LNG Shipping News

AN LNG JOURNAL TITLE ON LNG CARRIERS 12 April 2018

South Korea revises LNG demand forecasts upward

South Korean LNG demand is forecast to grow to 40.49 mill tonnes in 2031, up 11.1% from this year's estimated 36.46 mill tonnes, the South Korean Ministry of Trade, Industry and Energy (MOTIE) said in its latest supply plan.

KOGAS is looking to build another receiving terminal

LNG demand for power generation is projected to increase 0.26% each year on average to 17.09 mill tonnes in 2031, up from 16.52 mill tonnes estimated for this year.

This forecast reverses the trend projected in the previous Long-term Supply Plan in December, 2015, when MOTIE said LNG demand would decrease to 33.96 mill tonnes in 2022 and 34.65 mill tonnes in 2029, compared with 2014 consumption of 36.49 mill tonnes, due to lower power generation demand.

"But LNG demand is expected to get stronger, as the country is shifting away from coal and nuclear fuel," MOTIE said, according to Platts who analysed the report. President Moon Jae-in has vowed to increase power generation using LNG at the expense of coal and nuclear in order to address mounting public concerns over air pollution and nuclear safety.

"As part of effort to ensure a stable supply, South Korea will diversify LNG imports sources," MOTIE's statement said. More than 80% of import volumes in 2017 came from five countries - Qatar, Australia, Oman, Malaysia and Indonesia - up from 78.9% in 2012.

"We will look for the potential of Russian and US LNG projects as part of efforts to reduce the heavy reliance on several existing producers," a Ministry official told S&P Global Platts.

South Korea, the world's third largest LNG importer, will also increase co-operation on flexible contracts, volume swapping and facility sharing with Japan and China, the world's biggest LNG importers. "We will seek to have more flexibility in mid- and long term contracts through co-operation with major LNG buyers," MOTIE said in its statement.

The main sticking points in fixed LNG supply contracts are: 'take or pay' clauses that force buyers to pay for cargoes even if they do not need them; 'destination clauses' that prevent buyers from selling on cargoes; and oil-linked pricing, Platts said.

MOTIE also said that South Korea would build more storage facilities, as part of its efforts to secure stable supply. For example, state-owned Korea Gas Corp (KOGAS) has said that it wants to build its fifth LNG storage terminal by 2031.

Some analysts have said that the figures were disappointing for LNG shipments growth, as they had forecast a larger increase in demand. ■

CNOOC looking for long term cargoes

CNOOC is reportedly tendering for LNG cargoes for delivery up to 2022.

Reuters said that the company had given options for four different delivery time periods in the tender, which will close on 16th April and is valid until 25th April, according to the sources.

Options vary with the delivery of the first LNG cargo under the tender to start from the second half of November or December this year.

The options also include delivery periods up to December, 2019 to December, 2022, market sources told Reuters. ■

SHIPPING NEWS AGENDA

MARKETING

BUSINESS

FINANCE

TECHNOLOGY

LNG ORDERBOOK

GAIL to receive 90 US LNG cargoes

India's state-owned GAIL (India) said it will receive about 90 LNG cargoes annually from the US Sabine Pass and Cove Point LNG terminals.

GAIL has long-term deals in place to buy 5.8 mill tonnes of US LNG per year and will be procuring about $2 bill worth of LNG per annum from the US during fiscal year 2018/19.

In addition, GAIL received its first US cargo on 30th March, which was shipped on board the 165,500 cu m LNGC 'Meridian Spirit', which berthed at the Dabhol terminal. She was carrying about 120,000 tonnes of cargo.

The arrival of the LNGC coincides with the formation of Konkan LNG Private Limited, a subsidiary of GAIL.

This newly established company plans to invest INR30 bill (about $461 mill) in the Dabhol LNG terminal in order to double the capacity of the facility to 10 mill tonnes in the next three years, according to the Indian Economic Times. ■

The LNGC 'Meridian Spirit' delivered the first US cargo to Dhabol

BP eyeing 119 Tangguh cargoes per year

BP is targeting the shipment of 119 LNG cargoes from its Tangguh project in Indonesia's West Papua province this year, including 22 for the domestic market, a company official said.

In addition, BP expected to keep the same balance of shipments for both export and the domestic market unchanged to 2020, BP Indonesia country head Dharmawan Samsu told a parliament hearing, according to local media reports.

After 2020, BP will dedicate about a third of the LNG output from Tangguh to the domestic market, or around 60 cargoes, Samsu said.

Tangguh's annual output capacity is currently running at 7.6 mill tonnes from two LNG trains. A third train is currently under construction and is expected to be completed around 2020, he added.

