

LNG Shipping News

An LNG JOURNAL TITLE ON LNG CARRIERS

19 September 2019

Muted demand seen through August

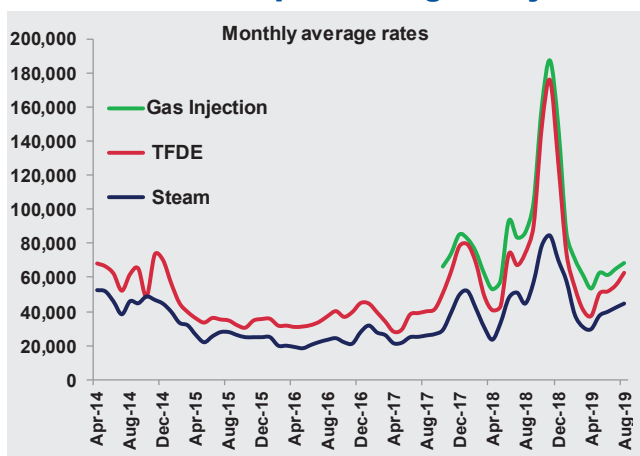
Neither the previously anticipated activity levels nor the freight rate highs seen last year occurred in the LNG sector last month.

According to SSY Consultancy & Research monthly report, indicatively, the front month for the JKM index traded below \$5 per MMBtu since mid-May, which permeated spot market activity in August, due to ample supply worldwide and muted demand, especially from Far Eastern buyers.

This supply/demand dynamic maintained a tightly closed arbitrage, thus curtailing tonne/miles and not enabling freight rates to climb, despite limited spot tonnage availability.

Throughout August, the combination of relatively tight tonnage and low LNG pricing led to a spot market stalemate. Interestingly, despite August average front month pricing

Estimated LNGC spot earnings \$/day



Source: SSY

for LNG delivered to the JKTC region being down almost 60%, year-on-year, freight rates generally held their own, due to tight tonnage, SSY said.

This dearth of spot tonnage availability lent support to shipowners' hopes that should the

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Gas demand to rise through 2035

Gas is the only fossil fuel expected to continuously rise in demand through to 2035, according to a new report.

McKinsey Energy Insights' 'Global Gas and LNG Outlook to 2035' report revealed that, in 2018, China emerged as the world's biggest importer of gas and LNG, overtaking Japan, and second biggest importer of LNG, overtaking South Korea.

The consultancy said that it expected demand to continue rising in the region, with China, ASEAN, and South Asia to account for 95% of global LNG demand growth until at least 2035. Total gas demand is set to rise by 0.9% per annum, while Asian gas demand is set to rise by 2.1% per annum during the same period, driven primarily by power and gas-intensive industries.

On the supply side, more than half of the global growth of 635 bill cu m by 2035 will be driven by the US - adding 380 bill cu m - followed by Russia (+110 bill), and Africa (+110 bill cu m). Elsewhere, Europe and the Rest of Asia's gas supply is forecast to decline rapidly.

"We'll look back at this as a milestone year, when China became the world's biggest LNG importer and we saw the highest volume of liquefaction projects

taking FID. In many ways, that sets the tone through to 2035: Asian economies in the ascendancy—led by China—with growing energy demand; the US continuing to rank highly for both supply and demand; but on the supply side Europe and Asia's second-tier economies falling away. Overall though, this is a growth story for gas and LNG," said Rahul Gupta, McKinsey Energy Insights' associate partner.

"In the last 12 months, a record volume of LNG projects took FID (over 60 mill tonnes per annum, or 20% of today's market), pushing the LNG supply/demand balance into the late 2020s. Looking ahead, only one in 10 proposed LNG projects will take FID, with over 100 LNG projects totaling 1,100 mill tonnes per annum of capacity competing to fill the 125 mill tonnes supply gap by 2035," added Dumitru Dediu, McKinsey Energy Insights' Partner.

'Global Gas and LNG Outlook to 2035' covers the global gas demand outlook, supply outlook and changes in cross-border capacity. ■



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Magnolia to supply gas to Vietnam

Delta Offshore Energy (DeltaOE) and Liquefied Natural Gas Limited (LNG) have partnered with Vietnam's Bac Lieu Provincial Government to deliver an LNG-to-power project.

The DeltaOE led power project includes the construction and operation of an LNG import terminal, 3,200 MW combined-cycle power plant and delivery of power generation to the province.

The integrated project is expected to commence operations in 2023, pending finalisation of government approvals.

LNG's wholly-owned subsidiary, Magnolia LNG is to deliver 2 mill tonnes per annum of LNG to DeltaOE on the back of a supply and purchase agreement (SPA), on a free-on-board (FOB) basis for 20 years with options to extend.

In turn, DeltaOE will deliver gas to the power plant, generate electricity, and sell its output to the province pursuant to a power purchase agreement (PPA).

The SPA and PPA are linked on a back-to-back basis to provide an integrated LNG-to-power solution for the province.

Specific terms and conditions of both the SPA and PPA, respectively, were negotiated in term sheet form and the various contracting parties are currently completing the contracts for execution.

"This agreement is a major achievement for the Magnolia LNG project as we progress our global commercial and marketing push toward a final investment decision," said Greg Vesey, LNG Limited's Managing Director and CEO. "We are pleased to welcome Delta Offshore Energy, the Government of Vietnam, and the Bac Lieu Provincial Standing Committee to the Magnolia LNG project, as customers that value the advantages Magnolia enjoys."

"This agreement represents a significant advancement of our long relationships held with DeltaOE, the province, and Vietnamese leadership, including our earlier hosting of the province leadership and DeltaOE at the Magnolia site," he said.

"Delta Offshore Energy's Bac Lieu project addresses Vietnam's need for an LNG import terminal to provide access to growing the LNG industry as a feedstock for electricity generation," said Bobby Quintos, Delta OE's Engineering Managing Director. "Our alliance with LNG Limited will allow the Government of Vietnam to have a stronger relationship with the US market and the long-term stability of the Henry Hub index, which fits perfectly with the Vietnamese National Power Development Plans."

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Far Eastern buyers return to the market ahead of the winter and there is a spike in LNG prices, freight rates could rise to levels seen last year.

New orders

On the newbuilding front, all three yards received at least one order last month. SHI, DSME and HHI won orders from NYK, Maran and TEN, respectively.

All three owners opted for 174,000 cu m capacity with X-DF propulsion units fitted.

NYK placed the order against long term business with Total, which entered the market in June for newbuilding tonnage. Total was also understood to have signed an additional multi-year charter with TMS Cardiff Gas for the company's last uncommitted newbuilding vessel, a 174,000 cu m X-DF unit currently under construction at HHI and set for delivery in April, 2020.

The charters were reported as being for seven years in duration with options. This leaves NYK and TMS Cardiff Gas with four and two newbuildings, respectively, on long term timecharters with Total.

On the production side, Venture Global announced the final investment decision (FID) and closing of project financing for the Calcasieu Pass LNG facility and associated TransCameron pipeline in Cameron Parish, Louisiana.

