

LNG Shipping News

AN LNG JOURNAL TITLE ON LNG CARRIERS

14 September 2023

Asian LNG buyers face volatile market

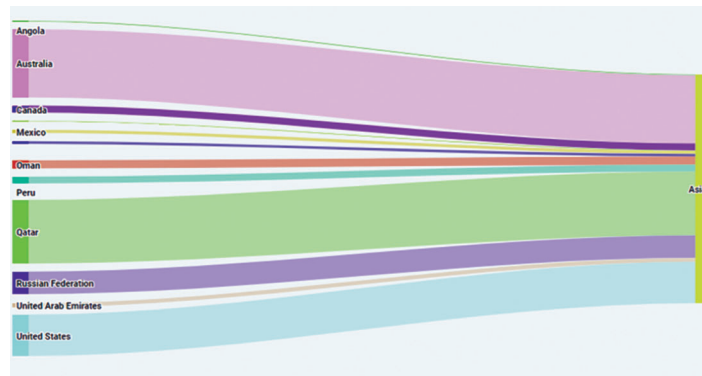
Asian LNG buyers are navigating a near-term market that is so finely balanced that any supply disruptions or demand hikes could cause significant price volatility, according to Mangesh Dilip Patankar, Vice President, APAC Gas and LNG Consulting at Wood Mackenzie (WoodMac).

Speaking on the sidelines of Gastech 2023, he said that the LNG market is at a critical juncture and the uncertain outlook has affected pricing and contract terms significantly and widened the gap between buyer and seller aspirations.

“Many LNG buyers face the challenge of ensuring LNG supply security, while keeping their procurement costs competitive and contractual terms flexible,” Patankar said. “Simultaneously, the terms in LNG SPAs are also evolving as LNG trading increases.”

According to WoodMac’s Lens, Australia and Qatar will be biggest suppliers of LNG to Asia between 2023 - 2030 with volumes of over 886 mill and 827 mill tonnes, respectively, which will account for almost 60% of the total LNG delivered into Asia during the period.

Patankar believed that the LNG market cooling off from last year’s highs meant that emerging buyers, particularly in Asia, were keen to re-engage with sellers. However, he warned that any Asian buyers looking to re-enter



LNG deliveries into Asia. Source: Wood Mackenzie

the market must understand LNG’s complex fundamentals and track its price volatility.

“As [LNG] buyers contemplate their options, it becomes crucial for them to evaluate the mix of pricing indices in their portfolio, such as oil or Henry Hub and whether they should also take some exposure to spot pricing/spot purchases,” Patankar said.

He added that with the new wave of LNG projects not expected to make a significant impact in terms of increased supply until 2026, the market looks set to remain tight.

WoodMac’s Lens data showed LNG year-on-year supply growth

averaging 40 mill tonnes per annum from 2026 to 2028, helping the global market to rebalance, which is predicted to bring prices down.

Patankar believed this will improve gas affordability, facilitate LNG availability for Europe and enable a rebound of demand in Asia.

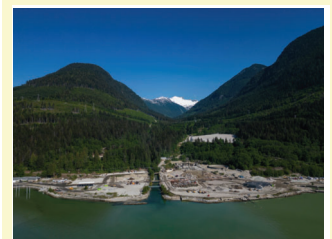
“The outlook for LNG market beyond 2028 is then dependent on the level of liquefaction project final investment decisions (FIDs) within the next one to two years, as well as the pace of energy transition, in addition to several dynamic supply-demand related factors,” he concluded. ■

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NEWS NUDGE

Wärtsilä monitor's LNGC's engines

Technology group Wärtsilä has signed a technical management agreement with China LNG Shipping (International) Co Ltd (CLSICO).

The 15-year agreement,

which took effect in July, will help ensure operational reliability and provide maintenance planning flexibility for the ‘Dapeng Princess’, the world’s largest shallow draft LNGC.

‘Dapeng Princess’ is fitted with three Wärtsilä 34DF dual-fuel engines. The agreement includes constant data monitoring and maintenance support for the engines and gas

valve units.

The full scope includes Wärtsilä’s dynamic maintenance planning solution, which maximises the time between overhauls and provides scheduling flexibility. Also included is Expert Insight, Wärtsilä’s predictive maintenance solution, which secures asset availability by preventing potential problems before they occur. ■

Australia - what next?

Facing industrial action at Chevron's Gorgon and Wheatstone production plants, plus a shutdown of Shell's 'Prelude' FLNG, during the past two years, Australia has overtaken Qatar to become the world's top LNG exporter.

During 2022, Australia exported 81.3 mill tonnes of seaborne LNG, according to Refinitiv vessel tracking data, analysed by Genoa-based shipbroker and consultancy, Banchero Costa. This accounted for 20.1% of global LNG shipments.

Last year, Qatar came in second with 79.9 mill tonnes, or a 19.8% share, while the US was third with 79.4 mill tonnes, or a 19.7% share.

In the first eight months of 2023, Australia exported 53.9 mill tonnes of LNG, which was a 1.3% year-on-year increase. This was behind first place US' 57.4 mill tonnes but ahead of Qatar's 53.1 mill in the same period.

Top loading ports for Australian LNG were - Gladstone (15.6 mill tonnes in January/August, 2023), Dampier (13 mill), Barrow Island (10.8 mill), Ashburton (6.8 mill), Darwin (5.9 mill) and 'Prelude'

FLNG (1.9 mill tonnes).

In terms of destinations, most was shipped to East Asia. For example, in the January/August period, LNG exports to Mainland China increased by 15.6% y-o-y to 16.2 mill tonnes from 14 mill in the same period a year ago, but was still well below the 21.3 mill tonnes recorded in the first eight months of 2021.

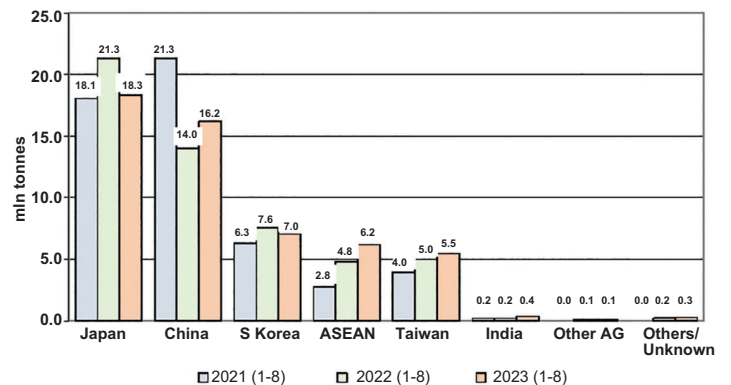
China was the destination for 30% of Australian LNG exports during the period. Exports to Japan declined during the period by 14.1% y-o-y to 18.3 mill tonnes from 21.3 mill in January/August, 2022, but are above the 18.1 mill tonnes shipped in the same period a year before.

This year, Japan has accounted for 34% of Australian LNG shipments to August.

