LNG Shipping News

AN LNG JOURNAL TITLE ON LNG CARRIERS | 6 July 2017

Qatar to increase LNG output

Qatar Petroleum, the world's largest LNG producer, plans to increase output by around 30% within seven years.

The state-run oil and gas producer is doubling output capacity target to 4 bill cu ft per day at a new project in the North Field, Qatar's section of the world's biggest natural gas deposit, CEO Saad Sherida Al Kaabi said in a news conference on Tuesday.

This will raise Qatar's total LNG production to 100 mill tonnes per year from its current level of 77 mill tonnes, he said, also claiming that LNG demand was growing faster than that for oil.

"LNG supplies are abundant now, and there are many projects under development, but the expected growth in demand is very large," he reportedly said, according to Bloomberg. "All the studies show that between 2021 and 2024 there will be a shortage of gas because of higher demand. Therefore, the launch of our project will be between 2022 and 2024, which is the period when there will be market demand."

Saad al-Kaabi, CEO Qatar Petroleum

He also revealed that Qatar won't halt pipeline shipments of natural gas to the UAE, despite the Emirates along with Saudi Arabia and other Gulf states seeking to isolate the Persian Gulf sheikhdom in a regional dispute.

Qatar's neighbours insist that it cuts ties with Iran, with which it shares the huge offshore gas field. In reply, Qatar has denied allegations that it sponsors terrorism.

Life Clinic mentors Maran Gas

Life Clinic Group acted as coach, mentor and presenter to the Angelicoussis Group companies, including Maran Gas Management.

This involved a human resources empowerment programme entitled; "Resilience: The skill towards safe & peak performance", a coach the trainers workshop.

Executives of the Group companies' confirmed that they were impressed by the programme and committed themselves to implement it to the largest possible extent in the coming years, Life Clinic claimed.

Keynote speakers were Dr Nancy Mallerou, Founder & CEO of Life Clinic Group and Mrs Lefki Avdi, head of corporate programmes.

In the first session, keynote speakers presented the programmes five modules, specifically:

- What is resilience?
- Change is part of life.
- The power of changing the angle of view to events.
- The essence of personal euphoria and prosperity.
- Adoption of decisive action.

All the techniques used for delivering each module were presented by highly interactive methodology, through the use of audio-visual material, real-life simulated exercises, humour and dynamic dialogue.

In the second session, Dr Mallerou introduced coaching techniques and tools to the participants and the programme's future in-house instructors, including strategies for teaching, speaking, guiding and inspiring audiences.

The programme was completed with the presentation of all the modules by the trainees.

SHIPPING NEWS AGENDA

BUSINESS

MARKETING

TECHNOLOGY

LNG ORDERBOOK

Rates to remain low this year

Amid a growing number of LNG importing nations, the demand for natural gas is increasing, especially from Asia.

With new players, a growing fleet and changing patterns, the LNG trade is undergoing a remarkable transformation, becoming more international, flexible and dynamic, said DNV GL's Jakub Walenkiewicz, writing in the class society's 'Gas Carrier Update' publication.

A substantial increase of gas production, combined with significant additions to both liquefaction and regasification capacity have changed the market fundamentals.

Jakub Walenkiewicz, DNV GL's markets guru

After years of stagnation, seaborne trade grew by 7%, adding 17 mill tonnes of new cargo. This demand growth was driven predominantly by China and India, but also by newcomers such as Pakistan, Egypt and Jordan. We also expect other countries such as Thailand, Vietnam and Singapore to play an increasing role as importers, Walenkiewicz said.

As 85% of newly constructed import terminals (or FSRU projects) are located in Asia, a substantial part of the new demand will be satisfied by sea transport. Clarksons Research expects a continued strong growth of seaborne trade, reaching 8% in 2018.

This year, a modest 25.5 bill cu m increase in liquefaction capacity is expected, mainly coming from Australian Gorgon (T3), Wheatstone LNG (T1) and the US Cheniere Sabine Pass (T3 and T4). A much larger increase is expected in 2018 when 43.8 bill cu m of new capacity will come on stream and in 2019 when another 47.8 bill cu m will be added.

Most of the 2018 additions will come from Australia whereas 2019 growth will be dominated by US export facilities. The US seems to be introducing new dynamics, such as an increased tonne/mile demand, attractive price arbitrage and much more flexible contract terms.

