

LNG Shipping News

AN LNG JOURNAL TITLE ON LNG CARRIERS

20 July 2023

Long term supply contracts required - GIIGNL

LNG market growth is expected to slow this year, due to limited new liquefaction capacity coming online, according to the International Group of Liquefied Natural Gas Importers' (GIIGNL) annual report.

A mild winter 2022/2023 and gas demand destruction in Europe has left storages levels well above normal. Europe is still set to compete with Asia over additional LNG imports to offset lower pipeline supplies from Russia, compared to 2022.

European countries launched new LNG receiving infrastructure alongside increasing capacity at existing terminals. For example, Germany became an LNG importer in early 2023, following the commissioning of three FSRUs and more projects are expected to come online later this year and next.

Today, Germany has the highest number of LNG terminals under construction in Europe, potentially adding around 17 mill tonnes per annum of import capacity.

However, having the necessary

infrastructure in place without the corresponding long-term commitments does not necessarily guarantee European security of supply, the GIIGNL warned.

For example, a rebound in LNG demand in China would put additional pressure on the market, although the country could turn to more pipeline gas or alternative sources of energy.

Record high gas and LNG prices have triggered emergency policy measures, such as the EU price cap on wholesale gas markets and joint procurement mechanism (the EU Energy platform).

Such emergency measures aimed at limiting gas price spikes while ensuring security of supply should remain a short term solution in order to limit their impact on gas markets, which have

proven to be efficient.

Looking ahead, by 2026, more than 100 mill tonnes per annum of new liquefaction capacity is expected to come online.

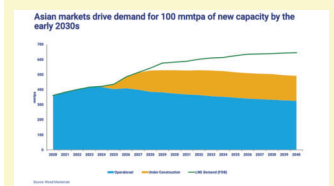
Before these projects ramp up, the market will remain tight, taking into account the strong demand increase expected over the next decade.

GIIGNL added that LNG's pivotal role in the energy transition should be acknowledged by political decision makers and other stakeholders, in order to avoid counter productive pressure on investors and lenders that could stifle the financing of additional LNG projects.

Such investments are necessary to ensure a sustainable but also a reliable and socially acceptable energy mix.

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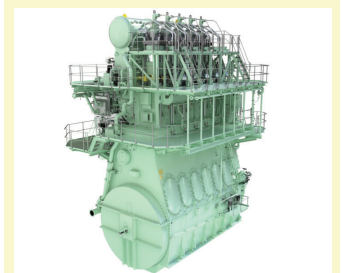
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DELIVERING CLEAN ENERGY FOR A SUSTAINABLE FUTURE



As the world transitions to cleaner and more sustainable energy sources, liquefied natural gas (LNG) has emerged as a key player in the global energy mix. LNG is a low-emission and versatile fuel that can power homes, businesses, and vehicles, reducing greenhouse gas emissions and improving air quality. These factors make LNG a promising alternative to coal and oil.

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LNG outlook - the challenges ahead

This year, LNG spot prices have dropped 90% since their peak in 2022, while a wave of new supply is set to hit the market from 2025.

By comparison, last July, new LNG project sellers and developers held all the aces, as European buyers fought to access volumes to cover the gap left by Russian pipeline gas cuts.

While contract prices are still relatively high, the balance of power is quickly shifting back towards the buyers, Wood Mackenzie (WoodMac) said in a report.

The LNG outlook is bullish, with another 100 mill tonnes per annum of capacity required to meet demand growth by the mid-2030s, a 25% rise on the current supply and on top of what is already sanctioned.

Three challenges

WoodMac identified three challenges developers faced and assessed which suppliers are best placed to capture market growth.

First, protecting margins from cost inflation. The LNG industry isn't immune to the global supply chain crunch and the flood of FIDs in the past two years is driving competition for labour and specialised materials.

US LNG project development costs have shot up to near \$1,000 per tonne today from \$600 per tonne pre-pandemic. Qatar is set to pay 30% more to build its new North Field South (NFS) mega trains, compared to the North Field East (NFE), sanctioned only two years ago.

Second, meeting the growing demand for low-carbon-footprint LNG. As security of supply concerns fade, buyers and governments are refocusing on lowering CO2 emissions. The industry must

seize this opportunity: reducing upstream, liquefaction and shipping emissions will prolong LNG demand through the energy transition.

US LNG projects are looking to source certified RSG (responsibly sourced gas) to reduce upstream emissions, QatarEnergy and NextDecade plan to fit carbon capture and storage (CCS) to liquefaction plants and many developers are considering electric-drive turbines sourced from renewables.

Lower-carbon LNG will command a premium price but will come at a cost. For the most carbon-intensive projects, this could be as much as another \$2 per MMBtu on the delivered cost to jurisdictions that impose a carbon price on imports (assuming \$100 per tonne).

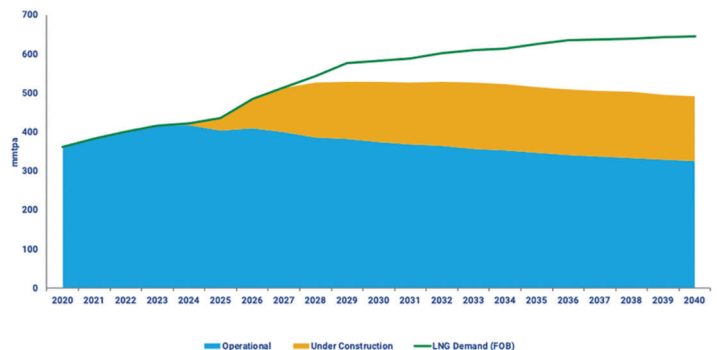
Two-tier market

A two-tier market could develop. On the one hand, premium-priced, low-carbon LNG sold by lower-cost developers, such as Qatar and the US and, on the other, higher-carbon LNG from suppliers under less government pressure to avoid investing in de-carbonisation could emerge. However, the latter is only likely to be short-lived.