In third place was South Korea, which accounted for 31.1% of Aus-

Australia - LNG Exports by Destination in Jan-Aug

(Sep 2023 ; source: refinitiv ; seaborne only ; all tankers ; in mln tonnes)



Source: Banchero Costa

tralian LNG shipments in 2023. However, shipments declined by 6.9% y-o-y during the period to 7 mill tonnes.

Volumes shipped to Southeast Asia increased by 28.5% y-o-y to 6.2 mill tonnes in January/August, 2023, including 2.5 mill tonnes to

Thailand (up from 1.3 mill in the previous year's period and 0.2 mill tonnes in the same period of 2021).

In addition, 1.9 mill tonnes was exported to Singapore, and 1.5 mill to Malaysia, Banchero Costa concluded. ■

ADNOC Gas signs LNG supply agreement with PetroChina

ADNOC Gas has signed an agreement, valued at between \$450 mill (AED1.65 bill) and \$550 mill (AED2 bill), to supply LNG to PetroChina International (PCI).

Ahmed Mohamed Alebri, ADNOC Gas CEO, said: "We are pleased to sign this LNG supply agreement with PCI, further strengthening our presence in one of the world's fastest growing gas markets.

"China continues to be a key market for ADNOC Gas, and this agreement further reinforces our role as a major LNG supplier

across East and South Asia, and beyond," he said.

Wu Junli, PCI Chairman, added: "Energy is an important area of collaboration between China and the UAE. We are delighted to partner with ADNOC Gas, a company committed to providing stable and reliable energy supply with low-carbon emissions.

"This agreement signifies an extension of the co-operation between our two companies and reaffirms PCI's commitment to ADNOC Gas as our global partner," he said.

This agreement follows several other significant international LNG sales agreements, including with Japan Petroleum Exploration

(JAPEX), TotalEnergies Gas and Power and India Oil Corp (IOCL).

ADNOC Gas said that it continued to leverage opportunities arising from its parent's integrated gas master plan, which links every part of the UAE's gas value chain, ensuring a sustainable and economic supply of natural gas to meet local and international demand. ■

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bp to offtake Woodfibre's LNG

bp has entered into its third long-term LNG offtake contract from the Woodfibre LNG facility being developed in British Columbia, Canada.

With the latest contract to offtake 0.45 mill tonnes of LNG per year for 15 years on a free on board (FOB) basis, all of Woodfibre's LNG production is now committed to bp. This includes a firm offtake of 1.95 mill tonnes with the remainder on a flexible offtake basis.

bp said that it continued to look for opportunities across the gas value chain, as it sees LNG as an essential part of the energy transition and its own pivot to becoming an integrated energy company.

As bp works towards building an LNG portfolio of 30 mill tonnes by 2030, the additional Canadian west coast supply source expands its flexible, high-quality LNG portfolio and further enhances the company's capability to meet the growing global natural gas demand, the UK energy major said.

In addition to securing LNG offtake rights from the project, bp

will provide gas transportation to the Woodfibre LNG export facility during the 15-year contact term.

Jonathan Shepard, bp's Vice President global LNG trading and origination, said: "As the world seeks secure, affordable and lower carbon energy, global

demand for LNG is expected to continue to grow and this additional Canadian supply source will further enhance bp's supply positions in the Pacific region. We look forward to continuing our close collaboration with Woodfibre LNG."



bp has taken all of Woodfibre's LNG thus far

Commonwealth agrees SPA with MET

Commonwealth LNG has entered into a Heads of Agreement (HOA) with the MET Group for the sale and purchase (SPA) of 1 mill tonnes of LNG per annum for 20 years.

MET is an integrated European energy company headquartered in Switzerland.

The LNG will be supplied from Commonwealth's facility currently under development in Cameron, Louisiana.

Commonwealth LNG Founder and Executive Chairman, Paul Varello, said, "This agreement recognises that US LNG can and will play a continuing role in Europe's energy transition by providing reliable and affordable natural gas to the region.

"We are excited to work with MET Group to deliver LNG on a long-term basis to contribute to the security of natural gas supply to their customers," he said.

MET Group Chairman and CEO, Benjamin Lakatos, commented, "LNG supply into Europe is a signif-

icant contributor to gas supply diversification and an important contributor to European energy security. LNG is also becoming an important part of MET Group's strategy going forward."

MET also said it was increasing its participation in the LNG market. In 2022, MET imported more than 30 TWh of LNG cargoes for countries including Croatia, Greece, Spain, Belgium and the UK.

This year, the company also secured long-term LNG capacities in Germany and expanded its spot capacity reach to Finland.

Under the terms anticipated in the non-binding HOA, shipments would commence at the start of the facility's commercial operations in 2027. The final terms remain subject to negotiation of a

definitive Sale and Purchase Agreement (SPA) between the two parties.

Commonwealth said that it is focused on completing the remaining steps necessary to achieve a final investment decision (FID) on the project in the first quarter of 2024, with first cargo deliveries expected in 2027.

An accelerated construction schedule will allow the project to be built in three years using a modular approach by which major components are fabricated offsite, the company explained.

Cameron is fully permitted and will include six natural gas liquefaction trains and associated facilities capable of producing around 9.3 mill tonnes per annum of LNG.

NEWS NUDGE

Hanwha Ocean orders TMC compressors

Hanwha Ocean has selected Norway-based TMC Compressors to deliver the complete marine compressed air system to six LNGCs building for Mitsui OSK Lines (MOL).

TMC will supply control, service air and 158 nitrogen feed air compressors to each of the six 174,000 cu m vessels.

"We are highly familiar with both the vessel type and the shipbuilder, and Hanwha Ocean knows us and our technology equally well. We are delighted to once again be given the opportunity to supply our energy-efficient compressors to them," said Hans Petter Tanum, TMC's director of sales and business development.

TMC will manufacture the equipment in Europe and ship it Hanwha Ocean in South Korea.

Sinopec in market for LNG cargoes

China's Sinopec, through Unipet, has issued a tender for 25 LNG cargoes.

They are to be delivered on an ex-ship (DES) basis between October this year and the end of 2024, according to two trading sources talking with Reuters.

One cargo is to be delivered in October, five in November and seven in December, plus one cargo per month throughout 2024.

Sinopec wants the cargoes indexed to the Japan-Korea-Marker (JKM) benchmark, except for the first cargo to be delivered in October.

The tender closes on 15th September.

China has imported 39 mill tonnes of LNG in the first seven months of 2023, compared to 63 mill tonnes for the whole of last year, Reuters reported.

Oman LNG reaches major milestone

Oman LNG has signed two binding term sheet agreements.

One is to supply 0.8 mill tonnes per annum of LNG to Shell International Trading Middle East and the other is to supply 0.75 mill tonnes to OQ Trading.

Based on these agreements, Shell will receive the LNG from Oman for 10 years starting from 2025, while OQ Trading's supply is for four years beginning in 2026.

