

LNG Shipping News

AN LNG JOURNAL TITLE ON LNG CARRIERS

15 September 2022

Seaborne LNG trade increases

Global seaborne LNG trade continued to surge this year, helped in part by the events in Ukraine.

In the first seven months of 2022, global LNG loadings increased by 6% year-on-year to 235.2 mill tonnes, based on Refinitiv vessel tracking data, analysed by Banchero Costa.

The biggest rise was seen in US exports, recording a huge 16.3% y-o-y shipments increase during the period, to 47.8 mill tonnes.

As a result, the US was the world's largest seaborne exporter of LNG, accounting for 20.3% of global volumes, ahead of Australia (19.7%) and Qatar (19.6%) by the end of July.

Shipments of Australian LNG increased by 2.2% y-o-y in the January/July window to 46.4 mill tonnes. Conversely, shipments from Qatar have stagnated for years, and only increased by 0.2% y-o-y to 46 mill tonnes during the period.

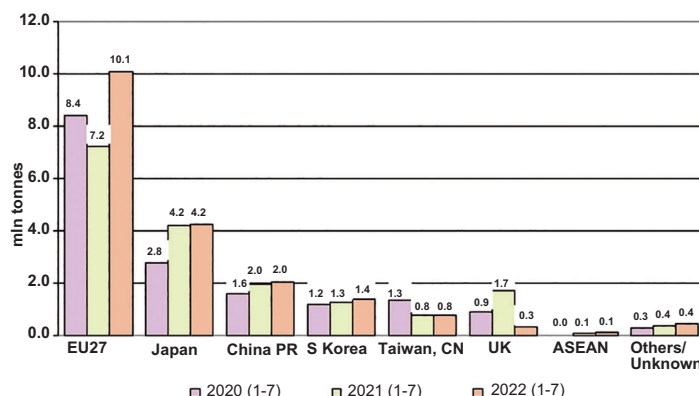
EU largest importer

In terms of destinations, the European Union (EU27) was the world's largest seaborne importer of LNG, with a 24.2% share in the first seven months of 2022, importing 57.4 mill tonnes, which represented a 66.6% y-o-y increase from the 34.5 mill tonnes recorded in the same period last year.

Russia was the fourth largest seaborne LNG exporter, after Qatar, Australia, and the US, with a 8.2% share of the market.

Russia - LNG Exports by Destination in Jan-Jul

(Aug 2022 ; source: refinitiv ; seaborne only ; all tankers ; in mln tonnes)



Source: Banchero Costa

Russian shipments increased this year, by 10.5% y-o-y to 19.4 mill tonnes and are now the highest on record. In January/July 2022, Yamal LNG exports reached 12.4 mill tonnes (64% of Russia's total LNG exports).

The second largest Russian operational LNG export facility is in Prigorodnoye on Sakhalin Island, in the country's Far East region. The Sakhalin-2 project was the first LNG export facility in Russia.

Sakhalin exports reached 6.6 mill tonnes during the period, which was 33.3% of Russia's total. Finally, small amounts of LNG - 0.4 mill tonnes in the first seven months of this year - were shipped from Vysotsk in the Gulf of Finland.

Despite the rhetoric, LNG exports from Russia to the EU27 increased by 40% y-o-y to 10.1 mill

tonnes from 7.2 mill in the same period of 2021.

However, cargoes to the UK crashed by 82.5% y-o-y to 0.3 mill from 1.7 mill tonnes in the same period of last year.

Chinese imports

During August, Chinese imports from Russia reached a 22-month high of about 611,000 tonnes, shipping data from S&P Global Commodity Insights showed.

China imported six LNG cargoes of about 71,000 tonnes each from Russia's Yamal LNG terminal and three cargoes of about 62,000 tonnes each from the Sakhalin LNG terminal, according to the shipping data.

These cargoes were thought to be mostly term contract volumes with about 15.7 mill tonnes per year contracted out of the 16.5 mill tonne volume, whereas Sakhalin cargoes were bought in the spot market via tenders, market sources said, adding that the Sakhalin cargoes were likely purchased at a high discount to spot LNG prices.

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“Despite the rhetoric, LNG exports from Russia to the EU27 increased by 40% y-o-y”

- Banchero Costa

More European LNG needed

Europe is on track to meet EU gas inventory targets of 80% full before the winter sets in.

In mid-August, inventory levels were nearly 75% full at around 74 bill cu m. LNG imports were playing a critical role in their build-up.

Europe imported roughly 107 bill cu m of LNG in 2022 up to the end of July, while pipeline imports were 12% lower, according to Poten & Partners' LNG Market Outlook.

While countries with smaller storage capacity, such as Spain, Belgium and the UK, are at 80% full or better, those with larger storage capacities like Germany, Italy and the Netherlands, were falling short and needed to increase volumes.

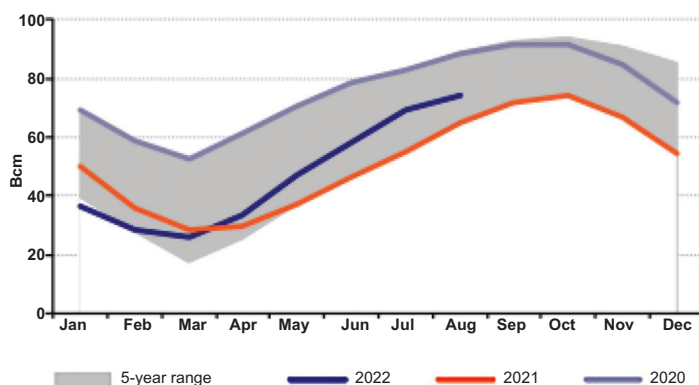
Among the countries with a

larger capacity, only France had met the target, Poten said.

Roughly 50% of total European monthly imports for 2022 arrived in France, Spain or the UK. Italy and Belgium will need to import more gas within the next two months to meet storage requirements before winter, the report said.

Both Italy and Belgium have been able secure more pipeline gas this year. Each country has also increased LNG imports and imported an average of 1 mill tonnes since March.

The complete cut off of Russian pipeline gas, a prolonged disruption in Norwegian piped



European storage inventories. Source: Reuters

gas, and the return of demand in Asia were among the largest risks to the European storage goals, Poten said.

European LNG imports were forecast to stay robust through at least September before the Asian winter demand kicks in. ■

Delfin and Devon Energy in LNG export partnership

Delfin Midstream and Devon Energy Corp have agreed to partner on LNG exports.

This agreement includes an executed Heads of Agreement (HOA) for long-term liquefaction capacity and a pre-financial investment decision (FID) strategic investment by Devon in Delfin.

The HOA provides the framework for finalising a definitive long-term tolling agreement representing 1 mill tonnes per annum of liquefaction capacity at Delfin's first FLNG, with the ability to add an additional 1 mill tonnes in the

first or any future FLNGs.

In addition to providing Devon with up to 2 mill tonnes of liquefaction capacity on a long-term basis, the HOA also provides an opportunity for additional future equity investments in Delfin.

"We are delighted to execute this agreement with Devon, representing a truly strategic partnership between a US producer and a liquefaction provider," said Dudley Poston, Delfin CEO. "We believe

our unique liquefaction solution provides significant structural flexibility that allows producers to maximise the value of their natural gas, while providing a much-needed source of additional supply to the world LNG market place."

"Our decision to invest in Delfin was the result of a thorough process intended to create additional pricing diversification for our natural gas portfolio and deliver a sustainable and capital efficient return for our shareholders," said Rick Muncrief, Devon's President and CEO. "Devon has a strong track record of finding best-in-class midstream and downstream solutions for our production and we are excited to partner with Delfin to meet the need for safe, clean and reliable energy."

Following a recent announcement of a binding SPA with Vitol and a HOA with Centrica, this move is Delfin's third major agreement signed in the past two months.

Delfin said that it was also in several advanced discussions on additional binding SPAs, HOAs and tolling agreements, similar to those already announced.

As a modular project requiring only 2-2.5 mill tonnes per annum of long-term contracts to begin construction, and with all necessary permits in hand, Delfin is on schedule to take FID on its first FLNG by the end of this year, the company claimed.

Latham & Watkins served as legal advisor to Delfin, while Kirkland & Ellis served as legal advisor to Devon. ■

“We believe our unique liquefaction solution provides significant structural flexibility that allows producers to maximise the value of their natural gas....”

– Dudley Poston, Delfin CEO

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Eemshaven comes online - Gate unveils open season

On 4th September, the FSRU 'Golar Igloo' arrived at Eemshaven and was moored in the port's Wilhelminahaven.

In order to increase the security of supply and become less dependent on Russian gas, a new floating LNG terminal at Eemshaven is being developed, which comprises two FSRUs.

'Golar Igloo' was the first to arrive to form the new floating LNG terminal called EemsEnergy Terminal. The second FSRU - 'Eemshaven LNG' - subsequently arrived on 6th September.

Last Thursday, the LNGC 'Murex' also arrived with the first LNG cargo and berthed alongside 'Golar Igloo'.

Operator Gasunie said that

EemsEnergyTerminal is forecast to receive, unload and ship around 18 LNG cargoes up to the end of this year.

It is thought that the first natural gas will flow into Gasunie's gas network by the middle of this month, while the LNG terminal is expected to be operating at full capacity by the end of November/beginning of December.

