024
Samsung 2585	Celsius Shipping	Samsung	01/08/2021	180,000	ME-GA	01/09/2024
Aktoras	Capital Gas	Hyundai Samho	01/09/2021	174,000	ME-GA	01/07/2024
Hudong-Zhonghua H1838a	K-Line	Hudong-Zhonghua	01/09/2021	79,960	XDF	01/09/2023
Daewoo 2523	MOL	DSME	14/09/2021	174,000	ME-GA	01/02/2024
Daewoo 2524	MOL	DSME	14/09/2021	174,000	ME-GA	01/04/2024
Daewoo 2525	MOL	DSME	14/09/2021	174,000	ME-GA	01/08/2024
Daewoo 2526	MOL	DSME	14/09/2021	174,000	ME-GA	01/10/2024
Daewoo 2527	MOL	DSME	01/10/2021	174,000	ME-GA	01/07/2024
Hudong-Zhonghua H1790a	MOL	Hudong-Zhonghua	01/10/2021	175,000	XDF	01/09/2024
Hudong-Zhonghua H1791a	MOL	Hudong-Zhonghua	01/10/2021	175,000	XDF	01/12/2024
Hudong-Zhonghua H1792a	MOL	Hudong-Zhonghua	01/10/2021	175,000	XDF	01/03/2025
Hudong-Zhonghua H1793a	MOL	Hudong-Zhonghua	01/10/2021	175,000	XDF	01/05/2025
Samsung 2580	NYK	Samsung	01/10/2021	174,000	XDF	01/09/2023
Samsung 2581	NYK	Samsung	01/10/2021	174,000	XDF	01/11/2023
Samsung 2582	NYK	Samsung	01/10/2021	174,000	XDF	01/12/2023
Samsung 2583	NYK	Samsung	01/10/2021	174,000	XDF	01/02/2024
Samsung 2592	JP Morgan	Samsung	01/10/2021	174,000		01/04/2024
Samsung 2593	JP Morgan	Samsung	01/10/2021	174,000		01/07/2024
Samsung 2594	JP Morgan	Samsung	01/10/2021	174,000		01/10/2024
Samsung 2595	JP Morgan	Samsung	01/10/2021	174,000		01/01/2025
Samsung 2596	JP Morgan	Samsung	01/10/2021	174,000	ME-GA	01/11/2024
Samsung 2597	JP Morgan	Samsung	01/10/2021	174,000	ME-GA	01/12/2024
Apostolos	Capital Gas	Hyundai Heavy	04/11/2021	174,000	ME-GA	01/06/2024
Assos	Capital Gas	Hyundai Heavy	04/11/2021	174,000	ME-GA	01/05/2024
Daewoo 2528	Maran Gas Maritime	DSME	10/11/2021	174,000	MEGI	01/08/2024
Daewoo 2529	Maran Gas Maritime	DSME	10/11/2021	174,000	MEGI	01/11/2024
Daewoo 2530	BWGas	DSME	25/11/2021	174,000	MEGI	01/03/2025
Daewoo 2531	BWGas	DSME	25/11/2021	174,000	MEGI	01/05/2025
Samsung 2600	JP Morgan	Samsung	01/12/2021	174,000		01/07/2024
Samsung 2601	JP Morgan	Samsung	01/12/2021	174,000		01/01/2025
Samsung 2598	Celsius Shipping	Samsung	07/12/2021	180,000	ME-GA	01/01/2025
Samsung 2599	Celsius Shipping	Samsung	07/12/2021	180,000	ME-GA	01/05/2025
Hudong-Zhonghua H1834a	ULT	Hudong-Zhonghua	08/12/2021	174,000	XDF	01/09/2024
Hudong-Zhonghua H1835a	ULT	Hudong-Zhonghua	08/12/2021	174,000	XDF	01/12/2024
Hudong-Zhonghua H1836a	ULT	Hudong-Zhonghua	08/12/2021	174,000	XDF	01/03/2025
Samsung 2604	NYK	Samsung	27/12/2021	174,000	XDF	01/12/2024
Daewoo 2532	GasLog	DSME	01/01/2022	174,000	MEGI	01/05/2024
Daewoo 2533	GasLog	DSME	01/01/2022	174,000	MEGI	01/08/2024
Daewoo 2534	GasLog	DSME	01/01/2022	174,000	MEGI	01/06/2025
Daewoo 2535	GasLog	DSME	01/01/2022	174,000	MEGI	01/08/2025
Samsung 2602	H-Line, Pan Ocean, SK Shipping	Samsung	01/01/2022	174,000	ME-GA	01/12/2024
Samsung 2603	H-Line, Pan Ocean, SK Shipping	Samsung	01/01/2022	174,000	ME-GA	01/12/2024