Both agreements form significant steps in the history of Oman LNG and form a major milestone, marking the completion of delivering 10.4 mill tonnes per annum and a total of 80 mill tonnes over a 10-year period, the company said.

This achieved Oman LNG's goal to renew its contract beyond 2024 successfully in less than 12 months since the sales campaign started.

With the previously agreed term sheet with Shell also for the offtake of 0.8 mill tonnes per year signed in January, 2023, this additional agreement makes Shell the biggest offtaker from Oman LNG beyond 2024.

Speaking after the signing ceremony, Hamed Al Naamany, Oman LNG CEO, said, "The term sheet agreements contribute to global energy security and sustain our position as a trusted supplier of reliable energy, where it facilitates business opportunities, and complements our objectives to establish partnerships and add value to the local economy.

"Additionally, this global marketing campaign comes as an exceptional milestone in Oman LNG's rather stellar history, despite the

unprecedented volatile markets, due to the geopolitical events and post-COVID challenges," he said.

Walid Hadi, Senior Vice President and Country Chair, Oman Shell, added: "Shell is proud of the role it has played in Oman LNG to date, as a shareholder and a technical advisor since its inception.

"We are proud that we will now become Oman LNG's largest LNG purchaser, as well as its largest private shareholder. This additional offtake term sheet signifies our deep commitment to continue pulling on all levers of Oman's energy system to address the pressing trilemma of sustainability, affordability, and security.

"Simultaneously, it serves as a

pivotal step in the evolution of our hydrocarbon enterprise, steering it toward a future characterised by both low carbon emissions and financial viability," he said.

Wail Al Jamali, CEO of OQT, commented: "As the international energy and commodity trading vehicle of the Government of Oman, we are delighted to add this strategic off-take to our portfolio. The execution of this term sheet represents the first long-term agreement between our two organisations following many years of co-operation.

"We are committed to developing strong, sustainable relationships for the long-term benefit of our respective shareholders and the Sultanate of Oman," he said. ■

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CoolCo's Tyrrell in upbeat mood

In its second quarter 2023 earnings review, CoolCo said LNGC owners remain focused primarily on longer-term charters.

This was down to an improved bargaining position afforded by a combination of scarcity and concentration. The charters would bridge the period until the next wave of LNG volumes arrives on-line in 2026/2027.

A newbuilding LNGC ordered today would be subject to about a four year lead time and a purchase price exceeding \$260 mill, limiting the likelihood of speculative contracting, while further supporting the benchmark against which the overall fleet is priced.

During 2Q23, CoolCo generated total operating revenues of \$90.3 mill, compared to \$98.6 mill in the previous quarter. The reduction was mainly related to the sale of 'Golar Seal' in late March, 2023.

Net income was \$44.6 mill, compared to \$70.1 mill for 1Q23, while CoolCo achieved average TCE of \$81,100 per day in 2Q23, compared to \$83,700 per day in the previous quarter, mainly attributable to a lower variable rate charter linked to the spot market.

The company achieved an adjusted EBITDA of \$59.9 mill for the quarter, compared to \$67.8 mill for 1Q23.

CoolCo also announced that it has exercised an option to acquire

two newbuilding 2-stroke MEGA LNGCs from affiliates of EPS Ventures. They are scheduled to be delivered from Hyundai Samho Heavy Industries in September and December, 2024, respectively.

They are being purchased for around \$234 mill each. The initial option exercise price was \$56.9 mill per vessel, resulting in a total of \$113.8 mill paid to EPS on 3rd July, 2023.

To be named 'Kool Tiger' and 'Kool Panther', the LNGCs are expected to be funded by a combination of cash on hand, including cash that was recently released from the sale of the 'Golar Seal', and committed debt financing.

CoolCo added that it was in discussions with multiple potential charterers for the newbuildings.

Loan increase

On 28th June, 2023, bank approval was granted for a \$70 mill increase under the senior secured sustainability linked amortising term loan, in addition to a reduction in the interest rate margin under the \$570 mill bank facility from 275 basis points to 225 basis points.

CoolCo declared a 2Q23 dividend of \$0.41 per share, to be paid to shareholders of record on

11th September, 2023.

Richard Tyrrell, CEO, commented: "During the second quarter, we achieved full utilisation across the CoolCo fleet and secured well-timed growth through the exercise of our option on two state-of-the-art newbuild MEGA LNG carriers with deliveries in late 2024. Newbuild pricing was materially below current levels and committed financing is in place subject to documentation.

"By exercising our option to acquire these vessels with scheduled delivery years well in advance of comparable newbuild orders, we are one of the few independent owners with availability in an early period of rapid expected growth in LNG supply.

"In conjunction with our three existing vessels that come into the charter market in 2023 and 2024, of which two are currently at rates well below prevailing levels, we have a clear path towards the realisation of significant incremental value, cash flow, and continued dividend-paying capacity.

"With the approach of winter in the Northern Hemisphere, which is typically accompanied by a surge in LNG carrier demand related to both increased gas consumption and additional utilisation



CoolCo's Richard Tyrrell sees good times ahead

for floating storage, trading arbitrage involving lengthy voyages to the Far East, and weather-related delays that soak up shipping capacity, the market seems tightly coiled.

"Moreover, the recent extreme volatility in gas pricing demonstrates a continued emphasis on energy security, as importers continue to put a premium on the commodity and the shipping capacity required to ensure security of supply.

"It remains to be seen how the coming winter will ultimately play out, but similar tightness of both cargoes and shipping capacity has historically presaged dramatic inflections in the spot charter market and provided firm support for both rates and charter durations in the more stable timecharter market," he concluded. ■

NEWS NUDGE

MAMII doubles membership

The Methane Abatement in Maritime Innovation Initiative (MAMII) has more than doubled its membership in its first 12 months.

Talking at Gastech, MAMII also confirmed three new members - MiQ, a methane measurement certification company, Japanese shipping giant NYK Line, and Petronas subsidiary, MISC.

Under the guidance of Saftytech Accelerator, MAMII was

established on 6th September, 2022, and has grown from an initial seven to 16 members.

In its first year, the initiative produced a methane strategy landscape report, covering methane regulatory requirements, well-to-tank and tank-to-wake analysis, and cost benefit analysis.

It also examined more than 150 technology companies to create an ecosystem of 27 leading methane tech concerns, of which 13 are actively engaged with MAMII partners.

However, speaking at Gastech, leading members

emphasised that the technology ecosystem for methane measurement and abatement still required significant time and investment.

MAMII will also release a comprehensive progress report in January, 2024, which will shed light on the methane emission challenge and offer actionable steps for the industry to take.

Baker Hughes to enhance Driftwood

Baker Hughes, in co-operation with Bechtel, is to supply eight main refrigerant compression packages for Phase 1 of Tel-

lurian's Driftwood LNG project.

This contract also secures a delivery schedule for the eight LM6000PF+ gas turbines, main refrigerant compressors, and control units required for Phase 1, to support Driftwood's ability to achieve initial LNG production in 2027.