Han Fennema, Gasunie CEO, said: "The EemsEnergyTerminal makes an important contribution to the security of supply and helps the Netherlands and Europe to reduce their dependence on Russian

gas. In the longer term Gasunie wants to use the terminal for green hydrogen. In this way, the EemsEnergyTerminal will be able to contribute to the energy supply in the Netherlands and Europe for many years to come."

Rotterdam open season

Remaining in the Netherlands, in Rotterdam, Gate terminal, a joint venture between Vopak and Gasunie, is to launch an open season to gauge market interest for an additional 4 bill cu m per year capacity.

In the first phase, Gate is invit-

ing interested parties to formulate a non-binding expression of interest (EOI). Following the signing of a confidentiality agreement (for which Gate will provide the draft), if not yet in place, parties can indicate in a free format their non-binding but bona fide interest in taking capacity.

The EOI should include the required capacity (maximum 4 bill cu m per year), the required duration (at least 10 years), required start-up date (between 1st April, 2026 and 1st April, 2028) and the required ultimate date by which the condition precedent of an investment decision should be lifted (indicatively, 1st September, 2023, dependent on obtaining an exemption from regulations on tariffs and access conditions).

Offers should be received before 14th October, 2022.

Participating in this non-binding phase is a requirement to join the binding phase, which is tentatively scheduled from 14th November, 2022 to 16th December, 2022, Gate said. ■



The two FSRUs plus 'Murex' in Eemshaven last week

Excelerate to provide Germany's fifth FSRU

Late last month, Excelerate Energy and ENGIE signed a term sheet to employ another FSRU in Germany.

Under the proposed agreement, Excelerate would earmark an FSRU from its fleet to provide regasification services for five years at Germany's fifth planned LNG import terminal, which is being developed at Wilhelmshaven by Tree Energy Solutions (TES) and ENGIE.

The deployment of an FSRU to Germany would significantly increase Excelerate's presence in the European market, the company said.

"This term sheet represents an important milestone in our commercial negotiations to support the development of a new FSRU import terminal in Germany," said

Oliver Simpson, Excelerate's Commercial Vice President. "We look forward to collaborating with ENGIE and its partners E.ON and TES to support Germany as the country seeks to enhance its energy security and achieve its decarbonisation goals."

This proposed deal demonstrates the flexibility of Excelerate's business model and the value of its integrated FSRU fleet, which allows the company to help strengthen Europe's energy security while expanding its terminal services and downstream gas sales in markets worldwide, it claimed. ■

NEWS NUDGE

Becker highlights energy saving solutions at SMM

Hamburg-based Becker Marine Systems presented new products, outlined its co-operation with partner Nakashima Propeller and highlighted the combined product portfolio of energy-saving solutions at SMM 2022.

The range of product developments covers not only the Becker Twist Rudder for propulsion efficiency and the high-lift Becker Flap Rudder for improved manoeuvrability, but also featured energy-saving devices like the Becker Twisted Fin and the patented Becker Mewis Duct.

New business activities in-

cluded wind propulsion systems and research into rigid wing sails.

Ships with wind-assisted propulsion will have different manoeuvring and course-keeping characteristics. Consequently, Becker developed and launched the retractable anti-drift device Becker Daggerboard.

Becker has also developed a rotary vane steering gear, enabling the company to offer complete packages of rudders with steering gears in the near future.

In addition, the company revealed it had won orders for Becker Rudders to be fitted on more than 20 x 174,000 cu m LNGCs built at Chinese shipyards. ■

Woodside signs two major deals

Woodside Energy Trading Singapore and Commonwealth LNG have converted their non-binding heads of agreement (HOA) into two binding LNG Sale and Purchase Agreements (SPAs).

Signed on 2nd September, 2022, the SPAs call for the supply of up to 2.5 mill tonnes per annum of LNG over 20 years from Commonwealth's export facility under development in Cameron Parish, Louisiana.

Key terms in the HOA, previously announced on 19th January, 2022, are unchanged in the binding SPAs. First deliveries are expected to commence in mid-2026.

The SPAs will become fully effective upon the satisfaction of customary conditions including an affirmative final investment decision (FID) on the project.

"We're very pleased to have Woodside involved in our project," said Commonwealth Executive Chairman, Paul Varello. "Woodside is known throughout the LNG industry for its keen technical capabilities and commercial agility. These SPAs establish Woodside as a cornerstone customer and mark a major milestone in the development of Commonwealth LNG."

Commonwealth President and CEO, Farhad Ahrabi, added: "Our modular construction approach allows Commonwealth LNG to provide greater cost and schedule certainty to customers as we

deliver affordable, reliable, cleaner energy to meet global demands. We're proud to have an international LNG customer of Woodside's stature recognise these advantages and show this level of commitment."

Woodside CEO, Meg O'Neill, said the agreements provided the basis for a long-term partnership with Commonwealth LNG. "The agreements secure for Woodside low-cost LNG

volumes in the Atlantic Basin in a period of expected strong demand as Europe seeks alternatives to Russian pipeline gas," she said.

US law firm Allens advised Woodside on the Commonwealth LNG deal. The legal team was assisted by the New York office of alliance partner, Linklaters.

Uniper deal

In addition, Woodside Singapore announced that it had signed a flexible long-term sale and purchase agreement (SPA) with Uniper Global Commodities for the supply of European LNG, including

from Germany, up to 2039, commencing in January, 2023.

The quantity of LNG to be supplied is up to 12 cargoes per year.

The supply from September 2031 is conditional upon Uniper finalising its long-term strategic capacity bookings in northwest Europe, expected by March, 2023.

O'Neill said: "Woodside is pleased that this latest agreement with Uniper will provide a new source of LNG for consumers in Europe who are seeking alternatives to Russian gas. It also reflects the increasingly interconnected nature of LNG

trade in the Atlantic and Pacific basins as global markets respond to energy security challenges."

Uniper Group CEO, Klaus-Dieter Maubach, added: "This agreement secures additional LNG supplies for our customers in Europe, which has become ever more important due to recent developments. It will support our security of supply strategy together with the development of our LNG terminal in Wilhelmshaven. Woodside is one of our biggest LNG suppliers in Asia and we are pleased to extend the co-operation with Woodside to Europe with this deal." ■



Woodside signs Commonwealth SPAs

RINA and Asprofos to manage Greek FSRU project

RINA, the inspection, certification and consulting engineering company, in partnership with Asprofos, a Greek engineering consultancy, have secured a contract to provide project management consultancy (PMC) services for the Alexandroupolis Independent Natural Gas System (INGS).

INGS is owned and developed by the Greek company Gastrade, whose shareholders include Ms E Copelouzou, GasLog Cyprus Investments, DEPA Commercial, Bulgartansgaz and DESFA.

The project will consist of a permanently moored FSRU and a pipeline system of 28 km connecting the unit to the Greek National Natural Gas Transmission System (NNGTS).

With a storage capacity of 153,500 cu m, the FSRU will be stationed in the northeastern part of the Aegean Sea, about 17.6 km southwest of the town of Alexandroupolis in northeast Greece.

It will have nominal gas send out rate of 625,000 cu m per hour and a peak (without redundancy) gas send out rate of up to 944,000 cu m per hour.

The project is being financed

through own resources with co-financing from public funds, the National Bank of Greece and shareholder equity. Public funds will be provided through the Greek Public Investment Programme, partly through national participation and partly through the European Regional Development Fund (ERDF).

This terminal is a fast-track project, with the FSRU scheduled to be online by the end of 2023.

RINA and Asprofos will ensure that the project's contractual requirements in terms of expected performance, quality, safety and planning are met.

As well as supporting the owner on technical and managerial planning and oversight the two partners will act as an interface, through a multi-disciplinary team of experts covering the different needs of the project. ■

CoolCo predicts rosy future

Recently formed Cool Company Ltd (CoolCo) generated aggregate operating income of \$53.4 mill and net income of \$40.9 mill for the first half of this year.

These results included \$27.7 mill and \$23.2 mill, which related to predecessor period operations, respectively.

Adjusted EBITDA came in at \$67 mill.

During the period, CoolCo achieved average daily TCE of \$59,100 per day, exceeding the all-up cash breakeven for the fleet of around \$50,000 per day per vessel.

The company fixed an LNGC on a 12-month charter at \$120,000 per day, which commenced in April and subsequently last month fixed another LNGC for 12 months at \$140,000 per day, which was due to start her charter early this month.

As of 30th June, the company had cash and cash equivalents of \$77.3 mill and contractual debt of \$787 mill.

CoolCo raised \$275 mill in an upsized private placement on 27th January, 2022 and listed on the Euronext Growth Oslo market on 22nd February, 2022.

The formation and funding of

CoolCo and its acquisition of eight TFDE LNGCs, The Cool Pool Limited and the shipping and FSRU management organisation from Golar LNG was completed in a phased process.

It commenced with the funding of CoolCo on 27th January, 2022 and concluded with the acquisition of the LNGCs and FSRU management organisation on 30th June.

Results for 1H22 have therefore been split between the period prior to the funding of CoolCo and various staggered acquisitions and subsequent to the vessel and management acquisitions.