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 = 28 March 2023

Fearnley LNG

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Hyundai Samho 8173	SK Shipping	Hyundai Samho	04/01/2022	174,000	ME-GA	01/09/2024
Daewoo 2537	Maran Gas Maritime	DSME	06/01/2022	174,000	MEGI	01/09/2025
Daewoo 2538	Maran Gas Maritime	DSME	06/01/2022	174,000	MEGI	01/11/2025
Hudong-zhonghua H1880a	MOL	Hudong-Zhonghua	07/01/2022	174,000	XDF	01/10/2024
Hudong-zhonghua H1881a	MOL	Hudong-Zhonghua	07/01/2022	174,000	XDF	01/08/2025
Hudong-zhonghua H1882a	MOL	Hudong-Zhonghua	07/01/2022	174,000	XDF	01/10/2025
Hudong-zhonghua H1883a	MOL	Hudong-Zhonghua	07/01/2022	174,000	XDF	01/03/2026
Hudong-zhonghua H1884a	MOL	Hudong-Zhonghua	07/01/2022	174,000	XDF	01/06/2026
Hudong-zhonghua H1885a	MOL	Hudong-Zhonghua	07/01/2022	174,000	XDF	01/09/2026
Daewoo 2536	MOL	DSME	17/01/2022	174,000	ME-GA	01/09/2024
Hyundai Samho 8175	H-Line	Hyundai Samho	26/01/2022	174,000	XDF	01/04/2025
MOL 1	MOL	Samsung	01/02/2022	174,000		01/12/2026
MOL 2	MOL	Samsung	01/02/2022	174,000		01/01/2027
Samsung 2607	H-Line	Samsung	01/02/2022	174,000	ME-GA	01/03/2025
Samsung 2608	H-Line	Samsung	01/02/2022	174,000	ME-GA	01/05/2025
Samsung 2609	H-Line	Samsung	01/02/2022	174,000	ME-GA	01/06/2025
Samsung 2610	H-Line	Samsung	01/02/2022	174,000	ME-GA	01/09/2025
Daewoo 2539	Maran Gas Maritime	DSME	07/02/2022	174,000	MEGI	01/11/2025
Daewoo 2540	Maran Gas Maritime	DSME	07/02/2022	174,000	MEGI	01/12/2025
Hyundai Samho 8170	Hyundai Glovis	Hyundai Samho	21/02/2022	174,000	ME-GA	01/08/2024
Daewoo 2541	Venture Global LNG	DSME	01/03/2022	200,000	ME-GA	01/07/2025
Daewoo 2542	Venture Global LNG	DSME	01/03/2022	200,000	ME-GA	01/10/2025
Daewoo 2543	Venture Global LNG	DSME	01/03/2022	200,000	ME-GA	01/12/2025
Jiangnan H2700	ADNOC	Jiangnan	01/03/2022	175,000	XDF	01/01/2025
Jiangnan H2701	ADNOC	Jiangnan	01/03/2022	175,000	XDF	01/05/2025