Testing markets

The US is testing potential markets, such as Latin America and Europe, as well as the Far East, which, due to its distance, generates the highest tonne/mile demand. Shipping 1 mill tonnes of US gas to the Far East per annum requires around 1.7 ships, whereas the comparable trade originating in Australia generates a demand for only 1.1 ships.

Most of the traditional Asian gas contracts are based upon oil-linked prices. However, in the US, gas is priced according to the Henry Hub Gas Index and thus is not sensitive to changes in the oil industry. It is not only decoupled from oil but also cheap, Walenkiewicz said.

For example, with current freight rates at around $40,000 per day, a price difference of $6/mBTU FoB in the US, versus $8/mBTU in Japan, may create an arbitrage of some $0.5/mBTU, which translates to $1 mill per cargo.

It may still take a while for LNGCs to experience higher earnings, as the order book stands at over 120 ships. Deliveries in 2017 will reach 53 vessels and in 2018 the fleet will grow by another 41 LNGCs – an estimated growth of 10% and 7%, respectively. ■

'Prelude' under tow to Australia

Royal Dutch Shell's 'Prelude', the world's largest FLNG, left Samsung Heavy Industries shipyard in Geoje, South Korea under tow at the end of last month.

The LNGC, constructed by Technip Samsung Consortium, is being towed around 3,600 miles to North West Australia, where the next phase of the project will begin.

On arrival at the Prelude offshore gas field, 295 miles north-north east of Broome, Western Australia, pre-installed mooring chains will be lifted from the seabed and secured to the facility. Once secure, the hook-up and commissioning process will begin.

The 488 m long and 74 m wide FLNG is being towed by three POSH Terasea tugs. A fourth tug is acting as an escort vessel. The convoy is due to arrive on site around 30th July. ■

The giant FLNG 'Prelude' seen at the start of her tow to Australia

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Port Arthur LNG takes a step closer

The respective subsidiaries of Sempra Energy and Woodside Petroleum, Sempra LNG & Midstream and Woodside Energy (USA), have signed a memorandum of understanding (MOU) with KOGAS regarding the Port Arthur LNG liquefaction project.

The MOU provides a framework for co-operation and joint discussion by the parties regarding key aspects of the project, including engineering and construction work, operations and maintenance activities, feed gas sourcing, LNG offtake and KOGAS as a potential purchaser of LNG from, and equity participant in, the Port Arthur LNG project.

"We're pleased to be collaborating with one of the world's largest LNG buyers and importers," said Octávio Simões, president of Sempra LNG & Midstream. "KOGAS' expertise and knowledge of the LNG market will complement Sempra's and Woodside's extensive natural gas infrastructure development and combined marketing and operational experience to continue advancing the Port Arthur LNG project."

"Woodside is delighted to further our long-term relationship with KOGAS, one of the LNG industry's leading buyers and investors," said Reinhardt Matisons, Woodside's executive vice president of marketing, trading and shipping. "We look forward to working with KOGAS and other potential buyers to advance the Port Arthur LNG project."

In February, 2016, Sempra LNG & Midstream and Woodside Energy (USA) signed a project development agreement to provide a framework for the sharing of costs of the project related to the development, technical design, permitting and marketing of the proposed liquefaction project.

The project has been designed to include two natural gas liquefaction trains, LNG storage tanks, vessel berths and ancillary facilities.

Ongoing development of the project is contingent upon: completing required commercial agreements; acquiring all necessary permits and approvals; securing financing commitments; securing potential incentives and satisfying other conditions before making a final investment decision (FID) to proceed.

The latest MOU does not commit any party to buy or sell LNG or otherwise participate in the Port Arthur LNG project, the companies stressed. ■

Port Arthur LNG has signed a MoU with KOGAS

NEWS NUDGES

MOL orders four LNGCs

Mitsui OSK Lines (MOL) has signed a long-term charter contracts for four 174,000 cu m LNGCs to serve the Yamal LNG project.

They will be delivered in 2019 and 2020 onwards to a wholly-owned subsidiary of MOL. The four LNGCs will transport gas transhipped from a European terminal, probably Zeebrugge.

Broking sources later reported that four LNGCs had been ordered by MOL at Hudong-Zhonghua for around $185 mill each.

Another rumoured newbuilding order concerned GasLog, which was believed to have ordered two 174 000 cu m LNGCs at Hyundai Heavy Industries (HHI).