CoolCo's fleet of eight TFDEs performed well with no technical off-hire recorded with fleet utilisation for 1H22 at 98%.

With very little tonnage on offer by independent owners, no uncommitted vessels scheduled for delivery for the rest of this year and charterers prioritising shipping coverage, CoolCo said that it expected the market will quickly tighten when Freeport

returns to service and relets are pulled back ahead of the winter.

At the end of the 1H22 TFDE spot rates recovered to around \$70,000 per day and 12-month TFDE rates had almost hit twice the spot rate.

Outlook

In 2023, around 38 vessels are scheduled for delivery, only three of which are uncommitted. A new environmental regulatory regime, which will hinder the operations of older, less efficient steam vessels that collectively make up over 30% of the global LNG fleet, will also come into force.

This will most likely cut the speed of the steam ships, especially in periods of high demand, such as winters, effectively adding tonne/miles.

At almost 40% of the on water fleet, the order book looks sizeable, however it remains insufficient to replace ageing steam vessels and to cater for the next wave of volumes scheduled to

start delivery in late 2024, CoolCo said.

Newbuilding prices have reached \$250 mill and it was increasingly difficult to secure a 2026 delivery slot, the company added. Cost uncertainties mean that shipyards were reluctant to take orders for vessels for delivery after 2026.

Meanwhile, record high LNG prices have set the scene for the most bullish environment for new LNG projects in a decade.

Europe's urgent need to move away from unreliable Russian piped gas and its decision to include gas in the EU Taxonomy of green fuels is giving energy companies and utilities the confidence to enter into long term offtake agreements that will underpin these projects.

They will generate a steady stream of new LNG volumes to be shipped over the decades ahead and CoolCo expected its vessels to be well positioned to cater for this demand, it said. ■

Cheniere reveals long-term capital allocation plan

Cheniere Energy's Board of Directors has approved a revised long-term capital allocation plan.

This plan is designed to maintain investment grade credit metrics through cycles, further return capital to shareholders over time, and continue to invest in accretive organic growth.

Executing under the capital allocation plan announced in September, 2021, Cheniere has repaid or redeemed over \$4 bill of long-term debt, repurchased more than \$0.6 bill of shares, initiated and paid \$1.32 per common share in dividends, as of the second quarter of 2022, and reached a positive final investment decision (FID) on Corpus Christi Stage 3 liquefaction project.

Given the company's progress on its previous capital allocation plan significantly ahead of schedule, which is driven by its con-

tinued out performance, Cheniere said that it had reached a new cash flow inflection point and now expects to generate over \$20 bill of available cash through 2026 and construction of CCL Stage 3, enabling further execution on its balance sheet, capital return and growth priorities.

The plan is designed to achieve a run-rate distributable cash flow (DCF) of over \$20 per share on a run-rate basis.

Cheniere is also raising its full year 2022 consolidated adjusted EBITDA guidance to \$11-\$11.5 bill and full year 2022 DCF guidance to \$8.1-\$8.6 bill, due primarily to a change in the expected timing of several cargoes accelerating into 2022, which were previously forecast for 2023, as well as sustained

higher margins on LNG throughout this year.

"(Today's) revised capital allocation plan marks another significant milestone for Cheniere and reflects the success achieved by the Cheniere team, particularly in terms of operational excellence and safety. The accelerated progress on our 2021 plan would not have been possible without the hard work and dedication of our entire workforce," said Jack Fusco, Cheniere's President and CEO.

"As a market leading LNG operator, we are proud of our accomplishments thus far and look forward to continuing to reliably supply the global market with our flexible, cleaner-burning LNG in support of our customers and end-

users abroad, while delivering on our commitment to create value for our all of our stakeholders.

"Energy security has never been more critical, and we are confident in the significant long-term role of North American natural gas in the global energy supply mix," he concluded.

Cheniere also pre-filed Corpus Christi Midscale Trains 8 & 9 with US FERC in August, 2022 with near-term goal to achieve about 60 mill tonnes per annum platform.

The company said that it was keen to develop large-scale brownfield growth opportunities at both Sabine Pass and Corpus Christi, with long-term potential to reach of around 90 mill tonnes per annum. ■

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Methane slip to be addressed

A coalition of shipping leaders has joined together to identify, accelerate and advocate technology solutions to measure and manage shipboard methane emissions activity.

The Methane Abatement in Maritime (MAM) innovation initiative aims to minimise the environmental impact of LNG in shipping, whilst aiding the transition to future fuel solutions.

Led by Safetytech Accelerator, established by Lloyd's Register (LR), MAM is a technology acceleration programme whose activities will initially be supported by seven partners: Maran Gas Maritime, Mediterranean Shipping Company (MSC), Carnival Corp,

Seaspan, Shell, LR and the Knutsen Group.

It will also make use of academics, civil society, and other stakeholders expertise, such as the National Physical Laboratory.

In the first year, members will seek to identify and pilot new technologies to monitor and reduce 'methane slip' from vessels fuelled by LNG. Once these solutions have been validated, the initiative will seek to endorse them to industry from 2023.

This initiative will tackle how shipowners and operators can be encouraged to adopt proven abatement technology at scale.

MAM will be chaired by Panagiotis Mitrou, LR's Global Gas Director, and directed by Safetytech Accelerator's Head of Partnerships, Steve Price.

To date, there are no globally recognised methods for measuring methane slip - with a lack of available data and tools contributing to the issue.

It is hoped that the new solutions identified by the innovation initiative will help the industry to understand the extent of, and then manage, their methane emissions activities.

Measuring the scale of methane emissions, and understanding if they can be managed to negligible levels, will signal if liquefied bio methane (LBM) and liquefied synthetic methane (LSM) are viable pathway fuels to help achieve 2050 de-carbonisation targets. ■

Trelleborg to assist the UK's Medway LNGC activity

Trelleborg Marine and Infrastructure (TMI) is to supply its navigation and piloting solutions for pilotage applications to Peel Ports Group's Liverpool, Clydeport and Sheerness.

This contract follows the successful trial of Trelleborg's SafePilot Portable Pilot system at Sheerness on the UK's River Medway, last year.

Combining piloting software with portable pilot units (PPUs) to deliver situational awareness of a vessel to within 1 cm accuracy, SafePilot Portable Pilot system has enabled the port to safely and efficiently accommodate larger vessels, including LNGCs, to enhance operational safety in support of the strategic drive to strengthen the UK's stock of gas.

Richard Hepworth, Trelleborg Marine and Infrastructure President, said: "Today's ports, terminals and offshore operations are managing bigger vessels to ever tighter schedules and increasingly variable and difficult operating conditions.

"We are delighted that our range of smart, next generation piloting and navigation solutions are capturing and integrating data in real time, both on board and jetty-side, to improve communication, safety, reduce delays and optimize vessel throughput across Peel Ports Group's Port of Liverpool, Clydeport and Port of Sheerness."

Gary Doyle, Peel Ports' Group Harbour Master, added: "As a leader in designing and manufacturing advanced, highly accurate piloting and navigation solutions for offshore and pilotage applications, we had no doubt that Trelleborg's solutions would successfully improve situational awareness during manoeuvres and enhance the safety, efficiency and sustainability of our port's operations, enabling the accommodation of larger vessels."

Together with its SafePilot software, TMI's portfolio of navigation and piloting solutions integrate with the SmartPort technology platform to better connect marine assets and opti-

mise performance across the port environment.

All port and pilot functions, data and schedules are linked together via the SmartPort cloud, enabling full transparency, information sharing and live access to all relevant information with a touch of a finger at the right time to the right staff - and in real time, the company claimed.

LNG solutions platform

In addition, TMI has unveiled a virtual interactive LNG Solutions Explorer platform.

This encompasses the company's comprehensive range of LNG transfer solutions along with its Global Energy Transfer Solutions

Showcase case study, to be highlighted in *LNG Journal*, which illustrates how innovative and pioneering solutions from Trelleborg can enhance LNG operational efficiencies while maintaining safety and sustainability in numerous applications worldwide.

Hepworth explained: "Global climate change and efforts to reduce carbon emissions across the marine supply chain have had a tremendous impact on the growth of the LNG industry. To keep up with market changes, ports are steadily expanding LNG bunkering and transfer facilities. With the growing number of LNG fuelled ships and bunker vessels in construction, operational flexibility, safety, and efficiency are becoming increasingly critical.

"Featuring high-quality LNG solutions across a range of applications, our new LNG Solutions Explorer platform will provide users with an in-depth look into how our products are operationally compatible and flexible in today's changing environment," he said. ■



Trelleborg has introduced an interactive solutions system

LNG inert gas generator upgraded

Alfa Laval's Smit LNG inert gas generator has been optimised.

A modular construction with a range of options will mean more choice and faster access to vital safety equipment, the company claimed.