Samsung 2619	Celsius Shipping	Samsung	01/03/2022	180,000	ME-GA	01/10/2025
Clean Levant	Dynagas	Hyundai Heavy	02/03/2022	200,000	ME-GA	01/04/2025
Clean Mistral	Dynagas	Hyundai Heavy	02/03/2022	200,000	ME-GA	01/03/2025
Clean Srocco	Dynagas	Hyundai Heavy	02/03/2022	200,000	ME-GA	01/12/2025
Hyundai Samho 8179	Knutsen	Hyundai Samho	31/03/2022	174,000	ME-GA	01/03/2025
Hyundai Samho 8180	Knutsen	Hyundai Samho	31/03/2022	174,000	ME-GA	01/06/2025
Daewoo 2544	BWGas	DSME	01/04/2022	174,000	MEGI	01/11/2025
Daewoo 2545	BWGas	DSME	01/04/2022	174,000	MEGI	01/12/2025
Samsung 2635	TMS Cardiff Gas	Samsung	01/04/2022	174,000	ME-GA	01/09/2024
Samsung 2636	TMS Cardiff Gas	Samsung	01/04/2022	174,000	ME-GA	01/03/2026
Daewoo 2550	MOL	DSME	15/04/2022	174,000	ME-GA	01/09/2025
Daewoo 2551	MOL	DSME	15/04/2022	174,000	ME-GA	01/09/2026
Dalian No 1 G175k-1	China Merchant	Dalian Shipbuilding	19/04/2022	175,000	XDF	01/09/2025
Dalian No 1 G175k-2	China Merchant	Dalian Shipbuilding	19/04/2022	175,000	XDF	01/12/2025
Hyundai Samho 8181	Knutsen	Hyundai Samho	20/04/2022	174,000	ME-GA	01/12/2025
Shanghai Jiangnan Changxing SB H1889A		Hudong-Zhonghua	28/04/2022	174,000	XDF	01/03/2027
Shanghai Jiangnan Changxing SB H1890A		Hudong-Zhonghua	28/04/2022	174,000	XDF	01/05/2027
NYK CNOOC 1	NYK	Hudong-Zhonghua	29/04/2022	174,000		01/04/2027
NYK CNOOC 2	NYK	Hudong-Zhonghua	29/04/2022	174,000		01/03/2027
NYK CNOOC 3	NYK	Hudong-Zhonghua	29/04/2022	174,000		01/01/2027
NYK CNOOC 4	NYK	Hudong-Zhonghua	29/04/2022	174,000		01/05/2026
NYK CNOOC 5	NYK	Hudong-Zhonghua	29/04/2022	174,000		01/08/2026
NYK CNOOC 6	NYK	Hudong-Zhonghua	29/04/2022	174,000		01/11/2026
Jiangnan H2702	ADNOC	Jiangnan	01/05/2022	175,000	XDF	01/09/2025
Jiangnan H2703	ADNOC	Jiangnan	01/05/2022	175,000	XDF	01/01/2026
Jiangnan H2704	ADNOC	Jiangnan	01/05/2022	175,000	XDF	01/06/2026