With construction having commenced earlier this year, the project is expected to start commercial operations during 2022. The 10 mill tonnes per annum Calcasieu Pass terminal is the second project of the second wave of US LNG terminals to reach the FID milestone, following FID taken in February on the 16 mill tonne Golden Pass LNG facility.

Furthermore, Tellurian, which is attempting to reach FID on its proposed Driftwood LNG export terminal before the end of this year, has

entered into definitive agreements with Total for a \$500 mill equity investment in Driftwood Holdings LP, and the purchase of LNG.

Along with Total's previously announced agreement to purchase around \$200 mill of Tellurian common stock, Total's aggregate investment in the Tellurian portfolio will be about \$907 mill at FID for Driftwood.

Another two important developments were seen last month in US LNG production - Cameron LNG Train 1 commenced commercial operations, while Freeport LNG Train 1 also produced its first LNG.

In other news, the Cyprus FSRU tender was awarded to the multi-national consortium comprising of JV China Petroleum Pipeline Engineering, AKTOR and METRON, with Hudong-Zhonghua Shipbuilding and Wilhelmsen Ship Management.

The Natural Gas Public Company of Cyprus (DEFA) aims for commencement of imports from the FSRU by 2021, SSY concluded.

LNG Shipping News

2 Prospect Road
St Albans AL1 2AX
United Kingdom
www.lngjournal.com
Tel: +44 (0)20 7253 2700

Publisher
Stuart Fryer

Editor

Ian Cochran
+44 (0) 7748144265
cochran@tankeroperator.com

Ad sales enquiries

Narges Jodeyri
+44 (0)20 7017 3406
narges@lngjournal.com

Subscriptions

Stephan Venter
Tel: +44 (0) 20 7253 2700
venter@lngjournal.com

Production

Vivian Chee
Tel: +44 (0) 20 8995 5540
chee@btconnect.com

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NEWS NUDGES

SHI to design Zvezda LNGCs

Samsung Heavy Industries (SHI) and Russian shipyard Zvezda have signed a contract to design the Arctic LNGCs needed for the Arctic LNG 2 project.

SHI has been selected as a technological partner to help Zvezda build the vessels.

Under the deal signed in Vladivostok on 4th September, SHI will design the ships to use LNG as a primary fuel. The LNGCs will feature a power plant totalling 45 MW, comparable to that of a nuclear icebreaker, and be able carry cargo while breaking ice up to 2.1 m thick in minus 52 deg C, according to SHI.

"As we expand icebreaking technology into LNGCs, we will be able to establish a solid foothold in the Arctic ships market," an SHI official said.

Cameron faces technical problems

Sempra Energy operated, Cameron LNG, has had to declare *force majeure*, due to technical problems at the Louisiana export terminal.

Cameron LNG had loaded eight cargoes since May, reaching a level of three cargoes a month in August, Refinitiv shipping data showed. The last cargo was reported to have left on 7th September, Reuters said.

Its first train has a capacity of 5 mill tonnes a year of LNG, with another two trains of 5 mill tonnes each due to start up in the first and second quarters of 2020.

OLT at full capacity- to introduce small scale shipments

OLT Offshore LNG Toscana's Terminal is to work at full capacity, as 41 slots out of 41 available for the Gas Year 2019/2020 have been allocated.

This amounts to about 6,3 mill cu m of capacity.

This confirms the effectiveness of the new allocation capacity system via auctions introduced in 2018, which makes the regasification sector more flexible and in line with the market demand, both for the spot market and the long and middle term markets, OLT claimed.

The cargoes received come from all over the world, in particular from US, which accounts for 36% of the cargoes received.

Due to its technical specifications, the plant can receive around the 90% of the worldwide LNGC fleet, with a maximum cargo capacity equal to 180,000 cu m and it can also receive different types of gas.

Since the start of the commercial operations, 'FSRU Toscana' has received LNG from 10 different countries: Algeria, Egypt, Nigeria, Norway, Peru, Qatar, Trinidad & Tobago, US and cargoes coming from other European terminals, such as Spain and the Netherlands.

In March, the company started the authorisation process to offer a small-scale service. To that end, the plant's modification will be concluded next year with



OLT is to facilitate small scale LNG shipments

small scale commercial activities beginning in 2021.

This new service will allow the loading of 41 small LNGCs slots, which will deliver LNG into storage, currently under construction at ports. ■

Corpus Christi III receives a boost

Cheniere Energy subsidiaries, Corpus Christi Liquefaction and Cheniere Corpus Christi Liquefaction Stage III, have signed a long-term gas supply agreements (GSA) with EOG Resources.

Under the GSAs, EOG will sell natural gas to Cheniere for around 15 years beginning in early 2020. The amount will start at 140,000 MMBtu per day and increase to 440,000 MMBtu per day.

"We are pleased to partner with EOG, one of the largest independent natural gas producers in the US, on our second Integrated Production Marketing (IPM) transaction, which is expected to support Corpus Christi Stage III," said Corey Grindal, Cheniere's Senior Vice President, Gas Supply. "The IPM commercial structure leverages our world-scale infrastructure platform and capabilities in Corpus Christi, offering domestic natural gas producers efficient

access to global LNG prices and long-term flow assurance, while providing Cheniere with reliable delivery of natural gas and commercial support for growth."

"We look forward to working with Cheniere, the leading US LNG provider, to expand into international natural gas markets where global demand is expected to significantly increase for years to come," said D. Lance Terveen, EOG's Senior Vice President, Marketing. "Adding gas sales agreements linked to LNG prices supports EOG's portfolio approach to marketing our growing production of low-cost natural gas. These agreements further diversify our access to customers across multiple

end markets in order to maximise our natural gas price realisations."

Part of the transaction is subject to certain conditions, including a positive final investment decision (FID) on Cheniere's Corpus Christi Stage III project. This project is being developed to include up to seven midscale liquefaction trains with a total expected aggregate nominal production capacity of around 9.5 mill tonnes per year.

Corpus Christi Stage III received a positive Environmental Assessment from the US Federal Energy Regulatory Commission (FERC) in March, 2019 and is anticipated to receive all remaining regulatory approvals by the end of this year, Cheniere claimed. ■

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Total gets PNG go ahead

PNG's Government has given the Papua LNG project operator, Total, the go ahead to proceed with the implementation of the \$20 bill Papua LNG Project.

Minister for Petroleum, Kerenga Kua, made the announcement earlier this month, following a period of uncertainty, due to the country's political changes. The initial deal, signed in April this year, involves three LNG trains fed by over one billion boe of gas.

The PRL 15 Joint Venture, consisting of Total, ExxonMobil

and Oil Search, will now work together with the government on finalising the National Content Plan for the project.

Oil Search will also focus on the development of the P'nyang gas field and commencement of FEED-related activities for the proposed three-train development, including FEED

for the associated gas expansion project, operated by the company.

Total has agreed to provide third party access to the petroleum pipeline, and enable the government to take a stake in the pipeline plus the forming of a joint venture with national oil company Kumul to evaluate a shipping operations. ■

Adriatic celebrates 10th birthday

Adriatic LNG has celebrated the 10th anniversary of regasification activities at its terminal located off the Veneto coasts.

