

LNG Shipping News

AN LNG JOURNAL TITLE ON LNG CARRIERS

13 May 2021

Steam turbine LNGCs vulnerable

At a recent earnings call, GasLog Partners CEO Paul Wogan gave his assessment of the current state of play in the LNGC market.

He said that Poten & Partners had reported 93 spot fixtures in the first quarter of this year, continuing a multi-year trend of rising market liquidity. In addition, a record 18 one-year timecharters were fixed during 1Q21.

Headline spot rates have risen sharply in recent weeks and are now above the upper band of their five-year range. Spot rates have benefited from sustained LNG demand and increasing prices in the major import markets of Europe and Asia, as both regions refilled depleted LNG inventories following the cold Northern Hemisphere winter.

"We expect the LNG carrier spot market to improve through 2021 relative to 2020, assuming the global economy continues to recover with the worldwide roll-out of COVID vaccines. However, this is by no means certain, as many countries continue to experience high levels of infections. In particular, India, the fourth largest consumer of LNG, is struggling with a huge increase in cases, which has begun to impact LNG demand.

"In contrast to last year, we presently anticipate minimal US cargoes to be shut in this summer. European gas storage levels are presently at 30% compared to a five-year average of 42% and 64.5% at this time last year. We expect restocking in Asia and Europe to continue to create demand for US LNG, and hence, is positive for LNG shipping in the coming months.

"However, the LNG carrier order book remains high," he warned. "Some 54 vessels are scheduled to enter the fleet this year. It is



LNGCs like 'Methane Princess' could be vulnerable to phase out

noteworthy that 87% of the order-book has multi-year employment while just seven unfixed vessels are scheduled to be delivered in 2021. All of these deliveries will add to the global fleet and therefore, have a potential to offset volume and tonne/mile growth," he said.

Least efficient

The IMO is proposing to adopt the Energy Efficiency Existing Ship Index (EEXI) and the Carbon Intensity Indicator (CII). Together, these two proposed measures will attempt to reduce emissions by addressing ship design and operations. These could potentially impact the steam turbine ships being the least efficient vessels in the global LNG fleet.

While these new rules have yet to be finalised, they have the potential to impact their remaining useful life and residual value of Golar Partnership's steam fleet.

"We are currently investigating mitigation measures, which may include operating these vessels at slower speeds or making efficiency

modifications. It's important to remember the steam turbine vessels comprise nearly 40% of today's LNGC fleet, making this an industry wide challenge with the potential to risk tonnage availability if not carefully implemented," Wogan explained.

Import terminals can be built much more quickly than production facilities, he pointed out. Although Total recently halted construction of their LNG project in Mozambique, there remains 120 mill tonnes per annum of LNG production under construction, 56 mill tonnes of which is in North America.

"Around 126 mill tonnes per annum of regasification capacity is also being built, of which two thirds is in Asia, again, highlighting the shipping-intensive nature of this growth. However, the postponement of the Mozambique project also underscores the risks to the future shipping supply and-demand balance, as LNG projects are often delayed, while vessels almost always deliver on time," he said. ■

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Re-stocking to boost charter market

This year, a recovery is expected both for pipeline gas and LNG seeing a 5.3% increase, which will be mainly driven by US and Russian exports to Asia.

Asia is likely to see an early re-stocking demand, although nuclear power restarts in Japan and South Korea might impact on LNG demand, Drewry Shipping Research said in a webinar.

Increasing imports are forecast from emerging countries and the strive towards emission reduction targets will also boost the sector.

In Europe, low storage and an extended winter were positive signs for LNG. Coal to gas switching will continue and the region's de-carbonisation policies were said to be positive for the sector.

An Asia versus Europe re-stocking situation could be seen, which may last into next winter, Drewry said.

A tight supply/demand balance is also forecast with a rise in LNG spot and contract prices expected.

In addition, Panama Canal congestion could last into next year, which will impinge on US/Asia voyages, meaning cargo owners

will have to seek alternative routes for their cargoes, especially as the US is expected to increase exports.

This predicted rise in US LNG production should keep the arbitrage wide.

Floating cargoes might also be seen again this winter, due to rising prices on the back of re-stocking.

LNG spot prices will remain volatile as the supply recovers to cope with the huge re-stocking demand in Asia and in Europe. But risks remain. The situation in India is fluid at present, due to the COVID-19 outbreak.

By the end of this year or the beginning of 2022, China should overtake Japan as the world's largest importer, while Indian supply is expected to increase again.

Another 226 mill tonnes per year of production will be added between 2021-2026 with the

Qatari NFE Phase 1 adding 33 mill tonnes and Phase 2 adding a further 16 mill tonnes. The latter is expected to take FID in 2023 with a startup planned for 2028.

As for regasification construction projects, around 71% are expected in Asia for gas-to-power plants with Vietnam being at the forefront.

Increased recycling

There are a total of 664 vessels operational today, which includes LNGCs, FSRUs and small scale vessels. Drewry forecast this figure to rise to 950 by 2026, however, recycling should increase on the back of the number of steam LNGCs coming off charter and becoming surplus to requirements.

Going forward, vessel contracting should increase on the back of new projects and the need for replacement tonnage. However, the number of speculative orders will be low.

In January of this year, the market witnessed a rate surge, which collapsed in February and March. Many vessels became open in Asia. Today, due to the very high re-stocking demand there is a lot of volatility with charterers taking vessels both for short and long term business.

Although TFDE rates fell in 2Q21, they were still much higher than the rates recorded in 2019 and 2020. In 3Q21, we should see a resumption of vessels entering the market, Drewry said, but during the 4Q of this year and into 1Q22, there should be a rate resurgence.

The high number of vessel deliveries could result in a short term oversupply situation in 2022/2023 but as more countries enter the market, the market should strengthen again in 2H23, rising by 2026, especially for X-DF/MEGI powered vessels, Drewry said. ■

Sinopec to adjust LNG procurement structure

Sinopec plans to import 17.4 mill tonnes of LNG this year and produce 34 bill cu m of natural gas, including about 12 bill of shale gas, senior officials said during the company's first quarter conference call.

The Chinese state-owned oil and gas giant imported 5.2 mill tonnes of LNG in 1Q21, which was stable from the same period in 2020, with a slight import loss, deputy head of Sinopec's finance department, Song Zhenguo, said.

By comparison, China imported 67.07 mill tonnes of LNG in 2020 and 15.25 mill tonnes in 1Q20, data from the Chinese

General Administration of Customs showed.

To lower losses and boost profits, Sinopec said that it planned to adjust its procurement structure by optimising the volumes taken via long-term and short-term contracts, as well as from the spot market, facilitated by hedge tools, deputy head of operation & management department, Li Li

said, according to S&P Global Platts.

Sinopec is China's second largest gas producer and raised its output by 16.8% year-on-year to 8.26 bill cu m in 1Q21 to contribute 15.5% to the country's domestic production during the quarter, according to its report and data from the National Bureau of Statistics.

Sinopec maintained its target to produce 34 bill cu m of gas in 2021, Song said, as well as 38 bill and 40 bill for 2022 and 2023, respectively.

Sinopec will keep its operating rate relatively stable, despite heavy maintenance in the coming months, Chen Yang, deputy head of board secretaries, said, Platts reported. ■

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LNGCs hit by Indian COVID-19 surge

LNGCs are being diverted away from India or are being purposely delayed, due to the surging coronavirus cases hampering domestic gas demand.

At least seven Indian LNG cargoes have gone to other Asia destinations, according to reports last week, sources told Reuters.

Gas demand took a hit from some areas, due to lockdowns imposed in several parts of the country.