Third, doubling-down on Asian markets. Beyond 2030, it's all about Asia, as the region's developing economies lean more heavily on gas, while striving to move away from coal.

For the past two years, China has led the way by signing multiple long-term contracts. But an opportunity now exists across

Asian markets drive demand for 100 mmtpa of new capacity by the early 2030s



Source: Wood Mackenzie

A rendering of the SPL expansion project

many Asian markets, most with a high growth potential. However, with limited existing infrastructure and, for the most part, sensitive to prices, developers will have to work hard to crack them.

Partnering with buyers from the region can help unlock this opportunity.

Looking head, competition will be fierce, although Qatar and the US, with 40% of global supply between them today, will be the front-runners by a mile, WoodMac said, adding that their combined market share will exceed 60% by 2040.

In contrast, Russia and Mozambique have slipped back down the field and are unlikely to make headway anytime soon.

West Canada is a dark horse. New capacity building challenges are clear, as construction costs are high, while support from Canadian First Nations is critical to secure social licences.

In Canada, there are huge RSG resources, multiple producers (including Asian companies) eager to monetise and a local benchmark, AECO, that trades at a healthy

discount to Henry Hub.

Another plus point is its proximity to North Asian markets, thus avoiding the constraints of the Panama Canal and cutting shipping costs by more than \$2 per MMBtu, compared with US Gulf Coast projects.

NEWS NUDGE

Piombino receives first commercial cargo

Eni has recently delivered a 90 mill cu m LNG cargo to SNAM's regasification terminal at Piombino, Italy.

This marked the start of commercial operations. Discharge operations took place following the completion of a test period.

The cargo came from SONATRACH's liquefaction plant in Betihoua, Algeria.

Eni has targeted LNG activity growth with contracted volumes expected to rise to over 18 mill tonnes in 2026, more than double that of 2022.

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Better long term planning needed - IGU

In the most turbulent year in gas market history, 2022 saw LNG demonstrate its essential value as a flexible, reliable, available energy resource for a secure energy transition.

According to the International Gas Union's (IGU) 14th annual World LNG Report, released last week at LNG23 in Vancouver (BC), last year, global gas markets, which were already tight in the 2021 post-Covid period, experienced a major supply crisis after the onset of the Russia/Ukraine conflict.

To cover the gap, Europe provided higher price premiums, compared with the rest of the world, to attract additional LNG cargoes, and, as a result, US producers exported 55.2 mill tonnes of LNG to Europe - a 148% increase, compared to 2021 levels - despite Freeport being offline following an accident in June, 2022.

LNG Re-Exports

Last year, there was a 50.4 mill tonnes increase in Europe's net imports but only a 4.6 mill tonne increase in Asia/Pacific imports.

Export growth was seen from the US (+10.5 mill tonnes), Russia (+3.4 mill) and Qatar (+3.1 mill tonnes).

Asian imports fell by 22.2 mill tonnes and Latin America also showed a drop of 6.6 mill tonnes last year.

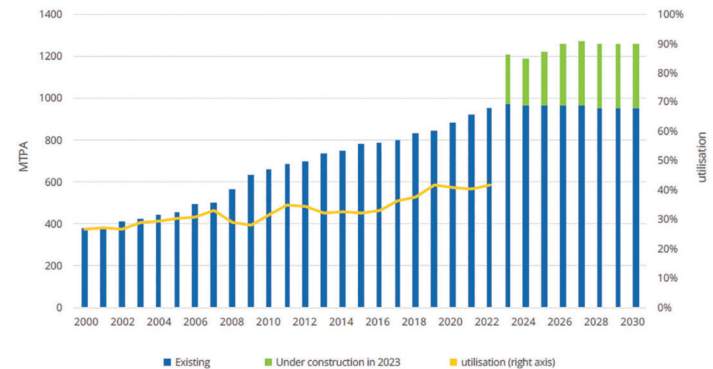
Europe managed to increase imports by raising receiving terminal utilisation rates and expanding import capacity.

IGU President, Li Yalan, said: "LNG kept the lights on in Europe last winter, but the lack of sufficient supply on the market also drove the world spot prices to record highs, and many consumers around the world had to choose dirtier fuels, or worse yet - shut down operations.

"A better, cleaner, and more secure future will require better long-term planning of energy supply and demand for an orderly transition," she said.

As of April, this year, the global LNG trade connected 20 exporting markets with 48 players with importing infrastructure, a rise of 0.8 mill tonnes, while an increasingly global LNG market made it possible to re-route massive volumes of

Global receiving terminal capacity, 2000-2030



Source: IGU

energy in a matter of months.

Over 10 European markets - including Germany, the Netherlands, Finland, France, Croatia, and Italy - started to construct new infrastructure since the Russia/Ukraine conflict broke out. These totlled 26 projects with a combined re-gasification capacity of 104.5 mill tonnes per annum.

Of these, six have been commissioned, another four terminals took FID and are under construction with a total capacity of 18.8 mill tonnes per annum. About 70% of this new capacity will take the form of floating terminals.

Prices firm

However, the ongoing risk of a return to 2022 conditions remains

high, despite prices easing, the IGU said. While prices moderated closer to historically average levels at the start of 2023, they remain firm.

Meanwhile, European reliance on the LNG spot market remains strong (around 70% of the Continent's imports in 2022 were estimated to be sourced from the spot market) and this will increase the volatility of European gas prices.

Looking toward 2050, the sector is actively developing deeper de-carbonisation pathways, such as with renewable natural gas, or biomethane; low-carbon and renewable hydrogen; ammonia; e-methane; plus carbon capture utilisation and storage (CCUS), the IGU said.