The terminal is claimed to be a strategic infrastructure, supplying 10% of Italy's natural gas consumption and contributing to the energy transition towards more sustainable sources.

Since September, 2009, over 700 LNGCs have arrived at the offshore terminal to discharge LNG for regasification before transferring it to the national pipeline network. This amounts to over 59 bill cu m.

Adriatic LNG has received LNG from eight countries, mainly from Qatar but also from Egypt, Trinidad and Tobago, Equatorial Guinea, Norway, Nigeria, US and Angola.

By expanding the number of import countries, the terminal



Adriatic has celebrated its 10th anniversary

significantly contributes to the diversification of supply sources, increasing the security of

national energy system while reducing dependence on single suppliers, Adriatic said. ■

Saipem JV to build Nigeria's Train 7

Last week, Nigeria LNG signed a letter of intent (LoI) with Saipem's joint venture with Daewoo E&C Co Ltd and Chiyoda Corp (SDC JV), to become the preferred bidder for the engineering, procurement & construction (EPC) contract of the Train 7 project, following a competitive FEED contract.

Saipem said that the EPC contract award is conditional upon the approval of Nigeria LNG Limited's board of directors and shareholders, the approval of governmental or regulatory authorities, the achievement

of any conditions precedent to a final investment decision (FID) and the execution of a legally binding EPC contract by the parties.

The proposals submitted by SDC JV includes the EPC execution

of one complete train and one liquification unit with a total capacity of around 8 mill tonnes per annum, plus other associated utilities and infrastructure.

Saipem's share in the SDC JV is about 60%. ■

NEWS NUDGES

Panama leaves LNGC tolls alone

Panama's Cabinet Council has officially approved the modification of the Panama Canal tolls structure, following a recommendation from the Panama Canal Board of Directors.

Despite modifications for most types of vessels, the toll structures remain unchanged for LNGCs, but tolls adjustments were approved to more closely align with the value of the route.

Gunvor submits low Pakistan LNG cargo bids

Commodity trader Gunvor has submitted the lowest bids to supply LNG to Pakistan for six cargoes out of 10 sought by Pakistan LNG, a document on the Pakistani company's website showed.

DXT Commodities, Vitol, a unit of PetroChina and Socar Trading submitted the lowest bids for the remaining four delivery slots, according to Reuters.

The prices offered ranged from 8.3% of Brent crude oil prices for a late October cargo, submitted by Vitol, to 10.9% of Brent for a late December cargo, submitted by Gunvor.

Sakhalin-1 to build LNG plant at De Kastro

Shareholders in the Sakhalin-1 oil and gas project are to build their own LNG plant at De Kastro, which could supply LNG to Japan.

The four partners - Rosneft, Exxon, Japan's SODECO and India's ONGC Videsh - were recently discussing whether to build their own LNG plant or to sell gas to Gazprom, according to Reuters.

"This year, shareholders made a decision to build our own LNG plant in De Kastro with a capacity of 6.2 mill tonnes per year," Rosneft CEO Igor Sechin said in a statement, Reuters said. "Its products will be much in demand in Japan due to the geographical proximity of the two countries."

H-Energy to develop Kakinada LNG Terminal

Indian natural gas company, H-Energy Global is to develop an LNG regasification and reloading terminal at Kakinada on India's East Coast.

Indian natural gas company, H-Energy Global is to develop an LNG regasification and reloading terminal at Kakinada on India's East Coast.

H-Energy will complete the project under a Port Service Agreement (PSA) signed with Kakinada Seaports Limited (KSPL) through its wholly

owned subsidiary East Coast Concessions Private Ltd (ECPL).

KSPL has the concession for Kakinada Deep Water Port from the government of Andhra Pradesh.

The Kakinada LNG hub will cater to the needs of Andhra Pradesh domestic customers and is expected to supply LNG

through small-scale LNGCs to H-Energy's forthcoming Kukrahati LNG terminal.

"We believe that Kakinada with its existing breakwater and deep draft combined with its close proximity to various natural gas pipeline makes this an efficient and successful project for our customers, our partners, and

ourselves," Darshan Hiranandani, H-Energy CEO, commented.

Meanwhile, H-Line Shipping has ordered a 174,000 cu m LNGC from Hyundai Samho Heavy Industries.

An HHI stock filing said that the contract has a value of KRW228 bill (\$191.2 mill).

The LNGC is scheduled for delivery by 31st December, 2021. ■

Knutsen's latest LNGCs coated by AkzoNobel

Knutsen OAS Shipping has chosen AkzoNobel's patented Intershield 300 and Intersleek foul release technologies for the company's latest LNGCs being built at HHI.

The first LNGC 'Adriano Knutsen' has already been delivered and the next, 'Rias Baixas Knutsen' is scheduled to be delivered this month.

"Knutsen have used Intershield 300 on our vessels for a long time," said Oliver Smith, Project Manager, Knutsen OAS Shipping. "The reason Knutsen applied Intershield 300 on our new LNGCs is because we knew that in the long term, we were able to benefit from the lower maintenance cost. When we have inspected the ballast tanks every five years for our vessels in service having Intershield 300, the number of repairs has been very minimal."



Knutsen's latest LNGCs have been coated by AkzoNobel

"We're delighted that our high-performing marine coatings were selected for Knutsen's latest LNG vessels and proud that our experience and capability in coatings for LNG continues to be recognised," said Jean-Michel

Gauthier, Director of AkzoNobel's Marine and Protective Coatings business. "That Intersleek was the industry's first biocide-free foul release coating when it was released in 1996 shows we have long been the front-

runner for this technology and that customers can be confident in the significant track record and qualities of the International product range."

Hyomin Ha, HHI Professional Engineer & Shipbuilding Senior Engineer for the Naval Architect Design Co-ordination Department, Shipbuilding Business Unit, said: "We took on this project as we were confident in applying Intersleek 1100SR for newbuilding projects. Even though it was complex to coat fluoropolymer and silicone-based coatings, we were able to establish internal standard procedures to apply these coatings and minimise disruption." ■

LNGC shipmanagement company formed

Anglo-Eastern Univan Group and EXMAR Ship Management have formed a joint venture dedicated to LNGC newbuilding supervision and vessel management for third-party owners.

Based in Singapore, the joint venture, AEX LNG Management, will draw on EXMAR's niche expertise in the LNG sector, while leveraging the systems, resources and global reach of Anglo-Eastern to provide specialist services for the growing LNGC market.

Services will include

newbuilding planning and supervision, shipmanagement, crewing, and training via Anglo-Eastern's network of strategically located maritime training centres and simulators.

"I look forward to combining EXMAR's unique competencies in the LNG space with our crewing

and training solutions in order to offer our customers a platform for LNG shipmanagement that carries the same depth and strength as we have in our other tanker segments," said Peter Cremers, Anglo-Eastern Executive Chairman. Nicolas Saverys, Chairman

of EXMAR Ship Management, added; "I am sure that our vast LNG shipmanagement expertise (since 1974) in combination with the global network of Anglo-Eastern will create exciting synergies that will change the third-party LNG shipmanagement game." ■

GTT receives raft of new orders

During the past couple of weeks, GTT has received several orders to design the tanks for LNGCs.