The vessels will be fitted with tri-fuel diesel-electric propulsion units with an option to switch to 2-stroke diesel engines with low-pressure gas injection, news sources said.

They will have a boil off rate of 0.09% and relatively low fuel consumption.

GasLog is currently involved in a joint venture with HHI, DNV GL and GTT to develop the next generation LNGCs.

*****LNG SN's 'World LNG Order Book' will be updated for the next issue, due to be published on 20th July.*

Lithuania awards first US LNG contract

Lithuania's state-owned gas trader Lietuvos Duju Tiekimas (LDT) has signed a contract to buy LNG directly from the US, according to a Reuters report.

The company expects to receive a delivery in the second half of August from Cheniere Energy. This move is seen as part of Lithuania's efforts to diversify its gas suppliers and reduce its reliance on Russia's Gazprom.

LDT, part of state-owned energy group Lietuvos Energija, signed a deal last year with Koch Supply & Trading for LNG supplies throughout 2017.

The Klaipeda LNG terminal broke Russia's Gazprom gas supply monopoly in the Baltic States when it came online in 2014 and now provides Lithuania with roughly half of its gas, Reuters said.

State-run Polish gas firm PGNiG received its first US LNG spot delivery from Cheniere Energy last month.

Jangkrik field's first LNG cargo delivered

The first liquefied natural gas (LNG) cargo from the Jangkrik field was delivered to the Tanjung Benoa regasification terminal in Bali last month from the LNG Bontang refinery in East Kalimantan.

The delivery was part of a long-term contract with state-owned oil and gas giant Pertamina. The Upstream Oil and Gas Regulatory Special Task Force (SKKMigas) deputy chairman, Sukandar, said that a majority of the gas produced from the Muara Bakau field would be used for fertiliser factories and other domestic industries where it was needed.

In addition to industrial use, the LNG will also be used to help support the power sector in eastern Indonesia.

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NYK partners with Kyushu

NYK and Kyushu Electric Power Co have agreed to co-operate in LNG transportation, among other services.

This agreement will allow Kyushu the option of using NYK LNGCs for short-term LNG transport demands, enabling the Japanese shipowner to improve its profitability through efficient vessel usage and the utility company to improve its flexibility in LNG shipments.

In a separate move, NYK has chartered the LNGC, 'Grace Barleria' to Kyushu. The contract started last month.

Under the terms of the charter, she will ship LNG from various projects to Japan, such as the Wheatstone LNG project in Australia, for about 11 years.

'Grace Barleria' has been chartered to Kyushu for about 11 years

Freeport LNG in Train 4 FERC filing

Freeport LNG Development (FLNG) has filed a formal application with the US Federal Energy Regulatory Commission (FERC) for authorisation to site, construct and operate a fourth liquefaction train (Train 4).

FLNG also announced that it was starting the front-end engineering and design (FEED) for Train 4.

This train is being designed with a nominal production capacity of 5.1 mill tonnes per annum. Construction is expected to start by the end of 2018, with operations commencing in 2022.

The first three liquefaction trains are currently under construction and are scheduled to commence operations between the fourth quarter of 2018 and the third quarter of 2019. LNG will be exported from the terminal by LNGCs transiting through the Freeport Harbor Channel in Texas.

About 13.4 mill tonnes per year of the production capacity from the first three liquefaction trains has been contracted under use-or-pay liquefaction tolling agreements with Osaka Gas, JERA Energy America, BP Energy Co, Toshiba Corp and SK E&S LNG.

The original Freeport LNG facilities were designed and installed to import LNG into the US in response to forecast declines in domestic natural gas supplies. Construction on the import project started in January, 2005 and was completed in June, 2008.

With the huge growth in domestic shale gas production, Freeport LNG began to develop the liquefaction project in 2010. Construction started in late 2014. ■

KOGAS to receive first Cheniere LNG cargo

Korea Gas Corp (KOGAS) was due to receive its first LNG cargo under a long-term supply deal with US exporter Cheniere Energy this month.

The 74,000-tonne LNG cargo was loaded from Cheniere's Sabine Pass export terminal in Louisiana on the 'SM Eagle', which was due to arrive at Tongyeong, South Korea on 2nd July, according to a Reuters report.

This was the first cargo in a 20-year contract, under which KOGAS will receive 2.8 mill tonnes of LNG per year from Cheniere.

The vessel loaded on 2nd June and then passed through the Panama Canal, according to Thomson Reuters Eikon shipping data.