BP heads the Tangguh project with a 37.16% stake. Its partners include MI Berau, China National Offshore Oil Co (CNOOC) and a joint venture between Mitsubishi Corp and Inpex. ■

Exxon keeps PNG plant tanks cool

ExxonMobil has imported an LNG cargo to keep the tanks cold at its Papua New Guinea LNG facilities, near the capital Port Moresby.

The imported LNG will help maintain the temperature of the tanks and marine terminal loading facilities to avoid a lengthy re-cooling period when it restarts operations, an ExxonMobil spokeswoman reportedly told Reuters.

It was shut in late February after the powerful earthquake disrupted feed-gas supplies from the gas-producing Highlands region.

"In addition, a small amount of gas is used as a fuel source for the plant's gas turbine generators, which help keep the plant in safe operating condition," the spokeswoman said. "The purchase of this cargo does not reflect a change in our earlier projection of eight weeks for return to production."

The 172,000 cu m LNGC 'Kumul', purpose-built for the PNG LNG project, was reported to be at the terminal, after discharging a cargo, Thomson Reuters Eikon shiptracking data showed.

In addition, the 170,000 cu m LNGC 'Papua' was anchored near Port Moresby, according to the data. ■

The LNGC 'Kumul' is reported to be at the PNG terminal

LNG Shipping News
1st Floor, 30 Warner Street
London EC1R 5EX
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
Elena Fuertes
Tel: +44 (0) 20 7253 2700
elena@lngjournal.com

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

Japan's Soma LNG terminal up and running

Soma LNG Terminal, located in Shinchi Town in Fukushima prefecture, commenced operation on 28th March, Japan Petroleum Exploration (JAPEX) said.

The terminal started its commissioning phase in December, 2017, when the first LNGC arrived.

Soma LNG Terminal is the first large-scale LNG terminal in Fukushima prefecture and comprises a ground-type LNG storage tank with a capacity of 230,000 kiloliters, two berths for a large ocean-going ships, a domestic vessel berth for transhipments, LNG vaporisation equipment and LNG shipping facility.

The terminal will import LNG and will supply LNG vaporised gas to Niigata-Sendai via Soma-Iwanuma gas pipeline, which started operation in November, 2017 and will be a base of JAPEX's LNG satellite supply system for the wider Tohoku region.

Image of the Soma LNG Terminal, including second phase, and Fukushima Natural Gas Power Plant. Source JAPEX

Fukushima Gas Power (FGP) has also awarded JAPEX a contract to manage the construction of an additional LNG storage tank with a capacity of 230,000 kiloliters and additional vaporisation equipment at the terminal.

Construction of the tank began in April, 2017 and work on the additional LNG vaporisation equipment will commence in spring 2018. The facilities are expected to be operational in 2020 at the same time as Fukushima Natural Gas Power Plant will start operating. ■

Hokuriku Electric receives first Petronas cargo

Petronas' subsidiary, Malaysia LNG Sdn Bhd (MLNG) delivered its first LNG cargo to Japan's Hokuriku Electric Power Co on 17th March, 2018.

The delivery marks the beginning of MLNG's supply to Hokuriku Electric via a Sale and Purchase agreement (SPA) signed on 6th December, 2016.

Under the terms of the agreement, MLNG will supply up to six cargoes of LNG per year for 10 years.

The cargo was delivered from Bintulu, Sarawak to the Toyama-Shinko terminal on board the 'Seri Amanah', which was chartered by MLNG and operated by another subsidiary, MISC.

Petronas vice president of LNG Marketing & Trading, Ahmad Adly Alias, said;"As an integrated global oil and gas player, Petronas remains committed to delivering the reliable supply of LNG through innovative and flexible solutions to accommodate the different needs of our buyers." ■

Qatargas to work with EGAT

Qatargas and the Electricity Generating Authority of Thailand (EGAT) have signed a memorandum of understanding (MoU) to 'explore collaborative efforts in the LNG business'.

Under the terms of the MoU, the parties intend to jointly identify and evaluate best practices in the LNG industry, particularly in the sharing of knowledge and expertise in procurement of LNG, LNG transportation, and FSRUs.

In addition, the MoU includes the possible supply of LNG to Thailand.

"We look forward to working with EGAT to identify and evaluate future opportunities to supply EGAT with Qatari LNG," Saad Sherida Al-Kaabi, President and CEO of Qatar Petroleum, and Chairman of the Qatargas Board, said.

"I would like to convey our deep commitment to working with EGAT and identifying world-class LNG solutions which meet their business needs. Once identified, we look forward to the prospect of building a long-term supply relationship with EGAT," Khalid Bin Khalifa Al-Thani, Qatargas CEO, added.