Seven of the LNGCs will be built by SHI on behalf of three shipowners based in US, Oceania and Bermuda.

GTT's Mark III Flex technology has been selected to equip the LNG tanks of six of the SHI newbuildings and the Mark III Flex+ technology will be used on the seventh. Each LNGC will be of 174,000 cu m capacity.

Delivery of the vessels is scheduled between the end of 2021 and the end of 2022.

Details of the eighth LNGC remain confidential at this stage, GTT said.

GTT later revealed that it had received two orders from HHI, to design the tanks for a Tsakos (TEN) and Capital Gas Carrier LNGC. Both vessels will also be of 174,000 cu m capacity.

They will be fitted with a Mark III Flex membrane containment system. The delivery of these ships is planned during the fourth quarter of 2021.

GTT's membrane technology has also been chosen for the tank design of six

VLECs, which will be built by HHI and SHI on behalf of Chinese based Zhejiang Satellite Petrochemical. The delivery of the vessels is scheduled from 4Q20 onwards.

GTT's Mark III membrane containment system was selected. The design was optimised to significantly increase the capacity within the standard VLGCs' overall dimensions, thereby offering more than 98,000 cu m total cargo capacity with limited draft.

Arc7 AiP

In addition, Russian Maritime Register of Shipping (RS) has carried out an Approval in principle (AiP) for the new GTT designed LNG containment systems for Arc7 LNGCs.

The new containment systems, Mark III Flex and NO 96 L03+, are based upon proven system designs, enabling the reduction in boil-off rate while in service, RS said.

RS and GTT analysed the containment systems in terms of safety of operation on

board a ship navigating in ice covered waters.

Under the AiP procedure, RS and GTT looked at containment system strength under hull vibration, as well as fatigue endurance of the containment system elements. In addition, containment systems safety in case of possible interaction with floating ice or icebergs, and also structural strength of the membrane systems to potential impacts (sloshing) related to LNG movements in the cargo tanks, were analysed and validated.

"We are very pleased to receive this Approval in Principle which is a further step in the validation of the next generation of prospective gas carriers in ice conditions," said Philippe Berterottière, GTT Chairman and CEO.

"Partnership with GTT is strategic for RS. We are proud to be a part of our joint co-operation programme, that is one of the key elements for the smooth LNG transportation in the Arctic," said RS Director General, Konstantin Palnikov. ■

ABS signs carrier agreements at Gastech

In an agreement signed at Gastech this week, ABS and Samsung Heavy Industries (SHI) are to collaborate on a next generation LNGC in a joint development project (JDP).

"ABS is a leader in gas carriers with a proud record of supporting innovation, delivering operational efficiencies and advancing the cause of safety. This exciting project with SHI for a state-of-the-art vessel represents the next step in that journey," said Patrick Ryan, ABS Senior Vice President Engineering and Technology. "ABS classed the world's first LNG carrier and today continues to lead global gas carrier classification."

"SHI has introduced advanced LNG carriers to the market successfully with industry leading partners, such as ABS," said Jong H Youn, SHI Vice President. "In this JDP we will focus on the examination and realisation of future technologies with SHI's most advanced LNG carrier design to meet current and future market demand."

Under the terms of the JDP, SHI will deliver the concept

and basic design for an LNGC, which will incorporate an air lubrication system for improved efficiency. In addition, the concept will incorporate smart-ship technologies. In turn, ABS will carry out design review of the structure and arrangements.

Also at Gastech, ABS granted an Approval in Principle (AiP) to Daewoo Shipbuilding and Marine Engineering (DSME) for its 165,000 cu m jumbo Ethane/Ethylene carrier design.

In this design, the IMO Type B cargo tanks would be constructed out of high manganese austenitic steel (Hi-MN Steel), which DSME claimed was more cost competitive than Ni alloy steel, as well as providing increased reliability and a more robust containment.

"We are proud to support development of this concept, which is the latest in a long line of innovations in gas carrier design



The ABS signing ceremony at Gastech

that ABS has helped to bring to the market," said Patrick Janssens, ABS Vice President for Global Gas Solutions. "ABS is committed to facilitating innovations in vessel design which advance safety and drive efficiencies for the industry."

"Based on DSME's advanced technology, which is performing strongly in the LNGC market, it will be able to lead the global gas market not only in membrane but also in Type B tanks by developing this new design for ultra-large

Ethane/Ethylene carriers, applying high-manganese steel, a newly rising cryogenic material," said Odin Kwon, DSME CTO.

ABS said it had reviewed the safety, suitability and feasibility of the Type B cargo tank design based on information supplied by DSME to confirm that the system would comply with current ABS Rules. ABS and DSME have previously collaborated on JDPs to assess the viability of Hi-Mn steel for cryogenic applications. ■

Sakhalin-2 LNGCs refinanced

Joint venture companies owned by Sovcomflot (SCF) and NYK Line have signed a \$176 mill non-recourse credit facility under the recently introduced environmental initiative, Poseidon Principles.

Agreed for eight years, the facility was signed with three international banks: Sumitomo Mitsui Banking Corp (through its German subsidiary, SMBC Bank EU AG); Société Générale, and Shinsei Bank.

It will be used towards the refinancing of two Ice Class LNGCs serving the Sakhalin-2 project - 'Grand Aniva' and her sistership 'Grand Elena', which are jointly owned and operated by SCF and NYK.

The vessels transport LNG year-round from Prigorodnoye on Sakhalin Island to Japan, South Korea and China under long-term contracts with Sakhalin Energy, the operator of Sakhalin-2 project. Since LNG shipments began from Sakhalin-2 in March, 2009, the two Ice Class 1C, 145,000 cu m LNGCs have completed 325 voyages, delivering over 46.5 mill cu m of LNG, SCF said.

With this financing facility, SCF said it was pioneering the adoption of provisions that enable lenders to comply with the Poseidon Principles - an environmental initiative by leading international banks that promotes a low carbon future for the global shipping industry by establishing a framework for assessing and disclosing the climate change impact of ship finance portfolios.

The Poseidon Principles are consistent with the IMO's ambition to reduce shipping's greenhouse gas emissions by at least 50% by 2050.

Nikolay Kolesnikov, SCF Executive Vice President & CF, said: "We are delighted to have concluded this new long-term financing agreement for our joint venture companies with NYK Line. We are grateful to our long-standing financial partners for their continued support and are pleased



SCF and NYK have refinanced the two Sakhalin-2 LNGCs

to welcome establishing relations with new international lenders.

"SCF Group continues to demonstrate uninterrupted access to ship finance amid market cyclicalities, which allows us to maintain a smooth debt repayment profile and a robust long-term liquidity position fully in line with

our budgetary targets. We are also pleased that this financing allows us to support the Poseidon Principles, a new initiative by the banking community aimed at de-carbonisation of the shipping industry, and to promote responsible and sustainable shipping," he said. ■

GasLog wins Panama project FSU

A GasLog Ltd subsidiary has signed a 10-year timecharter with Sinolam LNG Terminal, SA to provide and LNGFSU for a gas-fired power project being developed in Panama.