In a separate move, KOGAS has awarded a Won1.27 trill ($1.1 bill) contract to Korea Line Corp (KLC) to ship LNG.

Yonhap news agency reported that under the terms of the contract, KLC, now part of the Samra Midas (SM) Group, will transport LNG through 30th May, 2037, the company reportedly said in a regulatory filing. ■

NEWS NUDGE

Hyproc sheds old ladies

Sonatrach subsidiary Hyproc has sold two elderly LNGCs for scrap, according to brokers reports.

The 1977-built 'Larbi Ben M'Hidi and the 1979-built 'Bachir Chihani' were reportedly sold to Turkish breakers for $236 per ldt each on the basis of 'as is' Arzew.

Keppel wins 'LNG Lerici' upgrade

Keppel Shipyard, a wholly-owned subsidiary of Keppel Offshore & Marine, is to carryout major refurbishment for an EXMAR Ship Management LNGC.

Work on the 'LNG Lerici' has commenced and is expected to be completed in the first quarter of next year.

EXMAR gains funding for FLNG project

EXMAR has fully secured together with Bank of China, Sinosure and a leading European financial institution, a $200 mill financing for 'Caribbean FLNG'.

'Caribbean FLNG' is currently being built at Wison Offshore and Marine and will be delivered in the coming weeks. The proceeds from the financing will be used to pay the last instalment to the shipyard.

Night time Panama Canal LNGC transits planned

The Panama Canal Authority is considering night time LNGC transits using the new larger locks by next year.

At present, LNGCs can only transit during daylight hours.

On 26th June, the company celebrated the one-year anniversary of the inauguration of the expanded canal.

By that date, some 138 LNGCs had transited the canal via the new locks, representing 9.1% of the so called 'Neopanamax' tonnage to pass through.

The canal authority claimed that more than 90% of the global LNG fleet can now transit the waterway, opening new markets and allowing US LNG producers to ship natural gas to Asia at competitive prices.

An LNG terminal is also planned on the Atlantic side of the waterway to provide LNG bunkering and redistribution services to the region. ■

Keppel set to deliver world's first FLNG conversion

Keppel Offshore & Marine's (Keppel O&M) wholly-owned subsidiary, Keppel Shipyard, is to deliver the world's first converted FLNGV in the coming weeks.

She was named 'Hilli Episeyo' at a ceremony at Keppel Shipyard on 2nd June and is owned by Golar Hilli Corp, a subsidiary of Golar LNG.

Upon completion, the FLNGV will operate offshore Kribi, Cameroon for Société Nationale des Hydrocarbures and Perenco Cameroon.

Chris Ong, Keppel O&M CEO, said, "We are proud to be able to deliver the world's first FLNGV conversion in partnership with Golar LNG within three years and with a commendable safety record. By combining our expertise from a variety of complex offshore conversion projects and our capabilities in executing LNG-related EPC (engineering, procurement, construction) projects, we are able to offer innovative and reliable floating liquefaction solutions to meet the growing midstream needs of the LNG industry.

"Compared to newbuilds, converted FLNGVs are significantly more cost-effective and faster to market, without compromising safety and processing capabilities. With the experience gained from this first FLNGV conversion project, we are in a unique position to provide customers with reliable end-to-end solutions for the EPC and commissioning of FLNGVs, as well as FSRU conversions," he said.

Moss-type LNGC

'Hilli Episeyo' was converted from the 1975-built 125,000 cu m Moss-type LNGC 'Hilli'.

Sponsons were added on both sides of the hull to house the topside equipment comprising of pretreatment systems, four patented PRICO single mixed refrigerant liquefaction trains, boil-off gas compression and offloading equipment. The FLNGV is designed for a liquefaction capacity of about 2.4 mill tonnes of LNG per annum.

Oscar Spieler, Golar LNG CEO, said, "Being at its final leg towards completion, 'Hilli Episeyo' represents a game changer in the LNG industry with its fast track, low cost project execution. The development of this FLNGV positions us as forerunners in providing offshore liquefaction solutions to meet the growing demand for liquefied natural gas.

The world's first FLNGV conversion is nearing completion in Singapore

"We are uniquely positioned to take on projects also in a low commodity price environment and determined to enable unlocking of reserves from remote, marginal and stranded gas fields," he said.

With the global push towards cleaner energy, demand for natural gas is expected to increase significantly. FLNGV solutions enable operators to overcome the geographic, technical and economic limitations of developing natural gas resources located in marginal fields, while FSRUs help reach consumers in remote areas, Keppel said.