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Data last updated = 28 March 2023

Fearnley LNG

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Jiangnan H2705	ADNOC	Jiangnan	01/05/2022	175,000	XDF	01/09/2026
Samsung 2631	H-Line	Samsung	01/05/2022	174,000	ME-GA	01/07/2025
Samsung 2632	H-Line	Samsung	01/05/2022	174,000	ME-GA	01/12/2025
Samsung 2633	H-Line	Samsung	01/05/2022	174,000	ME-GA	01/01/2026
Hyundai Samho 8188	SK Shipping	Hyundai Samho	16/05/2022	174,000	ME-GA	01/07/2025
Hyundai Samho 8189	SK Shipping	Hyundai Samho	16/05/2022	174,000	ME-GA	01/08/2025
Hyundai Ulsan 3370	SK Shipping	Hyundai Heavy	16/05/2022	174,000	ME-GA	01/02/2025
Hyundai Ulsan 3371	SK Shipping	Hyundai Heavy	16/05/2022	174,000	ME-GA	01/03/2025
Petronas K-line 1	K-Line	Hudong-Zhonghua	17/05/2022	174,000	XDF	01/10/2026
Petronas K-line 2	K-Line	Hudong-Zhonghua	17/05/2022	174,000	XDF	01/12/2026
Petronas K-line 3	K-Line	Hudong-Zhonghua	17/05/2022	174,000	XDF	01/03/2027
Petronas K-line 4	K-Line	Hudong-Zhonghua	17/05/2022	174,000	XDF	01/06/2027
Daewoo 2559	SK Shipping, Pan Ocean, H-Line	DSME	01/06/2022	174,000	ME-GA	01/05/2024
Daewoo 2560	H-Line, Pan Ocean, SK Shipping	DSME	01/06/2022	174,000	ME-GA	01/04/2025
Daewoo 2561	Pan Ocean, SK Shipping, H-Line	DSME	01/06/2022	174,000	ME-GA	01/05/2025
Daewoo 2562	SK Shipping, Pan Ocean, H-Line	DSME	01/06/2022	174,000	ME-GA	01/06/2025
Daewoo 2563	H-Line, Pan Ocean, SK Shipping	DSME	01/06/2022	174,000	ME-GA	01/11/2025
Daewoo 2564	Pan Ocean, SK Shipping, H-Line	DSME	01/06/2022	174,000	ME-GA	01/11/2025
Daewoo 2565	Pan Ocean, SK Shipping, H-Line	DSME	01/06/2022	174,000	ME-GA	01/02/2026
Hyundai Samho 8196	EPS	Hyundai Samho	02/06/2022	174,000	ME-GA	01/09/2024
Hyundai Samho 8197	EPS	Hyundai Samho	02/06/2022	174,000	ME-GA	01/12/2024
Hyundai Ulsan 3380	Knutsen	Hyundai Heavy	03/06/2022	174,000	XDF	01/05/2025
Hyundai Ulsan 3381	Knutsen	Hyundai Heavy	03/06/2022	174,000	XDF	01/06/2025
Daewoo 2546	H-Line, Pan Ocean, SK Shipping	DSME	07/06/2022	174,000	ME-GA	01/12/2024
Daewoo 2547	H-Line, Pan Ocean, SK Shipping	DSME	07/06/2022	174,000	ME-GA	01/12/2024
Daewoo 2548	H-Line, Pan Ocean, SK Shipping	DSME	07/06/2022	174,000	ME-GA	01/01/2025
Daewoo 2549	H-Line, Pan Ocean, SK Shipping	DSME	07/06/2022	174,000	ME-GA	01/02/2025
Daewoo 2552	Maran Gas Maritime	DSME	08/06/2022	174,000	MEGI	01/05/2026
Daewoo 2553	Maran Gas Maritime	DSME	08/06/2022	174,000	MEGI	01/06/2026
Agamemnon	Capital Gas	Hyundai Samho	14/06/2022	174,000	ME-GA	01/03/2026
Archimidis	Capital Gas	Hyundai Samho	14/06/2022	174,000	ME-GA	01/01/2026
Samsung 2634	JP Morgan	Samsung	15/06/2022	174,000	ME-GA	01/05/2025
Samsung 2637	JP Morgan	Samsung	15/06/2022	174,000	ME-GA	01/07/2025
Samsung 2638	JP Morgan	Samsung	15/06/2022	174,000	ME-GA	01/08/2025
Samsung 2641	JP Morgan	Samsung	15/06/2022	174,000	ME-GA	01/11/2025
Samsung 2642	JP Morgan	Samsung	15/06/2022	174,000	ME-GA	01/01/2026
Samsung 2643	JP Morgan	Samsung	15/06/2022	174,000	ME-GA	01/02/2026
Samsung 2644	JP Morgan	Samsung	15/06/2022	174,000	ME-GA	01/05/2026
Samsung 2645	JP Morgan	Samsung	15/06/2022	174,000	ME-GA	01/06/2026
Samsung 2646	JP Morgan	Samsung	15/06/2022	174,000	ME-GA	01/07/2026
Samsung 2647	JP Morgan	Samsung	15/06/2022	174,000	ME-GA	01/08/2026
Hudong-Zhonghua H1892A	COSCO	Hudong-Zhonghua	01/07/2022	174,000	XDF	01/10/2025
Hudong-Zhonghua H1893A	COSCO	Hudong-Zhonghua	01/07/2022	174,000	XDF	01/03/2026
Hyundai Samho 8200	TMS Cardiff Gas	Hyundai Samho	06/07/2022	174,000	XDF	01/03/2026