A better, cleaner, and more secure future will require better long-term planning of energy supply and demand for an orderly transition

- Li Yalan, IGU President

Germany changes LNG terminal law

The German Federal Government passed a draft law on 7th July to enable modifications of the LNG Acceleration Act (LNGG) to accelerate the use of import terminals to process hydrogen.

The main changes to the act focuses on the climate-neutrality readiness of future land-based LNG infrastructure, as well as the final decision on the relocation of the FLNG terminal at Lubmin to the port of Mukran.

After a review, it was concluded that Mukran would be the location for the currently operational Lubmin LNG import facility, despite local opposition.

Prior to this, the German par-

liament had approved a law, which stipulated that FSRUs should be withdrawn when permanent LNG terminals on land begin to operate.

Previously, the act had noted a need for LNG terminals to support climate-neutral hydrogen from the beginning of 2044. However, the amendment advanced this policy by noting that fixed LNG terminals would need to prove an ability to handle hydrogen or hydrogen

derivatives, such as ammonia by the end of 2043, as early as the approval process.

According to the German Government, "[LNG] plant components that cannot be retrofitted later or can only be retrofitted at disproportionately high costs must be set up from the outset in such a way that operation with hydrogen or derivatives is possible."

Some market participants had previously shown concern about

the ability to retrofit an LNG terminal for hydrogen, suggesting that technological differences would result in plant operators needing to invest in new infrastructure.

The act's amendment was proposed on the basis of avoiding stranded assets, meaning that new projects aiming to import fossil fuels have a future in a net zero energy environment even if the plant is years from decommissioning.

NextDecade takes RGLNG FID

NextDecade Corp has taken a positive final investment decision (FID) to construct the first three liquefaction trains (Phase 1) of the 27 mill tonnes per annum Rio Grande LNG (RGLNG) export facility at Brownsville, Texas.

Last week, the company:

- Executed and closed a joint venture agreement for Phase 1, which included around \$5.9 bill of financial commitments from Global Infrastructure Partners (GIP), GIC, Mubadala Investment Co and TotalEnergies;
- Committed to invest about \$283 mill in Phase 1, including \$125 mill of pre-FID capital investments;
- Closed senior secured non-recourse bank credit facilities of \$11.6 bill, consisting of \$11.1 bill in construction term loans and a \$500 mill working capital facility;
- Closed a \$700 mill senior secured non-recourse private placement notes offering.

The \$18.4 bill project financing for RGLNG Phase 1 is the largest

greenfield energy project financing in US history, NextDecade claimed.

RGLNG also issued the notice to proceed (NTP) to Bechtel Energy to begin construction of Phase 1 under lump-sum turnkey engineering, procurement, and construction contracts (EPC).

The final EPC cost at the NTP is around \$12 bill. The remaining project costs are to be covered by the financing.

Long term SPAs

Phase 1, with nameplate liquefaction capacity of 17.6 mill tonnes per annum, already has 16.2 mill tonnes of long term binding LNG sale and purchase agreements (SPAs) with TotalEnergies, Shell, ENN, Engie, ExxonMobil, Guangdong Energy Group, China Gas

Hongda Energy Trading, Galp Trading and Itochu Corp.

“Achieving FID and issuing NTP on RGLNG Phase 1 is a landmark event reflecting years of hard work and dedication by NextDecade’s employees, shareholders, construction partners, equipment suppliers, and customers,” said Matt Schatzman, NextDecade’s Chairman and CEO. “I want to specifically recognise the Rio Grande Valley community, the Port of Brownsville and the countless leaders and officials at the local, state, and federal levels that have supported us throughout the development of RGLNG Phase 1.”

“Achieving FID is an important milestone in NextDecade’s mission of becoming a reliable supplier of low-carbon LNG that will replace coal with a cleaner source of energy,” added Bayo Ogunlesi, GIP Chairman and CEO. “Our investment in RGLNG affirms GIP’s commitment to promoting de-carbonisation, energy security and energy affordability.”

“We are delighted with this final investment decision that enables us to launch the construction of this new LNG liquefaction plant in the US, to which TotalEnergies will contribute its expertise in the development of major LNG projects,” commented Patrick Pouyanné, Chairman and CEO of TotalEnergies. “This project gives TotalEnergies access to competi-

tive LNG thanks to its low production costs. LNG from this first phase will boost TotalEnergies US LNG export capacity to over 15 mill tonnes per annum by 2030, and thus our ability to contribute to European gas security, and to provide customers in Asia with an alternative form of energy that is half as emissive as coal.”

As part of the transaction, the financial investors and TTE each have options to invest in RGLNG’s Train 4 and Train 5 equity, and options to invest in its planned carbon capture and sequestration project.

Latham & Watkins acted as lead outside counsel to NextDecade on the project financing transactions. MUFG Bank acted as financial advisor to NextDecade in connection with the debt financing and Macquarie Capital (USA) acted as financial advisor to NextDecade in connection with the equity financing.

Kirkland & Ellis acted as legal counsel to GIP, Jones Day acted as legal counsel to TotalEnergies, Sidley Austin acted as legal counsel to GIC, White & Case acted as legal counsel to Mubadala and Norton Rose Fulbright US acted as legal counsel to the lenders.

In addition, King & Spalding advised NextDecade on the EPC agreement, natural gas transportation arrangements, LNG marketing, all real estate matters, and as opinion counsel. ■



NextDecade has taken FID on RGLNG

Gaz-System launches FSRU 2 open season

A binding open season procedure for FSRU 2, to be located at Gdansk in Poland, has been initiated by Gaz-System.

The decision was taken as a result of the non-binding procedure to identify demand for additional regasification capacity of the FSRU Terminal in the Gulf of Gdańsk conducted in March, 2023, which showed significant interest.