By early next year, Baker Hughes will be on schedule to complete the fabrication of the electric-powered, zero-emissions integrated compressor line (ICL) packages and other turbo-machinery equipment for Driftwood Pipeline 200, following the contract award in 2022. ■



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Technip Energies launches modular LNG train solution

French engineering group, Technip Energies has unveiled the patented SnapLNG by T.EN, a modular, pre-engineered and standardised solution for LNG de-carbonised production.

Launched at Gastech, the initiative is claimed to accelerate the time to market with plant reliability.

With world LNG production reaching a possible 600 mill tonnes per annum by 2030, there is a need to make it cleaner and faster, the company said.

SnapLNG by T.EN is a 2.5 mill tonnes per annum electrically driven LNG train solution comprised of pre-produced modules ready for delivery and installation.

These modules operate autonomously and are pre-commissioned, for ease of delivery of a

complete natural gas liquefaction plant, thus accelerating time to market and saving more than two years on total project completion, compared to a conventional project.

Its advanced design offers certainty in cost execution, delivery schedule, plant reliability and availability, as well as production performance for a significant increase in annual revenues and a reduction of about 350kTe/year of CO₂ emission per train versus a gas turbine solution.

Loïc Chapuis, Technip Energies Senior Vice President Gas & Low

Carbon Energies, said: "SnapLNG by T.EN represents a significant breakthrough in the LNG industry, embodying its future thanks to its innovative nature.

"This solution enables our clients to achieve considerable time savings and greater operational certainty and reliability while reaching their zero-emissions objectives.

"With SnapLNG by T.EN, Technip Energies strengthens its position as a leader and pioneer in the LNG sector and as a trusted and committed partner supporting its clients in their transition to a low carbon economy," he said. ■

Hanwha Ocean's zero carbon LNGC design wins AiP

ABS has issued an approval in principle (AIP) to Hanwha Ocean for an LNGC design fitted with an ammonia-fuelled gas turbine.

If developed, the 174,000 cu m vessel would be the world's first carbon emission free LNGC.

The vessel has been designed to use ammonia and natural gas separately or simultaneously as fuel. If only ammonia is used, no carbon gas is emitted, the class society claimed.

It also incorporates Hanwha Power Systems' exhaust gas waste heat recovery system (sCO₂ Power System). Hanwha Ocean claimed that the system meets the NO_x requirement without a selective catalytic reduction (SCR) system regardless of fuel used and has a significantly reduced methane slip.

"With a global focus on de-carbonisation, this vessel design represents a big step forward in the shipping industry's ambitions for zero-carbon cargo transport. ABS is proud to be able to support it and use our deep de-carbonisation expertise to advance a more sustainable industry," said Panos Koutsourakis, ABS' Vice President, Global Sustainability.

A Hanwha Ocean spokesperson added: "Carbon neutrality is a 'challenge to be overcome' and an 'opportunity to leap' for shipyards. With this AIP, we will lead the competition for carbon free ships." ■

Sempra joins Japanese consortium

Sempra Infrastructure recently signed an agreement with a consortium comprised of Tokyo Gas Co, Osaka Gas Co, Toho Gas Co and Mitsubishi Corp.

Sempra will participate in evaluating a project to produce e-natural gas, a form of carbon recycling, in the US Gulf Coast.

If the project is successful, it could be the first link of an international supply chain of liquefied e-natural gas, a synthetic gas produced from renewable hydrogen and carbon dioxide.

Feasibility study

The consortium has been conducting preliminary feasibility work on the project since 2022. With the addition of Sempra Infrastructure, the energy transition would be advanced through the global market.

"Sempra Infrastructure is excited to bring its essential infrastructure development experience to this collaboration with Tokyo Gas, Osaka Gas, Toho Gas and Mitsubishi Corp. The project would allow existing natural gas infrastructure, including the global LNG supply chain and the gas distribution systems in nations across the world, to be used as the backbone for the delivery of a long-term, carbon neutral fuel," said Justin Bird, Sempra Infrastructure CEO.

"Sempra Infrastructure has strong strategic alignment with the goals of the consortium and is well-positioned to support this innovative opportunity by building on what we do well: developing energy infrastructure that provides access to safe, secure, affordable and lower and zero-carbon energy for our global partners," he said.

"Tokyo Gas, Osaka Gas, Toho Gas and Mitsubishi Corp intend to realise the world's first large-scale production and international supply chain of e-natural gas and have been progressing feasibility work.

"The US Gulf Coast is an ideal location for this type of facility and we are pleased to partner with Sempra Infrastructure, a company with a reliable and qualified track record of developing energy infrastructure in this region. We look forward to the development of this project as a truly global consortium," the Japanese partners said in a statement.

The planned project could produce 130,000 tonnes of e-natural gas per year that would be liquefied to become liquefied e-natural gas via Mitsubishi Corp's tolling

capacity at the Cameron LNG terminal in Southwest Louisiana and exported to Japan, where the product is commonly referred to as e-methane.

It could also include the production or procurement of green hydrogen, as well as the construction of facilities to produce e-natural gas.

The US Department of Energy (DoE) and Japan's Ministry of Economy, Trade and Industry (MITI) are currently implementing a memorandum of co-operation for carbon capture, utilisation and storage, conversion and recycling, and carbon dioxide removal.

This project would meet many of the objectives in the memorandum, and could complement it, should the policy frameworks recognise e-natural gas as a carbon-neutral fuel.

Successful development of the proposed project is contingent upon completing the required commercial agreements, securing and/or maintaining all necessary permits, obtaining financing, and reaching a final investment decision (FID), among other factors and considerations. ■

World's largest LNGC design gains AiPs

Class societies' ABS, DNV, BV and LR have issued an Approval in Principle for what is claimed will be the world's largest LNGC design.

Awarded during Gastech, the recipient was CSSC Hudong-Zhonghua for the design of a 271,000 cu m capacity LNGC fitted with GTT's NO 96 membrane containment system in five LNG tanks.

To deliver the AiP, a preliminary design review and HAZID (hazard identification) analysis was performed to help ensure the highest levels of safety, feasibility, and performance of this design in compliance with applicable classi-

fication rules and regulations.

Designed to be 344 m long, 53.6 m beam, the vessel will be fitted with five cargo tanks and a dual-fuel propulsion system.

Energy saving solutions include an air lubrication system (ALS) and

shaft generator, a cargo tank design with sloshing and hull stress monitoring systems fitted, as well as an advanced anti-collision system.

In addition, the vessel will come with a selective catalytic reduction (SCR)

system that should reduce the NOx emissions, which will help the vessel comply with IMO Tier III regulations even when operating in diesel mode.

Hudong-Zhonghua claimed that the new design - Global Max type 271K - will have around a 23% lower carbon intensity index (CII), compared to a conventional 174,000 cu m LNGC, which will enable the vessel to get longer qualified service years free of operational limitations.

Despite its size, the vessel will be able to berth at more than 70 LNG terminals on the main trade routes.