Keppel also claimed that it had accumulated a wealth of experience and capabilities in LNG technology ever since its first LNGC repair was undertaken in 1990. The yard also converted the world's first FSRU and is currently building two dual-fuel diesel LNG harbour tugs, based on its proprietary design and two dual-fuel LNGCs.

Through its Gas Technology Development arm, Keppel has developed a suite of solutions for the LNG industry, including FLNGVs that can work in combination with FSUs to provide cost-effective solutions for gas export terminals, which are faster to market compared to land-based terminals. ■

Knutsen newbuilding to be fitted with GTT system

GTT has received an order from Hyundai Heavy Industries (HHI) to install a Mark III Flex containment system on board a newbuilding LNGC.

The Ulsan yard will build the 180,000 cu m vessel for Knutsen subsidiary NORSPAN LNG XII. Delivery is scheduled in 2019.

At present, the Knutsen fleet consists of 10 LNGCs in service and one on order. The LNGCs are all fitted with GTT membrane containment systems.

Mark III Flex, the technology adopted for this latest LNGC, allows a boil-off rate of 0.085% V per day.

Philippe Berterottière, GTT Chairman and CEO, said: "It is the second order of this type this year with the HHI shipyard and the shipowner Knutsen. It highlights the excellent relationship we have with these two key players of the maritime industry."

Knutsen was also believed to have ordered a further 180,000 cu m LNGC, plus one option, from HHI with delivery scheduled for the first half of 2020.

Broking sources said that this was the second order placed by the Norwegian gas ship owner this year. ■

Wood Group secures FEED for Greek project

Wood Group has won a front end engineering design (FEED) contract from Gastrade for the Alexandroupolis Independent Natural Gas System (INGS) offshore Greece.

The project, to develop an FSRU, will create a new natural gas gateway to the markets of south-eastern and central Europe, the company said.

Wood Group's subsea team will perform the design and engineering services for the Alexandroupolis FSRU and its sub-systems, which will support the final investment decision (FID) for the project, planned for late 2017.

Bob MacDonald, CEO of Wood Group's Specialist Technical Solutions business, said: "This contract brings our global expertise and technical solutions to a new client and we look forward to working with Gastrade, as the main engineering contractor for developing this FEED.

"Our subsea capabilities combined with the engineering proficiency of our people and cost effective technical solutions, position us well to deliver this milestone European project," he claimed. ■