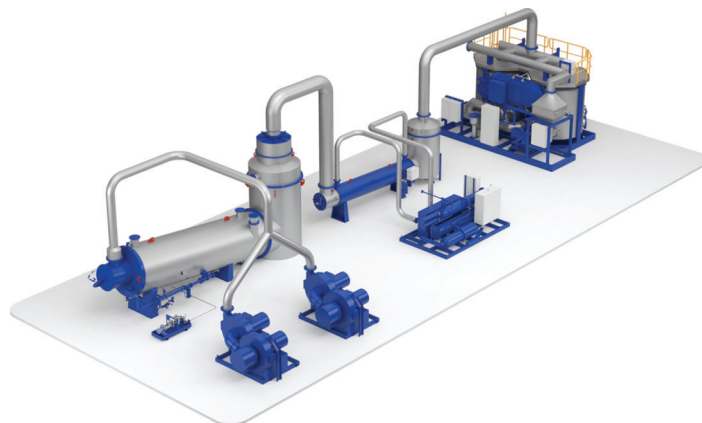
The Smit LNG system is known for its very dry inert gas, which is produced utilising Alfa Laval's patented ultramising principle. The fuel is atomised by steam, ensuring not only less soot in the cargo tank after inspection, but also lower NOx emissions.

"The Smit LNG system is the same in terms of quality and reliability," said Erik Haveman, Alfa Laval's Head of Inert Gas Systems. "What's different is the flexible configuration, which comes from splitting the system into a number of standardised modules. All class and safety requirements are fulfilled by the most basic arrangement, to which customers can add the options they wish."

Modularity streamlines costs for customers, as they only pay for the Smit LNG options that they select. Above all, it strengthens Alfa Laval's co-operation with shipyards, since finished drawings can be supplied quickly - with no variation from system to system.

"There are no surprises with today's Smit LNG system, either in performance or design," Haveman added. "For shipyards, the lead times are shorter and the predictability is 100%. Having examined RFQs from all major LNG yards when creating it, we can meet any yard request with the new modular approach."

For shipowners, servicing Smit LNG systems will be quicker and simpler, thanks to a reduced number of standardised parts. Spare parts stock will be easier to manage, and troubleshooting will be faster in the unlikely



Alfa Laval Smit has upgraded its inert gas generators

event of an issue.

"Less variation means less to investigate, so standardising the Smit LNG system adds to the already high peace of mind," Haveman concluded. "In addition, it gives us a stronger platform for further development. Customers have long entrusted us with their vessels' safety, and they can

expect us to continue moving it forward."

In another move, Alfa Laval has confirmed the purchase of Scanjet, a supplier of tank cleaning equipment.

Scanjet employs about 150 people and has factories in Sweden, Poland and Indonesia with a turnover of about SEK300 mill. ■

DESMI relaunched gas carrier cargo pump range

DESMI has relaunched its range of cargo pumps for liquefied gas vessels, including LPG, LEG carriers and LNGCs.

Even though steps are being taken all over the world to evolve away from fossil fuels, gas will continue to play an important role in the global energy mix for years to come, the company stressed.

"Our NDW range of cargo pumps is designed for LPG and LEG applications, but that's just the start," explained Martin Bro, DESMI's Global Sales Manager for

Gas System. "The marine business is evolving fast: To reduce carbon emissions, many marine engines are already fuelled by LPG and LEG today, and we expect that this tendency will only increase in the years to come."

Gas cargoes, too, will likely change. "We'll probably see an increased need for liquefied CO2 transportation," Bro added. "The

evolution of carbon capture and storage technology means that CO2 needs to be shipped to underground storage locations.

"So, both in terms of fuels and cargo, gas will change shipping, and our cargo pumps support this evolution: They will be developed to handle LNG, CO2, and other liquefied gases, and they can be adapted for use as gas fuel pumps. In short, they will be able to fulfil all future liquefied gas handling requirements.

"Over the years, we have quite simply become much better at building pumps, and a new DESMI cargo pump is superior to an old one.

"To take just one example, our design processes have improved through the use of state-of-the-art design and calculation tools. With computational fluid dynamics and stainless-steel casting simulations, we have achieved a highly efficient

pump design customised to our customers' exact requirements. In fact, the efficiency of our centrifugal cargo pumps is approximately 80%," he said.

While the new cargo pumps are designed and developed at DESMI's headquarters in Denmark, they are manufactured at the company's Chinese production facilities - close to the shipyards where the pumps will be installed.

This makes pump manufacturing fast and efficient, and since parts and complete pumps do not need to travel the globe several times before being installed, the process is also more climate friendly.

"Not only is sea transportation of liquefied gas still important; it looks set to be an integral part of the green transformation," Bro concluded. "Our relaunched range of cargo pumps is ready to support companies now and in future - from LPG to LNG and beyond." ■



DESMI enhances gas ship cargo pump range

Svanehøj develops LNG-powered ships fuel pump

With the launch of a new pump design for LNG, Svanehøj has claimed to become the first supplier to offer both deepwell and submerged pumps for electric fuel systems.

The company's aim is to gain a larger share of the attractive and strongly growing LNG market, it said.

The new cryogenic submerged CS pump was presented last week at the SMM trade fair in Hamburg.

In recent years, Svanehøj has supplied long-shaft deepwell pumps, where the motor and other electrical parts are located on deck. The CS pump is a submerged pump that is installed at the bottom of the tank.

"With the new CS pump for LNG, we are strengthening our position in a rapidly developing

market. We will differentiate ourselves from our competitors by offering advice that is neutral in terms of technology selection. In this way, we want to ensure that the customer always gets the solution that best suits the specific project," explained Johnny Houmann, Svanehøj's Director of Sales & Projects.

According to the class society DNV, at the end of August, 316 LNG-powered ships were in operation, while a further 511 ships were on order.

At the same time, the LNG market continues to grow, driven

by a sharply increasing demand for gas in Asia and Europe. Energy consultant Rystad Energy estimated in an analysis that global investments in LNG infrastructure will grow from \$27 bill in 2022 to \$42 bill in 2024.

This will lead to a sharp increase in LNG production, which is expected to increase from 380 mill tonnes in 2021 to more than 700 mill tonnes in 2034.

LNG-powered ships with submerged fuel pumps have a clogging issue with the pumps, due to impurities in the gas. Clogging makes a pump less efficient,

causes increased wear and operational disruptions. Svanehøj has claimed to have solved this challenge by developing a special self-cleaning LNG filter that ensures optimal flow.

Furthermore, Svanehøj has developed its own electric permanent magnet motor especially for this pump. With the assistance of external specialists, the Svanehøj engineering team succeeded in achieving a significantly higher degree of efficiency and lower energy consumption than other engines on the market. ■

LNGC steam to hybrid conversion project gets AiP

Lloyd's Register (LR) has awarded an Approval in Principle (AiP) to Empresa Naviera Elcano for its patented steam-to-hybrid conversion design.

This design is aimed at converting steam powered LNGCs to dual-fuel propulsion.

The conversion consists of a modification to the propulsion and electrical power generation system, upgrading the vessel from steam powered to a hybrid system with a steam turbine and dual fuel generator.

A dual fuel generator will supply electrical power to the ship's switchboard with electric propulsion motor/s coupled to the ship's propulsion gear box/shaft. The hybrid system also includes systems that can recover energy from the dual fuel generator exhaust gases and engine cooling systems, which will be integrated into the existing steam plant systems.

This conversion project could benefit the one-in-three LNGCs that rely on steam propulsion and are currently at risk of being non-compliant with the IMO's EEXI and CII regulations, without the need to scrap any part of the original

steam propulsion system, LR said.

Elcano's solution will ensure the steam turbine LNG fleet will meet EEXI MARPOL regulations by substantially reducing greenhouse gas (GHG) emissions on converted vessels, prioritising both energy security and climate alignment for the maritime industry, the company claimed.

Emission reduction and energy savings will increase dramatically if a vessels conversion includes the retrofitting of a reliquefaction plant driven by a dual fuel generator. This will increase efficiency by minimising the vessels use of a steam dump system.

LR awarded the AiP following extensive testing assessment of the conversion design, which found the available shaft power is 27% greater, compared to the limited power for the vessel without the hybrid system and that the propulsion and electrical power are produced more efficiently, resulting in a substantial reduction in GHG emissions. ■

NEWS NUDGE

PETRONAS expands YPF alliance

Malaysian energy giant, PETRONAS has signed a Memorandum of Understanding (MoU) with Argentina's largest integrated oil and gas company, YPF.

PETRONAS intends to collaborate with YPF in Argentina on an integrated LNG project and in other areas.

In addition to the MoU, the companies' operating entity in Argentina, PETRONAS E&P Argentina, executed a Joint Study and Development Agreement (JSDA) towards the potential development of the Argentina Integrated LNG project.

The project will include dedicated upstream gas production, dedicated pipeline and infrastructure development, LNG production, as well as marketing and shipping.

A final investment decision (FID) for the project will be undertaken after technical and commercial assessments have been conducted, backed by conducive fiscal terms, legislation and policies, the companies said.

PETRONAS' alliance with YPF began in 2014 through its part-

nership in the La Amarga Chica project, Vaca Muerta, as part of its growth aspirations in the Americas.

Golar in TTF swaps for FLNG 'Hilli'

Golar LNG Limited has agreed two swap arrangements for its Dutch Title Transfer Facility (TTF) linked production on the FLNG 'Hilli':

***4Q22:** Hedged about 50% of TTF linked production at \$70 per MMBtu. Golar's share of the TTF linked distributable adjusted EBITDA for 4Q22 is expected to be \$56 mill, of which \$28 mill is hedged. Golar said that it remained exposed for the remaining 50% of its 4Q22 TTF linked production.