More Indian-bound LNGCs are likely to be diverted in the coming weeks, market sources said, as the country's coronavirus outbreak showed no signs of abating.

The diversions, slowdowns and idling of vessels reflect the high stock levels at Indian terminals as Covid-19 restrictions and lockdowns hit India's LNG consump-

tion. Stock levels at Dahej were close to 90% of capacity recently, compared to around 60-70% a month earlier, one India-based trader said.

Some manufacturing and industrial plants have been hit by a drop of around 50% in their labour force because of Covid-19, resulting in a slowdown in processes and gas consumption.

Gas demand from city gas firms and refineries had fallen by around 10-20% and 5% last week, respectively since the second wave of Covid-19 cases began, an India-based trader estimated. LNG demand could take a further hit if

the restrictions and lockdowns are extended, he said.

A plethora of regulations and restrictions have been imposed at the Indian terminals on the back of the surge in Covid-19 cases. Visitors to vessels at Dahej must undergo a RT-PCR real-time detection test for Covid-19, as well as produce evidence they are not infected by the virus.

There are also restrictions on crew movements and changes in India, especially for Indian nationals. Some shipping companies are known to have banned the employment of Indian seafarers for the time being. ■



Dahej and other Indian receiving terminals could be hit by COVID

Market perception changing

The LNG market is changing from the idea of being a high price club for wealthy countries to a market where others can now join in.

Pricing matters, as this increasingly dictates trade flow, Poten & Partners Jason Feer said at one of the consultancy's regular webinars.

Last year saw 40% of deals being concluded on either spot or short terms, according to the recently published GIIGNL report.

Contract trends were changing, as in 2015, the number of Sales and Purchase Agreements (SPAs) were low, but since 2017, traders and aggregators have been 'warehousing' LNG.

Analysing the recent deals, Feer said that buying from a specific supply source would add between 1.2% to 1.5% on the slope price, while LNG tenders were

much cheaper than bi-lateral negotiations.

By mid-April of this year, 10 SPAs had been signed for a total of 10.8 mill tonnes of LNG at an average tenure of nine years and all negotiated against Brent.

Qatar won four SPAs totalling 8.25 mill tonnes with an average slope of 10.35%. The average for the 10 deals was 10.8% with the highest recorded at 11.5%, Feer said, adding that six SPAs involved end users, while the remaining four were booked by traders or intermediaries.

However, one smaller deal for four to eight cargoes per year did not have a pricing formula with each cargo being subject to nego-

tiation. Another buyer sought a price review every two years and included a formula involving JKM and Brent.

Going forward, he said that there was a concern that with the decline in oil production, Brent might lose its market presence.

One 10-year deal negotiated included a greenhouse gas clause, which Feer said was becoming more popular. In 2019, he counted three such deals, while last year six were recorded with GHG clauses and thus far this year, there were also six similar deals signed.

He warned that the market will continue to face physical restraints in terms of receiving terminals and storage capacity.

NEWS NUDGE

GasLog calls shareholders' meeting

GasLog Ltd has called a special general meeting of shareholders for 4th June, 2021.

This meeting will consider and vote on the proposal to approve -

- (i) The previously announced merger by and among GasLog, GEPIF III Crown Bidco, a Cayman Islands exempted company, and GEPIF III Crown MergerCo Limited, a Bermuda exempted company, by which Merger Sub will merge with and into GasLog, which will be the surviving company in the merger.
- (ii) The Merger Agreement
- (iii) The statutory merger agreement contemplated by the Merger Agreement.

Those holders of record of GasLog's common shares and 8.75% Series A cumulative redeemable perpetual preference shares on 30th April, 2021 will be entitled to attend and vote. ■



Poten's Jason Feer

However, he said that around 40 cargoes on the water could disappear within around two weeks.

Feer also said that the major players would choose the pricing benchmarks but these must be credible before the rest follow suit.

"If one or two top players back an index, most of the market will follow," he said. However, what is deemed to be the best index will not always win, he concluded. ■

Santos and eni to co-operate

Australian oil & gas developer Santos LNG and Italian utility Eni have signed a memorandum of understanding (MOU) to co-operate on opportunities in northern Australia and Timor-Leste.

The areas of co-operation include assessing the synergies of sharing possible infrastructure associated with gas field developments around Barossa and Evans Shoal, pipeline to Darwin and onshore associated gas processing leading to LNG expansion developments.

This also includes investigating options to upgrade the Bayu-Undan facilities to extend the life of the project, including a carbon capture and storage project, subject to the agreement of the Timor-Leste government.

Santos Managing Director and CEO, Kevin Gallagher said the MOU built on the momentum for northern Australia's development following Santos' Barossa gas and condensate project FID and Darwin LNG life extension for the next 20 years.

"Eni are already a highly valued partner in the Bayu-Undan project and this MOU strengthens our collaboration and co-operation," Gallagher added.

"CCS opportunities at Bayu-Undan are extremely exciting for Santos and Eni and today we are saying, we would like to be open for business to take your CO2.

"In 2019, the London Convention was amended to allow CO2 to be transported across jurisdictions to enable the establishment of storage hubs.

"A CCS project at Bayu-Undan could provide a new job-creating and revenue-generating industry for Timor-Leste with quality carbon credits increasing in both demand and value internationally.

"Capturing and storing CO2

from industries in the Northern Territory will help it meet its net-zero emissions by 2050 target. That's good for the environment, good for local jobs, good for local investment and good for regional development," he said.

Other areas of co-operation could include the development of Petrel and Tern through Blacktip/Yelcherr gas plant facilities.

"As I said when I was in Darwin to announce our FID decision for Barossa, we have approval for two more trains at DLNG and we are open to third party gas opportunities," Gallagher explained.

Meanwhile, law firm, Allens advised Santos on the sale to SK E&S of a 25% interest in the Darwin LNG facility and the Bayu-Undan gas field for \$390 mill. ■

'Bilbao Knutsen' sustains collision damage

An LNGC sustained some damage when she collided with a tanker near the Huelva's LNG import terminal in the Gulf of Cadiz, the Spanish Government said.

The accident occurred at around 04:30 local time on 30th April when the LNGC 'Bilbao Knutsen' was sailing from Huelva while the other vessel, the 38,734 dwt products tanker 'STI Pimlico', was inbound to the port's anchorage area.

There were no reported injuries or spills from the vessels, according to the Spanish authorities.

The Knutsen OAS Shipping owned 'Bilbao Knutsen' was believed to be under a long-term charter to Shell.

The 135,050 cu m capacity LNGC had been discharging gas at the Huelva LNG receiving terminal, which is operated by Spanish grid owner and regasification network operator Enagás.

Both ships sustained damages and were still anchored near the collision site on May 4, according to the shipping data.

'STI Pimlico' suffered starboard forecastle damages, and lost her starboard anchor flukes and crown, said a statement from the Spain's Transport, Mobility and Urban Planning Ministry (MITMA).

'Bilbao Knutsen' suffered portside hull dents and probably gashes, while cargo deck railings were also damaged, the statement added. ■

Russia/China to lead small-scale LNG liquefaction additions

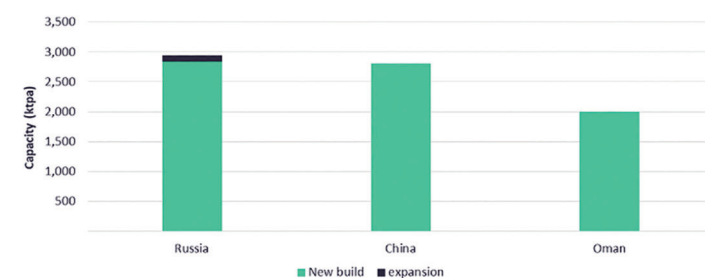
Russia and China are expected to lead the global small-scale LNG liquefaction capacity additions.

Together, the countries will contribute 43% of the total small-scale liquefaction capacity additions between 2021 and 2025, according to data and analytics company, GlobalData.

GlobalData's report, 'Global Small-Scale LNG Liquefaction Capacity and Capital Expenditure Outlook, 2021-2025 - Russia and China Lead Global Capacity Additions', revealed that Russia is expected to lead with a newbuild small-scale LNG liquefaction capacity addition of 2,840 kilo tonnes per annum by 2025, while expansion projects account for the rest with 100 kilo tonnes.

Bhargavi Gandham, GlobalData's Oil and Gas Analyst, commented: "In Russia, 16 newbuild small-scale LNG liquefaction projects are likely to start operations by 2025. Out of these, three are planned with

Global new build and expansion small-scale LNG liquefaction capacity additions by key countries, 2021-2025 (ktpa)



Source: Midstream Analytics, GlobalData Oil and Gas

GlobalData.

identified development plans and the remaining 13 are early-stage announced projects. Portovaya is the largest upcoming project in the country with a capacity of 1,500 kilo tonnes per annum.

"Russia is adding significant small-scale LNG capacity to meet the growing domestic demand, such as for powering locomotives and exports to countries such as Poland," Gandham said.

GlobalData also said China will

be the second-highest contributor with a total capacity of 2,810 kilo tonnes per annum by 2025. All of the capacity additions in the region are newbuild projects.

The Xi an project, with a capacity of 1,400 kilo tonnes, primarily drives the small-scale liquefaction capacity in the country, accounting for about 50% of the total capacity additions.

Oman is expected to add the third largest small-scale LNG liq-

uefaction capacity additions globally with 2,000 kilo tonnes per annum by 2025. Among the new-build projects, Port of Sohar and Oman III are the largest, each with a capacity of 1,000 kilo tonnes.

Both these terminals are expected to start operations in 2024 and 2023, respectively, GlobalData said. ■

TOTAL buys into Russian transshipment hubs

PAO NOVATEK has signed a Heads of Agreement (HoA) with TOTAL for the sale of a 10% interest in Arctic Transshipment LLC.

Arctic Transshipment is NOVATEK's wholly owned subsidiary set up to operate two LNG transshipment complexes currently under construction in the Kamchatka and Murmansk regions.

These complexes will form part of NOVATEK's logistical chain to optimise the use of the Arc7 fleet, with the aim to ensure efficient and cost-effective LNG transportation from Arctic LNG 2 and other NOVATEK's projects.

LNG cargoes will be transferred from the Arc7 LNGCs to conventional gas carriers at each location. Each transshipment hub will

comprise an FSU with a capacity of 360,000 cu m with two ship-to-ship transshipment points.

NOVATEK also announced that its joint venture OOO Arctic LNG 2 has concluded 20-year Sales and Purchase Agreements (SPAs) for the total LNG production volumes with all the project's participants.

Arctic LNG 2's first liquefaction train is planned to commence operations in 2023.

The SPAs provide for LNG supplies from Arctic LNG 2 on an FOB Murmansk and FOB Kamchatka basis with pricing formulas linked

to international oil and gas benchmarks. The offtake is set in proportion to the respective participants' ownership stakes in the project.

"The long-term offtake agreements between Arctic LNG 2 and its participants ensure the future revenue stream from LNG sales and de-risks the project," explained Leonid Mikhelson, NOVATEK's Chairman of the Management Board. "This represents one of the most important milestones in attracting the project's external financing that will be completed in 2021."

Plaquemines developer chosen

US gas developer, Venture Global LNG has partnered with the Zachry Group to develop the Plaquemines LNG export project.

This move follows the company's previous announcement of the appointment of KBR as the EPC contractor for the facility.

Through a joint venture KZJV, KBR and Zachry will execute the development, engineering, procurement and construction under the EPC contract for Phase 1 of Plaquemines LNG.

KZJV will integrate highly modularised, owner-furnished equipment for the 10 mill tonnes per annum nameplate facility, identical to the systems being successfully delivered and installed at Venture Global LNG's Calcasieu Pass project.

Venture Global CEO, Mike Sabel said; "Venture Global is thrilled to have the expertise and exceptional record of both KBR and Zachry Group behind Plaquemines LNG, as we embark on construction of our second facility.

"Combining the world-class experience of KBR in engineering, programme management and integration with Zachry Group's proven track record in project delivery and direct hire construction will enable Venture Global LNG to build on the historic success of Calcasieu Pass and continue our commitment to safe, on-time and on-budget execution," he said.

Plaquemines LNG project has contracted 3.5 mill tonnes per annum of the facility's 10 mill tonnes first phase under binding 20-year offtake agreements and has received both US Department of Energy export authorisation and final US Federal Energy Regulatory Commission (FERC) approval.

LNG import terminal FSRU shortlisted

Australian-based Venice Energy has finalised the selection of a preferred supplier of an FSRU for its Adelaide Outer Harbor project.

The FSRU will be a crucial component of the proposed LNG import facility, which when built will improve and diversify local gas supplies, especially during peak periods and help underpin South Australia's renewables sector by providing firm, dispatchable energy as the state progresses towards further decarbonisation of its energy landscape.

Venice Energy launched its FSRU tender in December last year and received offers from six of the world's leading FSRU/LNG shipping companies.

Three detailed offers were short-listed in early March, 2021.

Managing Director, Kym Winter-Dewhurst, said a final assessment

by the project team revealed two companies with highly competitive offers.

"In the end it really came down to certainty of supply against our project schedule and a desire on our part to work with a specific company due to their long-term commitment, international expertise and technical capabilities," he said. "We have signed the Heads of Agreement and Term Sheet with a leading global independent LNG shipowner and operator from Europe and we are beginning negotiations on the fully formed time charterparty agreement, which is expected to be concluded in the coming weeks.

"The FSRU represents the major

portion of our operational expenditure, so having it locked in at this stage of the project is critical to our development and provides us with certainty as we push ahead with our final round of project approvals this year. Once we have our approvals, we anticipate reaching a Final Investment Decision (FID) towards the back half of the year and breaking ground shortly thereafter.

"With the recent announcement by both the federal and state governments of a \$1 bill energy fund for South Australia and the Prime Minister's call for an additional 50-80 petajoules per annum of gas into the state, Venice Energy is well placed to meet these targets," he claimed.

NEWS NUDGE

FERC clarifies rule limiting construction activities

On 4th May, the US Federal Energy Regulatory Commission (FERC) issued an order prohibiting authorisations to proceed with construction for pipeline or LNG terminal facilities.

According to US law firm Sidley Austin, this order is invoked if a

timely request for rehearing of a certificate order that has been filed specifically opposing project construction, operation, or need until -

- 1) The request is no longer pending before FERC.

- 2) The record of the proceeding has been filed with the court of appeals.

- 3) 90 days have passed after the date that the request for rehearing may be deemed to have been denied under the US Natural Gas

Act's (NGA) rehearing provisions. This replaces the rule that had prohibited authorisations to proceed with construction until FERC had acted on the merits of any timely request for rehearing.

The new regulations take effect 30 days after date of publication in the US Federal Register, which last week, had yet to occur. It is anticipated that pipeline sector participants will appeal the final rule, the law firm said.



Power Play AWARDS

Presented by **ExxonMobil**

THE TIME IS NOW.

If you're planning to nominate an exceptional colleague for the **Power Play Awards**, now is your last chance. The deadline for nominations is June 11.

The third annual Power Play Awards recognize and celebrate the accomplishments of **remarkable professionals** in the LNG value chain who support and empower others in the workplace. We invite you to nominate the individuals that you believe are worthy of receiving one of the Power Play awards – or even go ahead and nominate yourself!

The categories are:

The Rising Star - Outstanding Young Professional

The Rising Star Award celebrates a **woman**, 35 or younger, who is excelling early in her LNG career. She shows tenacity, passion and positive energy through her already noteworthy contributions in the LNG sector. Known by peers and mentors as part of the next generation of LNG leadership, she's someone to watch.

The Ambassador - Outstanding Leadership

The Ambassador Award honors a **person** who, through their words, actions and positive energy, inspires those who work with and around them. This individual has a collaborative leadership style that builds bridges and finds solutions. They create opportunities for others, and either consciously or not, act as a role model in their field. They carry a sense of purpose in all that they do, whilst maintaining a commitment to ethical work practices with the aim of being a responsible global citizen.

The Pioneer - Outstanding Business, Innovation and/or Technology Contribution

The Pioneer Award honors a **person** who has delivered outstanding business results or innovation and technology leadership. Colleagues might note their unrelenting positive energy or unique ability to advance a technology, innovation or business goal, but they likely describe themselves as someone who thrives on success. Qualifying activities may include, for example, the close of a large deal, spearheading technology development/deployment, a new installation, a cost-saving initiative or an innovative commercial deal.

The Conqueror - Outstanding Resilience

The Conqueror Award recognizes a **woman** who, against all odds, has overcome many challenges particularly in light of the 2020 pandemic. She has discovered new ways to work and achieve positive outcomes. She is considered a resilient and determined team player, whose positive energy enables her to find solutions and new ways to thrive in the LNG sector. Her unwavering dedication, perseverance and work ethic grew even stronger in the past year as she rose to the occasion to face challenges head-on and continued to strive for excellence through these turbulent times.

Submit your nominations today at bit.ly/PowerPlayAwards.

And hurry – the deadline is June 11!

ExxonMobil | LNG

Strong LNG spot market boosts GasLog

GasLog Partners has reported a revenue decrease of \$4.3 mill to \$87.3 mill in the first quarter of this year.

This revenue fall was mainly attributable to the expirations of the initial multi-year timecharters of the 'Methane Rita Andrea' and 'Methane Shirley Elisabeth' with a Shell subsidiary in 2020, at rates higher than their current contracted rates.

It was partially offset by increased revenues from operating the 'Methane Heather Sally' in the spot market after the expiration of her multi-year charter with Shell in January, 2021, and a net increase in revenues due to decreased off-hire days for scheduled drydockings.

Due to a drop in technical maintenance costs connected with a drydocking, daily operating costs per vessel (excluding calendar days for the 'Solaris', the operating costs of which are covered by the charterers) decreased from \$14,987 per day for 1Q20 to \$14,132 per day for 1Q21.

The decrease in Adjusted EBITDA of \$0.1 mill, from \$64.2

mill in 1Q20, compared to \$64.1 mill in the same period this year, was attributable to the decrease in revenues, which was almost entirely offset by an aggregate increase of \$4.2 mill from savings in operating, voyage and general and administrative expenses.

The increase in profit of \$21.2 mill from \$14.2 mill in 1Q20 to \$35.4 mill in 1Q21, was mainly attributable to the decrease of \$6.1 mill in financial costs and the decrease of \$15.4 mill in loss/(gain) on derivatives.

An increase in adjusted profit of \$4 mill to \$31.8 mill in 1Q21, was mainly due to the decrease in interest expense on loans of \$5.6 mill, partially offset by a net increase in realised loss on derivatives held for trading of \$1.9 mill.

As of 31st March, 2021, GasLog had \$95.1 mill of cash and cash equivalents, out of which \$43.2 mill was held in current accounts and \$51.9 mill was held in time deposits with an original duration

of less than three months.

At the same time, the company reported an aggregate of \$1,250.8 mill of borrowings outstanding under its credit facilities, of which \$105.0 mill was repayable within a year.

CEO Paul Wogan, commented: "I am pleased to report another strong operational quarter for the Partnership with fleet uptime of 100%. A robust spot market for LNG carriers during the 2020/21 Northern Hemisphere winter, combined with our focus on cost reductions and lower interest expense bolstered the Partnership's financial results in the first quarter of 2021, largely offsetting the impact from the expiration of three initial multi-year steam turbine propulsion vessel charters.

"During the first quarter, we improved our charter coverage to 75% for the remainder of 2021. This fixed charter coverage, along with the adjusted EBITDA delivered in the first quarter, more than covers



GasLog CEO Paul Wogan

all the Partnership's operating, overhead and debt service requirements, as well as expenses related to our five drydockings scheduled for this year.

"Although the Partnership has covered its fixed expenses for the year, we still retain a meaningful exposure to any recovery in LNG shipping spot rates during the second half of 2021. We anticipate that our capital allocation in 2021 will continue to focus on debt repayment with repayments of \$36 mill in the quarter, we continue to reduce the fleet's breakeven levels and improve its free cash flow capacity over time," he said. ■

More cargoes - development delays

In an apparent departure from past negotiations, Pakistan has formally asked Qatar to provide four more LNG cargoes at 10.20% of the Brent.

Two will be for November delivery and the other two for December, 2021 under the second government-to-government 10 year LNG agreement that enters into force on 1st January, 2022.

The Pakistan State Oil (PSO) confirmed the order to local media saying the four additional cargoes would be acquired from Qatar Petroleum (QP) during November/December, 2021 in accordance with the PSO and QP contract.

This provision was included in the contract in view of the higher winter demand when spot prices strengthen. These additional cargoes will benefit the consumers with lower priced LNG.

Operational details are being co-ordinated by PSO's Petroleum Division involving all the stakeholders.

Pakistan is already importing LNG from Qatar under government-to-government 15-year long term agreement signed in 2015 at 13.37% of Brent.

However, under the GtG new LNG deal, Pakistan will import 450 cargoes in 10 years from Qatar at an effective rate of 10.13% from 1st January, 2022 although the deal was concluded at 10.20% of Brent.

Meanwhile, Canadian LNG developer Woodfibre LNG said it had signed a second agreement to sell LNG from its proposed export plant in British Columbia to a BP subsidiary.

Woodfibre said it will sell 0.75 mill tonnes per annum of LNG to BP's BP Gas Marketing Ltd over 15 years on a free on board (FOB) basis.

This latest agreement will increase BP's total LNG off-take to 1.5 mill tonnes per annum from Woodfibre's proposed 2.1 mill tonne export facility.

Woodfibre also said it continued to target making a FID in the third quarter of this year at an estimated cost of around C\$1.6 - C\$1.8 bill.

Delays and cancellations

Over the past couple of month, Annova has ceased work on its export plant in Brownsville, Texas, and Pembina Pipeline paused development of its Jordan Cove project in Oregon, while Sempra has delayed taking FID on Port Arthur LNG until next year.

In Australia, utility AGL Energy Limited (AGL) has confirmed that it will cease further development

of its proposed LNG import jetty at Crib Point, due to environmental concerns.

Total has also said recently that it aims to take a FID on the Papua LNG project in 2023.

This announcement followed a meeting by Total's CEO, Patrick Pouyanné and a delegation led by PNG's Deputy Prime Minister, Samuel Basil.

Following a year's delay, due to Covid-19, operator Total, said it had started the project teams' remobilisation plus other resources.

Total said that the objective was to launch FEED in early 2022 but also to prepare for the FID in 2023.

Total is developing the proposed 5.6 mill tonnes per annum project with partners ExxonMobil and Oil Search. ■

Cheniere raises 2021 guidance

Cheniere Energy has reported consolidated Adjusted EBITDA of around \$1.5 bill for first quarter 2021, an increase of about 40%, compared to 1Q20.

Net income was \$393 mill, or \$1.56 per share basic and \$1.54 per share diluted, for 1Q21.

The company also increased its full year 2021 consolidated adjusted EBITDA guidance to \$4.3 - \$4.6 bill and full year 2021 distributable cash flow guidance to \$1.6 - \$1.9 bill, due primarily to improved market margins.

In addition Cheniere achieved the substantial completion of the Corpus Christi project's Train 3 in March, ahead of schedule and within project budgets.

The company also accelerated the estimated timeline for the substantial completion of Train 6 of Sabine Pass to the first half of 2022 from the second half of that year.

Cheniere also entered into fixed-fee LNG sales agreements with multiple counterparties for portfolio volumes aggregating around 1.7 mill tonnes of LNG

across 2022 and 2023.

The company supplied a carbon neutral LNG cargo to Shell. Together with Shell, the complete lifecycle greenhouse gas emissions (GHG) associated with the LNG cargo were offset using nature-based credits by accounting for all estimated CO2 equivalent emissions produced through the entire value chain, from production through use by the final consumer.

"We are off to a great start in 2021, with reliable production of LNG and our continued ardent focus on execution, as well as sustained strength in LNG markets, helping drive our strong first quarter results and positive outlook for the future," said Jack Fusco, Cheniere's President and CEO. "We placed Corpus Christi Train 3 into service ahead of schedule and within budget and commenced our 25-year SPA with CPC Corporation, further reinforcing our reputation

for delivering on our promises to our customers.

"Continued strength in global LNG market fundamentals, together with the strong first quarter results we reported, improves our outlook for the balance of the year and enables us to increase our full year 2021 financial guidance for the second consecutive quarter. For the balance of the year, our focus is on delivering results within the increased guidance ranges and leveraging the Cheniere platform to commercialise additional LNG capacity," he said.

Analyst GlobalData said that Cheniere Energy was off to a strong start in 2021, as the company had first earnings of \$1.54 per share and generated revenue of \$3.09 bill.

After four tough quarters, strong LNG demand provided a boost for Cheniere and the company managed to exceed expectations.



Fusco gave a full year guidance

Steven Ho, GlobalData Upstream Oil & Gas Analyst, commented: "Cheniere has been struggling to meet expectations for the past few quarters and needed the result this quarter to prove that its LNG business has long term resilience, as LNG demand is expected to continue growing through 2024.

"As the company claims, natural gas use in power generation capacity is expected to grow by an additional 300 GW by 2040, equivalent to 300 mill tonnes of LNG. The majority of the demand comes from Asia, especially China, India and other Southeast Asia countries, as these regions embark on major gas infrastructure expansion, further encouraged by a global effort to reduce GHG emissions and use cleaner fuels," he said.

“Continued strength in global LNG market fundamentals, together with the strong first quarter results we reported, improves our outlook for the balance of the year...”

- Jack Fusco, President and CEO, Cheniere

JVCo and Höegh amalgamation complete

Larus Holding Limited (JVCo), a 50/50 joint venture between Leif Höegh & Co Ltd (LHC) and funds managed by Morgan Stanley Infrastructure Partners (MSIP), has completed the amalgamation of all of the issued and outstanding shares of Höegh LNG Holdings Ltd not owned by LHC or its affiliates.

The amalgamation has been registered in the Bermuda Registrar of Companies. Company shareholders as at the expiry date of 4th May, 2021 will receive a consideration of NOK23.5 for each company share they held.

JVCo now intends to undertake a comprehensive review of the company's operational and financial strategy, including its affiliates, to strengthen the financial profile of the group and will care-

fully review its integrated business plan, including future financial needs.

Höegh LNG Partners' common and preferred units of common and preferred units will remain outstanding and continue to trade on the New York Stock Exchange.

JVCo, together with the units owned directly by LHC, now owns and controls 47.1% equity interest in the Partnership, as well as 100% of the incentive distribution

rights and the non-economic general partner interest in the Partnership.

Höegh LNG Holdings has also announced that the amendments to the company's senior unsecured bond issues maturing in February, 2022 and January, 2025, approved by the bondholders' meetings held on 22nd March, 2021, have now become effective.

These amendments related to the amalgamation, as above.

NEWS NUDGE

US receives largest LNGC

The largest LNGC to load in the US sailed from Cheniere Energy's Sabine Pass export terminal on 29th April.

The 263,000 cu m 'MOL FSRU Challenger' was recently in the Gulf of Mexico and was heading to China, according to data from cFlow, Platts' trade-flow software.

She has just finished a charter as an FSRU for Botas in Turkey and is due to go on charter to Hong Kong LNG again as an FSRU for a new power project.

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Taiwan moves LNG project further offshore

Taiwan's Ministry of Economic Affairs is to move a planned LNG project off Taoyuan further out to sea.

The move will be made to "minimise any impact on algal reefs," the Ministry said during a meeting.

To try to prevent the project from being blocked by a referendum, the Ministry said that it had updated its proposal for the nation's third LNG receiving terminal to move it another 455 m from shore.

"By pushing the project farther

out into deeperwater, we no longer need to dredge the ocean floor," Minister of Economic Affairs, Wang Mei-hua told a news conference in Taipei. "The algal reefs will no longer be affected."

Although the new proposal would add NT\$15 billion to the project's budget, the terminal could still be completed in two-and-a-half years, Wang said.

Environmentalists have said that the terminal – to be built in the Guantang Industrial Park on the coast of Datan Borough in Taoyuan's Guanyin District – would damage algal reefs in the area. They have successfully petitioned for a referendum to block the terminal, which the Ministry claims is essential for the government's plans to move

away from coal.

According to polls conducted by the DPP and quoted by the Chinese-language United Daily News, more than 50% of Taiwanese surveyed said they were against the project "if it means harming algal reefs."

Moving the terminal further away from the shore received about 60% support. ■

NEWS NUDGE

EXMAR to market FSRU S188

EXMAR has confirmed that it is to start circulating its FSRU S188 for charter.

The unit was originally chartered to Gunvor but the trading house issued an early charter termination notice, which has been the subject of arbitration proceedings.

EXMAR said that it had received a termination fee equal to two years hire as a result of the early ending of the charter.

Deliveries, orders and recyclings

Greece-based Alpha Gas is to take delivery of another LNGC. The 173,400 cu m 'Energy Integrity' will be the fourth LNGC to join Alpha Gas' fleet.

She recently returned to Daewoo Shipbuilding and Marine Engineering's (DSME) yard in Okpo after completing gas trials, according to AIS data.

Anna Angelicoussis controlled Alpha Gas, has four sisterships on order at DSME and expects to take delivery of the two remaining LNGC newbuilds by the second quarter of this year.

They are all fitted with MAN B&W ME-GI engines, a reliquefaction system, and GTT's NO96 cargo containment system.

Korea Shipbuilding & Offshore Engineering (KSOE) said last week that it had signed a Won209.9 billion deal to build an LNGC.

She was ordered by an undisclosed European-based company. Hyundai Samho Heavy Industries, a unit of KSOE, will build the vessel by October, 2023, KSOE said in a regulatory filing.

Brokers have reported the sale of the 1980-built 126,530 cu m 'Caribbean Energy' for recycling in Bangladesh or Pakistan for \$640 per ldt under tow with 6,000 tonnes of aluminium.

As the 'Louisiana', she was one of a series of pioneering steam turbine LNGCs built in the US in the late 1970s- early 1980s for Lachmar Shipping.

She has been laid up in the Labuan area for around six years.

Maintenance shutdowns confirmed

Chevron has started to repair the heat exchangers at the third Gorgon LNG train in Australia.

CFO, Pierre Breber said last week during the company's quarterly earnings call that it had started repair work and maintenance at the third train.

"We expect that to be completed by the end of this quarter. And then, we'd be operating all three trains in the second half of the year," Breber told analysts during the call.

He added that Chevron expected turnarounds and downtime, mainly related to the third train, to reduce its production by 90,000 barrels of oil equivalent

per day in the second quarter of this year.

In the UK, the Milford Haven Dragage LNG receiving terminal is to close for 26 days for maintenance.

The shutdown is planned to start on 17th May and will enable Dragage to carry out maintenance and inspection and make small improvements in a safe and controlled manner, the company said.

Dragon has started preparations for the shutdown and has also been working with the Welsh Government, Public Health Wales, Pembrokeshire County Council TTP team and UK Government to align the Covid-19 controls it already has in place in preparation for additional workforce. ■



LNGC and FSRU efficiency to be enhanced

Kongsberg Digital, BW LNG and Alpha Ori Technologies have agreed a digitalisation partnership to enhance efficiency and reduce LNGCs and FSRUs environmental footprint.

The agreement encompasses several projects, including utilising a common data management platform and developing a maritime digital twin and digital processing models to facilitate operational excellence.

The partnership's aim is to enable the acceleration of technologies needed for future-ready LNGCs and FSRUs by leveraging Kongsberg Digital's data infrastructure technology, Vessel Insight, together with Alpha Ori's patented SMARTShip digital applications plus BW's operational expertise and assets for piloting a maritime digital twin and a real time decision support system.

"We are very pleased to announce this strategic partnership between two maritime strongholds: digital and industrial," said Hege Skryseth, President of Kongsberg Digital. "The goal of this partnership is to lead the way in the industry through reducing emissions and proving operational excellence through digitalisation.

"Kongsberg Digital is also looking forward to developing the world's first comprehensive maritime digital twin, leveraging our digital twin expertise, data infrastructure, Vessel Insight, our digital platform Kognifai, and our maritime simulators," she said.

"BW LNG is excited to further strengthen our relationship with Kongsberg and Alpha Ori through this partnership," added Harald Martin Myhre, BW LNG's Head of IT and Digitalisation. "We're confi-



Left to right: Yngvil Åsheim, Managing Director, BW LNG; Captain Rajesh Unni, Co-CEO, Alpha Ori Group; Hege Skryseth, President, Kongsberg Digital

dent that these digitalisation initiatives will help close the information gap between ship and shore and empower us to be more data-driven in our decision making.

"By supplementing our extensive operational experience with well-managed data and algorithms we can create more value for all our stakeholders - increasing the safety of operations, reducing emissions to the environment, and reducing operating costs for our customers," he said.

Rajesh Unni, Co-CEO Alpha Ori Technologies, commented: "Alpha Ori is excited to bring the power of cutting-edge technologies (ie artificial intelligence and machine learning) through our digital applications to LNG end users and beyond. Our customers have seen outstanding results through digi-

talisation in improving fleet operational efficiencies, fuel savings and de-carbonisation. We strongly believe in partnerships and in building synergies, thereby creating enhanced value to the asset owners.

"The coming together of BW LNG, Kongsberg Digital and Alpha Ori will surely set a leading example of what can be achieved by collaborating with the right partners," he concluded.

Pilot project

A pilot project is to be developed immediately to test a maritime digital twin, aimed at promoting operational excellence, reducing emissions and costs, and increasing safety. It will be developed for the 'BW Magna' FSRU, utilising the Vessel Insight data infrastructure,

Kognifai digital platform and Kongsberg Digital maritime simulators, as well as applications from Alpha Ori.

This pilot scheme will aim to illustrate an example of the benefits of digitalisation for the industry.

Alongside the pilot project, Alpha Ori and Kongsberg Digital have agreed to enable the integration of Vessel Insight with Alpha Ori applications and the offering of the integrated services to customers worldwide.

This will mean that Vessel Insight customers will get complete access to all Alpha Ori applications and the latter will continue to develop user-centric applications, while Kongsberg Digital will allow access to complete, contextualised data from vessels. ■

LNG rate assessments

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

Region	This week	Change*
East of Suez	\$72,000	+\$12,000
West of Suez	\$77,000	+\$4,000
12 mos T/C	\$77,000	+\$3,000

*Since last report (29/04/21)

Source: Fearnleys (12/05/21)

Monthly Large LNGC Values*

Newbuildings (174,000 cu m)	\$185.65 mill
Five years old (160,000 cu m)	\$141.87 mill
Total Fleet (513 ships)	\$56.12 bill
Orderbook (125 ships)	\$24.01 bill

Source: VesselsValue (27/04/21)

*The above is updated each month courtesy of VesselsValue

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WORLD LNG CARRIER ORDERBOOK

Name	Containment system	Propulsion	Yard	Delivery date	Capacity	Primary Owner
Bw Lesmes	GTT 96 GW	MEGI	DSME	01/03/2021	174000	BWGas
Marvel Swan	Unknown	XDF	Samsung	01/03/2021	173400	Navigare
Lngships Empress	GTT MK III Flex	XDF	Samsung	01/03/2021	174000	TMS Cardiff Gas
Hellas Diana	GTT MK III Flex	XDF	Hyundai	01/03/2021	174000	Latsco Shipping
Lngships Athena	GTT MK III Flex	XDF	Hyundai	01/03/2021	174000	TMS Cardiff Gas
Lng Adventure	GTT MK III Flex	XDF	Samsung	01/03/2021	174000	NYK
Lngship Manhattan	GTT MK III Flex	XDF	Hyundai	01/04/2021	174000	TMS Cardiff Gas
Celsius Charlotte	Unknown	XDF	Samsung	01/05/2021	180000	Celsius Shipping
Diamond Gas Crystal	GTT MK III Flex	XDF	Hyundai	01/05/2021	174000	NYK
Flex Vigilant	GTT MK III Flex	XDF	Hyundai	01/05/2021	174000	Flex LNG
Energy Integrity	GTT 96 GW	MEGI	DSME	01/05/2021	173400	Alpha Gas
Yiannis	GTT 96 GW	MEGI	DSME	01/06/2021	174000	Maran Gas Maritime
Mu Lan	GTT 96 L03+	XDF	Hudong-Zhonghua	01/06/2021	174000	CSSC
Bw Helios	GTT 96 GW	MEGI	DSME	01/06/2021	174000	BWGas
Energy Intelligence	GTT 96 GW	MEGI	DSME	01/06/2021	174000	Alpha Gas
Gaslog Wellington	GTT MK III Flex+	XDF	Samsung	01/06/2021	180000	GasLog
Isabella	GTT 96 GW	XDF	DSME	01/06/2021	174000	Maran Gas Maritime
Aristarchos	GTT MK III Flex	XDF	Hyundai	01/06/2021	174000	Capital Gas
Mol Hestia	Unknown	MEGI	DSME	01/07/2021	174000	MOL
Minerva Chios	GTT MK III Flex+	XDF	Samsung	01/07/2021	174000	Minerva Marine
Minerva Limnos	GTT 96 GW	MEGI	DSME	01/07/2021	173400	Minerva Marine
Adamastos	GTT MK III Flex	XDF	Hyundai	01/08/2021	174000	Capital Gas
Samsung 2314	Unknown	XDF	Samsung	01/08/2021	180000	Celsius Shipping
Gaslog Winchester	GTT MK III Flex+	XDF	Samsung	01/08/2021	180000	GasLog
Attalos	GTT MK III Flex	XDF	Hyundai	01/08/2021	174000	Capital Gas
Asklipios	GTT MK III Flex	XDF	Hyundai	01/09/2021	174000	Capital Gas
Daewoo 2504	GTT 96	XDF	DSME	01/09/2021	174000	Maran Gas Maritime
Global Sea Spirit	GTT 96 GW	XDF	DSME	01/09/2021	173400	Nakilat
Samsung 2306	GTT MK III Flex	XDF	Samsung	01/09/2021	174000	NYK
Diamond Gas Victoria	GTT MK III Flex	XDF	Hyundai	01/09/2021	174000	NYK
Hellas Athina	GTT MK III Flex	XDF	Hyundai	01/09/2021	174000	Latsco Shipping
Samsung 2355	GTT MK III Flex	XDF	Samsung	01/10/2021	174000	NYK
Daewoo 2507	GTT 96 GW	XDF	DSME	01/10/2021	174000	Maran Gas Maritime
Hyundai Ulsan 2939	GTT MK III Flex	XDF	Hyundai	01/10/2021	180000	SK Shipping
Daewoo 2506	GTT 96	MEGI	DSME	01/11/2021	174000	Maran Gas Maritime
Hyundai Samho 8025		XDF	Hyundai	01/12/2021	174000	H-Line
Tenergy	GTT MK III Flex	XDF	Hyundai	01/12/2021	174000	Tsakos Energy Navigation
Samsung 2336	GTT MK III Flex	XDF	Samsung	01/12/2021	174000	JP Morgan
Global Sealine	GTT 96 GW	XDF	DSME	01/12/2021	173400	Nakilat
Samsung 2307	GTT MK III Flex	XDF	Samsung	01/12/2021	174000	NYK
Hyundai Samho 8032	GTT MK III Flex	XDF	Hyundai	01/01/2022	174000	NYK
Gui Ying	GTT 96 L03+	XDF	Hudong-Zhonghua	01/01/2022	174000	CSSC
Daewoo 2508	Unknown	XDF	DSME	01/03/2022	174000	Maran Gas Maritime

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 = 3rd March 2021

Name	Containment system	Propulsion	Yard	Delivery date	Capacity	Primary Owner
Hudong-zhonghua H1829a	GTT 96 L03+	XDF	Hudong-Zhonghua	01/03/2022	170520	CSSC
Samsung 2319	GTT MK III Flex	XDF	Samsung	01/03/2022	174000	JP Morgan
Elisa Aquila	GTT MK III Flex	XDF	Hyundai	01/03/2022	174000	NYK
Clean Cajun	Unknown	XDF	Hyundai	01/04/2022	200000	Dynagas
Hyundai Samho 8033	GTT MK III Flex	XDF	Hyundai	01/06/2022	173000	NYK
Hyundai Samho 8026	GTT MK III Flex	XDF	Hyundai	01/06/2022	174000	H-Line
Hudong-zhonghua H1830a	GTT 96 L03+	XDF	Hudong-Zhonghua	01/06/2022	170520	CSSC
Samsung 2337	GTT MK III Flex	XDF	Samsung	01/07/2022	174000	JP Morgan
Clean Copano	Unknown	XDF	Hyundai	01/07/2022	200000	Dynagas
Hyundai Samho 8091	Unknown	XDF	Hyundai	01/08/2022	174000	Knutzen
Hyundai Ulsan 3185		XDF	Hyundai	01/08/2022	174000	Korea Line
Daewoo 2509	Unknown	MEGI	DSME	01/08/2022	174000	BWGas
Daewoo 2510	Unknown	MEGI	DSME	01/09/2022	174000	BWGas
Prism Diversity	Unknown	XDF	Hyundai	01/09/2022	180000	SK Shipping
United Prosperity	Not Applicable	XDF	Hudong-Zhonghua	01/10/2022	174000	China LNG Shipping
Hyundai Samho 8092	Unknown	XDF	Hyundai	01/10/2022	174000	Knutzen
Hyundai Ulsan 3186		XDF	Hyundai	01/10/2022	174000	Korea Line
Hyundai Ulsan 3187		XDF	Hyundai	01/11/2022	174000	JP Morgan
Hyundai Samho 8093	Unknown	XDF	Hyundai	01/11/2022	174000	Knutzen
Minerva Amorgos	GTT MK III Flex+	XDF	Samsung	01/11/2022	174000	Minerva Marine
Hyundai Ulsan 3243	Unknown	XDF	Hyundai	01/12/2022	174000	Knutzen
Daewoo 2514	Unknown	TFDE - Azipod	DSME	01/12/2022	172500	Sovcomflot
Hyundai Ulsan 3188		XDF	Hyundai	01/12/2022	174000	JP Morgan
Hyundai Samho 8094	Unknown	XDF	Hyundai	01/12/2022	174000	Knutzen
United Glory	Unknown	XDF	Hudong-Zhonghua	01/01/2023	174000	China LNG Shipping
Samsung 2364	GTT MK III Flex+	XDF	Samsung	01/01/2023	174000	MISC
Hyundai Ulsan 3111	GTT MK III Flex	XDF	Hyundai	01/01/2023	174000	Capital Gas
Hyundai Ulsan 3244	Unknown	XDF	Hyundai	01/02/2023	174000	Knutzen
Samsung 2365	GTT MK III Flex+	XDF	Samsung	01/02/2023	174000	MISC
Samsung 2426	Unknown	XDF	Samsung	01/03/2023	174000	Pan Ocean
Hyundai Ulsan 3189	Unknown	XDF	Hyundai	01/03/2023	174000	JP Morgan
Zvezda 041	GTT MK III	TFDE - Azipod	Zvezda SSK	01/03/2023	172600	Smart LNG
Daewoo 2515	Unknown	TFDE - Azipod	DSME	01/04/2023	172500	MOL
United Fortune	Unknown	XDF	Hudong-Zhonghua	01/04/2023	174000	China LNG Shipping
Hyundai Samho 8095	Unknown	XDF	Hyundai	01/05/2023	174000	Knutzen
Hyundai Ulsan 3190	Unknown	XDF	Hyundai	01/05/2023	174000	JP Morgan
Hyundai Samho 8096	Unknown	XDF	Hyundai	01/06/2023	174000	Knutzen
Samsung 2425	Unknown	XDF	Samsung	01/07/2023	174000	Maran Gas Maritime
Daewoo 2516	Unknown	TFDE - Azipod	DSME	01/07/2023	172500	Sovcomflot
Hyundai Samho 8105		XDF	Hyundai	01/08/2023	174000	Sovcomflot
Hyundai Ulsan 3191	Unknown	XDF	Hyundai	01/09/2023	174000	Korea Line
Daewoo 2517	Unknown	TFDE - Azipod	DSME	01/09/2023	172500	Sovcomflot
Zvezda 042	GTT MK III	TFDE - Azipod	Zvezda SSK	01/09/2023	172600	Smart LNG
Hyundai Ulsan 3198	Unknown	XDF	Hyundai	01/10/2023	174000	Korea Line

DFDE = dual fuel diesel engines, STRH = steam turbine reheat / ultra steam turbine, MEGI = marine electric gas injection, DRL = slow speed diesel, FSRU = vessel with regas capacity, FLNG = floating LNG production unit
Data last updated = Data last updated = 3rd March 2021

Name	Containment system	Propulsion	Yard	Delivery date	Capacity	Primary Owner
Daewoo 2518	Unknown	TFDE - Azipod	DSME	01/10/2023	172500	MOL
Zvezda 043	GTT MK III	TFDE - Azipod	Zvezda SSK	01/10/2023	172600	Smart LNG
Zvezda 044	GTT MK III	TFDE - Azipod	Zvezda SSK	01/11/2023	172600	Smart LNG
Daewoo 2519	Unknown	TFDE - Azipod	DSME	01/12/2023	172500	MOL
Zvezda 045	Unknown	TFDE - Azipod	Zvezda SSK	01/12/2023	172600	Smart LNG
Samsung 2393	Unknown	XDF	Samsung	01/01/2024	174000	NYK
Samsung 2394	Unknown	XDF	Samsung	01/02/2024	174000	NYK
SHI Maran 1	GTT MK III Flex	XDF	Samsung	15/02/2024	174000	Maran Gas Maritime
SHI Maran 2	GTT MK III Flex	XDF	Samsung	15/02/2024	174000	Maran Gas Maritime
SHI #1	GTT MK III Flex	XDF	Samsung	15/02/2024	174000	Maran Gas Maritime
SHI #2	GTT MK III Flex	XDF	Samsung	15/02/2024	174000	Maran Gas Maritime
Hyundai Ulsan 3221	Unknown	XDF	Hyundai	01/07/2024	174000	Pan Ocean
Hyundai Ulsan 3222	Unknown	XDF	Hyundai	01/08/2024	174000	Pan Ocean
Samsung 2395	Unknown	XDF	Samsung	01/08/2024	174000	NYK
Zvezda 046	Unknown	TFDE - Azipod	Zvezda SSK	01/08/2024	172600	Smart LNG
Samsung 2396	Unknown	XDF	Samsung	01/09/2024	174000	NYK
Zvezda 047	Unknown	TFDE - Azipod	Zvezda SSK	01/09/2024	172600	Smart LNG
HHI 2/9	GTT MK III Flex	XDF	Hyundai	15/09/2024	174000	MOL
HHI 3/9	GTT MK III Flex	XDF	Hyundai	15/09/2024	174000	MOL
HHI 4/9	GTT MK III Flex	XDF	Hyundai	15/09/2024	174000	MOL
HHI 5/9	GTT MK III Flex	XDF	Hyundai	15/09/2024	174000	MOL
HHI 6/9	GTT MK III Flex	XDF	Hyundai	15/09/2024	174000	K-Line
HHI 7/9	GTT MK III Flex	XDF	Hyundai	15/09/2024	174000	K-Line
HHI 8/9	GTT MK III Flex	XDF	Hyundai	15/09/2024	174000	K-Line
HHI 9/9	GTT MK III Flex	XDF	Hyundai	15/09/2024	174000	K-Line
HHI 1/9	GTT MK III Flex	XDF	Hyundai	15/09/2024	174000	MOL
Hyundai Ulsan 3223	Unknown	XDF	Hyundai	01/10/2024	174000	JP Morgan
Zvezda 048	Unknown	TFDE - Azipod	Zvezda SSK	01/10/2024	172600	Smart LNG
Hyundai Samho 8100	Unknown	XDF	Hyundai	01/11/2024	174000	Knutsen
Zvezda 049	Unknown	TFDE - Azipod	Zvezda SSK	01/11/2024	172600	Smart LNG
Zvezda 050	Unknown	TFDE - Azipod	Zvezda SSK	01/12/2024	172600	Smart LNG
Zvezda 051	Unknown	TFDE - Azipod	Zvezda SSK	01/08/2025	172600	Smart LNG
Zvezda 052	Unknown	TFDE - Azipod	Zvezda SSK	01/09/2025	172600	Smart LNG
Zvezda 053	Unknown	TFDE - Azipod	Zvezda SSK	01/10/2025	172600	Smart LNG
Zvezda 054	Unknown	TFDE - Azipod	Zvezda SSK	01/11/2025	172600	Smart LNG
Zvezda 055	Unknown	TFDE - Azipod	Zvezda SSK	01/12/2025	172600	Smart LNG

DFDE = dual fuel diesel engines, STRH = steam turbine reheat / ultra steam turbine, MEGI = marine electric gas injection, DRL = slow speed diesel, FSRU = vessel with regas capacity, FLNG = floating LNG production unit
Data last updated = Data last updated = 3rd March 2021



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WORLD SMALL SCALE LNG FLEET*

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

For more information please visit <http://small-lng.com>

*Includes multi-gas, ethylene and LNG bunker ships with 40,000 cubic metres LNG cargo capacity or less

TBN = To Be Nominated indicates ships are still at construction/planning stage

** = project shelved † = Data to be verified Data last updated = 28th April 2021

Built	Name	CBM	Cargo Type	Trading area	Trading in LNG?	Ship Owner / Operator
2017	LNG-Gorskaya TBN	7,300	LNG	Russia	Yes	LNG-Gorskaya
2017	Green Zeebrugge	5,000	LNG	Northwest Europe	Yes	NYK
2017	Cardissa	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	SM Jeju LNG1	7,500	LNG	Korea	Yes	Korea Line
2019	Gas Agility	18,600	LNG	NWE	Yes	MOL
2019	Flexfueller 001	1,480	LNG	Amsterdam	Yes	Titan LNG
2020	Avenir Advantage	7,500	LNG	Mediterranean	Yes	Avenir LNG
2020	Avenir Accolade	7,500	LNG	Mediterranean	Yes	Avenir LNG
2020	Avenir Aspiration	7,500	LNG		Yes	Avenir LNG
2020	Kaguya	3,500	LNG	Japan	Yes	CLS
2020	CNTIC VPOWER Global	28,000	LNG	Myanmar	Yes	Dalian Inteh Group
2020	Ecobunker Tokyo Bay	2,500	LMG	Japan	Yes	Ecobunkers
2020	Optimus	6,000	LNG	NWE	Yes	Elenger
2020	ENN TBN	8,500	LNG	China	Yes	ENN
2020	FueLNG Bellina	7,500	LNG	Singapore	Yes	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	Avenir Allegiance	20,000	LNG	Worldwide	Yes	Avenir LNG
2021	Bergen LNG	850	LNG	Norway	Yes	Bergen Tankers
2021	Dmitry Mendeleev	5,800	LNG	Russia	Yes	Gazprom Neft
2021	JMU TBN	2,500	LNG	Japan	Yes	JMU
2021	Ravenna Knutsen	30,000	LNG	Mediterranean	Yes	Knutsen OAS
2021	PE TBN	12,000	LNG	Singapore	Yes	MOL
2021	TBN	18,600	LNG	Mediterranean	Yes	MOL
2021	TG TBN	500	LNG	Korea	Yes	Trans Gas
2022	Veder TBN	30,000	LNG	Worldwide	Yes	Anthony Veder
2022	Avenir Achievement	20,000	LNG	Worldwide	Yes	Avenir LNG
2022	Kuntsen TBN	5,000	LNG	Spain	Yes	Knutsen OAS
2022	Clean Cañaveral	5,400	LNG	USG	Yes	PNE
2023	Cryopeak TBA	4,000	LNG	West Canada	Yes	Cryopeak
2023	Kuntsen TBN	12,500	LNG	Spain	Yes	Knutsen OAS
2023	SM Jeju LNG3	7,500	LNG	Korea	Yes	Korea Line
2023	Pan Ocean TBN	18,000	LNG	USG	Yes	Pan Ocean Co
2024	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG
2024	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG
2026	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG
2026	Avenir TBN (option)	20,000	LNG	Worldwide	Yes	Avenir LNG

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