As part of the MoU, a committee of representatives from both companies will be formed to execute the terms of the agreement, Qatargas said. ■

Pavilion imports first LNG cargo for domestic use

Singapore has received its first LNG import cargo for its own use.

Pavilion Energy, a subsidiary of Singapore's Temasek Holdings, has discharged its first LNG cargo for domestic use.

The cargo was shipped from Qatar on the Q-Flex LNGC 'Al Oraiq'.

Last year, Pavilion became one of two companies, with Royal Dutch Shell, to be granted a license to import LNG into Singapore.

Singapore sees LNG imports by ship as a necessity to supplement a possible decline in supplies via pipeline from Malaysia and Indonesia. About 9% of the island nation's electricity is generated by gas-burning power plants, according to a report from Bloomberg.

Pavilion had already shipped some LNG cargoes to Singapore LNG Corp's Jurong Island terminal, but they were transhipped instead of being fed into the local energy system. ■

The Qatargas Q-Flex 'Al Oraiq' has delivered the first cargo to Singapore's Pavilion for domestic use

PRODUCED BY:

CWC

FROM THE PRODUCERS OF:

CWC WORLD LNG & GAS SERIES

27th WORLD GAS CONFERENCE WASHINGTON DC | JUNE 25-29 2018 IGU

LNG2019 SHANGHAI 1-5 APRIL

CWC 4TH LNG FUELS SUMMIT

MARINE • ROAD • INDUSTRIAL

22 - 24 MAY 2018

NOVOTEL AMSTERDAM CITY HOTEL, NETHERLANDS

Morten Larsen
Chief Technical Officer
Fjord Line

Lauran Wetemans
General Manager
Downstream LNG -
Gas to Transport
Shell

Tom Strang
Senior Vice President -
Maritime Affairs
Carnival Corporation

Sjaak Klap
V.P. - Business Development
Spliethoff

Gerd Wessels
Managing Partner
Wessels Reederei

Robert Venema
Operational Manager
Containerships

Rob Wood
CEO
Gasrec

Masamichi Morooka
President & CEO
Yokohama-Kawasaki International Port Corporation

BRONZE SPONSORS:

gasunie

Kosan Crisplant®

GTT Expert in LNG

MAN

2018 SUPPORTERS:

sgmf the society for gas as a marine fuel

VDR German Shipowners' Association

Be part of the leading event driving the LNG Fuels industry forward. For more information on how to get involved in 2018, please contact **Tyler Forbes** on **lngfuels@thecwcgroup.com** or call **+44 20 7978 0061**

NEWS NUDGE

Teekay LNG Partners declares distribution

Teekay GP LLC, the general partner of Teekay LNG Partners has declared a cash distribution of $0.14 per common unit for the quarter ended 31st March, 2018.

The cash distribution is payable on 11th May, 2018 to all common unitholders of record as at 4th May, 2018.

GTT receives more orders

At the end of March, GTT received orders from Daewoo and Hyundai for the design of the LNG tanks for three LNGCs.

Two of the 173,400 cu m LNGCs will be built at DSME's Geoje shipyard for a European shipowner.

The tanks will be fitted with the NO96 GW technology. Their delivery is expected for the first half of 2020.

The Hyundai order is for a Mark III Flex cryogenic membrane containment system to be fitted on board a 180,000 cu m LNGC, also for an European owner.

Her delivery is scheduled for March, 2020.

New orders and rumours

Knutsen has firmed up an option for another 180,000 cu m LNGC at HHI for 2020 delivery.

A build-operate-transfer (BOT) contract for two 174,000 cu m has also been awarded to HHI by Japanese interests for 2020 deliveries.

Cosco Shipping Energy could be on the brink of ordering more LNGCs, as the company has said it wants 38 LNGCs by 2020.

Alpha Gas has finally decided to increase its LNG fleet by ordering two 173,400 cu m vessels from DSME.

Samsung Heavy Industries has won a deal worth $368 mill to build two 174,000 cu m LNGCs for an undisclosed company.

The deal is subject to approval of the client's board of directors, which Samsung described as a formality in a filing.

Deliveries are scheduled by October, 2020. ■

K Line secures LNGC refinancing deal

Kawasaki Kisen Kaisha (K Line) has secured a $180 mill refinancing package for two of its LNGCs.

The refinancing package involved the 'Arctic Voyager' and 'Arctic Discoverer', which are both on timecharter to Statoil.

The 2006-built 140,000 cu m LNGCs were chartered to load cargoes at Snøhvit, near Hammerfest, for 20 years.