***Full year 2023:** Hedged 50% of 2023 TTF linked production at \$50.5 per MMBtu. As announced on its 2Q22 earnings results on 11th August, the company had previously hedged 50% of 2023 TTF linked production at \$49.5 per MMBtu. Hence Golar is now fully hedged for its 2023 TTF price exposure at an average price of \$50 per MMBtu.

Golar expects to generate 2023 distributable adjusted EBITDA from TTF linked production of \$150 mill. ■

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Yangzijiang Shipbuilding to construct GTT membrane containment systems

GTT has signed a technical assistance and license agreement with Yangzijiang - China's largest private shipyard – to enable it to construct vessels using the company's membrane technologies.

This agreement marks a new phase in the development of GTT technologies in China. Yangzijiang successfully completed the GTT qualification process in record time - the first validation steps began in March, 2022.

Yangzijiang had already won an order for four 8,000 TEU dual-fuelled containerships from Pacific International Lines (PIL). The container vessels will feature GTT's membrane technology covering the LNG fuel tanks.

Each LNG fuel tank will be fitted with the Mark III membrane containment technology and include features to facilitate a potential conversion of these vessels to ammonia-fuel.

Letian Ren, Yangzijiang Chairman and CEO, said: "We are

proud of the trust placed in us by the GTT company and hope to promptly demonstrate to the market that Yangzijiang yards have the necessary skills to build vessels to today's highest standards. We look forward to working with GTT on the construction of LNG carriers, VLEC and LNG-fuelled merchant vessels."

Earlier, GTT had announced that it had won an order from the Chinese shipyard Hudong-Zhonghua Shipbuilding (Group) Co. Ltd for the tank design of four new LNGCs on behalf of an Asian shipowner.

GTT will design the tanks of the four vessels, each of which will offer a cargo capacity of 174,000 cu m and will be fitted with the NO96 Super+ membrane containment system.

They are scheduled for delivery during the fourth quarter of 2026 and the first and second quarters of 2027.

GTT has also won an order from Hyundai Samho Heavy Industries for the tanks of two 174,000 cu m LNGCs.

They will be fitted with the Mark III Flex system.

New identity

At Gastech, GTT unveiled its new visual identity.

This new identity illustrates the Group's development strategy and its positioning as a player in the energy transition, committed to building a sustainable world.

Philippe Berterrotière, GTT Chairman and CEO, said: "For almost 60 years, we have been

committed alongside the maritime transport industry to improve their operational performance and to support them in their energy transition.

"Over the decades, we have conquered new markets, beyond the design of LNG carriers, which is the core of our expertise. We continue to innovate to offer new technologies and new solutions, notably in LNG fuel, Smart Shipping and in the field of green hydrogen with our subsidiary Elogen.

"The new visual identity of the GTT group reflects our *raison d'être*, our culture of excellence and our commitment to the high standards and values that have always guided us. Between modernity and continuity, it propels us towards the future," he said. ■

NEWS NUDGE

Ships – Newbuildings, charters, sales

South Korean shipbuilders Daewoo Shipbuilding & Marine Engineering (DSME) and Samsung Heavy Industries (SHI) have won orders to build 11 LNGCs.

DSME said in a regulatory filing with the South Korean Stock Exchange it would build seven 174,000 cu m units for an undisclosed shipowner.

Delivery is scheduled for early 2026.

In two separate filings, SHI confirmed an order for two LNGCs for delivery by March 2025, and for another two, which should be delivered to an undisclosed Bermuda-based shipowner by September of that year.

Brokers reported that all 11 orders are connected to QatarEnergy's giant project.

Two SHI contracts were placed by JP Morgan and the other two by a South Korean

shipowner consortium, while the seven DSME LNGCs were also ordered by the South Korean consortium, according to broking sources.

The cost per ship was estimated to be around \$214 mill.

In addition, Mitsui OSK Lines has signed a long-term charter contract for three newbuilding LNGCs with ENN LNG (Singapore) Pte. Ltd, a wholly owned subsidiary of ENN Natural Gas Co.

The vessels will be built at Hudong-Zhonghua Shipbuilding (Group) Co, Ltd, and are slated for delivery by 2028.

On 1st September, NYK and Q United Energy Supply & Trading, a Kyuden Group company, signed a multi-year timecharter contract for a new LNGC, which will be built at SHI.

This 174,000 cu m vessel will be equipped with a WinGD-dual-fuel slow-speed X-DF diesel engine. She will also

feature a re-liquefaction system that can use surplus boil-off gas efficiently.

On 6th September, NYK signed a multi-year timecharter contract with Osaka Gas International Transport Inc, a Daigas Group company, for a new LNGC building at Hyundai Samho for delivery this year.

Named 'Grace Freesia', the 174,000 cu m LNGC is also fitted with a WinGD X-DF diesel engine and a re-liquefaction system.

China Development Bank Financial Leasing (CDB Leasing) has agreed a sale and leaseback deal with affiliates of Greek shipowner George Procopiou for three 200,000 cu m LNGCs under construction in South Korea.

The deal was said to be worth up to \$596.5 mill.

The three vessels are due for delivery from Hyundai Heavy Industries in November and December, 2023 plus February,

2024, respectively.

The lease deal has been signed for 10 years and the companies have an option to buy back the ships for less than \$99.42 mill each after the deal expires.

EXMAR's only LNGC 'Excalibur' has remained idle for the first half of 2022.

However, the Belgian company said that it had recently signed an agreement to acquire 100% of the vessel, which after drydocking, will be converted into an FSU and employed on an Eni project.

Brokers have reported that the 159,000 cu m LNGC 'Maran Gas Lindos' has been fixed for three years to undisclosed interests at \$120,000 per day.

In addition, it was thought that the 151,883 cu m 'Kmarin Diamond' (ex 'British Diamond') and 'British Sapphire' had been sold to undisclosed Greek interests. ■

Babcock teams up with Kongsberg

Babcock's LGE business has signed a Frame Agreement with Kongsberg Maritime to develop a remote LNGC monitoring solution.

This system is designed specifically for Babcock's patented ecoSMRT LNG reliquefaction system.

With growing global energy demand, there is increasing pressure on LNGC owners and operators to have modern, efficient and reliable vessels that minimise cargo losses, while simultaneously reducing CO2 emissions, the company said.

The remote monitoring solution under development by Babcock and Kongsberg will further enhance the Kongsberg Information Management System network and will focus on boosting the reliquefaction system feedback.

This system will improve ecoSMRT's performance, reduce the risk of plant failures, and minimise the need for physical attendance on board vessels, Babcock claimed.

In-house analysis

As well as providing more detailed feedback on plant performance, the company is also developing a performance feedback element to add to the system, where data will be analysed by in-house specialists and specific advice and performance improvements offered to vessels.

This remote monitoring system will ensure that owners and operators have all the required information to make informed operational and commercial decisions, the company said.

Babcock LGE's Business Development Manager, Graeme McKinley, said: "We are delighted to team up with Kongsberg Maritime to develop this remote monitoring solution. As ecoSMRT is the most efficient LNG reliquefaction system on the market today, it is important to compliment that accolade with high reliability. The

ecoSMRT remote monitoring system will provide our shipowners with key information to allow them to maximise plant uptime, whilst ensuring the plant maintains the efficiency that they expect.

"We are very much looking forward to further developing this solution over the coming months and providing this important service to our customers' in-operation vessels," he added.

Kongsberg Maritime Sales Director - Digital Solutions, Eirik Ågren, said: "We welcome this opportunity to deepen our existing collaboration with Babcock's LGE business, a world-leading provider of cargo handling and fuel gas supply systems for the liquefied gas markets. The addition of this remote monitoring functionality to the existing Kongsberg Information Management System network will force multiply the ecoSMRT system's benefits through more regu-

lar performance feedback while reducing manual overhead."

The Frame Agreement was established in conjunction with LNGC operator, Latsco LNG Marine Management (LLMM), which has Babcock's ecoSMRT technology installed and operating on the company's existing vessels.

Elias Karystios, LLMM Fleet Manager, said, "We are more than excited to work together with Babcock's LGE Business and Kongsberg Maritime, world leading companies in the marine and gas sector, providing our own expertise and insights on gas management and the operation of LNG carriers.

"We are confident that the final product, after completion of the development, will meet our expectations, which is to maximise usage and the efficiency of the plant at all essential operational conditions," he said. ■

NEWS NUDGE

Gastech to return to Singapore

Gastech 2023 is due to take place in Singapore from 11-14 September next year, the organisers said at the end of this year's show.

Lee Pak Sing, Assistant Chief Executive Officer of Enterprise Singapore, told Gastech 22 in Milan: "Over the last few days, we have had many conversations on the driving forces affecting the future of energy, geopolitics, energy transition, and market volatility, and we will continue these conversations when Singapore takes over as host of Gastech 2023.

"We are a global energy hub, host to all of the major petrochemical companies and energy trading companies. We are also a global LNG hub, home to over 60 companies buying, selling, and marketing LNG through Singa-

pore, as well as the world's largest bunkering centre, which has set the standards for LNG bunkering.

"Singapore is therefore an ideal place to host Gastech 2023. I promise you an exciting programme at Gastech in Singapore, and we invite you to join us on this journey," he claimed.