Although claimed to be the largest LNGC, there are larger FSRUs and FSUs currently in service.



Hudong-Zhonghua's Global Max Type 271K

LR reveals partnership with COSCO - awards AiP

Lloyd's Register (LR) and Shanghai COSCO SHIPPING LNG investment (COSCO), a subsidiary of China Shipping Corp, have signed a partnership agreement.

This agreement is aimed at developing a new project to formulate and assess the de-carbonisation pathway for COSCO Shipping's existing LNGC fleet.

A Letter of Intent (LOI) was signed at Gastech 2023 and will focus on providing COSCO with insights to enable the company to make the existing LNGC fleet carbon neutral by 2040.

As part of the project, LR will support an analysis of COSCO's fleet operations characteristics and carbon emissions, looking at future carbon reduction energy transition practices alongside future fuels, energy efficiency technology and retrofit plans.

The planned project would also see the further development of COSCO's fleet capacity, future energy adoption and efficiency transformation, based on the shifting landscapes of world trade and the development planning of shipping companies, LR said.

Sau Weng Tang, LR's Commercial Manager - Greater China, said: "The de-carbonisation of our industry is going to require open collaboration between the entire maritime value chain.

"This is why projects and partnerships like this are so important, they provide an opportunity for fleet operators to thoroughly analyse the options available to them to enable them to reach their own and industry mandated requirements for maritime de-carbonisation.

"LR is proud to work alongside one of the key players in the LNG sector in COSCO and we look forward to providing our technical expertise as a trusted adviser on this project to ensure COSCO can successfully navigate their journey towards a carbon neutral fleet by 2040," he said.

Lin Nan, General Manager, COSCO SHIPPING LNG investment (Shanghai), added: "In the context

of IMO maritime de-carbonisation strategy, CSLNG, as an international LNG shipping company, COSCO will endeavour to fulfil the responsibility and accountability to achieve our LNGC fleets' carbon reduction and provide low-carbon and efficient LNG transportation services for the industry. In this effort, we appreciate valuable co-operation between the industrial chain, including the open support from the expertise of LR."

Hyundai AiP

At Gastech, LR also awarded design approval to HD Korea Shipbuilding & Offshore Engineering (HD KSOE) and HD Hyundai Heavy Industries (HD HHI) for their 'FORE-accommodation' LNGC.

Additional space for the installation of future fuels and eco-friendly equipment, such as wind assisted propulsion systems (WAPS), on board carbon capture

and storage systems (OCCS) and fuel cells, were included in the design.

The design is claimed to have an improved propulsion efficiency, compared to conventional LNGCs, due to reduced wind resistance by applying low & streamlined accommodation.

This approval follows a joint development project (JDP) to develop an energy efficient carrier capable of running on future alternative fuels with eco-friendly equipment involving SK Shipping, LR, HD KSOE, HD HHI and the Marshall Islands Flag state.

LR provided qualified advisory services as part of the design approval process, based on detailed in-depth discussions during the project, whilst a HAZID workshop was carried out at HHI's GRC (Global R&D Centre) with the Marshall Islands Flag to identify potential hazards in the early part of the design phase.

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GTT wins more contracts - receives AiPs

Last month, GTT Group digitalisation company, Ascenz Marorka announced it is to equip GasLog's 35 LNGCs with its 'smart shipping' solution.

GasLog chose Ascenz Marorka after an in-depth technical assessment and a pilot run undertaken on two LNGCs.

The five-year contract involves the integration of high frequency sensor data and manually reported data, as well as a comprehensive set of online applications for managing, monitoring and optimising the energy and the environmental performance of the ships.

These include weather routing, voyage management, hull and propeller performance monitoring, machinery optimisation, trim optimisation, emissions monitoring and regulatory reporting.

In addition, GasLog will also utilise other GTT LNG features, such as LNG cargo management, boil-off gas (BOG) optimisation, heel optimisation, LNG ageing, roll-over prevention, emergency

departure management and cargo conditioning.

At this month's Gastech expo, GTT received three Approvals in Principle (AiP) from ABS, and also signed a Joint Development Project (JDP) with the class society.

The three AiPs involved the following projects:

- A concept for an LNG dual-fuel VLCC developed in collaboration with the Finnish ship designer Deltamarin, fitted with a LNG fuel tank of 12,500 cu m equipped with GTT's Mark III system;
- A concept for an LNG dual-fuel Suezmax tanker also developed in collaboration with Deltamarin, fitted with a LNG fuel tank of 5,500 cu m equipped with GTT's Mark III system;
- A concept for a Mark III LNG fuel tank with a design pressure up to 1 bar gauge (barg) for LNG fuel application.

The JDP signed with ABS, and the crude oil tanker company, DHT Holdings, focuses on optimising the design of the VLCC, exploring the total cost of operation with the analysis of the operating profile and fuel availability at frequently visited ports. The collaboration also addresses topics, such as LNG fuel volume, tank size optimisation and the impact on regulatory measures such as the IMO's Carbon Intensity Indicator (CII).

GTT also announced that it has received an order from Dalian Shipbuilding Industry for the tank design of two new 175,000 cu m LNGCs, on behalf of Sea Jade Investment.

The tanks will be fitted with the Mark III Flex membrane containment system and the vessels are scheduled to be delivered between the first and the third quarters of 2027. ■

FSRU to be fitted with Power Conversion technology

Power Conversion, part of the GE Vernova group of energy businesses, recently won a contract from HD Hyundai Heavy Industries to supply GE Vernova's SeaGreen integrated power and propulsion system.

This system includes high power-density induction motor technology, to power and propel an FSRU for Excelsior Energy.

To be constructed at HD Hyundai Heavy Industries' shipyard, the FSRU will be fitted with the technology for optimised vessel energy management and performance.

Power Conversion's integrated electric propulsion system, with PWM (pulse width modulation) power converters and high torque density induction motors, brings higher efficiency, reliability, and availability for sustainable operations, to shipowners, the company claimed.

The FSRU will be the 11th unit to join Excelsior Energy's fleet, a third of which are powered by Power Conversion's integrated electrical propulsion systems.

Eric Cotellet, General Manager at Power Conversion, France, explained: "Building on 130 years of experience, GE Vernova's Power Conversion business is leading a new era of energy - electrifying the world while simultaneously working to de-carbonise it.

"Power Conversion is proud to provide HHI and its customer Excelsior with a state-of-the-art integrated electrical propulsion system and support them in delivering on energy efficiency and electrification, as part of the maritime and energy sector transition," he said. ■

NEWS NUDGE

Saipem wins FSRU contract

Italian engineering giant Saipem has won a contract to construct the facilities for a new FSRU, through a temporary alliance of companies involving Rosetti Marino and Micoperi.

Awarded by snam Rete Gas, the contract calls for the FSRU to be located in the Adriatic Sea offshore Ravenna, Italy.

Saipem's award consists of the engineering, procurement, construction and installation (EPCI) of the new offshore facility, linked to an existing one, for the docking and mooring of the FSRU.