The timecharter is expected to be fulfilled by the conversion of the 'GasLog Singapore', a 155,000 cu m, TFDE LNGC built in 2010.

Under the modification stipulations, as well as being FSU ready, the vessel will still be able to trade as an LNGC following her conversion.

'GasLog Singapore's' conversion will take place in conjunction with the vessel's scheduled five-year special survey in the third quarter of 2020, enabling both time and cost synergies with the vessel's regular drydocking.

The charter will start on the FSU's delivery in Panama, which is scheduled for November,

2020. Since September 2016, she has been trading in the LNGC spot market.

The contract is for a fixed period, thereby delivering 100% utilisation for the duration of the charter. The unit will also incur a lower opex than if the vessel was trading as an LNGC. GasLog has estimated that the charter will generate around \$20 mill of EBITDA per annum over its 10-year charter life.

She will receive, store and send out LNG to a gas-fired power plant currently being developed near Colón, Panama, by Sinolam Smarter Energy LNG Power Co (Sinolam), a subsidiary

of private Chinese investment group Shanghai Gorgeous Investment Development Co.

The power project has signed long-term power purchase agreements with Panamanian utility companies, as well as a 15-year LNG sale and purchase agreement (SPA) with Royal Dutch Shell.

CEO Paul Wogan, stated: "The 10-year FSU charter once again demonstrates GasLog's ability to execute on our strategic objectives of locking in long-term stable revenues and full utilisation on one of our existing open vessels. Owning and operating an FSU will also

expand GasLog's service offering. We look forward to partnering with Sinolam to deliver gas-fired power to Panama, thereby displacing coal, oil and oil products in the country's energy mix with cleaner natural gas."

Kenneth Zhang, Sinolam Smarter Energy CEO, added: "The LNG FSU is a key element of our integrated power project, and we are very pleased to welcome GasLog as a strategic partner for our commercial operations. GasLog's entry into the project is a vote of confidence in our business platform and the attractiveness of Panama as an investment opportunity." ■

New approach to BOG handling

Atlas Copco Gas and Process Division has adapted its turbocompressor technology to handle cryogenic high-pressure boil-off gas (BOG) processing.

This six-stage compressor offers over 98% reliability and availability combined with significant CAPEX and OPEX savings over conventional technologies, the company claimed.

Using cryogenic low pressure BOG and fuel gas boosting reference machinery, Atlas Copco has designed a compressor that handles cryogenic high pressure BOG applications with greater reliability and efficiency than was previously attainable.

This is the first process machine to combine two cryogenic and four warm stages on a single gearbox and skid, allowing for a smaller, more

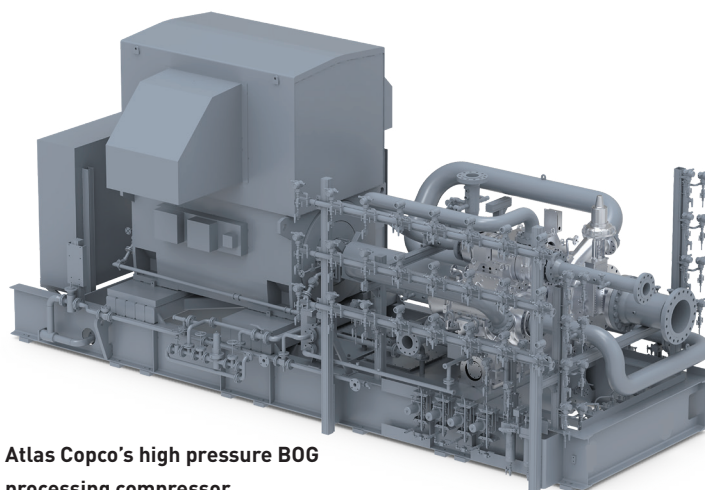
efficiently operating machine. The six stages allow for the industry's highest processing

capability, the company said.

The application of dry-gas seals in a cryogenic high-pressure

BOG centrifugal compressor is another first for this type of machine. Compared to traditional carbon ring seals, the dry gas seals allow for higher efficiency and lower methane leakage into the environment.

"Applying integral gear technology to cryogenic high pressure BOG handling is a true accomplishment by our engineering team," said Tushar Patel, Global Head of Marketing at Atlas Copco Gas and Process. "We are pleased that we can offer our customers the efficiency and reliability our IGC machines are known for, now in cryogenic high pressure BOG handling." ■



Atlas Copco's high pressure BOG processing compressor

Freeport LNG receives Train 4 loan

Freeport LNG Development and Westbourne Capital have signed definitive agreements to provide a mezzanine loan for Freeport's Train 4 project.

Westbourne and its co-investors will provide up to a \$1.025 bill mezzanine loan to a Freeport LNG subsidiary in support of Freeport LNG's proposed Train 4 expansion project.

This financing, combined with a contemplated bank facility, will be sufficient to provide 100% of the capital required for Train 4, Freeport said and it follows Freeport LNG's receipt of US FERC and DOE authorisations for the project and its execution of a Train 4 fixed price EPC contract with KBR.

Under the terms of the Train 4 EPC contract, KBR will provide engineering, procurement, construction, commissioning and startup of the nominal 5 mill tonnes per annum Train 4 and associated gas pre-treatment plant to export US LNG to international markets.

"We are happy to continue to progress

our Train 4 expansion with an eye towards FID in the next several months," said Michael Smith, Founder, Chairman and CEO, Freeport LNG. "The Westbourne-led consortium have all been very supportive investors of Freeport in the past and we are excited to do more with them to grow the company."

"We are very pleased to extend our investment relationship with this world-class LNG project backed by an experienced management team and a strong stakeholder group," added George Batsakis, Executive Director and Partner, Westbourne Capital. "We wish Freeport every success with the imminent commencement of operations and development of Train 4."

Brownstein Hyatt Farber Schreck acted as Freeport LNG's counsel and Allen and Overy acted as lenders' counsel. ■

NEWS NUDGES

LNGC projects go to Singapore

Singapore-based Sembcorp Marine Repairs & Upgrades has won three new gas ship projects.

These include the conversion of the LNGC 'Dwiputra' into a 125,000 cu m FSRU for a joint venture between Mitsui OSK Lines (MOL) and Karpower International; conversion of NYK Line's former gas carrier 'LNG Flora' into a 127,000 cu m FSU for Gasfin Development; plus upgrading work on the 173,400 cu m FSRU 'BW Magna' for BW LNG.

All three projects will be undertaken at Sembcorp Marine Admiralty Yard, with scheduled deliveries between the end of this year and February, 2020.

BW LNG names two LNGCs

BW LNG, part of BW Group, held a naming ceremony for two new LNGCs on 7th September.

The 174,000 cu m vessels, named 'BW Pavilion Aranda' (H2489) and 'BW Magnolia' (H2490), were built at Daewoo Shipbuilding & Marine Engineering (DSME).

'BW Pavilion Aranda' is to be delivered this week when she will go on a long-term charter to Singapore's Pavilion Energy, while 'BW Magnolia', is scheduled for delivery in December, 2019, when she will start a long-term charter to UK-based oil major BP.