WORLD LNG CARRIER ORDERBOOK

Name	Segment	Status	Yard	Design	Prop	Capacity	Delivery Date	Ordered	Imo	Hull No	Primary Owner
Asia Venture	LNGC	Order	Samsung	TZ Mk. III	TFDE	160000	01/04/2017	2012	9680190	2070	Chevron
Kawasaki Sakaide 1718	LNGC	Order	Kawasaki	Moss	TFDE	180000	01/04/2017	2013	9698123	1718	K-Line
Daewoo 2450	LNGC	Order	DSME	GT NO 96	TFDE	174000	01/05/2017	2014	9761839	2450	Korea Line
Jmu Tsu 5070	LNGC	Order	Japan Marine United Corp (Jmu)	SPB	TFDE	165000	01/05/2017	2014	9736092	5070	MOL
Hudong-Zhonghua H1717a	LNGC	Order	Hudong-Zhonghua	Membrane	TFDE	174000	01/06/2017	2012	9672844	H1717A	China LNG Shipping Holdings
Hudong-Zhonghua H1719a	LNGC	Order	Hudong-Zhonghua	Membrane	TFDE	174000	01/06/2017	2013	9694751	H1719A	China LNG Shipping Holdings
Oceanic Breeze	LNGC	Order	Mitsubishi H.I.	Moss	STRH	155300	01/07/2017	2013	9698111	2310	K-Line
Seri Cempaka	LNGC	Order	Hyundai Heavy	Moss	STRH	150000	01/07/2017	2013	9714290	2731	Petronas
Murex	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/07/2017	2013	9705641	2416	Teekay LNG
Daewoo 2462	LNGC	Order	DSME	GT NO 96	TFDE	180000	01/07/2017	2015	9771913	2462	MOL
Bishu Maru	LNGC	Order	Kawasaki	Moss	TFDE	164700	01/08/2017	2013	9691137	1713	K-Line
Seri Camar	LNGC	Order	Hyundai Heavy	Moss	STRH	150000	01/08/2017	2013	9714305	2732	Petronas
Jmu Tsu 5071	LNGC	Order	Japan Marine United Corp (Jmu)	SPB	TFDE	165000	01/08/2017	2014	9752565	5071	NYK
Daewoo 2417	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/08/2017	2013	9705653	2417	Teekay LNG
Daewoo 2421	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	01/08/2017	2014	9768368	2421	Dynagas
Hudong-Zhonghua H1718a Holdings	LNGC	Order	Hudong-Zhonghua	Membrane	TFDE	174000	01/09/2017	2013	9694749	H1718A	China LNG Shipping
Samsung 2153	LNGC	Order	Samsung	KC-1	TFDE	174000	01/09/2017	2014	9761803	2153	SK Shipping
Samsung 2154	LNGC	Order	Samsung	KC-1	TFDE	174000	01/09/2017	2014	9761815	2154	SK Shipping
Daewoo 2426	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	30/09/2017	2014	9750658	2426	MOL
Castillo De Caldelas	LNGC	Order	Imabari	TZ Mk. III	MEGI	178000	01/10/2017	2014	9742819	8188	Elcano
Mitsubishi Nagasaki 2316	LNGC	Order	Mitsubishi H.I.	Moss	STRH	153000	01/10/2017	2014	9743875	2316	NYK
SK Resolute	LNGC	Order	Samsung	TZ Mk. III	XDF	182000	01/10/2017	2013	9693173	2081	SK Shipping
Hudong-Zhonghua H1720a	LNGC	Order	Hudong-Zhonghua	Membrane	TFDE	174000	01/10/2017	2012	9672818	H1720A	China LNG S Holdings
Jmu Tsu 5072	LNGC	Order	Japan Marine United Corp (Jmu)	SPB	TFDE	165000	01/10/2017	2014	9758832	5072	MOL
Eduard Toll	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	31/10/2017	2014	9750696	2423	Teekay LNG
Castillo De Merida	LNGC	Order	Imabari	TZ Mk. III	MEGI	178000	01/11/2017	2014	9742807	8177	Elcano
Seri Cemara	LNGC	Order	Hyundai Heavy	Moss	STRH	150000	01/12/2017	2014	9756389	2735	Petronas
Kawasaki Sakaide 1731	LNGC	Order	Kawasaki	Moss	TFDE	177000	01/12/2017	2015	9774135	1731	MOL
Daewoo 2453	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/12/2017	2014	9770921	2453	Teekay LNG
Rudolf Samoylovich	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	01/12/2017	2014	9750713	2425	Teekay LNG
Daewoo 2422	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	01/12/2017	2014	9768370	2422	Dynagas
Daewoo 2424	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	31/12/2017	2014	9750701	2424	MOL
Flex Endeavour	LNGC	Order	DSME	GT NO 96	MEGI	172400	01/01/2018	2014	9762261	2447	John Fredriksen
Flex Enterprise	LNGC	Order	DSME	GT NO 96	MEGI	172400	01/01/2018	2014	9762273	2448	John Fredriksen
SK Audace	LNGC	Order	Samsung	TZ Mk. III	XDF	182000	01/01/2018	2013	9693161	2080	SK Shipping
Hudong-Zhonghua H1664a	LNGC	Order	Hudong-Zhonghua	GT NO 96	TFDE	174000	01/01/2018	2014	9750232	H1664A	Teekay LNG
Pan Asia	LNGC	Order	Hudong-Zhonghua	GT NO 96	TFDE	174000	01/01/2018	2014	9750220	H1663A	Teekay LNG
BW Tulip	LNGC	Order	DSME	GT NO 96	MEGI	173000	01/01/2018	2014	9758064	2435	BWGas
Daewoo 2460	LNGC	Order	DSME	GT NO 96	MEGI	174000	01/01/2018	2014	9766889	2460	Chandris
Teekay NB-6	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/02/2018	2014	9770933	2454	Teekay LNG
Hyundai Ulsan 2800	LNGC	Order	Hyundai Heavy	TZ Mk. III	XDF	174000	01/02/2018	2014	9748899	2800	GasLog
Daewoo 2443	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/02/2018	2014	9766554	2443	BP
Jmu Tsu 5073	LNGC	Order	Japan Marine United Corp (Jmu)	SPB	TFDE	165000	01/02/2018	2014	9758844	5073	MOL
Samsung 2130	LNGC	Order	Samsung	TZ Mk. III	XDF	174000	01/03/2018	2014	9744013	2130	GasLog
Daewoo 2442	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/03/2018	2014	9766542	2442	BP
Hyundai Ulsan 2801	LNGC	Order	Hyundai Heavy	TZ Mk. III	XDF	174000	01/03/2018	2014	9748904	2801	GasLog
MOL E.On.	LNGC	Order	DSME	GT NO 96	TFDE	179900	01/04/2018			TBN	MOL
Kawasaki Sakaide 1720	LNGC	Order	Kawasaki	Moss	TFDE	164000	01/04/2018	2014	9749609	1720	K-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 = 26 April 2017