Gastech 2023 will be hosted at the Singapore EXPO Convention and Exhibition Centre with support from Enterprise Singapore and the Singapore Tourism Board.

Next year's expo is expected to draw more than 40,000 international visitors to Singapore and will feature over 750 exhibitors. There will be dedicated industry zones and 20 country pavilions showcasing international companies.

Gastech 2022 attracted 39,467 attendees and over 750 exhibitors over the four days in Milan, including a record breaking 668 speakers. ■

Monthly Large LNGC Values*

Newbuildings (174,000 cu m)	\$237.97 mill
Five years old (174,000 cu m)	\$187.86 mill
Total Fleet (552 ships)	\$75.34 bill
Orderbook (257 ships)	\$63.36 bill

*Source: VesselsValue (31/08/22)

*The above is updated each month courtesy of VesselsValue

LNG rate assessments

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

Region	This week	Change*
East of Suez	\$150,000	+\$80,000
West of Suez	\$145,000	+\$60,000
12 mos T/C	\$143,000	+\$3,000

*Since last report (01/09/22)

Source: Fearnleys (14/09/22)

WORLD LNG CARRIER ORDERBOOK

Name	Owners	Yard	Capacity	Propulsion	Delivered	Delivery
Minerva Amorgos	Minerva Marine	Samsung	174000	XDF	01/11/2022	Q4, 2022
Clean Copano	Dynagas	Hyundai Heavy	200000	XDF	01/07/2022	Q3, 2022
Asterix I	Capital Gas	Hyundai Heavy	174000	XDF	01/11/2022	Q4, 2022
Hudong-zhonghua H1829a	CSSC	Hudong-Zhonghua	174000	XDF	01/01/2024	Q1, 2024
Hudong-zhonghua H1830a	CSSC	Hudong-Zhonghua	174000	XDF	01/04/2024	Q2, 2024
Alexey Kosygin	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/03/2023	Q1, 2023
Pyotr Stolypin	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/09/2023	Q3, 2023
Sergei Witte	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/10/2023	Q4, 2023
Zvezda 044	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/11/2023	Q4, 2023
Zvezda 045	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/12/2023	Q4, 2023
Bw Cassia	BWGas	DSME	174000	MEGI	01/09/2022	Q3, 2022
Bw Enn Snow Lotus	BWGas	DSME	174000	MEGI	01/07/2022	Q3, 2022
Samsung 2364	MISC	Samsung	174000	XDF	01/01/2023	Q1, 2023
Samsung 2365	MISC	Samsung	174000	XDF	01/03/2023	Q1, 2023
Alicante Knutsen	Knutsen	Hyundai Samho	174000	XDF	01/09/2022	Q3, 2022
Huelva Knutsen	Knutsen	Hyundai Samho	174000	XDF	01/11/2022	Q4, 2022
Malaga Knutsen	Knutsen	Hyundai Samho	174000	XDF	01/08/2022	Q3, 2022
Sm Albatross	Korea Line	Hyundai Heavy	174000	XDF	01/08/2022	Q3, 2022
Sm Bluebird	Korea Line	Hyundai Heavy	174000	XDF	01/09/2022	Q3, 2022
Lng Prosperity	JP Morgan	Hyundai Heavy	174000	XDF	01/12/2022	Q4, 2022
Orion Song	JP Morgan	Hyundai Heavy	174000	XDF	01/11/2022	Q4, 2022
Kun Lun	ULT	Hudong-Zhonghua	174000	XDF	01/04/2023	Q2, 2023
Shaolin	ULT	Hudong-Zhonghua	174000	XDF	01/08/2022	Q3, 2022
Wu Dang	ULT	Hudong-Zhonghua	174000	XDF	01/01/2023	Q1, 2023
Lng Harmony	JP Morgan	Hyundai Heavy	174000	XDF	01/08/2023	Q3, 2023
Orion Sage	JP Morgan	Hyundai Heavy	174000	XDF	01/07/2023	Q3, 2023
El Ferrol Knutsen	Knutsen	Hyundai Samho	174000	XDF	01/05/2023	Q2, 2023
Extremadura Knutsen	Knutsen	Hyundai Samho	174000	XDF	01/06/2023	Q2, 2023
Daewoo 2514	Sovcomflot	DSME	172500	TFDE - Azipod	01/02/2023	Q1, 2023
Daewoo 2515	Sovcomflot	DSME	172500	TFDE - Azipod	01/04/2023	Q2, 2023
Daewoo 2516	Sovcomflot	DSME	172500	TFDE - Azipod	01/07/2023	Q3, 2023
Daewoo 2517	MOL, COSCO	DSME	172500	TFDE - Azipod	01/09/2023	Q3, 2023
Daewoo 2518	MOL, COSCO	DSME	172500	TFDE - Azipod	01/10/2023	Q4, 2023
Daewoo 2519	MOL, COSCO	DSME	172500	TFDE - Azipod	01/12/2023	Q4, 2023
Zvezda 046	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/08/2024	Q3, 2024
Zvezda 047	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/09/2024	Q3, 2024
Zvezda 048	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/10/2024	Q4, 2024
Zvezda 049	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/11/2024	Q4, 2024
Zvezda 050	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/12/2024	Q4, 2024
Zvezda 051	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/08/2025	Q3, 2025
Zvezda 052	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/09/2025	Q3, 2025
Zvezda 053	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/10/2025	Q4, 2025
Zvezda 054	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/11/2025	Q4, 2025
Zvezda 055	Smart LNG	Zvezda SSK	172600	TFDE - Azipod	01/12/2025	Q4, 2025
Sm Golden Eagle	Korea Line	Hyundai Heavy	174000	XDF	01/09/2025	Q3, 2025
Sm Kestrel	Korea Line	Hyundai Heavy	174000	XDF	01/12/2023	Q4, 2023
Grazyna Gesicka	Knutsen	Hyundai Heavy	174000	XDF	01/06/2023	Q2, 2023

Name	Owners	Yard	Capacity	Propulsion	Delivered	Delivery
Lech Kaczynski	Knutsen	Hyundai Heavy	174000	XDF	01/12/2022	Q4, 2022
Samsung 2425	Maran Gas Maritime	Samsung	174000	XDF	01/07/2023	Q3, 2023
Hyundai Samho 8100	Knutsen	Hyundai Samho	174000	XDF	01/11/2024	Q4, 2024
Orion Sky	JP Morgan	Hyundai Heavy	174000	XDF	01/11/2024	Q4, 2024
Hyundai Ulsan 3221	Pan Ocean	Hyundai Heavy	174000	XDF	01/09/2024	Q3, 2024
Hyundai Ulsan 3222	Pan Ocean	Hyundai Heavy	174000	XDF	01/10/2024	Q4, 2024
Samsung 2426	Pan Ocean	Samsung	174000	XDF	01/04/2023	Q2, 2023
Jules Verne	Alpha Gas	Hyundai Samho	174000	XDF	01/04/2023	Q2, 2023
Dapeng Princess	Shenzhen Gas	Hudong-Zhonghua	79960	XDF	01/01/2023	Q1, 2023
Hyundai Ulsan 3294	Hyundai LNG Shipping	Hyundai Heavy	174000	XDF	01/02/2024	Q1, 2024
Hyundai Ulsan 3295	Hyundai LNG Shipping	Hyundai Heavy	174000	XDF	01/06/2024	Q2, 2024
Hyundai Ulsan 3296	Hyundai LNG Shipping	Hyundai Heavy	174000	XDF	01/07/2024	Q3, 2024
Hyundai Samho 8139	Knutsen	Hyundai Samho	174000	XDF	01/10/2023	Q4, 2023
Jiangnan H2637	Jovo Energy	Jiangnan	79800	XDF	01/12/2023	Q4, 2023
Samsung 2473	Maran Gas Maritime	Samsung	174000	XDF	01/09/2024	Q3, 2024
Samsung 2474	Maran Gas Maritime	Samsung	174000	XDF	01/09/2024	Q3, 2024
Daewoo 2521	Hyundai LNG Shipping	DSME	174000	MEGI	01/09/2023	Q3, 2023
Hyundai Ulsan 3290	Dynagas	Hyundai Heavy	200000	ME-GA	01/09/2023	Q3, 2023
Hyundai Ulsan 3291	Dynagas	Hyundai Heavy	200000	ME-GA	01/11/2023	Q4, 2023
Hyundai Ulsan 3292	Dynagas	Hyundai Heavy	200000	ME-GA	01/02/2024	Q1, 2024
Hyundai Ulsan 3293	Dynagas	Hyundai Heavy	200000	ME-GA	01/03/2024	Q1, 2024
Daewoo 2520	MOL	DSME	174000	ME-GA	01/10/2023	Q4, 2023
Amore Mio I	Capital Gas	Hyundai Heavy	174000	ME-GA	01/10/2023	Q4, 2023
Axios II	Capital Gas	Hyundai Heavy	174000	ME-GA	01/12/2023	Q4, 2023
Alexandre Dumas	Alpha Gas	Hyundai Samho	170520	XDF	01/07/2024	Q3, 2024
Hyundai Samho 8147	H-Line	Hyundai Samho	174000	XDF	01/11/2023	Q4, 2023
Samsung 2459	Celsius Shipping	Samsung	180000	ME-GA	01/06/2023	Q2, 2023
Samsung 2460	Celsius Shipping	Samsung	180000	ME-GA	01/09/2023	Q3, 2023
Samsung 2461	Celsius Shipping	Samsung	180000	ME-GA	01/12/2023	Q4, 2023
Victor Hugo	Alpha Gas	Hyundai Samho	170520	XDF	01/08/2024	Q3, 2024
Hyundai Samho 8101	Knutsen	Hyundai Samho	174000	XDF	01/10/2023	Q4, 2023
Hyundai Samho 8102	Knutsen	Hyundai Samho	174000	ME-GA	01/09/2025	Q3, 2025
Hyundai Ulsan 3320	JP Morgan	Hyundai Heavy	174000	ME-GA	01/07/2025	Q3, 2025
Hyundai Ulsan 3321	JP Morgan	Hyundai Heavy	174000	ME-GA	01/09/2025	Q3, 2025
Hyundai Ulsan 3224	Pan Ocean	Hyundai Heavy	174000	ME-GA	01/10/2024	Q4, 2024
Hyundai Ulsan 3225	Pan Ocean	Hyundai Heavy	174000	ME-GA	01/12/2024	Q4, 2024
Daewoo 2522	Hyundai LNG Shipping	DSME	174000	MEGI	01/05/2024	Q2, 2024
Hyundai Samho 8148	Knutsen	Hyundai Samho	174000	XDF	01/02/2024	Q1, 2024
Hyundai Samho 8149	Knutsen	Hyundai Samho	174000	ME-GA	01/03/2024	Q1, 2024
Hyundai Ulsan 3297	Hyundai LNG Shipping	Hyundai Heavy	174000	XDF	01/05/2024	Q2, 2024
Hyundai Ulsan 3298	Hyundai LNG Shipping	Hyundai Heavy	174000	XDF	01/11/2024	Q4, 2024
Hyundai Ulsan 3299	Hyundai LNG Shipping	Hyundai Heavy	174000	XDF	01/01/2025	Q1, 2025
Samsung 2579	Celsius Shipping	Samsung	180000	ME-GA	01/03/2024	Q1, 2024
Samsung 2584	Celsius Shipping	Samsung	180000	ME-GA	01/07/2024	Q3, 2024
Samsung 2585	Celsius Shipping	Samsung	180000	ME-GA	01/09/2024	Q3, 2024
Hudong-zhonghua H1838a	K-Line	Hudong-Zhonghua	79960	XDF	01/09/2023	Q3, 2023
Hyundai Samho 8140	Capital Gas	Hyundai Samho	174000	ME-GA	01/07/2024	Q3, 2024