They are jointly owned by Statoil, Mitsui & Co and Iino Kaiun.

Watson Farley & Williams (WFW) acted as an adviser to facility agent MUFG Bank of Japan who lead a syndicate, comprising Development Bank of Japan and French banking and financial services company, Societe Generale.

The WFW Hong Kong asset finance team advising on the transaction was led by partner and office head Madeline Leong, supported by senior associate Ryan Tan, registered foreign lawyer Rueben Tan and legal assistant Sandrea Mar.

In addition, London finance partner Rob McBride provided advice on the hedging elements of the financing, while New York Counsel Susanne Burstein provided advice on the New York law governed account pledges.

Leong commented: "We are delighted to have advised the syndicate of lenders on this important LNG financing transaction involving Asian and European banks coming together in support of the growing LNG market." ■

Sales buoy EXMAR

LNG and LPG carrier owner EXMAR has reported a consolidated result after tax of $28 mill for 2017, compared to $40.4 mill for the previous year.

This result was positively influenced by a capital gain of $26.7 mill on the sale of subsidiary company Belgibo, a capital gain of $70 mill on the sale of the FSRUs 'Excelerate', 'Explorer' and 'Express' and a capital gain of $1.6 mill on the sale of the LPG carrier 'Kissama'.

An impairment of $22.5 mill on the LNGC 'Excel' was recorded in the first semester of 2017 and the vessel was subsequently sold. A further impairment of $2.6 mill was recorded on the LPG carrier 'Temse' in the fourth quarter of last year.

EBITDA for 2017 was $141.4 mill and EBIT was $70 mill, compared with $116.5 mill and $70.4 mill in 2016, respectively.

As for the LNG division, EBIT was $47.6 mill last year, which included a capital gain of $70 mill on the sale of the three FSRUs and the impairment on the 'Excel'.

This compares with $41 mill in 2016, which was positively influenced by an exceptional revenue of $9 mill received from Pacific Exploration & Production (PEP).

In the FSRU market, several projects have suffered delays or cancellations, EXMAR said. There was only one long-term contract awarded for an FSRU in 2017 worldwide and it was to the Belgian company.

Currently, 26 FSRUs are afloat out of which 23 operate as terminals and presently 10 more units are under construction. Forecasters estimate that by 2025 the number of FSRUs will be close to 50, EXMAR said

The world's first FSRU barge was contracted on the only long-term employment awarded in 2017 and was delivered in December, 2017. The unit is undergoing site specific modifications before the start of its operations in the second half of this year.

The floating liquefaction barge CFLNG was successfully commissioned in 2017 and is awaiting final deployment with several candidate projects under consideration. However, no income is expected in 2018, EXMAR added.

Four FSRUs - 'Excelerate', 'Explorer', 'Express' and 'Excelsior' - operated under long-term charter to Excelerate Energy, were acquired by their charterer. Three FSRUs were sold during 2017 and generated about $71 mill of cash after debt repayment and a profit of $70 mill.

The sale of the 'Excelsior' will be recorded in the first quarter of 2018 and will generate a capital gain of $31 mill and about $39 mill in cash after debt repayment. The LNGC 'Excel' was also sold and is undergoing conversion into a floating storage unit.

EXMAR Shipmanagement will maintain the operation and maintenance of the four FSRUs, as well as for the conversion supervision for 'Excel'.

'Excalibur' remains under charter until early 2022 at competitive rates.

The shipmanagement subsidiary has 84 vessels under management, compared to 46 in 2016 and has further increased its focus on niche markets by offering operation and maintenance services to specialised vessels, including FSRUs and LNGCs, all types of LPG vessel and juice carriers. ■

LNG Solutions for the Marine Industry

Chart's maritime LNG solutions reduce operating costs while dramatically improving emissions for compliance with today's stringent requirements in the marine industry.

Cryogenic Solutions for:

- LNG ship fueling systems
- FLNG
- FSRUs
- Bunkering vessels
- Bunkering stations
- Port power applications

www.ChartLNG.com
LNG@ChartIndustries.com

CHART®

Innovation. Experience. Performance.®

MOL takes delivery of first Arc7

Mitsui OSK Lines (MOL) first Arc7 'Vladimir Rusanov' loaded a cargo 27th - 28th March at Sabetta.

She is the first of three newbuildings for MOL and China COSCO Shipping joint venture and will sail under a long-term charter contract to transport LNG for the Yamal LNG project.

The vessel left Daewoo shipyard after her naming ceremony on 21st December, 2017, and headed to the Arctic Ocean through the Suez Canal for ice trials. The ice trials took place over three weeks in the presence of MOL's technical engineers and marine experts,Yamal LNG, DSME, and her main equipment OEMs.