The facility will be connected to shore via a 26 in offshore pipeline 8.5 km in length, plus a 2.6 km onshore pipeline and a

parallel fibre optic cable. The shore crossing will utilise a micro-tunnelling system to minimise environmental impacts.

Offshore operations will be executed by Saipem's pipelay barge 'Castoro 10'.

Tugs for RGLNG

Gulf LNG Tugs of Brownsville, Texas has signed newbuilding contracts with Master Boat Builders of Coden, Alabama, and Sterling Shipyard in Port Neches, Texas.

Each shipyard will build two tugs to serve the Rio Grande LNG (RGLNG) export facility.

Gulf LNG Tugs is a joint venture formed to provide tug services for RGLNG under a long-term agreement. It is owned by Bay-Houston Towing of Houston, Texas; Moran Towing Corp of New

Canaan, Connecticut and Suderman & Young Towing Co also of Houston.

It is the third joint venture formed by the owners to provide tug services to a Gulf Coast LNG project.

Each shipyard will construct two Z-Tech 30-80 tugs designed by naval architect Robert Allan. These represent a proven workhorse in Gulf Coast ports, where affiliates of Gulf LNG Tugs already operate 10 of the same hull design.

The 80-tonne bollard pull tugs will meet US Coast Guard Sub-M regulations and will be ABS classed. The main propulsion engines will be Caterpillar 3516 E, complying with EPA Tier-4 emission standards, and the tugs will receive ABS low emission vessel notation. ■

Methane slip abatement trials underway

At least two pilot projects are underway to monitor and reduce methane slip from vessels using LNG as a fuel.

For example, Swiss-based Daphne Technology has commenced a project to fit its patented SlipPure system on board a Maran Gas LNGC.

Key players in this project include Lloyd's Register (LR) as an independent auditor, Maran Gas Maritime (ship operator), Wärtsilä (engine provider), Shell International Trading and Shipping (vessel charterer and project co-ordinator), while DNV provided the relevant class approvals for the retrofit.

Daphne Technology's SlipPure solution, which last year was awarded approval in principle by LR and DNV, is an after-treatment system that aims to reduce methane slip from LNG-fuelled

engines.

This technology allows for the further methane abatement in exhaust gas to negligible levels and is complementary to Wärtsilä technologies and developments, Daphne said.

Daphne's technology is being retrofitted on a Wärtsilä 34DF auxiliary engine on board the LNGC 'Maran Gas Chios'.

For the SlipPure solution, HAZID and HAZOP workshops were completed by LR, as part of the risk-based certification process.

Daphne Technology's patented PureMetrics solution will also be installed on board 'Maran Gas Chios' throughout the trials, and LR will handle the data dissemination as an independent third-

party verifier.

PureMetrics is a system that directly measures and reports real-time GHG emissions, eliminating the reliance on fuel consumption estimates and ensuring compliance with European Union Monitoring, Reporting and Verification (EU MRV) and the IMO's Data Collection System (IMO DCS) regulations.

"Joining this project, together with Shell, LR, Daphne and Wärtsilä and deciding to install the Daphne SlipPure methane abatement solution on one of our ships shows our commitment to work jointly with high-profile partners towards exploring solutions to handle the methane slip. We look forward to seeing the results of the SlipPureTM trial installed on

board our ship," said Andreas Spertos, Maran Gas' Technical Director.

Two technologies

The second trials involved Finnish marine technology supplier Wärtsilä and Swedish tanker owner Furetank, who are co-developing and testing two technologies having the potential to halve methane slip.

The two technical solutions were tested in Furetank's 'Vinga' tanker series.

One is a Greenhouse Gas (GHG) reduction package, developed by Wärtsilä for dual fuel engines, which actively controls the engine while working in demanding conditions, such as manoeuvring, harsh sea conditions or varying fuel quality. By using this method, combustion is optimised and unburned gas emissions minimised.

The other solution is a low load optimisation package, which reduces the methane slip at low engine loads, for example during harbour operations, such as loading and discharging cargo.

It balances the loading of each engine cylinder, optimising the overall total engine efficiency even at a low engine load.

Tests performed, both in the laboratory and at sea, show very promising results, as the methane slip was reduced by 45-50%, the companies claimed.

This initiative will be implemented in newbuilding 'Vinga' sisterships and also retrofitted into the earlier vessels in the series. ■



Daphne Technology is trialling a new methane slip abatement initiative on board 'Maran Gas Chios'.

Monthly Large LNGC Values*

Newbuildings (174,000 cu m)	\$260.63 mill
Five years old (174,000 cu m)	\$221.73 mill
Total Fleet (573 ships)	\$91.36 bill
Orderbook (332 ships)	\$88.23 bill

*Source: VesselsValue (29/08/23)

*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	\$180,000	+\$50,000
West of Suez	\$170,000	+\$30,000
12 mos T/C	\$101,000	-\$500

*Since last report (31/08/23)

Source: Fearnleys (13/09/23)

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WORLD LNG CARRIER ORDERBOOK

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Hudong-zhonghua H1830a	CSSC	Hudong-Zhonghua	01/08/2019	174,000	XDF	01/04/2024
Wen Cheng	CSSC	Hudong-Zhonghua	01/08/2019	174,000	XDF	01/01/2024
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
Lng Harmony	JP Morgan	Hyundai Heavy	20/07/2020	174,000	XDF	01/07/2023
Daewoo 2517	MOL, COSCO	Hanwha Ocean	01/08/2020	172,500	TFDE - Azipod	01/11/2023
Daewoo 2518	MOL, COSCO	Hanwha Ocean	01/08/2020	172,500	TFDE - Azipod	01/02/2024
Daewoo 2519	MOL, COSCO	Hanwha Ocean	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
Maran Gas Marseille	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
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
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	Hanwha Ocean	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	01/10/2023
Clean Vitality	Dynagas	Hyundai Heavy	31/05/2021	200,000	ME-GA	01/02/2024
MOL Coral	MOL	Hanwha Ocean	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	01/08/2024
Hyundai Samho 8106	Alpha Gas	Hyundai Samho	01/07/2021	174,000	XDF	01/03/2024
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	01/11/2023
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
Daewoo 2522	Hyundai LNG Shipping	Hanwha Ocean	15/07/2021	174,000	MEGI	01/05/2024
Ignacy Lukasiewicz	Knutsen	Hyundai Samho	22/07/2021	174,000	ME-GA	01/11/2023
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	01/10/2023
Samsung 2579	Celsius Shipping	Samsung	26/07/2021	180,000	ME-GA	01/04/2024