Until now, the project planned by Gaz-System assumed construction of the FSRU terminal, ready for regasification of 6.1 bill cu m per annum, in the Gdańsk area.

The FSRU 2 terminal project involves mooring a second FSRU in

the Gdańsk area that would be capable of LNG offloading, process storage and regasification of 4.5 mill cu m per annum.

The open season procedures' objective is to confirm the demand for additional regasification capac-

ity through the interested market participants' submission of binding, long term offers for FSRU 2's regasification services, thus justifying Gaz-System's project startup and allowing a positive final investment decision (FID) to be taken. ■

Three more SPAs announced

First, Zhejiang Energy International has signed an LNG sales and purchase agreement (SPA) with Mexico Pacific to offtake 1 mill tonnes per year of LNG.

The LNG will be shipped from Mexico Pacific's export facility, Saguaro Energia, located at Puerto Libertad, Sonora, Mexico.

Under the SPA, Zhejiang Energy will purchase the LNG on a free-on-board (FOB) basis for 20 years.

Second, in the UK, Centrica has signed a long term sale and purchase agreement (SPA) with Delfin Midstream for 1 mill tonnes per annum of LNG for 15 years on a free-on-board (FOB) basis.

The LNG will be produced at

the Delfin Deepwater Port, located 40 nautical miles off the coast of Louisiana.

Centrica will take delivery of around 14 LNG cargoes per year, which could provide enough energy to heat 5% of UK homes for 15 years.

The deal, with a market value of \$8 bill, follows a three-year supply agreement with Equinor.

This SPA follows an HOA signed between Centrica and Delfin in August, 2022. Operations and first

LNG are expected to commence at the Delfin Deepwater Port in 2027.

Third, Indian Oil Corp has signed long term import deals with Abu Dhabi Gas Liquefaction Co (ADNOC LNG) and France's TotalEnergies.

The two deals were signed during Prime Minister Narendra Modi's Visit to France and UAE last week. Supplies under the two deals would commence from 2026, IOC said.

ADNOC LNG would supply up to 1.2 mill tonnes per year of LNG to IOC for 14 years. India's trade treaty with the UAE enables it to import LNG without paying a 2.5% import tax.

TotalEnergies would supply 0.8 mill tonnes per annum of LNG to IOC under the 10-year deal from its global portfolio.

Elsewhere, Thailand's state-controlled PTT is in advanced talks with Qatar for a 15-year LNG deal to supply 1- 2 mill tonnes per annum, sources told Reuters. ■



An impression of a Delfin Midstream production unit

TotalEnergies strengthens ties with SONATRACH

SONATRACH and TotalEnergies have extended the deliveries of 2 mill tonnes per year of LNG at Fos-Cavaou, near Marseille, France, through 2024.

The deliveries of Algerian LNG contribute directly to energy security in France and Europe, TotalEnergies said.

This was agreed at a meeting held on 9th July in Algiers between Patrick Pouyanné, TotalEnergies Chairman and CEO and Toufik Hakkar, SONATRACH CEO.

Several agreements were signed to strengthen the co-operation between the two companies in the production of natural gas in Algeria, the delivery of LNG to Europe via Fos-Cavaou, as well as the development of renewables in Algeria.

These included an agreement to convert the production contracts for the Tin Fouyé Tabankort II (TFTII) and Tin Fouyé Tabankort Sud (TFT sud) fields in southern Algeria (SONATRACH 51%, TotalEnergies 49%) to the framework established by the new Algerian Petroleum Law enacted on 11th December, 2019.

This particular agreement remains subject to the approval of the Algerian authorities.

SONATRACH and TotalEnergies will pursue the investment programme already launched to increase TFTII and TFT South's gas



TotalEnergies head - Patrick Pouyanné

production programme, which includes the upgrade of existing facilities and the drilling of additional wells, thus increasing the potential export of Algerian gas to the European market.

In addition, the two companies will co-operate to develop Algerian renewable energy projects.

Energy Transfer agrees Lake Charles LNG HOAs

US LNG export plant developer, Energy Transfer has signed three long term agreements to sell LNG from its planned Lake Charles LNG export project in Louisiana.

The three non-binding heads of agreement (HOA) total 3.6 mill tonnes per year of LNG to be exported to customers in Asia and the US.

Energy Transfer said the first HOA is with an unnamed Japanese consortium for the purchase of 1.6 mill tonnes per year for 20 years.

The second deal would see Chesapeake Energy (CHK) supply Lake Charles LNG with enough gas volumes to produce 1 mill tonnes per annum for 15 years; after liquefaction, Swiss commodities trader, Gunvor plans to buy the LNG from CHK at a price indexed to the Japan Korea Marker (JKM) for 15 years.

The third HOA is with an unnamed US customer and involves a tolling arrangement for 1 mill tonnes per year for 15 years, Energy Transfer said.

According to local media, the company has announced the agreements even though the US Department of Energy (DoE) has so far refused to extend Lake Charles' authorisation to sell LNG to non-Free Trade Agreement (FTA) countries beyond December, 2025. ■

"I am delighted to sign these new agreements with our strategic partner SONATRACH. They testify to TotalEnergies' close ties to Algeria, whose resources contribute directly to Europe's energy supply and security. We are also delighted to be able to support Algeria in its energy transition and in the development of its huge potential for renewable energy production," Pouyanné said. ■

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To achieve Net Zero Carbon Emissions by 2050, we consistently embark on new pathways that lead towards a sustainable future. Be it in the realm of innovation, environmental sustainability, or positive community development, these efforts collectively aid our partners in achieving their Environmental, Social and Governance goals, without compromising on energy security.