The harsh conditions at Sabetta can clearly be seen

Construction of the second and the third vessels for the joint venture at Daewoo's Okpo yard have been progressing as originally planned, and they will be delivered to the Yamal LNG project at the end of September, 2018 and September, 2019 respectively, MOL said.

MOL added that it continued to take a proactive stance towards new Arctic LNG projects in light of the easier access to the Arctic where there is a huge potential for natural gas and other energy resources exploitation. ■

Alfa Laval wins FLNG pump order

Alfa Laval has won an order to supply Framo pumping systems to an FLNG to be built in South Korea.

The order is valued at about SEK50 mill and was booked in the pumping systems unit of the Marine Division. Deliveries are scheduled for this year.

"It is very pleasing to once again be able to announce a large offshore order for our Framo pumping systems," said Peter Leifland, President of the Marine Division. "Our pumping systems play a vital role in safe and reliable offshore operations. The order proves that we can meet the high demands from customers in this industry." ■

BOG re-liquefaction systems for GasLog LNGCs

At the end of January, 2018, Air Liquide commissioned a boil-off gas (BOG) re-liquefaction system, Turbo-Brayton-1050 (TBF-1050), on board the Samsung built 174,000 cu m LNGC'GasLog Genoa'.

A second TBF-1050 unit will also be fitted on a sistership being built at the same yard.

The company's equipment range also includes other types that are claimed to be just as compact as the TBF-1050 but with even greater re-liquefaction capacity, such as the TBF-1225 and the TBF-1400.

Air Liquide said that its Turbo-Brayton technology is reliable and an economical cryogenic system that requires no maintenance, designed to re-liquefy BOG from LNGCs.

The range extends from the TBF-175 to the TBF-1400. ■

Höegh takes delivery of eighth FSRU

Höegh LNG Holdings has taken delivery of 'Höegh Esperanza', its eighth FSRU.

This high-specification FSRU was built by Hyundai Heavy Industries and was designed for open, combined and closed loop re-gasification operations.

It has a storage capacity of 170,000 cu m of LNG and a maximum re-gasification throughput of 750 mill standard cu ft per day. It is equipped with a GTT Mark III membrane containment system and dual-fuel diesel-electric (DFDE) propulsion.

Höegh said that she was fully financed at a fixed interest rate of about 4%, with the $200 mill debt portion expandable to $230 mill once long-term employment has been secured.

The company claimed that it was currently in advanced negotiations for her intermediate employment on a combined FSRU and LNGC contract with seasonal use in FSRU mode until the anticipated start date of its intended long-term FSRU contract in Chile. ■

NYK's new Cameron LNGC is named

Nippon Yusen Kaisha's (NYK) new LNGC was named 'Marvel Falcon' at Samsung Heavy Industries' (SHI) Geoje Shipyard on 29th March, 2018.

The 174,000 cu m newbuilding will be chartered to Mitsui & Co under a long-term contract, NYK said.

She is the first in a series of new vessels that will be used by Mitsui in the Cameron LNG Project.

Following the delivery of the 'Marvel Falcon' scheduled for 16th April, 2018, the ship will commence transporting LNG from the US state of Louisiana and other locations around the world for up to 25 years, including optional extension periods.

The NYK Group will be responsible for shipmanagement.

The vessel is fitted with an X-DF diesel engine – a new 2-stroke large-bore slow-speed diesel engine able to operate on marine gas oil or boil-off gas (BOG) stored as a liquid at cryogenic temperatures.

Cameron will consist of an LNG terminal near the Gulf of Mexico, which is jointly owned by Sempra LNG & Midstream, ENGIE, Mitsui and Japan LNG Investment, a company owned by Mitsubishi Corp and NYK. ■

NYK has named its Cameron project LNGC 'Marvel Falcon'