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Samsung 2584	Celsius Shipping	Samsung	01/08/2021	180,000	ME-GA	01/06/2024
Samsung 2585	Celsius Shipping	Samsung	01/08/2021	180,000	ME-GA	01/07/2024
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	Hanwha Ocean	14/09/2021	174,000	ME-GA	01/02/2024
Daewoo 2524	MOL	Hanwha Ocean	14/09/2021	174,000	ME-GA	01/04/2024
Daewoo 2525	MOL	Hanwha Ocean	14/09/2021	174,000	ME-GA	01/08/2024
Daewoo 2526	MOL	Hanwha Ocean	14/09/2021	174,000	ME-GA	01/10/2024
Daewoo 2527	MOL	Hanwha Ocean	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	01/10/2023
Samsung 2581	NYK	Samsung	01/10/2021	174,000	XDF	01/11/2023
Samsung 2582	NYK	Samsung	01/10/2021	174,000	XDF	01/01/2024
Samsung 2583	NYK	Samsung	01/10/2021	174,000	XDF	01/02/2024
Samsung 2592	JP Morgan	Samsung	01/10/2021	174,000		01/03/2024
Samsung 2593	JP Morgan	Samsung	01/10/2021	174,000		01/06/2024
Samsung 2594	JP Morgan	Samsung	01/10/2021	174,000		01/09/2024
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	Hanwha Ocean	10/11/2021	174,000	MEGI	01/08/2024
Daewoo 2529	Maran Gas Maritime	Hanwha Ocean	10/11/2021	174,000	MEGI	01/11/2024
Daewoo 2530	BWGas	Hanwha Ocean	25/11/2021	174,000	MEGI	01/03/2025
Daewoo 2531	BWGas	Hanwha Ocean	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	Hanwha Ocean	01/01/2022	174,000	MEGI	01/05/2024
Daewoo 2533	GasLog	Hanwha Ocean	01/01/2022	174,000	MEGI	01/08/2024
Daewoo 2534	GasLog	Hanwha Ocean	01/01/2022	174,000	MEGI	01/06/2025
Daewoo 2535	GasLog	Hanwha Ocean	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
Hyundai Samho 8173	SK Shipping	Hyundai Samho	04/01/2022	174,000	ME-GA	01/09/2024
Daewoo 2537	Maran Gas Maritime	Hanwha Ocean	06/01/2022	174,000	MEGI	01/09/2025
Daewoo 2538	Maran Gas Maritime	Hanwha Ocean	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	Hanwha Ocean	17/01/2022	174,000	ME-GA	01/09/2024

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 = 2 August 2023

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Hyundai Samho 8175	H-Line	Hyundai Samho	26/01/2022	174,000	XDF	01/04/2025
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	Hanwha Ocean	07/02/2022	174,000	MEGI	01/11/2025
Daewoo 2540	Maran Gas Maritime	Hanwha Ocean	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	Hanwha Ocean	01/03/2022	200,000	ME-GA	01/07/2025
Daewoo 2542	Venture Global LNG	Hanwha Ocean	01/03/2022	200,000	ME-GA	01/10/2025
Daewoo 2543	Venture Global LNG	Hanwha Ocean	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	Hanwha Ocean	01/04/2022	174,000	MEGI	01/11/2025
Daewoo 2545	BWGas	Hanwha Ocean	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	Hanwha Ocean	15/04/2022	174,000	ME-GA	01/09/2025
Daewoo 2551	MOL	Hanwha Ocean	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	XDF	01/08/2026
NYK CNOOC 2	NYK	Hudong-Zhonghua	29/04/2022	174,000	XDF	01/10/2026
NYK CNOOC 3	NYK	Hudong-Zhonghua	29/04/2022	174,000	XDF	01/01/2027
NYK CNOOC 4	NYK	Hudong-Zhonghua	29/04/2022	174,000	XDF	01/04/2027
NYK CNOOC 5	NYK	Hudong-Zhonghua	29/04/2022	174,000	XDF	01/07/2027
NYK CNOOC 6	NYK	Hudong-Zhonghua	29/04/2022	174,000	XDF	01/10/2027
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
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
Daewoo 2559	SK Shipping, Pan Ocean, H-Line	Hanwha Ocean	01/06/2022	174,000	ME-GA	01/05/2024
Daewoo 2560	H-Line, Pan Ocean, SK Shipping	Hanwha Ocean	01/06/2022	174,000	ME-GA	01/04/2025
Daewoo 2561	Pan Ocean, SK Shipping, H-Line	Hanwha Ocean	01/06/2022	174,000	ME-GA	01/05/2025

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
Daewoo 2562	SK Shipping, Pan Ocean, Hanwha Ocean H-Line		01/06/2022	174,000	ME-GA	01/06/2025
Daewoo 2563	H-Line, Pan Ocean, SK Shipping	Hanwha Ocean	01/06/2022	174,000	ME-GA	01/11/2025
Daewoo 2564	Pan Ocean, SK Shipping, Hanwha Ocean H-Line		01/06/2022	174,000	ME-GA	01/11/2025
Daewoo 2565	Pan Ocean, SK Shipping, Hanwha Ocean H-Line		01/06/2022	174,000	ME-GA	01/02/2026
Kool Panther	Cool Co	Hyundai Samho	02/06/2022	174,000	ME-GA	01/09/2024
Kool Tiger	Cool Co	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 ME-GA	H-Line, Pan Ocean, SK Shipping	Hanwha Ocean	01/12/2024		07/06/2022	174,000
Daewoo 2547 ME-GA	H-Line, Pan Ocean, SK Shipping		01/12/2024	Hanwha Ocean	07/06/2022	174,000
Daewoo 2548 ME-GA	H-Line, Pan Ocean, SK Shipping		01/01/2025	Hanwha Ocean	07/06/2022	174,000
Daewoo 2549 ME-GA	H-Line, Pan Ocean, SK Shipping		01/02/2025	Hanwha Ocean	07/06/2022	174,000
Daewoo 2552	Maran Gas Maritime	Hanwha Ocean	08/06/2022	174,000	MEGI	01/05/2026
Daewoo 2553	Maran Gas Maritime	Hanwha Ocean	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
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

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 = 2 August 2023

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
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	Hanwha Ocean	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
Hudong-zhonghua H1894a	K-Line	Hudong-Zhonghua	01/09/2022	174,000	XDF	01/10/2026
Hudong-zhonghua H1895a	K-Line	Hudong-Zhonghua	01/09/2022	174,000	XDF	01/12/2026
Hudong-zhonghua H1896a	K-Line	Hudong-Zhonghua	01/09/2022	174,000	XDF	01/03/2027
Hudong-zhonghua H1897a	K-Line	Hudong-Zhonghua	01/09/2022	174,000	XDF	01/06/2027
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	XDF	01/06/2027
MOL ENN 2	MOL	Hudong-Zhonghua	08/09/2022	174,000	XDF	01/10/2027
MOL ENN 3	MOL	Hudong-Zhonghua	08/09/2022	174,000	XDF	01/03/2028
Daewoo 2566	Meiji Shipping	Hanwha Ocean	30/09/2022	174,000	XDF	01/08/2025
Daewoo 2567	Meiji Shipping	Hanwha Ocean	30/09/2022	174,000	XDF	01/09/2025
Daewoo 2568	Meiji Shipping	Hanwha Ocean	30/09/2022	174,000	XDF	01/06/2026
Daewoo 2569	Meiji Shipping	Hanwha Ocean	30/09/2022	174,000	XDF	01/09/2026
DAEWOO 2570	MISC	Hanwha Ocean	30/09/2022	174,000	XDF	01/01/2026
DAEWOO 2571	MISC	Hanwha Ocean	30/09/2022	174,000	XDF	01/05/2026
Daewoo 2572	TMS Cardiff Gas	Hanwha Ocean	30/09/2022	174,000	ME-GA	01/03/2026
Daewoo 2573	TMS Cardiff Gas	Hanwha Ocean	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	01/11/2025
Hyundai Samho 8182	TMS Cardiff Gas	Hyundai Samho	17/10/2022	174,000	XDF	01/01/2026
VG 1	Venture Global LNG	Hanwha Ocean	21/10/2022	174,000	MEGI	01/09/2026
VG 2	Venture Global LNG	Hanwha Ocean	21/10/2022	174,000	MEGI	01/12/2026
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
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