Name	Segment	Status	Yard	Design	Prop	Capacity	Delivery Date	Ordered	Imo	Hull No	Primary Owner
Mitusi NB 2 Cameron	LNGC	Order	Kawasaki	Moss	STRH	155000	01/04/2018	2014	9759252	1729	MOL
Daewoo 2441	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/04/2018	2014	9766530	2441	BP
Mitsui Cameron Shi NB 1	LNGC	Order	Samsung	Mark III Flex	TFDE	177000	01/05/2018	2014	9760768	2148	MOL
Samsung 2149	LNGC	Order	Samsung	Mark III Flex	TFDE	177000	01/05/2018	2014	9760770	2149	MOL
Mitsui KHI NB 1	LNGC	Order	Kawasaki	Moss	STRH	155000	01/05/2018	2014	9759240	1728	MOL
Daewoo 2432	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	01/05/2018	2014	9750660	2432	MOL
Daewoo 2430	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	01/05/2018	2014	9750725	2430	Teekay LNG
Daewoo 2455	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/05/2018	2014	9770945	2455	Teekay LNG
Daewoo 2464	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/05/2018	2015	9785158	2464	Chandris
Mitsubishi Nagasaki 2324	LNGC	Order	Mitsubishi H.I.	Moss	STaGE	165000	01/06/2018	2015	9779226	2324	NYK
Daewoo 2458	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/06/2018	2015	9767950	2458	Maran Gas Maritime
Daewoo 2444	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/06/2018	2014	9766566	2444	BP
Daewoo 2427	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	01/06/2018	2014	9768382	2427	Dynagas
Hudong-Zhonghua H1665a	LNGC	Order	Hudong-Zhonghua	GT NO 96	TFDE	174000	01/06/2018	2014	9750244	H1665A	Teekay LNG
Samsung 2107	LNGC	Order	Samsung	TZ Mk. III	MEGI	174000	01/07/2018	2013	9709025	2107	Flex LNG
BW Lilac	LNGC	Order	DSME	GT NO 96	MEGI	173000	01/07/2018	2014	9758076	2436	BWGas
Daewoo 2445	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/07/2018	2014	9766578	2445	BP
Samsung 2150	LNGC	Order	Samsung	Mark III Flex	TFDE	177000	10/07/2018	2014	9760782	2150	MOL
Daewoo 2446	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/08/2018	2014	9766580	2446	BP
Mitsubishi Nagasaki 2323	LNGC	Order	Mitsubishi H.I.	Moss	STaGE	180000	01/08/2018	2015	9774628	2323	MOL
Daewoo 2431	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	01/09/2018	2014	9750737	2431	Teekay LNG
MOL NB 2 Freeport	LNGC	Order	Kawasaki	Moss	STaGE	177000	01/10/2018	2015	9791200	1734	MOL
Mitsubishi Nagasaki 2325	LNGC	Order	Mitsubishi H.I.	Moss	STaGE	165000	01/10/2018	2015	9779238	2325	NYK
Mitsubishi Nagasaki 2326	LNGC	Order	Mitsubishi H.I.	Moss	STaGE	180000	01/10/2018	2015	9796781	2326	NYK
Samsung 2108	LNGC	Order	Samsung	TZ Mk. III	MEGI	174000	31/10/2018	2013	9709037	2108	Flex LNG
Daewoo 2428	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	01/11/2018	2014	9768394	2428	Dynagas
NYK NB 2 Freeport	LNGC	Order	Kawasaki	Moss	STaGE	177000	01/12/2018	2015	9791212	1735	MOL
Mitsubishi Nagasaki 2327	LNGC	Order	Mitsubishi H.I.	Moss	STRH	180000	01/12/2018	2015	9796793	2327	NYK
Daewoo 2429	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	01/12/2018	2014	9768526	2429	Dynagas
Daewoo 2456	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/01/2019	2015	9753014	2456	Maran Gas Maritime
Pan Africa	LNGC	Order	Hudong-Zhonghua	GT NO 96	TFDE	174000	01/01/2019	2014	9750256	H1666A	Teekay LNG
Daewoo 2433	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	01/01/2019	2014	9750749	2433	Teekay LNG
Daewoo 2459	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/01/2019	2015	9767962	2459	Maran Gas Maritime
SK Shipping SK E&S NB1	LNGC	Order	Hyundai Heavy	TZ Mk. III Flex	XDF	180000	01/02/2019	2016	9810549	2937	SK Shipping
Hyundai Samho S856	LNGC	Order	Hyundai Samho	TZ Mk. III	MEGI	174000	01/02/2019	2015	9781918	S856	Teekay LNG
Mitsubishi Nagasaki 2332	LNGC	Order	Mitsubishi H.I.		STaGE	165000	01/02/2019	2015	9810020	2332	Mitsubishi
Samsung 2131	LNGC	Order	Samsung	TZ Mk. III	XDF	174000	01/03/2019	2014	9744025	2131	GasLog
Hyundai Samho S857	LNGC	Order	Hyundai Samho	TZ Mk. III	MEGI	174000	01/03/2019	2015	9781920	S857	Teekay LNG
Mitsubishi Nagasaki 2321	LNGC	Order	Mitsubishi H.I.	Moss	STaGE	177000	01/04/2019	2015	9770438	2321	NYK
Daewoo 2457	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/04/2019	2014	9753026	2457	Maran Gas Maritime
SK Shipping SK E&S NB2	LNGC	Order	Hyundai Heavy	TZ Mk. III Flex	XDF	180000	01/05/2019	2016	9810551	2938	SK Shipping
Mitsubishi Nagasaki 2322	LNGC	Order	Mitsubishi H.I.	Moss	STaGE	177000	01/06/2019	2015	9770440	2322	MOL
Flex Constellation	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/06/2019	2017	9825427	2470	John Fredriksen
Nb Gaslog - Centrica Samsung 2212	LNGC	Order	Samsung	GTT Mark V	XDF	180000	01/07/2019	2016	9816763	2212	GasLog
Flex Courageous	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/08/2019	2017	9825439	2471	John Fredriksen
Hyundai Ulsan 2964	LNGC	Order	Hyundai Heavy	TZ Mk. III Flex	MEGI	180000	01/08/2019	2017	9825568	2964	Knutsen
Samsung 2213	LNGC	Order	Samsung	GTT Mark V	XDF	180000	01/09/2019	2016	9819650	2213	GasLog
Daewoo 2489	LNGC	Order	DSME	GT NO 96	MEGI	173400	01/11/2019	2015	9792606	2489	BWGas
Daewoo 2434	LNGC	Order	DSME	GT NO 96	TFDE - Azipod	172410	01/11/2019	2014	9750672	2434	Teekay LNG
Maran Gas NB1	LNGC	Order	DSME	GT NO 96	MEGI	173400	19/11/2019	2016	9810379	2467	Maran Gas Maritime
Maran Gas NB2	LNGC	Order	DSME	GT NO 96	MEGI	173400	19/11/2019	2016	9810367	2466	Maran Gas Maritime
Trinity J/V (Mitsui & Co.)	LNGC	Order	Imabari	GTT Mark III Flex	MEGI	178000	01/01/2020			TBN	K-Line
Imabari Saijo 8200	LNGC	Order	Imabari		MEGI	178000	01/10/2021	2015	9778923	8200	Trinity LNG Transport SA

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 = 26 April 2017

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	Norgas Carriers
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	Norgas Carriers
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 Innvoation	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 = 24th May 2017

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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
2016	Shell Bunker Barge TBN 1	6,500	LNG	Northwest Europe	Yes	Shell
2016	Shell Bunker Barge TBN 2	6,500	LNG	Northwest Europe	Yes	Shell
2016	Shell Bunker Barge TBN 3	6,500	LNG	Northwest Europe	Yes	Shell
2016	Shell Bunker Barge TBN 4	3,000	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
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
2021	Stolt TBN (option)	7,500	LNG		Yes	Stolt-Nielsen Gas

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