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Berkshire Hathaway buys Cove Point stake

Dominion Energy has agreed to sell its 50% stake in the Cove Point LNG facility located in Maryland's Chesapeake Bay to a subsidiary of Warren Buffett's Berkshire Hathaway for \$3.3 bill in cash.

Berkshire Hathaway Energy already operates the plant, and upon closing of the latest deal, would have a 75% stake. A company involved with Brookfield Infrastructure Partners owns the remaining 25%.

Cove Point is located in Lusby, Maryland, about 60 miles south-east of Washington, DC and has a storage capacity of 14.6 bill cu ft, providing LNG to replace coal-

burning power plants and support energy needs in 28 countries.

Robert Blue, Dominion's CEO, said that the company considered Cove Point a non-core business, and selling it would free the Richmond, Virginia-based company to focus on state-regulated utility operations.

Dominion also expects to receive about \$200 mill from the

termination of interest-rate derivatives. It plans to use the sale proceeds to repay debt.

This transaction is still subject to US federal regulatory approval, and is expected to close by the end of 2023. If the deal failed under specified circumstances, Berkshire would have to pay Dominion a \$150 mill termination fee. ■

Low carbon tugs to serve LNGCs

Global towage company Svitzer, a subsidiary of AP Moller-Maersk, is to fuel five tugs, servicing the South Hook LNG Terminal in Milford Haven, with hydrogenated vegetable oil (HVO), a low-carbon fuel.

The long-term deal, which requires no modifications to equipment or engines, will see a significant reduction in CO2 emissions from the tugs, which service the LNGCs berthing at South Hook.

South Hook LNG terminal is the first at Milford Haven to switch its towage contract to low carbon fuels, taking advantage of Svitzer's EcoTow solution.

Mattias Hellström, European CCO, Svitzer Europe, said: "We are committed to providing sustainable marine services, and delighted to be working with a partner like South Hook LNG terminal to deliver a more sustainable fleet of towage vessels in

Milford Haven.

"We look forward to continuing working with South Hook to operate vessels that benefit the local port environment through reduced particulate emissions. Running these vessels on HVO also means Svitzer is able to continue cutting carbon emissions across its UK operations," he said.

In 2022, Svitzer's UK fleet switch from MGO to HVO prevented more than 21,000 tonnes of CO2 from being emitted into the atmosphere, the company claimed.

With the South Hook fleet's HVO conversion, there are only a few tugs left to be converted to complete the whole of the UK tug

fleet's switch to low carbon fuels.

Svitzer has also signed a 15-year agreement to service Gastrade's Alexandroupolis Independent Natural Gas System (Alexandroupolis INGS) LNG terminal, the first offshore LNG project in Greece.

Svitzer will set up towage services and support for LNG operations at the new import terminal, including support for the FSRU with a pipeline system.

Svitzer will provide four new ASD tugs, fully manned by Greek crew, to assist the FSRU and the LNGCs in berthing, un-berthing, navigation assistance, and other terminal services, including fire-fighting, pollution control, pilot and boarding party transfer.

Svitzer will also provide support and station keeping services to the FSRU during initial installation.

While the Alexandroupolis LNG terminal is due to become operational at the beginning of 2024, Svitzer has already initiated the recruitment process to ensure staff undergo training. This will include the use of advanced tug simulators replicating the actual environment around the terminal. ■



Svitzer tugs in action at South Hook

Nigerian President backs FLNG project

Nigerian President, Bola Tinubu has given his support for the development of a \$5 bill FLNG project in the country.

Recently, the President received a group of joint venture partners from UTM FLNG, TECHNIP Energies, and JGC Corp in Abuja, together with the French and Japanese Ambassadors to Nigeria, local media reported.

Following discussions with the President, Julius Rone, the delegation's leader and Group Managing Director of UTM FLNG, told Nigerian State House correspondents that a \$5 bill financing agreement had been signed with Afreximbank to start the project.

He said that for the first time in Nigeria, an indigenous company will be involved in such a project that would contribute to the country's de-carbonisation efforts.

The project is expected to come on stream by the first quarter of 2026. ■

NEWS NUDGE

Schliebs is SSY's new head of Research

Simpson Spence Young (SSY) has appointed Kyla Schliebs to the role of Head of LNG Research.

An LNG specialist with over 10 years of professional experience, Schliebs was previously a gas & LNG principal consultant for Wood Mackenzie.

Prior to this, she had senior roles at EDF and Santos, respectively.

Based in London, Schliebs is working alongside the SSY LNG team and the wider SSY global research team to further develop the broker's LNG offering. ■

First ME-GA completes gas trials

MAN Energy Solutions' (MES) first ME-GA engine has completed gas trials on board an LNGC built by Hyundai Samho Heavy Industries (SHI) for Norwegian shipping company, Knutsen OAS Shipping.

Bjarne Foldager, MES' Head of 2-Stroke Business, said: "This successful gas trial is a very important milestone in the development of the ME-GA engine. We developed this engine for easy application to most contemporary LNG carrier designs and, indeed, all ME-GA orders to date have been exclusively for this segment."

Built by HHI-EMD, the Knutsen ME-GA engine comes equipped with exhaust gas recirculation (EGR) that reduces methane slip emissions when compared to first-generation, Otto-cycle engines without an EGR fitted.

Thomas Hansen, MES' Head of Promotion and Customer Support, added: "We have had more than 260 orders for the ME-GA since its launch in May, 2021 and our order-book contains ME-GA engine orders for ship deliveries stretching all the way into 2027.

"EGR as standard enables the ME-GA to significantly reduce emissions, while simultaneously improving fuel efficiency and operation in both gas and fuel-oil operation," he said.

Brian Østergaard Sørensen, MES Vice President and Head of R&D, 2-Stroke Business, commented: "It's been very pleasing to follow the steady progress of the ME-GA engine ever since we began its

development back in 2018.