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Data last updated = 2 August 2023

Name	Owners	Yard	Ordered	Capacity	Propulsion	Delivery
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
Celsius 1	Celsius Shipping	China Merchants HI Jiangsu	31/12/2022	180,000	ME-GA	01/03/2026
Celsius 2	Celsius Shipping	China Merchants HI Jiangsu	31/12/2022	180,000	ME-GA	01/07/2026
Celsius 3	Celsius Shipping	China Merchants HI Jiangsu	31/12/2022	180,000	ME-GA	01/11/2026
Celsius 4	Celsius Shipping	China Merchants HI Jiangsu	31/12/2022	180,000	ME-GA	01/03/2027
Hyundai Samho 8204	Oman Shipping Co.	Hyundai Samho	01/01/2023	174,000		01/05/2026
Hyundai Samho 8205	Oman Shipping Co.	Hyundai Samho	01/01/2023	174,000		01/06/2026
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
HYUNDAI SAMHO 8238	NYK	Hyundai Samho	01/02/2023	174,000	XDF	01/05/2027
HYUNDAI SAMHO 8239	NYK	Hyundai Samho	01/02/2023	174,000	XDF	01/10/2027
MOL 1	MOL	Samsung	01/02/2023	174,000	ME-GA	01/09/2026
MOL 2	MOL	Samsung	01/02/2023	174,000	ME-GA	01/01/2027
Samho Mar 1	NYK	Hyundai Samho	01/02/2023	174,000	XDF	01/12/2026
Samho Mar 2	NYK	Hyundai Samho	01/02/2023	174,000	XDF	01/07/2027
Samho Mar 3	NYK	Hyundai Samho	01/02/2023	174,000	XDF	01/12/2027
DAEWOO 2580	MOL	Hanwha Ocean	13/02/2023	174,000	ME-GA	01/03/2027
DALIAN NO 1 G175K-5	China Merchant	Dalian Shipbuilding	01/03/2023	175,000	XDF	01/08/2026
DALIAN NO 1 G175K-6	China Merchant	Dalian Shipbuilding	01/03/2023	175,000	XDF	01/10/2026
DALIAN NO 1 G175K-7	China Merchant	Dalian Shipbuilding	01/03/2023	175,000	XDF	01/12/2026
DALIAN NO 1 G175K-8	China Merchant	Dalian Shipbuilding	01/03/2023	175,000	XDF	01/02/2027
Shandong 1	Shandong Marine	Jiangnan	01/03/2023	175,000		01/03/2027
Shandong 2	Shandong Marine	Jiangnan	01/03/2023	175,000		01/07/2027
Hyundai Samho 8206	Capital Gas	Hyundai Samho	28/03/2023	174,000	ME-GA	01/02/2027
Hyundai Samho 8207	Capital Gas	Hyundai Samho	28/03/2023	174,000	ME-GA	01/03/2027
HANWHA OCEAN 2581	Maran Gas Maritime	Hanwha Ocean	01/04/2023	174,000	MEGI	01/04/2027
HANWHA OCEAN 2582	Maran Gas Maritime	Hanwha Ocean	01/04/2023	174,000	MEGI	01/06/2026
K-Line SHI I	K-Line	Samsung	04/04/2023	174,000	ME-GA	01/08/2026
K-Line SHI II	K-Line	Samsung	04/04/2023	174,000	ME-GA	01/11/2026
Daewoo 2583	MOL	Hanwha Ocean	07/04/2023	174,000	ME-GA	01/08/2027
Hd Hyundai Ulsan 3452	Dynagas	Hyundai Heavy	28/04/2023	200,000	XDF	01/05/2027
Hd Hyundai Ulsan 3453	Dynagas	Hyundai Heavy	28/04/2023	200,000	XDF	01/11/2027
Hudong-zhonghua H1901a	CSSC	Hudong-Zhonghua	01/05/2023	174,000	XDF	01/03/2028
Hudong-zhonghua H1902a	CSSC	Hudong-Zhonghua	01/05/2023	174,000	XDF	01/06/2028
Hudong-zhonghua H1903a	CSSC	Hudong-Zhonghua	01/05/2023	174,000	XDF	01/09/2028
NYK EnBW	NYK	Hyundai Heavy	02/05/2023	174,000		01/03/2027
NYK EnBW 2	NYK	Hyundai Heavy	02/05/2023	174,000		01/06/2027
NYK EnBW 3	NYK	Hyundai Heavy	02/05/2023	174,000		01/09/2027
NYK EnBW 4	NYK	Hyundai Heavy	02/05/2023	174,000		01/12/2027
Chevron SHI 1	Chevron	Samsung	13/06/2023	174,000		01/12/2027
Chevron SHI 2	Chevron	Samsung	13/06/2023	174,000		01/02/2028
PCI 7	ULT	Hudong-Zhonghua	03/07/2023	174,000	XDF	01/11/2025
PCI 8	ULT	Hudong-Zhonghua	03/07/2023	174,000	XDF	01/12/2025

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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	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 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
2018	Bunker Breeze	1,200	LNG	Barcelona	Yes	Suardiaz Energy Shipping
2018	HUA XIANG 8	13,720	LNG	China	Yes	Zhejiang Huaxiang
2019	Blue Whale	7,500	LNG	Korea	Yes	Korea Line

Built	Name	CBM	Cargo Type	Trading area	Trading in LNG?	Ship Owner / Operator
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	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	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	New Frontier 2	18,000	LNG	USG	Yes	Shell
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	FueLNG
2023	LNG Erasmus	8,000	LNG	NWE	Yes	Shell
2023	Energy Stockholm	8,000	LNG	NWE	Yes	Shell
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	Paolina Cosulich	8,000	LNG	Mediterranean	Yes	Fratelli Cosulich
2024	Anhui Changjiang TBN	14,000	LNG	China	Yes	Anhui Changjiang LNG
2024	Keys Azalea	3,000	LNG / Oil	Japan	Yes	Keys Bunkering West Japan
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