Name	Owners	Yard	Capacity	Propulsion	Delivered	Delivery
Daewoo 2523	MOL	DSME	174000	ME-GA	01/02/2024	Q1, 2024
Daewoo 2524	MOL	DSME	174000	ME-GA	01/04/2024	Q2, 2024
Daewoo 2525	MOL	DSME	174000	ME-GA	01/08/2024	Q3, 2024
Daewoo 2526	MOL	DSME	174000	ME-GA	01/10/2024	Q4, 2024
Daewoo 2527	MOL	DSME	174000	ME-GA	01/07/2024	Q3, 2024
Hudong-zhonghua H1790a	MOL	Hudong-Zhonghua	175000	XDF	01/09/2024	Q3, 2024
Hudong-zhonghua H1791a	MOL	Hudong-Zhonghua	175000	XDF	01/12/2024	Q4, 2024
Hudong-zhonghua H1792a	MOL	Hudong-Zhonghua	175000	XDF	01/03/2025	Q1, 2025
Hudong-zhonghua H1793a	MOL	Hudong-Zhonghua	175000	XDF	01/05/2025	Q2, 2025
Samsung 2580	NYK	Samsung	174000	XDF	01/09/2023	Q3, 2023
Samsung 2581	NYK	Samsung	174000	XDF	01/11/2023	Q4, 2023
Samsung 2582	NYK	Samsung	174000	XDF	01/12/2023	Q4, 2023
Samsung 2583	NYK	Samsung	174000	XDF	01/02/2024	Q1, 2024
Samsung 2592	JP Morgan	Samsung	174000		01/04/2024	Q2, 2024
Samsung 2593	JP Morgan	Samsung	174000		01/07/2024	Q3, 2024
Samsung 2594	JP Morgan	Samsung	174000		01/10/2024	Q4, 2024
Samsung 2595	JP Morgan	Samsung	174000		01/01/2025	Q1, 2025
Apostolos	Capital Gas	Hyundai Heavy	174000	ME-GA	01/06/2024	Q2, 2024
Assos	Capital Gas	Hyundai Heavy	174000	ME-GA	01/05/2024	Q2, 2024
Daewoo 2528	Maran Gas Maritime	DSME	174000	MEGI	01/08/2024	Q3, 2024
Daewoo 2529	Maran Gas Maritime	DSME	174000	MEGI	01/11/2024	Q4, 2024
Daewoo 2530	BWGas	DSME	174000	MEGI	01/03/2025	Q1, 2025
Daewoo 2531	BWGas	DSME	174000	MEGI	01/05/2025	Q2, 2025
Samsung 2600	JP Morgan	Samsung	174000		01/07/2024	Q3, 2024
Samsung 2601	JP Morgan	Samsung	174000		01/01/2025	Q1, 2025
Samsung 2598	Celsius Shipping	Samsung	180000	ME-GA	01/01/2025	Q1, 2025
Samsung 2599	Celsius Shipping	Samsung	180000	ME-GA	01/05/2025	Q2, 2025
Hudong-zhonghua H1834a	ULT	Hudong-Zhonghua	174000	XDF	01/09/2024	Q3, 2024
Hudong-zhonghua H1835a	ULT	Hudong-Zhonghua	174000	XDF	01/12/2024	Q4, 2024
Hudong-zhonghua H1836a	ULT	Hudong-Zhonghua	174000	XDF	01/03/2025	Q1, 2025
Samsung 2604	NYK	Samsung	174000	XDF	01/12/2024	Q4, 2024
Daewoo 2532	GasLog	DSME	174000	MEGI	01/05/2024	Q2, 2024
Daewoo 2533	GasLog	DSME	174000	MEGI	01/08/2024	Q3, 2024
Daewoo 2534	GasLog	DSME	174000	MEGI	01/06/2025	Q2, 2025
Daewoo 2535	GasLog	DSME	174000	MEGI	01/08/2025	Q3, 2025
Samsung 2602	Celsius Shipping	Samsung	174000	ME-GA	01/12/2024	Q4, 2024
Samsung 2603	Celsius Shipping	Samsung	174000	ME-GA	01/12/2024	Q4, 2024
Hyundai Samho 8173	SK Shipping	Hyundai Samho	174000	ME-GA	01/09/2024	Q3, 2024
Daewoo 2537	Maran Gas Maritime	DSME	174000	MEGI	01/09/2025	Q3, 2025
Daewoo 2538	Maran Gas Maritime	DSME	174000	MEGI	01/11/2025	Q4, 2025
Hudong-zhonghua H1880a	MOL	Hudong-Zhonghua	174000	XDF	01/10/2024	Q4, 2024
Hudong-zhonghua H1881a	MOL	Hudong-Zhonghua	174000	XDF	01/08/2025	Q3, 2025
Hudong-zhonghua H1882a	MOL	Hudong-Zhonghua	174000	XDF	01/10/2025	Q4, 2025
Hudong-zhonghua H1883a	MOL	Hudong-Zhonghua	174000	XDF	01/03/2026	Q1, 2026
Hudong-zhonghua H1884a	MOL	Hudong-Zhonghua	174000	XDF	01/06/2026	Q2, 2026
Hudong-zhonghua H1885a	MOL	Hudong-Zhonghua	174000	XDF	01/09/2026	Q3, 2026
Daewoo 2536	MOL	DSME	174000	ME-GA	01/09/2024	Q3, 2024

Name	Owners	Yard	Capacity	Propulsion	Delivered	Delivery
Samsung 2607	H-Line	Samsung	174000	ME-GA	01/03/2025	Q1, 2025
Samsung 2608	H-Line	Samsung	174000	ME-GA	01/05/2025	Q2, 2025
Samsung 2609	H-Line	Samsung	174000	ME-GA	01/06/2025	Q2, 2025
Samsung 2610	H-Line	Samsung	174000	ME-GA	01/09/2025	Q3, 2025
Daewoo 2539	Maran Gas Maritime	DSME	174000	MEGI	01/11/2025	Q4, 2025
Daewoo 2540	Maran Gas Maritime	DSME	174000	MEGI	01/12/2025	Q4, 2025
Hyundai Samho 8170	Hyundai Glovis	Hyundai Samho	174000	ME-GA	01/08/2024	Q3, 2024
Daewoo 2541	Venture Global LNG	DSME	200000		01/07/2025	Q3, 2025
Daewoo 2542	Venture Global LNG	DSME	200000		01/10/2025	Q4, 2025
Daewoo 2543	Venture Global LNG	DSME	200000		01/12/2025	Q4, 2025
Jiangnan H2700	ADNOC	Jiangnan	175000	XDF	01/01/2025	Q1, 2025
Jiangnan H2701	ADNOC	Jiangnan	175000	XDF	01/05/2025	Q2, 2025
Samsung 2619	Celsius Shipping	Samsung	180000	ME-GA	01/10/2025	Q4, 2025
Hyundai Ulsan 3356	Dynagas	Hyundai Heavy	200000	ME-GA	01/03/2025	Q1, 2025
Hyundai Ulsan 3357	Dynagas	Hyundai Heavy	200000	ME-GA	01/04/2025	Q2, 2025
Hyundai Ulsan 3358	Dynagas	Hyundai Heavy	200000	ME-GA	01/12/2025	Q4, 2025
Hyundai Samho 8179	Knutsen	Hyundai Samho	174000	ME-GA	01/03/2025	Q1, 2025
Hyundai Samho 8180	Knutsen	Hyundai Samho	174000	ME-GA	01/06/2025	Q2, 2025
Daewoo 2544	BWGas	DSME	174000	MEGI	01/11/2025	Q4, 2025
Daewoo 2545	BWGas	DSME	174000	MEGI	01/12/2025	Q4, 2025
Samsung 2635	TMS Cardiff Gas	Samsung	174000	ME-GA	01/09/2024	Q3, 2024
Samsung 2636	TMS Cardiff Gas	Samsung	174000	ME-GA	01/03/2026	Q1, 2026
Cosco 1	COSCO	Hudong-Zhonghua	174000		01/01/2026	Q1, 2026
Cosco 2	COSCO	Hudong-Zhonghua	174000		01/03/2026	Q1, 2026
Cosco 3	COSCO	Hudong-Zhonghua	174000		01/05/2026	Q2, 2026
Cosco 4	COSCO	Hudong-Zhonghua	174000		01/07/2026	Q3, 2026
Cosco 5	COSCO	Hudong-Zhonghua	174000		01/09/2026	Q3, 2026
Cosco 6	COSCO	Hudong-Zhonghua	174000		01/11/2026	Q4, 2026
MOL DSME 1	MOL	DSME	174000	ME-GA	01/11/2026	Q4, 2026
MOL DSME 2	MOL	DSME	174000	ME-GA	01/08/2026	Q3, 2026
Dalian No 1 G175k-1	China Merchant	Dalian Shipbuilding	175000	XDF	01/09/2025	Q3, 2025
Dalian No 1 G175k-2	China Merchant	Dalian Shipbuilding	175000	XDF	01/12/2025	Q4, 2025
Hyundai Samho 8181	Knutsen	Hyundai Samho	174000	ME-GA	01/12/2025	Q4, 2025
NYK Samho	NYK	Hyundai Samho	174000	XDF	30/11/2025	Q4, 2025
NYK CNOOC 1	NYK	Hudong-Zhonghua	174000		01/04/2027	Q2, 2027
NYK CNOOC 2	NYK	Hudong-Zhonghua	174000		01/03/2027	Q1, 2027
NYK CNOOC 3	NYK	Hudong-Zhonghua	174000		01/01/2027	Q1, 2027
NYK CNOOC 4	NYK	Hudong-Zhonghua	174000		01/02/2026	Q1, 2026
NYK CNOOC 5	NYK	Hudong-Zhonghua	174000		01/04/2026	Q2, 2026
NYK CNOOC 6	NYK	Hudong-Zhonghua	174000		01/06/2026	Q2, 2026
Jiangnan H2702	ADNOC	Jiangnan	175000	XDF	01/09/2025	Q3, 2025
Jiangnan H2703	ADNOC	Jiangnan	175000	XDF	01/01/2026	Q1, 2026
Jiangnan H2704	ADNOC	Jiangnan	175000	XDF	01/06/2026	Q2, 2026
Jiangnan H2705	ADNOC	Jiangnan	175000	XDF	01/09/2026	Q3, 2026
Samsung 2631	H-Line	Samsung	174000	ME-GA	01/07/2025	Q3, 2025
Samsung 2632	H-Line	Samsung	174000	ME-GA	01/12/2025	Q4, 2025
Samsung 2633	H-Line	Samsung	174000	ME-GA	01/01/2026	Q1, 2026

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 = 29th July 2022

Name	Owners	Yard	Capacity	Propulsion	Delivered	Delivery
Hyundai Ulsan 3370	SK Shipping	Hyundai Heavy	174000	ME-GA	01/02/2025	Q1, 2025
Hyundai Ulsan 3371	SK Shipping	Hyundai Heavy	174000	ME-GA	01/03/2025	Q1, 2025
Petronas SK Samho 1	SK Shipping	Hyundai Samho	174000	ME-GA	01/07/2025	Q3, 2025
Petronas SK Samho 2	SK Shipping	Hyundai Samho	174000	ME-GA	01/08/2025	Q3, 2025
Petronas K-line 1	K-Line	Hudong-Zhonghua	174000		01/10/2025	Q4, 2025
Petronas K-line 2	K-Line	Hudong-Zhonghua	174000		01/12/2025	Q4, 2025
Petronas K-line 3	K-Line	Hudong-Zhonghua	174000		01/02/2026	Q1, 2026
Petronas K-line 4	K-Line	Hudong-Zhonghua	174000		01/04/2026	Q2, 2026
Qatar HHI 3	Knutsen	Hyundai Heavy	174000	XDF	01/05/2025	Q2, 2025
Qatar HHI 4	Knutsen	Hyundai Heavy	174000	XDF	01/07/2025	Q3, 2025
Qatar HHI 5	Knutsen	Hyundai Heavy	174000	XDF	01/08/2025	Q3, 2025
Qatar HHI 6	Knutsen	Hyundai Heavy	174000	XDF	01/12/2025	Q4, 2025
Hyundai Samho 8196	Cool Co	Hyundai Samho	174000	ME-GA	01/02/2025	Q1, 2025
Hyundai Samho 8197	Cool Co	Hyundai Samho	174000	ME-GA	01/01/2025	Q1, 2025
Hyundai Ulsan 3380	Knutsen	Hyundai Heavy	174000	XDF	01/05/2025	Q2, 2025
Hyundai Ulsan 3381	Knutsen	Hyundai Heavy	174000	XDF	01/06/2025	Q2, 2025
Daewoo 2546	Pan Ocean, SK Shipping, DSME H-Line		174000	ME-GA	01/12/2024	Q4, 2024
Daewoo 2547	Pan Ocean, SK Shipping, DSME H-Line		174000	ME-GA	01/12/2024	Q4, 2024
Daewoo 2548	Pan Ocean, SK Shipping, DSME H-Line		174000	ME-GA	01/01/2025	Q1, 2025
Daewoo 2549	Pan Ocean, SK Shipping, DSME H-Line		174000	ME-GA	01/02/2025	Q1, 2025
Daewoo 2552	Maran Gas Maritime	DSME	174000	MEGI	01/03/2026	Q1, 2026
Daewoo 2553	Maran Gas Maritime	DSME	174000	MEGI	01/06/2026	Q2, 2026
Hyundai Samho 8198	Capital Gas	Hyundai Samho	174000	ME-GA	01/01/2026	Q1, 2026
Hyundai Samho 8199	Capital Gas	Hyundai Samho	174000	ME-GA	01/03/2026	Q1, 2026
Samsung 2634	JP Morgan	Samsung	174000	ME-GA	01/05/2025	Q2, 2025
Samsung 2637	JP Morgan	Samsung	174000	ME-GA	01/07/2025	Q3, 2025
Samsung 2638	JP Morgan	Samsung	174000	ME-GA	01/08/2025	Q3, 2025
Samsung 2641	JP Morgan	Samsung	174000	ME-GA	01/11/2025	Q4, 2025
Samsung 2642	JP Morgan	Samsung	174000	ME-GA	01/01/2026	Q1, 2026
Samsung 2643	JP Morgan	Samsung	174000	ME-GA	01/02/2026	Q1, 2026
Samsung 2644	JP Morgan	Samsung	174000	ME-GA	01/05/2026	Q2, 2026
Samsung 2645	JP Morgan	Samsung	174000	ME-GA	01/06/2026	Q2, 2026
Samsung 2646	JP Morgan	Samsung	174000	ME-GA	01/07/2026	Q3, 2026
Samsung 2647	JP Morgan	Samsung	174000	ME-GA	01/08/2026	Q3, 2026
K3 SHI 1	Pan Ocean, SK Shipping, Samsung H-Line		174000		01/03/2026	Q1, 2026
K3 SHI 2	Pan Ocean, SK Shipping, Samsung H-Line		174000		01/06/2026	Q2, 2026
Qatar SHI 11	JP Morgan	Samsung	174000	ME-GA	01/11/2024	Q4, 2024
Qatar SHI 12	JP Morgan	Samsung	174000	ME-GA	01/12/2024	Q4, 2024
Qatar Knutsen 10	Knutsen	Hyundai Heavy	174000	XDF	01/08/2026	Q3, 2026
Qatar Knutsen 7	Knutsen	Hyundai Heavy	174000	XDF	01/02/2026	Q1, 2026
Qatar Knutsen 8	Knutsen	Hyundai Heavy	174000	XDF	01/04/2026	Q2, 2026
Qatar Knutsen 9	Knutsen	Hyundai Heavy	174000	XDF	01/06/2026	Q2, 2026

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
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WORLD SMALL SCALE LNG FLEET*

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

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