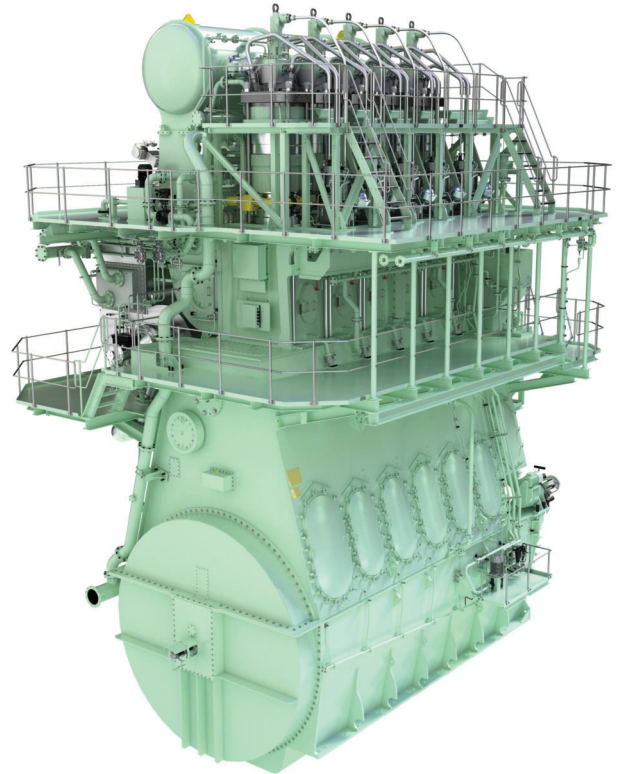
Following its factory acceptance test (FAT), type approval test and first shipyard delivery, this completion of sea and gas trials marks another significant step in its timeline as it approaches its commercial debut," he said.

New control feature

MES also reported that - as a first - the engine-control system contains a new control feature called 'ME-GA opti' for optimal engine operation through individual cylinder control.

Hansen said: "ME-GA-opti is the latest and most advanced control feature for the ME-GA engine and significantly improves its operation. It comprises an advanced and intelligent network of control algorithms that have been developed to optimise the combustion process on an individual-cylinder basis, and which ensure optimal operating conditions. I'm certain it will be received well by the market."

Foldager added: "MAN Energy Solutions has always played a leading role in developing ground breaking technologies that add value to our customers' operations. Thus we have made EGR standard for the ME-GA, thereby reducing methane slip compared



Rendering of an MAN BW ME-GA engine

to first-generation Otto-cycle engines without EGR, which simultaneously improves fuel efficiency in both gas and fuel-oil operation. ME-GA-opti continues this trend and will further boost the ME-GA's reputation."

ME-GA-opti's intelligent functionality benefits engine performance in several ways, including by:

- ensuring optimised conditions

for the combustion process by reducing the influences of ambient temperature, pressure and humidity that can influence Otto-cycle engines;

- enabling maximum and stable gas potential for the engine;
- reducing fuel-ratio control activation - ME-GA-opti is able to adapt the engine's running conditions as the combustion moves towards the pre-ignition limit. ■

NEWS NUDGE

Suez Canal LNGC fee reduction

The Suez Canal Authority (SCA) has amended the rebates and port ranges for LNGCs transiting the canal, either laden or in ballast.

LNGCs operating between the American Gulf & ports South of the US Gulf on one side and the below areas at Asia on the other side, shall be granted the following rebate percentages:

- Arabian Gulf ports (ports

within the Arabian Gulf starting from Sur port, Oman) and its eastern ports until Cochin on the west coast of India, shall be granted a rebate of 30% of Suez Canal normal tolls.

- Ports located East of Cochin until before Port Klang, shall be granted a rebate of 60% of Suez Canal normal tolls.
- Port Klang and its eastern ports (including Far East area), shall be granted a rebate of 75% of Suez Canal normal tolls.

In addition, LNGCs operating between ports at the East Coast of North America on one side and

the below areas at India and its eastern ports on the other side, shall be granted the following rebate percentages:

- Ports at the West of the Indian subcontinent starting from Karachi, Pakistan until Cochin port at the west of India, shall be granted a rebate of 10% of Suez Canal normal tolls.
- Ports located East of Cochin (including Far East area) shall be granted a rebate of 35% of Suez Canal normal tolls.

These amendments entered into force for laden or ballast LNGCs carriers transiting the canal on

1st July, 2023.

First Gen awards LNG cargo contract

Philippine Power producer First Gen Corp has awarded a tender to buy a single LNG cargo to Shell Eastern Trading for delivery between 1st August and 30th September.

First Gen, which is due to commission an FSRU in Batangas province in September, said the cargo will be utilised by its existing gas-fired power plants currently running on Malampaya natural gas.

Baker Hughes to supply RGLNG's compressors

Baker Hughes has been awarded a contract by developer Bechtel Energy to supply three main refrigerant compressors (MRs) for NextDecade's Rio Grande LNG (RGLNG) project at Brownsville, Texas.

The order will be booked in the second quarter of 2023.

In total, Baker Hughes will supply six Frame 7 gas turbines paired with 18 centrifugal compressors for RGLNG's first three LNG trains in a parallel configuration arrangement, providing more operational flexibility - for a nameplate capacity of 17.61 mill tonnes per year.

"This order builds on our long-standing relationship with Bechtel

and is a significant milestone in our partnership with NextDecade, supporting them on this key LNG project," said Ganesh Ramaswamy, Baker Hughes' Executive Vice President of Industrial & Energy Technology.

"We are delighted that our proven and reliable technology solution will support the production of LNG in the US, which is crucial in balancing energy affordability,

security and sustainability globally," he said.