WORLD LNG CARRIER ORDERBOOK

Name	Containment System	Propulsion	Yard	Ordered	Delivery Date	Capacity	Primary Owner
Gaslog Hong Kong	TZ Mk. III	XDF	Hyundai Heavy	2014	01/02/2018	174000	GasLog
Gaslog Genoa	TZ Mk. III	XDF	Samsung	2014	01/03/2018	174000	GasLog
Oceanic Breeze	Moss	STRH	Mitsubishi H.I.	2013	31/03/2018	155300	K-Line
LNG Sakura	Moss	TFDE	Kawasaki	2015	31/03/2018	177000	MOL
Myrina	GT NO 96	MEGI	DSME	2014	01/04/2018	173400	Teekay LNG
Seri Cemara	Moss	STRH	Hyundai Heavy	2014	01/04/2018	150000	MISC
British Partner	GT NO 96	MEGI	DSME	2014	01/04/2018	173400	BP
Marvel Falcon	GTT Mark III Flex	XDF	Samsung	2014	15/04/2018	174000	MOL
Castillo De Merida	TZ Mk. III	MEGI	Imabari	2014	01/05/2018	178000	Elcano
CESI Lianyungang	Membrane	TFDE	Hudong-Zhonghua	2012	01/05/2018	174000	China LNG Shipping Holdings
Flex Ranger	TZ Mk. III	MEGI	Samsung	2013	01/05/2018	174000	Flex LNG
Pacific Breeze	Moss	TFDE	Kawasaki	2013	01/06/2018	180000	K-Line
Mitsubishi Nagasaki 2316	Moss	STRH	Mitsubishi H.I.	2014	01/06/2018	153000	NYK
Diamond Gas Orchid	Moss	STaGE	Mitsubishi H.I.	2015	01/06/2018	165000	NYK
Pan Europe	GT NO 96	TFDE	Hudong-Zhonghua	2014	01/06/2018	174000	Teekay LNG
Megara	GT NO 96	MEGI	DSME	2014	01/07/2018	173400	Teekay LNG
Flex Rainbow	TZ Mk. III	MEGI	Samsung	2013	25/07/2018	174000	Flex LNG
Energy Liberty	SPB	TFDE	Japan Marine United Corp (Jmu)	2014	01/08/2018	165000	MOL
Rudolf Samoylovich	GT NO 96	TFDE - Azipod	DSME	2014	01/08/2018	172410	Teekay LNG
Diamond Gas Rose	Moss	STaGE	Mitsubishi H.I.	2015	01/08/2018	165000	NYK
Enshu Maru	Moss	STRH	Kawasaki	2014	30/08/2018	164000	K-Line
Castillo De Caldelas	TZ Mk. III	MEGI	Imabari	2014	01/09/2018	178000	Elcano
Daewoo 2462 MOL E.On	GT NO 96	TFDE	DSME	2015	01/09/2018	180000	MOL
Vladimir Vize	GT NO 96	TFDE - Azipod	DSME	2014	01/09/2018	172410	MOL
Kinisis	GT NO 96	MEGI	DSME	2015	15/09/2018	173400	Chandris
Daewoo 2442	GT NO 96	MEGI	DSME	2014	01/10/2018	173400	BP
Daewoo 2427	GT NO 96	TFDE - Azipod	DSME	2014	01/10/2018	172410	Dynagas
Marvel Eagle	Moss	TFDE	Kawasaki	2014	15/10/2018	155000	MOL
Daewoo 2443	GT NO 96	MEGI	DSME	2014	01/11/2018	173400	BP
Boris Davydov	GT NO 96	TFDE - Azipod	DSME	2014	01/11/2018	172410	Dynagas
Marvel Hawk	GTT Mark III Flex	XDF	Samsung	2014	01/12/2018	174000	MOL
Mitsubishi Nagasaki 2321	Moss	STaGE	Mitsubishi H.I.	2015	01/12/2018	177000	NYK
Nikolay Zubov	GT NO 96	TFDE - Azipod	DSME	2014	01/12/2018	172410	Dynagas
Jmu Tsu 5071	SPB	TFDE	Japan Marine United Corp (Jmu)	2014	01/01/2019	165000	NYK
Samsung 2150	GTT Mark III Flex	XDF	Samsung	2014	01/01/2019	174000	MOL
Maran Gas Spetses	GT NO 96	MEGI	DSME	2015	01/01/2019	173400	Maran Gas Maritime
Daewoo 2444	GT NO 96	MEGI	DSME	2014	01/01/2019	173400	BP
Mitsubishi Nagasaki 2323	Moss	STaGE	Mitsubishi H.I.	2015	01/01/2019	177000	MOL
Maran Gas Chios	GT NO 96	MEGI	DSME	2015	01/01/2019	173400	Maran Gas Maritime
Pan Africa	GT NO 96	TFDE	Hudong-Zhonghua	2014	01/01/2019	174000	Teekay LNG
Maran Gas Hydra	GT NO 96	MEGI	DSME	2015	01/01/2019	173400	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 = 29th March 2018

Fearnley LNG

Name	Yard	Containment System	Capacity	Propulsion	Delivery Date	Ordered	Primary Owner
Hyundai Samho S856	TZ Mk. III	MEGI	Hyundai Heavy	2015	01/01/2019	174000	Teekay LNG
Gaslog Gladstone	TZ Mk. III	XDF	Samsung	2014	01/01/2019	174000	GasLog
Hyundai Samho S857	TZ Mk. III	MEGI	Hyundai Heavy	2015	01/01/2019	174000	Teekay LNG
Daewoo 2445	GT NO 96	MEGI	DSME	2014	01/02/2019	173400	BP
Kawasaki Sakaide 1734	Moss	STRH	Kawasaki	2015	01/03/2019	177000	MOL
Kawasaki Sakaide 1735	Moss	STaGE	Kawasaki	2015	01/03/2019	177000	MOL
Daewoo 2446	GT NO 96	MEGI	DSME	2014	01/03/2019	173400	BP
Mitsubishi Nagasaki 2326	Moss	STaGE	Mitsubishi H.I.	2015	01/03/2019	180000	NYK
Mitsubishi Nagasaki 2327	Moss	STRH	Mitsubishi H.I.	2015	01/03/2019	180000	NYK
Hyundai Ulsan 2937	GTT Mark III Flex	XDF	Hyundai Heavy	2016	01/04/2019	180000	SK Shipping
Jmu Tsu 5073	SPB	TFDE	Japan Marine United Corp (Jmu)	2014	01/05/2019	165000	MOL
Diamond Gas TBN		STaGE	Mitsubishi H.I.	2015	01/05/2019	165000	Mitsubishi
Hyundai Ulsan 2964	GTT Mark III Flex	MEGI	Hyundai Heavy	2017	01/05/2019	180000	Knutsen
Flex Constellation	GT NO 96	MEGI	DSME	2017	01/06/2019	173400	John Fredriksen
Hyundai Ulsan 2963	GTT Mark III Flex	MEGI	Hyundai Heavy	2017	01/06/2019	180000	Knutsen
Hyundai Ulsan 2938	GTT Mark III Flex	XDF	Hyundai Heavy	2016	01/07/2019	180000	SK Shipping
Daewoo 2430	GT NO 96	TFDE - Azipod	DSME	2014	01/07/2019	172000	Teekay LNG
Maran Gas Syros	GT NO 96	MEGI	DSME	2014	01/07/2019	173400	Maran Gas Maritime
Gaslog Windsor	GTT Mark V	XDF	Samsung	2016	01/07/2019	180000	GasLog
MOL HUDONG-ZHONGHUA 1/4	GT NO 96	MEGI	Hudong-Zhonghua	2017	01/07/2019	174000	MOL
Kawasaki Sakaide 1729	Moss	TFDE	Kawasaki	2014	01/08/2019	155000	MOL
Daewoo 2431	GT NO 96	TFDE - Azipod	DSME	2014	01/08/2019	172000	Teekay LNG
Flex Courageous	GT NO 96	MEGI	DSME	2017	01/08/2019	173400	John Fredriksen
Jmu Tsu 5072	SPB	TFDE	Japan Marine United Corp (Jmu)	2014	01/09/2019	165000	MOL
Daewoo 2432	GT NO 96	TFDE - Azipod	DSME	2014	01/09/2019	172410	MOL
Mitsubishi Nagasaki 2322	Moss	STaGE	Mitsubishi H.I.	2015	01/09/2019	177000	MOL
Daewoo 2466	GT NO 96	MEGI	DSME	2016	01/10/2019	173400	Maran Gas Maritime
Daewoo 2433	GT NO 96	TFDE - Azipod	DSME	2014	01/10/2019	172000	Teekay LNG
MOL HUDONG-ZHONGHUA 2/4	GT NO 96	MEGI	Hudong-Zhonghua	2017	01/10/2019	174000	MOL
Daewoo 2467	GT NO 96	MEGI	DSME	2016	01/11/2019	173400	Maran Gas Maritime
Daewoo 2489	GT NO 96	MEGI	DSME	2015	01/11/2019	173400	BWGas
Daewoo 2434	GT NO 96	TFDE - Azipod	DSME	2014	01/11/2019	172000	Teekay LNG
Marvel Swan	GTT Mark III Flex	MEGI	Imabari	2015	01/01/2020	178000	K-Line
MOL HUDONG-ZHONGHUA 3/4	GT NO 96	MEGI	Hudong-Zhonghua	2017	01/01/2020	174000	MOL
MOL HUDONG-ZHONGHUA 4/4	GT NO 96	MEGI	Hudong-Zhonghua	2017	01/04/2020	174000	MOL
HHI NYK/EDF	GTT Mark III Flex	XDF	Hyundai Heavy	2018	30/04/2020	174000	NYK
Daewoo 2478	GT NO 96	MEGI	DSME	2017	31/05/2020	173400	Maran Gas Maritime
Samsung 2213	GTT Mark V	XDF	Samsung	2017	01/06/2020	180000	GasLog
HHI Cardiff		XDF	Hyundai Heavy	2018	01/06/2020	174000	Cardiff Marine
HHI Sovcomflot		XDF	Hyundai Heavy	2018	01/06/2020	174000	Sovcomflot
Daewoo 2469	GT NO 96	MEGI	DSME	2016	30/06/2020	173400	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 = 29th March 2018

Fearnley LNG

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 / Lucia Ambition	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	Aman Hakata	18,800	LNG	Malaysia - Japan	Yes	Perbadanan/NYK
2000	Triputra (ex Surya Satsuma)	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	Norgas Creation	10,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2010	Norgas Innovation	10,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2011	Akebono Maru	3,556	LNG	Japan	Yes	Chuo Kaiun
2011	Norgas Bahrain Vision	12,000	LNG/LPG/Ethylene	Worldwide	No	Teekay
2011	Norgas Conception	10,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2011	Norgas Invention	10,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2011	Norgas Unikum	12,000	LNG/LPG/Ethylene	Worldwide	No	Teekay
2012	Coral Energy	15,600	LNG	Northwest Europe/Baltics	Yes	Anthony Veder
2013	Coral Anthelia	6,500	LNG/Ethylene			Anthony Veder
2013	JX Energy TBN	2,500	LNG	Japan	Yes	JX Energy
2013	Kakuyu Maru	2,500	LNG	Japan	Yes	Tsurumi Sunmarine
2014	LNG-Oil combi**	2,000	LNG	Germany	Yes	Veka
2014	Short Sea LNG Tanker **	4,000	LNG	Germany	Yes	Veka
2015	10 small carriers TBN**	5,000	LNG			Bimantara Group
2015	Jahre TBN**	6,200	LNG	Norway	Yes	Donsotank/Jahre Marine
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	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 Inland bunker**	800	LNG	Germany	Yes	Veka
2015	Norgas TBN**	17,000	LNG/LPG/Ethylene	Worldwide		Norgas Carriers
2015	Norgas TBN**	17,000	LNG/LPG/Ethylene	Worldwide		Norgas Carriers
2015	PetroChina TBN	30,000	LNG	China		PetroChina
2015	TBN	14,000	LNG	China	Yes	Zhejiang Huaxiang
2015	TBN 1	27,500	LNG	China?		Danyang?
2015	TBN 2	27,500	LNG	China?		Danyang?
2015	TBN 3	27,500	LNG	China?		Danyang?
2016	Clean Jacksonville	2,200	LNG	US Coast	Yes	CME
2016	Dalian TBN	28,000	LNG	China	Yes	Dalian Inteh Group
2016	Hai Yang Shi You 301	30,000	LNG	Bali FSU	Yes	CETS (CNOOC)
2016	JS Ineos Indepence	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	JS Ineos Innvovation	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	JS Ineos Inspiration	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	LNG Prime	2,250	LNG	Northwest Europe	Yes	Veka Deen LNG
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 = 12th February 2018

Small-LNG.com

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	Cardissa	6,500	LNG	Northwest Europe	Yes	Shell
2017	Yuan He 1	30,000	LNG	China	Yes	CSR
2017	ENGIE Zeebrugge	5,000	LNG	Northwest Europe	Yes	NYK
2017	CME TBN†	2,200	LNG	US Coast	Yes	CME
2017	CME TBN†	2,200	LNG	US Coast	Yes	CME
2017	Coral EnergICE	18,000	LNG	Northwest Europe/Baltics	Yes	Anthony Veder
2017	Coralius	5,800	LNG	Northwest Europe/Baltics	Yes, for Skangas	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	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	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
2017	Oizmendi	600	LNG	Bilbao	Yes	Itsas Gas
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	Shell Bunker Barge TBN 4	3,000	LNG	Northwest Europe	Yes	Shell
2018	Bernhard Schulte TBN	7,500	LNG	Baltic	Yes	Bernhard Schulte
2018	CME TBN†	2,200	LNG	US Coast	Yes	CME
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
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	Stolt TBN (option)	7,500	LNG		Yes	Stolt-Nielsen Gas
2020	Stolt TBN (option)	7,500	LNG		Yes	Stolt-Nielsen Gas
2020	Shell Bunker Barge	4,000	LNG	US Coast	Yes	Q-LNG Transport / Harvey Gulf
2020	Total TBN	18,600	LNG	NWE	Yes	MOL
2021	Stolt TBN (option)	7,500	LNG		Yes	Stolt-Nielsen Gas

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 = 12th February 2018

Small-LNG.com