They are the third and fourth out of a series of seven newbuildings.

BW LNG said that these vessels are fitted with MEGI propulsion and state-of-the-art reliquefaction systems.

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	Tripura	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	Norgas Carriers
2010	Coral Fraseri	10,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2011	Akebono Maru	3,556	LNG	Japan	Yes	Chuo Kaiun
2011	Coral Furcata	10,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2011	Coral Fungia	10,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
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	JX Energy TBN	2,500	LNG	Japan	Yes	JX Energy
2013	Kakuyu Maru	2,500	LNG	Japan	Yes	Tsurumi Sunmarine
2013	Coral Anthelia	6,500	LNG/Ethylene			Anthony Veder
2014	LNG-Oil combi**	2,000	LNG	Germany	Yes	Veka
2014	Short Sea LNG Tanker **	4,000	LNG	Germany	Yes	Veka
2015	LNG Inland bunker**	800	LNG	Germany	Yes	Veka
2015	LNG bunker barge 1†	2,250	LNG	China	Yes	Anhui Huaqiang Natural Gas
2015	LNG bunker barge 2†	2,250	LNG	China	Yes	Anhui Huaqiang Natural Gas
2015	LNG bunker barge 3†	2,250	LNG	China	Yes	Anhui Huaqiang Natural Gas
2015	LNG Barge TBN	3,000	LNG	US Coast	Yes	LNG America
2015	10 small carriers TBN**	5,000	LNG			Bimantara Group
2015	Jahre TBN**	6,200	LNG	Norway	Yes	Donsotank/Jahre Marine
2015	Norgas TBN**	17,000	LNG/LPG/Ethylene	Worldwide		Norgas Carriers
2015	Norgas TBN**	17,000	LNG/LPG/Ethylene	Worldwide		Norgas Carriers
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	TBN 1	27,500	LNG	China?		Danyang?
2015	TBN 2	27,500	LNG	China?		Danyang?
2015	TBN 3	27,500	LNG	China?		Danyang?
2015	PetroChina TBN	30,000	LNG	China		PetroChina
2016	Clean Jacksonville	2,200	LNG	US Coast	Yes	CME
2016	LNG Prime	2,250	LNG	Northwest Europe	Yes	Veka Deen LNG
2016	JS Ineos Indepence	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	JS Ineos Innovation	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	Hai Yang Shi You 301	30,000	LNG	Bali FSU	Yes	CETS (CNOOC)
2016	Navigator Aurora	35,000	Ethane/Ethylene	Markus Hood - Stenungsund	Ethane, for Borealis	Navigator
2016	Gaschem Beluga	36,000	Ethane/Ethylene	US - Teeside	Ethane, for Sabic	Gaschem Services
2016	Gaschem Orca	36,000	Ethane/Ethylene	US - Teeside	Ethane, for Sabic	Gaschem Services

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 = 5th September 2019

Built	Name	CBM	Cargo Type	Trading area	Trading in LNG?	Ship Owner / Operator
2016	Ocean Yield TBN**	36,000	Ethane/Ethylene	US - Teeside	Ethane, for Sabic	Gaschem Services
2017	Oizmendi	600	LNG	Bilbao	Yes	Itsas Gas
2017	CME TBN†	2,200	LNG	US Coast	Yes	CME
2017	CME TBN†	2,200	LNG	US Coast	Yes	CME
2017	ENGIE Zeebrugge	5,000	LNG	Northwest Europe	Yes	NYK
2017	Coralius	5,800	LNG	Northwest Europe/Baltics	Yes, for Skangas	Anthony Veder
2017	Cardissa	6,500	LNG	Northwest Europe	Yes	Shell
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	Coral EnergICE	18,000	LNG	Northwest Europe/Baltics	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	Yuan He 1	30,000	LNG	China	Yes	CSR
2017	Navigator Eclipse	35,000	Ethane/Ethylene	US	Ethane	Navigator
2017	Navigator Nova	35,000	Ethane/Ethylene	US	Ethane	Navigator
2017	Navigator Prominence	35,000	Ethane/Ethylene	US	Ethane	Navigator
2018	HUA XIANG 8	13,720	LNG	China	Yes	Zhejiang Huaxiang
2018	CME TBN†	2,200	LNG	US Coast	Yes	CME
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	Kairos	7,500	LNG	Baltic	Yes	Bernhard Schulte
2018	Qi Yuan	28,000	LNG	China	Yes	Dalian Inteh Group
2018	Evergas TBN	32,000	Ethane/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2018	Evergas TBN	32,000	Ethane/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2018	Evergas TBN	32,000	Ethane/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2018	Evergas TBN	32,000	Ethane/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2018	Bunker Breeze	1,200	LNG	Barcelona	Yes	Suardiaz Energy Shipping
2019	KLine TBN	7,500	LNG	Korea	Yes	Korea Line
2019	KLine TBN	7,500	LNG	Korea	Yes	Korea Line
2019	Stolt TBN	7,500	LNG	Mediterranean	Yes	Stolt-Nielsen Gas
2019	Stolt TBN	7,500	LNG	Mediterranean	Yes	Stolt-Nielsen Gas
2020	Shell Bunker Barge	4,000	LNG	US Coast	Yes	Q-LNG Transport/Harvey Gulf
2020	Stolt TBN (option) **	7,500	LNG		Yes	Stolt-Nielsen Gas
2020	Stolt TBN (option)	7,500	LNG		Yes	Stolt-Nielsen Gas
2020	Total TBN	18,600	LNG	NWE	Yes	MOL
2020	FuelLNG TBN	7,500	LNG	Singapore	Yes	FuelLNG
2020	CLS TBN	3,500	LNG	Japan	Yes	CLS
2020	Elenger TBN	6,000	LNG	NWE	Yes	Elenger
2020	ENN TBN	8,500	LNG	China	Yes	ENN
2021	Stolt TBN (option)	7,500	LNG		Yes	Stolt-Nielsen Gas
2021	Knutsen TBN	30,000	LNG	Mediterranean	Yes	Knutsen OAS
2021	Gazprom Neft TBN	5,800	LNG	Russia	Yes	Gazprom Neft
2021	PE TBN	12,000	LNG	Singapore	Yes	MOL
2021	JMU TBN	2,500	LNG	Japan	Yes	JMU
2022	Stolt TBN	20,000	LNG	Worldwide	Yes	Stolt-Nielsen Gas
2022	Stolt TBN	20,000	LNG	Worldwide	Yes	Stolt-Nielsen Gas
2022	PNE TBN	5,400	LNG	USG	Yes	PNE
2024	Stolt TBN (option)	20,000	LNG	Worldwide	Yes	Stolt-Nielsen Gas
2024	Stolt TBN (option)	20,000	LNG	Worldwide	Yes	Stolt-Nielsen Gas
2026	Stolt TBN (option)	20,000	LNG	Worldwide	Yes	Stolt-Nielsen Gas
2026	Stolt TBN (option)	20,000	LNG	Worldwide	Yes	Stolt-Nielsen Gas

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*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 = 5th September 2019