Baker Hughes' gas technology chosen for RGLNG provides NextDecade with the highest production levels for the plant's design, as well as operational flexibility and high availability. The Frame 7 gas turbine is well-proven for its energy efficiency, availability, reliability and maintainability, the company claimed.

Packaging of the turbine/compressor train, a unique Baker Hughes offering, as well as assembly of the compressors and testing of the trains, will take place at Baker Hughes' facilities in Italy.

This announcement follows another recent contract awarded by Bechtel to Baker Hughes to supply two liquefaction trains for another LNG project in Texas, announced in March, 2023. ■

Fibre optic hull monitoring for newbuilding LNGCs

Light Structures, a supplier of fibre optic condition monitoring systems, has been contracted by China Merchants Hoi Tung to deliver and install hull stress monitoring systems for eight newbuilding LNGCs.

The vessels are owned by two separate consortia for operations in the Middle East and are being built by Hudong-Zhonghua Shipbuilding for delivery through 2024 to 2026.

Light Structures will provide precise hull monitoring data to the LNGCs using the standardised SENSFIB Global system.

While essentially a commercial off the shelf (COTS) product,

SENSFIB Global installations are configured according to the vessel's design. This ensures that its precision sensors record the most accurate data on 'global bending moments,' which can be used to minimise hull stress and fatigue, and therefore ensure the ship meets its designed operational lifecycle.

SENSFIB Global also meets new requirements as part of new

SMART notations from class societies, including ABS, BV and DNV.

This ensures the system is ready to provide data as part of a wider digital condition-based monitoring system, which unlocks the potential to reduce operational costs by extending the time between drydockings.

"While SENSFIB Global's primary role is the provision of on board decision support based on

real-time data, our experts also analyse the same data as part of enhanced annual reports that help our customers to plan for the long-term effects of hull stress and fatigue on their LNG vessels and any other type of ship," explained Goetz Vogelmann, Sales Director, Light Structures.

The fibre optic systems are based on Fiber Bragg Grating (FBG) technology. ■

NEWS NUDGE

Ships - Orders, charters, recycling

On 18th July, 2023, China City Gas, a wholly-owned subsidiary of China Gas Holdings, filed details of a joint venture to be established to acquire, own and charter out of two newbuilding LNGCs.

The joint venture will be between China City Gas (30%), Vantage Energy (40%), a subsidiary of Wah Kwong Maritime and Fortune Clean Energy (25%), a subsidiary of leasing company, CSSC (Hong Kong).

The two LNGCs will be chartered out for 20 years at a rate varying between \$80,000 and \$100,000 per day to Gas Hongda Energy Trading - another China

Gas Holdings company.

Elsewhere, Celsius Tankers has ordered four 180,000 cu m LNGCs from China Merchants Heavy Industry (Jiangsu) (CMHI).

Broking sources put the cost at \$235 mill per vessel.

They are to be long term chartered to trading house Gunvor's subsidiary Clearlake Shipping upon their delivery in 2026/2027.

Their design will minimise CO2 emissions and methane slip via the installation of air lubrication, enhanced reliquefaction capacity, hull shape optimisation and the use of the best available paint system to reduce the vessels' friction in water and they will be fitted with ME-GA propulsion systems.

They will be built to ABS class with Enviro+ notation for im-

proved criteria for environmental protection.

The newbuildings will bring Celsius Tankers' LNG fleet up 18 x 180,000 cu m vessels technically managed in-house by Celsius Tech Limited.

Remaining in China, COSCO Shipping and PetroChina have ordered another two 174,000 cu m LNGCs at Hudong-Zhonghua Shipbuilding for around \$245 mill per vessel.

They will be built for joint venture, United Liquefied Gas Shipping and delivered in 2025 and 2026.

In the charter market, Dynagas LNG Partners has confirmed new new timecharter agreements with Rio Grande LNG (RGLNG), a subsidiary of NextDecade Corp, adding around \$270 mill to its existing

revenue backlog:

The 2007 built LNGC 'Clean Energy' has been fixed for about two years, commencing between March/May, 2026 following the expiration of her existing charter to SEFE Marketing & Trading.

'Arctic Aurora' has been fixed for about seven years, commencing between September /November/ 2026 following the expiration of her existing charter to Equinor.

Meanwhile, the 1993-built, 88,000 cu m LNGC 'Lara', ex 'Seapeak Polar', was beached at Alang, India on 8th July for recycling.

Also reported sold to Indian recyclers was the 1981-built 129,000 cu m FSRU 'Golar Spirit' for \$425 per LDT on the basis of 'as is' Greece and with 3,500 tonnes of aluminium on board. ■

Black & Veatch awarded Canadian FLNG FEED contract

LNG infrastructure solution provider, Black & Veatch (B&V) has been awarded a front-end engineering design (FEED) contract for the Ksi Lisims LNG nearshore floating production facility in northwest Canada.

B&V will jointly develop the design with Samsung Heavy Industries (SHI).

Developed jointly by Western LNG, the Nisga'a Nation and Rockies LNG, the Ksi Lisims LNG project will be one of the most significant indigenous-led infrastructure projects in Canadian history.

The project will use an FLNG design that improves the project economics, minimises land impacts and reduces construction-related risk, B&V said.

With commercial operations anticipated to begin in 2028, Ksi Lisims LNG will be designed to produce up to 12 mill tonnes of LNG per year for export to overseas markets.

Once completed, Ksi Lisims

LNG will have among the world's lowest unit carbon emissions rates of any large-scale LNG export projects globally.

Through a connection with British Columbia's renewable hydroelectric grid and use of innovative design features, the project's greenhouse gas emissions will be 90% lower than conventional LNG facilities.

Combined with a credible offset management plan, the project expects to be net zero by 2030.