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Data last updated = 28 March 2023

Fearnley LNG

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Hyundai Samho 8201	TMS Cardiff Gas	Hyundai Samho	06/07/2022	174,000	XDF	01/08/2026
Hyundai Ulsan 3382	Knutsen	Hyundai Heavy	06/07/2022	174,000	XDF	01/07/2025
Hyundai Ulsan 3383	Knutsen	Hyundai Heavy	06/07/2022	174,000	XDF	01/11/2025
Hyundai Ulsan 3384	Knutsen	Hyundai Heavy	06/07/2022	174,000	XDF	01/02/2026
Hyundai Ulsan 3385	Knutsen	Hyundai Heavy	06/07/2022	174,000	XDF	01/04/2026
Hyundai Ulsan 3386	Knutsen	Hyundai Heavy	06/07/2022	174,000	XDF	01/05/2026
Hyundai Ulsan 3387	Knutsen	Hyundai Heavy	06/07/2022	174,000	XDF	01/08/2026
Hyundai Ulsan 3393	Knutsen	Hyundai Heavy	06/07/2022	174,000	XDF	01/10/2026
Hyundai Ulsan 3394	Knutsen	Hyundai Heavy	06/07/2022	174,000	XDF	01/11/2026
Hyundai Samho 8049	NYK	Hyundai Samho	01/08/2022	174,000	XDF	01/03/2025
Hyundai Samho 8174	NYK	Hyundai Samho	01/08/2022	174,000	XDF	01/10/2025
Hyundai Ulsan 3395	NYK, MISC, K-Line, China LNG Shipping Holdings	Hyundai Heavy	09/08/2022	174,000	XDF	01/08/2025
Hyundai Ulsan 3396	NYK, MISC, K-Line, China LNG Shipping Holdings	Hyundai Heavy	09/08/2022	174,000	XDF	01/12/2025
Hyundai Ulsan 3397	NYK, MISC, K-Line, China LNG Shipping Holdings	Hyundai Heavy	09/08/2022	174,000	XDF	01/01/2026
Hyundai Ulsan 3398	NYK, MISC, K-Line, China LNG Shipping Holdings	Hyundai Heavy	09/08/2022	174,000	XDF	01/07/2026
Hyundai Ulsan 3399	NYK, MISC, K-Line, China LNG Shipping Holdings	Hyundai Heavy	09/08/2022	174,000	XDF	01/09/2026
Hyundai Ulsan 3400	NYK, MISC, K-Line, China LNG Shipping Holdings	Hyundai Heavy	09/08/2022	174,000	XDF	01/12/2026
Hyundai Ulsan 3401	NYK, MISC, K-Line, China LNG Shipping Holdings	Hyundai Heavy	09/08/2022	174,000	XDF	01/12/2026
DAEWOO 2558	MOL	DSME	01/09/2022	174,000	ME-GA	01/09/2026
Dalian No 1 G175k-3	China Merchant	Dalian Shipbuilding	01/09/2022	175,000	XDF	01/11/2025
Dalian No 1 G175k-4	China Merchant	Dalian Shipbuilding	01/09/2022	175,000	XDF	01/01/2026
Hudong-Zhonghua H1794A	MOL	Hudong-Zhonghua	01/09/2022	174,000	XDF	01/02/2027
Hudong-Zhonghua H1795A	MOL	Hudong-Zhonghua	01/09/2022	174,000	XDF	01/07/2027
Hudong-Zhonghua H1796A	MOL	Hudong-Zhonghua	01/09/2022	174,000	XDF	01/12/2027
Hudong-Zhonghua H1797a	NYK, MISC, K-Line, China LNG Shipping Holdings	Hudong-Zhonghua	01/09/2022	174,000	XDF	01/09/2025
Hudong-zhonghua H1798a	NYK, MISC, K-Line, China LNG Shipping Holdings	Hudong-Zhonghua	01/09/2022	174,000	XDF	01/11/2025
Hudong-zhonghua H1799a	NYK, MISC, K-Line, China LNG Shipping Holdings	Hudong-Zhonghua	01/09/2022	174,000	XDF	01/02/2026
Hudong-zhonghua H1800a	NYK, MISC, K-Line, China LNG Shipping Holdings	Hudong-Zhonghua	01/09/2022	174,000	XDF	01/05/2026
Hudong-zhonghua H1801a	NYK, MISC, K-Line, China LNG Shipping Holdings	Hudong-Zhonghua	01/09/2022	174,000	XDF	01/07/2026
Samsung 2611	H-Line, Pan Ocean, SK Shipping	Samsung	01/09/2022	174,000	ME-GA	01/01/2025
Samsung 2612	H-Line, Pan Ocean, SK Shipping	Samsung	01/09/2022	174,000	ME-GA	01/03/2025
Samsung 2639	JP Morgan	Samsung	01/09/2022	174,000	ME-GA	01/09/2025
Samsung 2640	JP Morgan	Samsung	01/09/2022	174,000	ME-GA	01/09/2025
MOL ENN 1	MOL	Hudong-Zhonghua	08/09/2022	174,000		01/06/2027
MOL ENN 2	MOL	Hudong-Zhonghua	08/09/2022	174,000		01/10/2027
MOL ENN 3	MOL	Hudong-Zhonghua	08/09/2022	174,000		01/12/2027
Dalian n5	China Merchant	Dalian Shipbuilding	26/09/2022	175,000	XDF	01/04/2026
Dalian n6	China Merchant	Dalian Shipbuilding	26/09/2022	175,000	XDF	01/02/2025
Daewoo 2566	Meiji Shipping	DSME	30/09/2022	174,000	XDF	01/08/2025
Daewoo 2567	Meiji Shipping	DSME	30/09/2022	174,000	XDF	01/09/2025

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Fearnley LNG

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Daewoo 2568	Meiji Shipping	DSME	30/09/2022	174,000	XDF	01/06/2026
Daewoo 2569	Meiji Shipping	DSME	30/09/2022	174,000	XDF	01/09/2026
DAEWOO 2570	MISC	DSME	30/09/2022	174,000	XDF	01/01/2026
DAEWOO 2571	MISC	DSME	30/09/2022	174,000	XDF	01/05/2026
Daewoo 2572	TMS Cardiff Gas	DSME	30/09/2022	174,000	ME-GA	01/03/2026
Daewoo 2573	TMS Cardiff Gas	DSME	30/09/2022	174,000	ME-GA	01/06/2026
MISC EM 1	MISC	Samsung	30/09/2022	174,000	XDF	01/06/2026
MISC EM 2	MISC	Samsung	30/09/2022	174,000	XDF	01/08/2026
Samsung 2651	Celsius Shipping	Samsung	01/10/2022	180,000	ME-GA	01/12/2025
Hyundai Samho 8182	TMS Cardiff Gas	Hyundai Samho	17/10/2022	174,000	XDF	01/01/2026
VG 1	Venture Global LNG	DSME	21/10/2022	200,000	ME-GA	01/10/2026
VG 2	Venture Global LNG	DSME	21/10/2022	200,000	ME-GA	01/12/2026
Shandong 1	Shandong Marine	Jiangnan	26/10/2022	175,000		01/03/2027
Shandong 2	Shandong Marine	Jiangnan	26/10/2022	175,000		01/05/2027
Shandong 3	Shandong Marine	Jiangnan	26/10/2022	175,000		01/12/2027
Yangzijiang 1	Hammonia Reederei	Yangzijiang	26/10/2022	175,000	ME-GA	01/10/2025
Yangzijiang 2	Hammonia Reederei	Yangzijiang	26/10/2022	175,000	ME-GA	01/03/2026
Wideshine 2	CSSC	Hudong-Zhonghua	27/10/2022	174,000	XDF	01/03/2028
Wideshine 3	CSSC	Hudong-Zhonghua	27/10/2022	174,000	XDF	01/06/2028
Wideshine 4	CSSC	Hudong-Zhonghua	27/10/2022	174,000	XDF	01/09/2028
Samsung 2652	Minerva Marine	Samsung	01/11/2022	174,000	ME-GA	01/02/2026
Samsung 2653	Minerva Marine	Samsung	01/11/2022	174,000	ME-GA	01/03/2026
Samsung 2656	Seapeak	Samsung	15/11/2022	174,000	ME-GA	01/03/2027
Samsung 2657	Seapeak	Samsung	15/11/2022	174,000	ME-GA	01/05/2027
Samsung 2658	Seapeak	Samsung	15/11/2022	174,000	ME-GA	01/08/2027
Samsung 2659	Seapeak	Samsung	15/11/2022	174,000	ME-GA	01/09/2027
Samsung 2660	Seapeak	Samsung	15/11/2022	174,000	ME-GA	01/12/2027
Dalian 7	China Merchant	Dalian Shipbuilding	05/12/2022	175,000	XDF	01/12/2026
Dalian 8	China Merchant	Dalian Shipbuilding	05/12/2022	175,000	XDF	01/06/2027
Celsius 1	Celsius Shipping	China Merchants HI Jiangsu	31/12/2022	180,000	ME-GA	01/01/2026
Celsius 2	Celsius Shipping	China Merchants HI Jiangsu	31/12/2022	180,000	ME-GA	01/03/2026
Celsius 3	Celsius Shipping	China Merchants HI Jiangsu	31/12/2022	180,000	ME-GA	01/05/2026
Celsius 4	Celsius Shipping	China Merchants HI Jiangsu	31/12/2022	180,000	ME-GA	01/07/2026
Hyundai Samho 8204	Oman Shipping Co.	Hyundai Samho	01/01/2023	174,000		01/01/2026
Hyundai Samho 8205	Oman Shipping Co.	Hyundai Samho	01/01/2023	174,000		01/04/2026
Hyundai Ulsan 3433	Dynagas	Hyundai Heavy	16/01/2023	200,000	XDF	01/04/2026
Hyundai Ulsan 3434	Dynagas	Hyundai Heavy	16/01/2023	200,000	XDF	01/07/2026
Hyundai Ulsan 3435	Dynagas	Hyundai Heavy	16/01/2023	200,000	XDF	01/11/2026
Hyundai Samho 8202	Capital Gas	Hyundai Samho	18/01/2023	174,000	ME-GA	01/09/2026
Hyundai Samho 8203	Capital Gas	Hyundai Samho	18/01/2023	174,000	ME-GA	01/11/2026
DAEWOO 2580	MOL	DSME	13/02/2023	174,000	ME-GA	01/03/2027
DAEWOO 2574	Maran Gas Maritime	DSME	01/03/2023	174,000	MEGI	01/09/2026
DAEWOO 2575	Maran Gas Maritime	DSME	01/03/2023	174,000	MEGI	01/12/2026
Samho Mar 1	NYK	Hyundai Samho	02/03/2023	174,000		01/08/2027
Samho Mar 2	NYK	Hyundai Samho	02/03/2023	174,000		01/10/2027
Samho Mar 3	NYK	Hyundai Samho	02/03/2023	174,000		01/12/2027

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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	Seapeak Unikum	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
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

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Built	Name	CBM	Cargo Type	Trading area	Trading in LNG?	Ship Owner / Operator
2019	Blue Whale	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	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	Xin Ao Pu Tuo Hao	8,500	LNG	China	Yes	ENN
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	Alice Cosulich	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
2023	FueLNG Venosa	18,000	LNG	Singapore	Yes	FuelLNG
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
2024	Seaspan TBN 1	7,600	LNG	Canada	Yes	Seaspan ULC
2024	Fratelli Cosulich TBN	8,000	LNG	Mediterranean	Yes	Fratelli Cosulich
2024	Anhui Changjiang TBN	14,000	LNG	China	Yes	Anhui Changjiang LNG
2024	LNG Erasmus	8,000	LNG	NWE	Yes	Shell
2025	Seaspan TBN 2	7,600	LNG	Canada	Yes	Seaspan ULC
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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