WORLD LNG CARRIER ORDERBOOK

Name	Delivery	Capacity	Propulsion	Containment	Primary Owner	Yard	Ordered
Energy Universe	01/08/2019	165000	TFDE	SPB	MOL	Japan Marine United	01/02/2014
Georgiy Ushakov	11/09/2019	172000	TFDE - Azipod	GT NO 96	Teekay LNG	DSME	01/07/2014
Nikolay Urvantsev	15/07/2019	172410	TFDE - Azipod	GT NO 96	MOL	DSME	01/07/2014
Yakov Gakkel	25/10/2019	172000	TFDE - Azipod	GT NO 96	Teekay LNG	DSME	01/07/2014
Marvel Pelican	15/12/2019	155000	TFDE	Moss	MOL	Kawasaki	01/09/2014
Marvel Heron	20/09/2019	177000	STaGE	Moss	MOL	Mitsubishi H.I.	01/01/2015
Marvel Swan	15/10/2021	178000	MEGI		K-Line	Imabari	15/05/2015
BW Pavilion Aranda	10/09/2019	173400	MEGI	GT NO 96	BWGas	DSME	01/09/2015
Daewoo 2466	15/10/2019	173400	MEGI	GT NO 96	Maran Gas Maritime	DSME	01/06/2016
Daewoo 2467	15/10/2019	173400	MEGI	GT NO 96	Maran Gas Maritime	DSME	01/06/2016
Gaslog Windsor	15/04/2020	180000	XDF	GTT Mark III Flex	GasLog	Samsung	01/09/2016
Daewoo 2469	01/04/2020	173400	MEGI	GT NO 96	Maran Gas Maritime	DSME	16/12/2016
Rias Baixas Knutsen	15/07/2019	180000	MEGI	GTT Mark III Flex	Knutsen	Hyundai	01/03/2017
Flex Courageous	15/08/2019	173400	MEGI	GT NO 96	Flex LNG	DSME	02/03/2017
MOL Hudong-Zhonghua 1/4	15/12/2019	174000	MEGI	GT NO 96	MOL	Hudong-Zhonghua	01/07/2017
MOL Hudong-Zhonghua 2/4	01/03/2020	174000	MEGI	GT NO 96	MOL	Hudong-Zhonghua	01/07/2017
MOL Hudong-Zhonghua 3/4	15/07/2020	174000	MEGI	GT NO 96	MOL	Hudong-Zhonghua	01/07/2017
MOL Hudong-Zhonghua 4/4	01/10/2020	174000	MEGI	GT NO 96	MOL	Hudong-Zhonghua	01/07/2017
Gaslog Warsaw	15/07/2019	180000	XDF	GTT Mark III Flex	GasLog	Samsung	01/12/2017
Daewoo 2478	15/05/2020	173400	MEGI	GT NO 96	Maran Gas Maritime	DSME	06/12/2017
Elisa Larus	30/03/2020	174000	XDF	GTT Mark III Flex	NYK	Hyundai	01/01/2018
SHI #1	15/07/2020	174000	XDF	GTT Mark III Flex	Cardiff Marine	Samsung	01/01/2018
SHI #17	15/10/2020	174000	XDF	GTT Mark III Flex	Cardiff Marine	Samsung	01/01/2018
HHI / Total	15/01/2020	174000	XDF	GTT Mark III Flex	Cardiff Marine	Hyundai	04/01/2018
HHI / Total / Sovc	28/02/2020	174000	XDF	GTT Mark III Flex	Sovcomflot	Hyundai	04/01/2018
BW Magnolia	15/12/2019	173400	MEGI	GT NO 96	BWGas	DSME	01/02/2018
BW Pavilion Aramhera	15/06/2020	173400	MEGI	GT NO 96	BWGas	DSME	01/02/2018
HHI / Cardiff #1	15/02/2020	174000	XDF	GTT Mark III Flex	Cardiff Marine	Hyundai	01/02/2018
HHI / Cardiff #2	15/04/2020	174000	XDF	GTT Mark III Flex	Cardiff Marine	Hyundai	01/02/2018
Flex Reliance	15/07/2020	173400	MEGI	GT NO 96	Flex LNG	DSME	28/02/2018
Flex Resolute	15/08/2020	173400	MEGI	GT NO 96	Flex LNG	DSME	28/02/2018
Flex Amber	15/07/2020	174000	XDF	GTT Mark III Flex	Flex LNG	Hyundai	01/03/2018
Flex Aurora	15/05/2020	174000	XDF	GTT Mark III Flex	Flex LNG	Hyundai	01/03/2018
SHI Gaslog #1	15/04/2020	180000	XDF	GTT Mark III Flex	GasLog	Samsung	01/03/2018
Samsung 2271	15/04/2020	174000	XDF	GTT Mark III Flex	Cardiff Marine	Samsung	09/03/2018
DSME Minerva #1	15/01/2021	173400	MEGI	GT NO 96	Minerva Marine	DSME	15/03/2018
DSME Minerva #2	15/04/2021	173400	MEGI	GT NO 96	Minerva Marine	DSME	15/03/2018
Traiano Knutsen	15/06/2020	180000	MEGI	GTT Mark III Flex	Knutsen	Hyundai	23/03/2018
DSME 2483	15/08/2020	173400	MEGI	GT NO 96	Alpha Gas	DSME	28/03/2018
DSME 2484	01/12/2020	173400	MEGI	GT NO 96	Alpha Gas	DSME	28/03/2018
SHI Gaslog #2	15/07/2020	180000	XDF	GTT Mark III Flex	GasLog	Samsung	30/05/2018
DSME 2487	15/01/2021	173400	MEGI	GT NO 96	Maran Gas Maritime	DSME	05/06/2018
Maran Gas DSME	15/09/2020	173400	MEGI	GT NO 96	Maran Gas Maritime	DSME	05/06/2018
DSME 2485	15/04/2021	173400	MEGI	GT NO 96	Alpha Gas	DSME	07/06/2018

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 = 6th August 2019

Name	Delivery	Capacity	Propulsion	Containment	Primary Owner	Yard	Ordered
Cool Discoverer	15/08/2020	174000	XDF	GTT Mark III Flex	Thenamaris	Hyundai	19/06/2018
Flex Vigilant	15/03/2021	174000	XDF	GTT Mark III Flex	Flex LNG	Hyundai	30/06/2018
Flex Volunteer	15/11/2020	174000	XDF	GTT Mark III Flex	Flex LNG	Hyundai	30/06/2018
Aristarchos	15/03/2021	174000	XDF	GTT Mark III Flex	Capital Gas	Hyundai	01/07/2018
Aristidis I	15/11/2020	174000	XDF	GTT Mark III Flex	Capital Gas	Hyundai	01/07/2018
Aristos I	15/10/2020	174000	XDF	GTT Mark III Flex	Capital Gas	Hyundai	01/07/2018
Attalos	15/06/2021	174000	XDF	GTT Mark III Flex	Capital Gas	Hyundai	01/07/2018
Flex Freedom	15/10/2020	173400	MEGI	GT NO 96	Flex LNG	DSME	05/07/2018
Celcius #1	15/10/2020	180000	XDF	GTT Mark III Flex	Celcius Shipping	Samsung	01/08/2018
Celcius #2	15/12/2020	180000	XDF	GTT Mark III Flex	Celcius Shipping	Samsung	01/08/2018
HHI 3037	15/09/2020	174000	XDF	GTT Mark III Flex	Cardiff Marine	Hyundai	15/08/2018
SHI 2300	15/10/2020	174000	XDF	GTT Mark III Flex	GasLog	Samsung	15/08/2018
SHI 2301	15/12/2020	174000	XDF	GTT Mark III Flex	GasLog	Samsung	15/08/2018
HHI 3038	15/11/2020	174000	XDF	GTT Mark III Flex	Cardiff Marine	Hyundai	15/09/2018
Cool Racer	15/01/2021	174000	XDF	GTT Mark III Flex	Thenamaris	Hyundai	27/09/2018
SHI NYK	15/04/2021	174000	XDF	GTT Mark III Flex	NYK	Samsung	28/09/2018
SHI Minerva #1	15/01/2021	174000	XDF	GTT Mark III Flex	Minerva Marine	Samsung	15/10/2018
HHI 3039	15/03/2021	174000	XDF	GTT Mark III Flex	Cardiff Marine	Hyundai	15/11/2018
HHI 3112	15/01/2021	174000	XDF	GTT Mark III Flex	Cardiff Marine	Hyundai	15/11/2018
HHI Latsco #1	15/02/2021	174000	XDF	GTT Mark III Flex	Latsco Shipping	Hyundai	25/11/2018
HHI Latsco #2	15/08/2021	174000	XDF	GTT Mark III Flex	Latsco Shipping	Hyundai	25/11/2018
SHI 2306	15/09/2021	174000	XDF	GTT Mark III Flex	NYK	Samsung	03/12/2018
SHI 2307	15/11/2021	174000	XDF	GTT Mark III Flex	NYK	Samsung	03/12/2018
DSME 2496	15/02/2021	174000	MEGI	GT NO 96	BWGas	DSME	05/12/2018
DSME 2497	15/06/2021	174000	MEGI	GT NO 96	BWGas	DSME	05/12/2018
DSME 2495	15/05/2021	173400	MEGI	GT NO 96	Nakilat	DSME	10/12/2018
HHI NYK DG #1	15/09/2020	174000	XDF	GTT Mark III Flex	NYK	Hyundai	11/12/2018
HHI NYK DG #2	15/05/2021	174000	XDF	GTT Mark III Flex	NYK	Hyundai	11/12/2018
HHI NYK DG #3	15/06/2021	174000	XDF	GTT Mark III Flex	NYK	Hyundai	11/12/2018
DSME Dec #1	15/12/2020	180000	MEGI	GT NO 96	MOL	DSME	15/12/2018
DSME Dec #2	15/02/2021	180000	MEGI	GT NO 96	MOL	DSME	15/12/2018
SHI Navigare	15/03/2021	173400	XDF	GTT Mark III Flex	Navigare	Samsung	15/12/2018
HHI Sovcom #1	30/08/2020	174000	XDF	GTT Mark III Flex	Sovcomflot	Hyundai	19/12/2018
HHI Sovcom #2	15/12/2020	174000	XDF	GTT Mark III Flex	Sovcomflot	Hyundai	19/12/2018
Alpha Gas	15/06/2021	174000	MEGI	GT NO 96	Alpha Gas	DSME	27/12/2018
SHI Gaslog CE #1	15/06/2021	180000	XDF	GTT Mark III Flex	GasLog	Samsung	27/12/2018
SHI Gaslog CE #2	15/08/2021	180000	XDF	GTT Mark III Flex	GasLog	Samsung	27/12/2018
SHI #18	15/03/2021	174000	XDF	GTT Mark III Flex	Cardiff Marine	Samsung	31/12/2018
Celcius #3	15/02/2021	180000	XDF	GTT Mark III Flex	Celcius Shipping	Samsung	15/01/2019
Celcius #4	15/04/2021	180000	XDF	GTT Mark III Flex	Celcius Shipping	Samsung	15/01/2019
SHI Minerva #2	15/09/2021	174000	XDF	GTT Mark III Flex	Minerva Marine	Samsung	15/01/2019
CSSC #1	15/09/2021	178000	XDF	GT NO 96	CSSC	Hudong-Zhonghua	30/01/2019
CSSC #2	15/02/2022	178000	XDF	GT NO 96	CSSC	Hudong-Zhonghua	30/01/2019
DSME Maran	15/05/2021	174000	MEGI	GTT Mark III Flex	Nakilat	DSME	15/02/2019
Samsung Feb #1	15/03/2022	174000	XDF	GTT Mark III Flex		Samsung	15/02/2019

Name	Delivery	Capacity	Propulsion	Containment	Primary Owner	Yard	Ordered
Samsung Feb #2	15/03/2022	174000	XDF	GTT Mark III Flex		Samsung	15/02/2019
Samsung Feb #3	15/03/2022	174000	XDF	GTT Mark III Flex		Samsung	15/02/2019
Capital Gas #5	15/07/2021	174000	XDF	GTT Mark III Flex	Capital Gas	Hyundai	25/02/2019
DSME Maran #2	15/08/2021	173400	XDF	GTT Mark III Flex	Nakilat	DSME	25/02/2019
DSME Maran #3	15/10/2021	173400	XDF	GTT Mark III Flex	Nakilat	DSME	25/02/2019
SHI Mar19	15/03/2022	174000	XDF	GTT Mark III Flex	Nisshin Shipping	Samsung	20/03/2019
DSME Maran 2504	15/01/2022	174000	MEGI	GT NO 96	Maran Gas Maritime	DSME	01/04/2019
H Samho NYK	15/03/2022	174000	XDF	GTT Mark III Flex	NYK	Hyundai	01/04/2019
HHI Samho Edison	15/01/2022	174000	XDF	GTT Mark III Flex	NYK	Hyundai	10/04/2019
Capital Gas #6	15/09/2021	174000	XDF	GTT Mark III Flex	Capital Gas	Hyundai	15/04/2019
Samsung N/A	15/01/2022	174000	XDF	GTT Mark III Flex	Minerva Marine	Samsung	01/05/2019
DSME May19	15/05/2022	174000	MEGI	GT NO 96	Maran Gas Maritime	DSME	14/05/2019
DSME MOL #3	15/07/2021	173400	MEGI	GT NO 96	MOL	DSME	15/05/2019
Hyundai European #1	15/03/2022	180000	XDF	GTT Mark III Flex	Dynagas	Hyundai	22/05/2019
Hyundai European #2	15/06/2022	180000	XDF	GTT Mark III Flex	Dynagas	Hyundai	22/05/2019
Samsung 2019 #10	15/06/2022	174000	XDF	GTT Mark III Flex	Morgan Stanley	Samsung	08/06/2019
Samsung 2019 #9	15/01/2022	174000	XDF	GTT Mark III Flex	Morgan Stanley	Samsung	08/06/2019
HHI SK E&S	15/09/2021	180000	XDF	GTT Mark III Flex	SK Shipping	Hyundai	10/07/2019

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 = 6th August 2019



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