"The Ksi Lisims LNG project team is delighted to be working with the world's pre-eminent experts in floating LNG engineering and design," said Davis Thames, Western LNG President and CEO. "As global leaders in FLNG engineering and construction, we un-

derstand that Black & Veatch and Samsung Heavy Industries undertake extensive analysis and carefully choose each project they work with.

"This agreement demonstrates their confidence in the fundamentals of our project and our prospects for success. We couldn't be more pleased to be working with them both," he said.

"We are excited and look forward to further developing our relationship with the Ksi Lisims LNG owners team," added Javid Talib, Vice President and Managing Director in B&V's energy resources industries business.

"We see this FEED award as an important step as we move towards working together on the engineering and construction of this world-class project," he said.

Eva Clayton, Nisga'a Lisims Government President, said the Ksi Lisims LNG project "will be the heartbeat of our Nation's economy. It's our best chance to build prosperity and a positive future for our people. After nearly 10 years of planning work, we're thrilled to see the project advance into FEED."

"The opportunity to work on this game-changing LNG facility is attracting the best and brightest team in the LNG field," commented Charlotte Raggett, President and CEO of Rockies LNG. "Canada is stepping up to offer the world's most reliable, low-risk and low-emission natural gas. We're happy to have Black & Veatch and SHI join us in getting this important clean energy resource to the markets that need it most." ■

NEWS NUDGE

GTT receives another nine orders

GTT has received orders from Samsung Heavy Industries (SHI) for the tank design for five new 174,000 - 180,000 cu m LNGCs.

The company will design the tanks, which will be fitted with a Mark III family membrane containment system.

In addition, Dalian Shipbuilding Industry has ordered the tank design of two 175,000 cu m LNGCs on behalf of CMES LNG Carrier Investment.

These tanks will be fitted with a Mark III Flex membrane containment system.

The vessels' delivery is scheduled between the fourth quarter of 2026 and the first quarter of 2027.

Finally, GTT announced an order from Hyundai Samho Heavy Industries (HSHI) for the tank design of two 174,000 cu m LNGCs, on behalf of an Asian shipowner.

They will also be fitted with

a Mark III Flex membrane containment system and are scheduled for delivery during the first and second quarters of 2027.

BW LNG to test on board CCS

Together with Hanwha Ocean and HI AIR KOREA, BW LNG is participating in an on board pilot test of a newly developed carbon capture and storage (CCS) plant.

This pilot test will be conducted during sea and gas trials on BW LNG's newbuilding Hull 2510, scheduled to be delivered later this year.

A CCS system captures CO₂ from the exhaust gas in a dedicated scrubber and stores it on board as a solid in dedicated storage tanks.

Tests will contribute to further development of the system and its technology by providing valuable data points from live operations, BW LNG said. ■

Monthly Large LNGC Values*

Newbuildings (174,000 cu m)	\$270.22 mill
Five years old (174,000 cu m)	\$223.82 mill
Total Fleet (570 ships)	\$92.39 bill
Orderbook (329 ships)	\$87.70 bill

*Source: VesselsValue (19/07/23)

*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	\$68,500	-\$1,500
West of Suez	\$72,500	-\$2,500
12 mos T/C	\$107,000	-\$5,500

*Since last report (06/07/23)

Source: Fearnleys (19/07/23)

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WORLD LNG CARRIER ORDERBOOK

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

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

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

DFDE = dual fuel diesel engines, STRH = steam turbine reheat / ultra steam turbine, MEGI = marine electric gas injection, DRL = slow speed diesel, FSRU = vessel with regas capacity, FLNG = floating LNG production unit
Data last updated = 28 March 2023

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

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

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

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 Innvation	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

Built	Name	CBM	Cargo Type	Trading area	Trading in LNG?	Ship Owner / Operator
2019	Blue Whale	7,500	LNG	Korea	Yes	Korea Line
2019	Gas Agility	18,600	LNG	NWE	Yes	MOL
2019	Flexfueller 001	1,480	LNG	Amsterdam	Yes	Titan LNG
2020	Avenir Advantage	7,500	LNG	Mediterranean	Yes	Avenir LNG
2020	Avenir Accolade	7,500	LNG	Mediterranean	Yes	Avenir LNG
2020	Avenir Aspiration	7,500	LNG		Yes	Avenir LNG
2020	Kaguya	3,500	LNG	Japan	Yes	CLS
2020	CNTIC VPOWER Global	28,000	LNG	Myanmar	Yes	Dalian Inteh Group
2020	Ecobunker Tokyo Bay	2,500	LMG	Japan	Yes	Ecobunkers
2020	Optimus	6,000	LNG	NWE	Yes	Elenger
2020	FueLNG Bellina	7,500	LNG	Singapore	Yes	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	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	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
2024	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG
2024	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG
2024	TBN	30,000	LNG	Australia	Yes	Anthony Veder ?
2024	Crowley TBN	12,000	LNG	US Coast	Yes	Crowley Maritime
2024	CNOOC TBN	12,000	LNG	China	Yes	CNOOC
2024	TBN	12,500	LNG	Worldwide	Yes	???
2024	Keys TBN	3,500	LNG	Japan	Yes	Keys Bunkering West Japan Co
2024	Seaspan TBN 1	7,600	LNG	Canada	Yes	Seaspan ULC
2024	Fratelli Cosulich TBN	8,000	LNG	Mediterranean	Yes	Fratelli Cosulich
2024	Anhui Changjiang TBN	14,000	LNG	China	Yes	Anhui Changjiang LNG
2024	LNG Erasmus	8,000	LNG	NWE	Yes	Shell
2025	Seaspan TBN 2	7,600	LNG	Canada	Yes	Seaspan ULC
2026	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG
2026	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG