LNG Shipping News

AN LNG JOURNAL TITLE ON LNG CARRIERS 20 July 2017

US to be world's second largest LNG exporter -IEA

The US is on track to become the world's second largest exporter of LNG by the end of 2022, just behind Australia and ahead of Qatar, the International Energy Agency (IEA) has said.

The US could reach second place in the world's LNG export league

Overall, global LNG export capacity could reach 650 bill cu m a year by the end of that year, compared to less than 452 bill cu m a year in 2016, the IEA said in its annual report on the gas markets.

By 2022, Australia would have capacity to export 117.8 bill cu m a year, followed by the US with 106.7 bill cu m a year and Qatar with 104.9 bill cu m a year, the report said.

Australia would stay in pole position by adding 30 bill cu m a year by the end of 2022 to its existing capacity, but the US, which has seen shale gas output surge, would add about 90 bill cu m a year to its current capacity of about 14 bill cu m a year.

"By the end of our forecast period, the US will be well on course to challenging Australia and Qatar for global leadership among LNG exporters," the report said, according to Reuters.

However, the new LNG capacity is being added to an already well-supplied market, while demand is falling in some of the traditionally large importing nations, such as Japan, the IEA said.

Excess capacity

With demand expected to reach 460 bill cu m a year by 2022, the market would have 190 bill cu m a year in excess capacity, putting pressure on gas prices and discouraging new upstream investment.

Current low LNG prices are already making it tougher for exporters, and competition is loosening the typically rigid contracts that have dominated the long-distance trade.

"This change will be further accelerated by the expansion of US exports, which are not tied to any particular destination and so will play a major role in increasing the liquidity and flexibility of LNG trade," the report said.

Qatar said recently it planned to raise its LNG output by 30% to 100 mill tonnes a year (roughly 140 bill cu m a year) in the next five to seven years, in what was seen as a challenge to other exporters, Reuters said (see LNG SN, 6th July).

The IEA report did not assess the impact of Qatar's plans as the extra capacity was expected to be in place after the report's forecast period of 2016-2022, Keisuke Sadamori, the IEA's director of energy markets and security, told Reuters at the report's launch.

Overall, the IEA said global gas production would grow faster than oil and coal in the next five years, helped by low price and ample supply, alongside a growing preference for gas because of its lower emissions compared to other fossil fuels.

Global gas demand was expected to rise by 1.6% a year to 4,000 bill cu m in 2022, slightly higher than last year's forecast of 1.5%, the IEA said. Most of the expected growth was expected to come from developing countries, led by China.

However, most gas is transported by pipeline rather than on ships as LNG. ■

> "By the end of our forecast period, the US will be well on course to challenging Australia and Qatar for global leadership among LNG exporters"
>
> *- IEA*

SHIPPING NEWS AGENDA

Lithuania to buy second US LNG cargo

Lithuania's natural gas supply and trade company Lietuvos Duju Tiekimas (LDT) is to buy a second LNG cargo from the US.

According to local media reports, LDT signed a contract with Spanish trading company Natural Gas Fenosa. Under the terms of the contract, the gas is due to arrive at Klaipeda in mid-September from the US Sabine Pass terminal.

"The additional amount of gas was purchased in light of the needs of clients in Lithuania and other Baltic states. The growing global LNG production capacities are boosting the market liquidity and the availability of moment deals," Dalius Misiunas, CEO of LDT operator Lietuvos Energija, said in a statement.

This will be the fourth LNG shipment purchased by LDT this year.

The first US LNG shipment is expected to arrive in Klaipeda in the second half of August. It was purchased from Cheniere Marketing International. ■

Lithuania has recently contracted its second US LNG cargo

NITC to invest in LNGCs

NITC is considering venturing into the LNG market, as Iran gears up for production of natural gas.

The plans were revealed by Mohammad Reza Shams Dolatabadi, NITC's head of international affairs, Reuters reported. He said that NITC was looking at acquiring LNGCs in three to five years time.

The diversification plans and fleet build-up come as NITC returned to the European tanker market following the lifting of sanctions against Iran in January, 2016.

"Our ships are calling at many European ports and the number of these shipments is increasing day by day," Dolatabadi told Reuters.

Earlier this month, NITC's parent company, National Iranian Oil Company (NIOC), signed a $5 bill deal with Total, marking the return of an European oil major to the country.

"By signing this contract, a lot of doubts with some foreign companies to invest and work in Iran will be resolved, and in fact, this will be the beginning of a return for those who want to invest in Iran, not only in oil industry, but also in other fields not related to oil," Iranian Minister of Petroleum, Bijan Zangeneh, said. ■

GTT to design four LNGC's tanks

At the end of June, GTT received an order for containment systems from the Chinese Shipyard Hudong Zhonghua Shipbuilding (Group) Corp.

This order is to equip four LNGCs which will be built for Mitsui OSK Lines (MOL). They will be fitted with the NO96-L03+ technology and will have a capacity of 174,000 cu m each. The delivery of the first vessel is scheduled for late 2019.

Philippe Berterottière, GTT Chairman and CEO, said: "We are very pleased to further strengthen our relations with our partner Hudong Zhonghua. This is an extraordinary order, a very large and major shipbuilding project to which we are proud to contribute. In addition, the four vessels concerned will be equipped with the technology NO96-L03+, a success for the new GTT technologies recently developed."

The insulation system NO96-L03+ is an evolution of the NO96 technology, which is fitted on board more than 200 vessels. The configuration of the containment system guarantees a boil-off rate of 0.1% cargo volume per day, GTT claimed. ■

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Höegh signs MOUs with Ghanaians and Nakilat

The Regional Maritime University in Ghana (RMU) has signed a Memorandum of Understanding (MoU) with Höegh LNG to support maritime capacity development for both RMU and Ghanaian seafarers.

Quantum Power Ghana has also signed the MoU, which was agreed on 16th June, 2017.

Using a new, purpose built FSRU provided by Höegh LNG, Quantum Power intends to construct, own and operate an LNG terminal facility offshore Tema.

Under the terms of the MoU, Höegh LNG will work with RMU to increase the competence of Ghanaian seafarers, RMU lecturers, Ghanaian pilots and tug Masters to build up local expertise in safely and efficiently operating and handling modern gas carriers.

LNG is set to become a more relevant part of Ghana's energy mix and it is important that Ghana develops its own capacity to handle LNG installations, Höegh LNG said.

The company said that it had a substantial track record in building maritime LNG capacity in other countries in which it operates FSRUs and will draw on the experience to the benefit of Ghana once the FSRU has been deployed.

Hoegh LNG's Sveinung Støhle with Nakilat's Managing Director Eng Abdullah Al-Sulaiti

Representing RMU at the MoU signing were the Vice Chancellor, Prof Elvis Nyarko, while the Norwegian company was represented by Oeyvind Staerk of Höegh LNG AS, Höegh LNG's management company and Quantum Power Ghana was represented by Ruben Atekpe.

Höegh LNG has also signed a MoU with Nakilat to explore FSRU collaboration, as part of its LNG diversification strategy.

Nakilat's managing director, Eng Abdullah Al-Sulaiti, said; "Nakilat views this strategic alliance with Höegh LNG, a leading owner and operator of FSRUs, as a huge stepping stone for further growth. This agreement paves the way for greater business opportunities to create substantial platforms for local players to get involved in the project, exposing them to innovative technologies and expertise that would be beneficial to their growth and the development of Qatar's energy and maritime industry.

"Nakilat is always looking at opportunities of diversifying solutions to deliver clean energy worldwide, supporting the rising global demand of LNG," he said.

Sveinung Støhle, Höegh LNG President and CEO, said; " We are pleased and very proud to be partnering with Nakilat, the largest LNG carrier company and look forward to jointly contribute to expanding the global market for LNG.

"The alliance with Nakilat is a confirmation of Höegh LNG's leading position in the FSRU market and offers the opportunity to further accelerate our market presence beyond the projects we undertake on a sole basis," he said. ■

Golar in charter amendment with DUSUP

Golar LNG Partners has agreed with Dubai Supply Authority (DUSUP), the charterer of the 'Golar Freeze' FSRU, to amend the existing timecharter that was due to end in May, 2020.

DUSUP has two FSRUs on charter but does not currently have full use for 'Golar Freeze' and has been working with Golar Partners to find alternative employment for the FSRU.

Golar Partners and DUSUP will continue to co-operate on the vessel's future employment but in the meantime have agreed to shorten the charter by one year and to remove DUSUP's termination for convenience rights and extension option rights - which ran to 2024.

Golar will receive the right to terminate its obligations under the charter whilst continuing to receive the capital element of the charter, with the exception of the operating costs, until the end of the new charter period in April, 2019.

The charter's operating cost element will be reduced to a nominal amount from November, 2017 and Golar Partners will save costs by putting the vessel into layup pending her new employment.

Golar Partners said that it saw several opportunities for employment of smaller scale FSRUs, such as like 'Golar Freeze' and 'Golar Spirit', which have significantly lower capital cost than newbuilding FSRUs.

This arrangement gives both parties more certainty and enables Golar Partners to re-market the vessel with the clear knowledge of her long term availability from 2018, the company said. ■

EC approves jv to develop Brunsbuttel LNG terminal

Gasunie LNG Holding, Oiltanking and Vopak LNG Holding have met EU Merger Regulation approval to establish a joint venture to own and operate an LNG terminal at Brunsbuttel, Northern Germany.

This decision was said to be a milestone within the feasibility study being conducted by the companies.

The three companies are jointly exploring the possibility of constructing and operating a multi-service LNG terminal (including import and small scale services) at Brunsbuttel, which is close to Hamburg and is located at the entrance of the Kiel Canal.

The feasibility study consists of economic, technical, nautical and regulatory assessments, as well as the permits procedure processes. No financial investment decisions (FID) have been taken thus far. ■

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Funds secured for first Bangladesh LNG project

Excelerate Energy Bangladesh (Excelerate) and IFC, a member of the World Bank Group, have secured debt financing for Bangladesh's first LNG import terminal.

Bangladesh first FSRU project has overcome the funding hurdle

The equity for the country's Moheshkhali floating LNG project had been tied up earlier with IFC coming in with a contribution of $10.8 mill and Excelerate with $43.1 mill.

To be located offshore Moheshkhali island in the Bay of Bengal, the project is estimated to cost $179.5 mill.

IFC helped arrange the debt financing package of $125.7 mill for the LNG project including a loan of $32.8 mill from its own account and the balance from CDC Group, DEG, FMO and JICA. The funding will support the timely construction and installation of the fixed infrastructure required for the project, the companies said.

Bangladesh's first LNG import terminal will enable state-owned energy company Petrobangla, to increase natural gas supply in the country by up to 20%, sufficient to support up to 3,000 MW of power generation capacity.

The construction of the terminal will commence in the fourth quarter of 2017 and is due to come on stream by mid-2018.

"Our partnership with IFC has been essential to the development of this project," said Excelerate's CFO, Nick Bedford. "IFC has demonstrated its commitment to bringing new energy to Bangladesh with the execution of these agreements. Excelerate takes great pride in helping bring sustainable energy solutions to countries with high energy demand, and we expect this project to have a great impact on the wider Bangladeshi economy."

First turnkey project

The terminal is the first fully integrated turnkey floating terminal solution whereby Excelerate will provide all the services under a single contract.

"IFC is committed to a sustained effort towards partnering with Bangladesh in bringing reliable and affordable clean energy to all," said IFC Regional Industry Head, Infrastructure and Natural Resources, Asia/Pacific, Hyun-Chan Cho. "Addressing the issue of depleting gas supplies is critical for the country. We hope this first LNG import facility in Bangladesh will pave the way to expand support to the power sector and industry, promote growth and mitigate climate change impacts."

The Moheshkhali Floating LNG terminal will provide the infrastructure needed for the country to access natural gas from global markets, which is especially important considering declining domestic natural gas reserves, limited hydro and wind resources, scarce land availability for large-scale solar deployment, and increasing dependence on expensive, imported liquid fuels in the country, Excelerate said.

The terminal will include one of Excelerate's existing 138,000 cu m FSRUs, the installation of a subsea buoy system anchored offshore, and the employment of port service vessels during operations. ■

RasGas' 500th Edison cargo delivered

RasGas has completed the 500th LNG cargo delivery to its long term customer, Edison.

This delivery came under a sales and purchase agreement (SPA) signed between Ras Laffan Liquefied Natural Gas Company (II) and Edison in November, 2003, for the delivery of 4.6 mill tonnes of LNG per year.

RasGas' LNGC, 'Al Areesh', delivered the cargo on 1st July, 2017 at the Adriatic LNG Terminal located in the northern Adriatic Sea, about 15 kilometres off the Veneto coastline in Italy.

RasGas' 'Al Areesh' 'arrives at the Adriatic LNG Terminal, marking the 500th SPA cargo delivery to RasGas' long standing customer, Edison

Commenting on this significant milestone, RasGas' CEO, Hamad Mubarak Al Muhannadi, said: "We are very proud to have delivered the 500th LNG SPA cargo to our long-term partner and customer, Edison. This is a milestone delivery that underlines RasGas' continued commitment to the safe and reliable supply of LNG to all of its customers worldwide."

"The 500th LNG SPA cargo is further evidence of the excellent relationship and long term partnership between RasGas and Edison, which started more than 14 years ago with the signing of the long term LNG sales and purchase agreement and the construction of the offshore LNG receiving terminal," said Marc Benayoun, Edison's CEO. ■

King & Spalding advises Jordan Cove

US law firm King & Spalding advised Jordan Cove LNG LLC in a contract for the engineering, procurement and construction of an LNG liquefaction export terminal in Coos Bay, Oregon.

The five-train LNG liquefaction terminal is expected to produce a maximum of 7.8 mill tonnes of LNG per year for export.

It represents the first and most advanced LNG export terminal project on the West Coast of North America and would be the largest single, private investment in the history of southern Oregon, the law firm said.

The King & Spalding team was led by Houston-based global transactions partner Scott Greer and associate Jonathan Katz. ■

Goltens to retrofit BWTS on two LNGCs

Goltens has been awarded a contract to engineer and retrofit OceanSaver ballast water treatment systems (BWTS) on board two of BP Shipping's LNGCs.

The vessels to be retrofitted are the two 138,000 cu m LNGCs - 'British Innovator' and 'British Merchant'.

Goltens will undertake the engineering and prefabrication work this year and then complete the installation services in 2018.

"We look forward to working closely with BP and applying our well-proven process to the retrofit of these two gas carriers in the most efficient manner," said Roy Strand, Goltens Worldwide COO.

Goltens operates centres in Oslo, Miami, Dubai, Singapore, Shanghai, Busan and Groningen in the Netherlands, where the Green Technologies division is headquartered.

The company's Green Technologies division was set up to provide comprehensive support for BWTS retrofit projects, including 3D laser scanning and design engineering, system evaluation and comparisons, total engineering packages; including bill of materials, 3D shipyard installation drawings and instructions and classification referrals, as well as full turnkey installations.

Goltens has been involved in more than 240 projects covering a broad range of vessel types and all of the major BWTS manufacturers.

Two BP LNGCs are to be fitted with OceanSaver BWTS by Goltens

Aqualis Offshore wins LNGC audit

Offshore marine and engineering consultancy Aqualis Offshore, part of Oslo-listed Aqualis ASA, has been contracted by Hyundai Samho Heavy Industries to provide an engineering study of a newbuild LNGC.

The yard is constructing the LNGC for Teekay LNG.

Aqualis Offshore's work scope is to provide failure modes and effects analysis (FMEA), hazard identification (HAZID) and hazard & operability (HAZOP) studies for the boil-off gas handling system and fuel gas system on board the vessel.

The company will also provide FMEA-studies of the vessel's propulsion redundancy and steering system, as well as ensure that electrical generation and distribution systems and associated control systems are designed such that a single fault will not result in the loss of ability to maintain cargo tank pressures.

Teekay LNG will use the LNGC to provide transportation services for BP Shipping's LNG cargoes from the Freeport LNG project located on Quintana Island near Freeport, Texas.

Aqualis Offshore's Seoul office will manage the engineering study project.

"We established a physical presence on the doorstep of the many South Korean yards to support industry players who are based in South Korea but operate internationally. This latest contract with Hyundai Samho Heavy Industries confirms that this strategy is beneficial for both the local yards and international companies such as Teekay LNG," said Phil Lenox, director – Asia/Pacific, Aqualis Offshore.

> "We established a physical presence on the doorstep of the many South Korean yards to support industry players who are based in South Korea but operate internationally"
>
> *Phil Lenox, director – Asia/Pacific, Aqualis Offshore.*

NEWS NUDGE

Teekay LNG declares cash distribution

Teekay GP LLC, the general partner of Teekay LNG Partners, has declared a cash distribution of $0.14 per unit for the quarter ended 30th June, 2017.

The cash distribution is payable on 11th August, 2017 to all unit holders of record on 4th August, 2017.

Nakilat takes another Q-Flex in-house

Nakilat assumed full shipmanagement and operations of Q-Flex LNGC 'Al Sheehaniya' from STASCo (Shell Trading and Shipping Company) on 6th July, 2017.

With a cargo carrying capacity of 210,200 cu m the LNGC is wholly-owned by Nakilat and chartered by Qatargas.

'Al Sheehaniya' is the ninth wholly-owned LNGC to come under the management of Nakilat Shipping Qatar (NSQL), bringing the total number of vessels managed in-house to 17, comprising of 13 LNG and four LPG carriers.

Eighth 'Dragon' named

Evergas' last addition to its fleet, the eighth 'Dragon class' 27,500 cu m multigas LNGC, was named 'JS Ineos Invention' at Houston, Texas.

The 'Dragon' class vessels are the largest, most flexible and advanced multigas carriers built to date, the company claimed.

The eighth and last 'dragon' class hybrid gas carrier

'Gassed up' LNGC surveyed at Brest

Damen Shiprepair Brest (DSB) has completed a two week maintenance project on the LNGC 'GDF Suez Point Fortin'.

In addition to its expertise and facilities, operator MOL LNG Transport (Europe) and ENGIE as charterer, selected DSB because it is one of the first European yards capable of performing modifications work on board LNGCs when 'gassed-up'.

The work took place in the second half of May and included a full, in-water survey conducted by divers, changing of the mooring cables from wire to rope, and full class surveys carried out on the main boilers. A radar dome was also replaced.

Damen Brest recently completed the survey of 'GDF Suez Point Fortin' while she was still gassed up

Given the constraints imposed by working on an LNGC when gassed-up, extensive preparations were required before the maintenance could get underway. These included obtaining the necessary permissions from the port authority and agreeing the scope of work with the client prior to the vessel's arrival.

Good communications between all the parties involved ensured that the yard was ready for the vessel on the due date and the work completed within the scheduled time frame.

DSB's track record in maintaining and repairing LNGCs of all sizes includes a renewal survey maintenance programme carried out on the 'Gaselys' earlier in 2017. Prior to that, the yard has also worked on the sistership 'Provalys' and on other LNGCs, such as the 'Global Energy' and the 'Tellier'.

AiP for non-spherical MOSS-type LNG tank

Class society ABS has granted Approval in Principle (AIP) for a new MOSS-type LNG tank design concept developed by Japan's Kawasaki Heavy Industries (KHI).

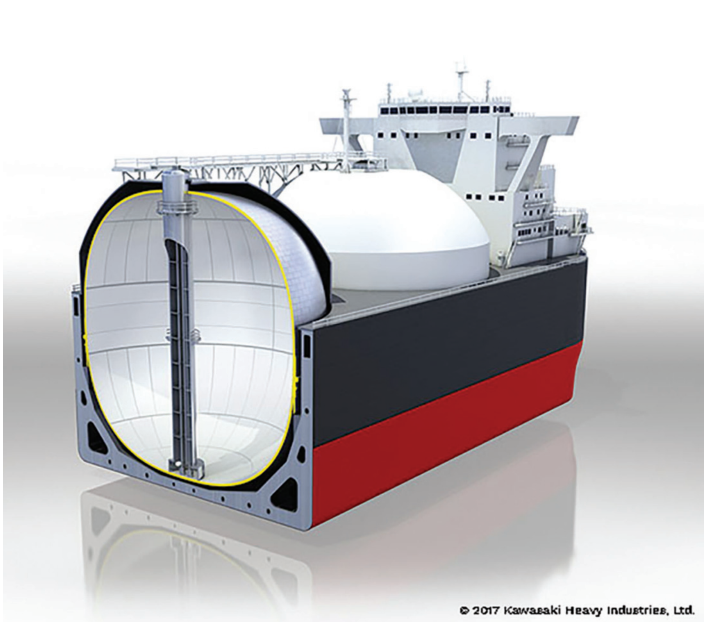
"We are pleased to issue this AIP that further demonstrates our commitment to technology advancements and safety," said ABS Vice President for Global Gas Solutions, Patrick Janssens. "KHI's concept applies the latest technologies, introducing new efficiencies and innovations that promote a safer and more sustainable shipping industry."

Designated as an IMO Type B independent tank, this concept takes a new approach by applying a non-spherical tank design to increase the use of space on board an LNGC.

According to KHI, this non-spherical design concept allows Neo-Panamax-size LNGCs carriers to expand their total carrying capacity to 180,000 cu m, a 25,000 cu m volume increase when compared to using spherical tanks.

In issuing its AIP, ABS reviewed the strength and fatigue analysis to support KHI in demonstrating the feasibility of the new concept.

"As the Panama Canal expands and LNG demand increases, owners and operators are looking to gain efficiencies without compromising safety," said KHI Ship & Offshore Co General Manager for the Engineering Division, Hideaki Naoi. "This new concept adds 15% more carrying capacity while maintaining the size of the new Panamax tankers. By working with a proven technology leader like ABS, we were able to prove the feasibility of this innovative design."



ABS has awarded KHI an AiP for its new MOSS-type containment tank

WORLD LNG CARRIER ORDERBOOK

Name	Segment	Yard	Containment System	Propulsion	Capacity	Delivery Date	Ordered	Primary Owner
Flex Constellation	LNGC	DSME	GT NO 96	MEGI	173,400	Jun-19	2017	John Fredriksen
Flex Courageous	LNGC	DSME	GT NO 96	MEGI	173,400	Aug-19	2017	John Fredriksen
Hyundai Ulsan 2964	LNGC	Hyundai Heavy	TZ Mk. III Flex	MEGI	180,000	May-19	2017	Knutsen
Hyundai Ulsan 2963	LNGC	Hyundai Heavy	TZ Mk. III Flex	MEGI	180,000	Jun-19	2017	Knutsen OAS Shipping AS
Samsung SLNG 1	LNGC	Samsung	KC-1		7,500	May-19	2017	Korea Line
Samsung SLNG 2	LNGC	Samsung	KC-1		7,500	Dec-19	2017	Korea Line
MOL HUDONG-ZHONGHUA 1/4	LNGC	Hudong-Zhonghua	GT NO 96	MEGI	174,000	Jul-19	2017	MOL
MOL HUDONG-ZHONGHUA 2/4	LNGC	Hudong-Zhonghua	GT NO 96	MEGI	174,000	Oct-19	2017	MOL
MOL HUDONG-ZHONGHUA 3/4	LNGC	Hudong-Zhonghua	GT NO 96	MEGI	174,000	Jan-20	2017	MOL
MOL HUDONG-ZHONGHUA 4/4	LNGC	Hudong-Zhonghua	GT NO 96	MEGI	174,000	Apr-20	2017	MOL
KEPPEL NANTONG 2	LNGC	Keppel Nantong			7,500	Aug-19	2017	Stolt-Nielsen
KEPPEL NANTONG 1	LNGC	Keppel Nantong			7,500	May-19	2017	Stolt-Nielsen Gas
Hyundai Mipo 8250	LNGC				7,500	Sep-18	2016	
Samsung 2212	LNGC	Samsung	GTT Mark V	XDF	180,000	Jun-19	2016	GasLog
Samsung 2213	LNGC	Samsung	GTT Mark V	XDF	180,000	Sep-19	2016	GasLog
Daewoo 2466	LNGC	DSME	GT NO 96	MEGI	173,400	Oct-19	2016	Maran Gas Maritime
Daewoo 2467	LNGC	DSME	GT NO 96	MEGI	173,400	Nov-19	2016	Maran Gas Maritime
Hyundai Ulsan 2937	LNGC	Hyundai Heavy	TZ Mk. III Flex	XDF	180,000	Feb-19	2016	SK Shipping
Hyundai Ulsan 2938	LNGC	Hyundai Heavy	TZ Mk. III Flex	XDF	180,000	Apr-19	2016	SK Shipping
Coralius	LNGC				5,800	Jul-17	2015	
Coral Energice	LNGC				18,000	Nov-17	2015	
Daewoo 2489	LNGC	DSME	GT NO 96	MEGI	173,400	Feb-19	2015	BWGas
Kinisis	LNGC	DSME	GT NO 96	MEGI	173,400	Sep-18	2015	Chandris
China Merchants Jiangsu CMHI-188	LNGC	China Merchant	Membrane		45,000	Feb-18	2015	Landmark Capital
Daewoo 2458	LNGC	DSME	GT NO 96	MEGI	173,400	Jan-19	2015	Maran Gas Maritime
Daewoo 2456	LNGC	DSME	GT NO 96	MEGI	173,400	Jan-19	2015	Maran Gas Maritime
Daewoo 2459	LNGC	DSME	GT NO 96	MEGI	173,400	Apr-19	2015	Maran Gas Maritime
Mitsubishi Nagasaki 2332	LNGC	Mitsubishi H.I.		STaGE	165,000	Feb-19	2015	Mitsubishi
Daewoo 2462	LNGC	DSME	GT NO 96	TFDE	180,000	Jul-17	2015	MOL
Kawasaki Sakaide 1731	LNGC	Kawasaki	Moss	TFDE	177,000	Dec-17	2015	MOL
Kawasaki Sakaide 1734	LNGC	Kawasaki	Moss	STaGE	177,000	Jun-18	2015	MOL
Mitsubishi Nagasaki 2323	LNGC	Mitsubishi H.I.	Moss	STaGE	180,000	Aug-18	2015	MOL
Kawasaki Sakaide 1735	LNGC	Kawasaki	Moss	STaGE	177,000	Sep-18	2015	MOL
Mitsubishi Nagasaki 2322	LNGC	Mitsubishi H.I.	Moss	STaGE	177,000	Jun-19	2015	MOL
Diamond Gas Orchid	LNGC	Mitsubishi H.I.	Moss	STaGE	165,000	Feb-18	2015	NYK
Mitsubishi Nagasaki 2326	LNGC	Mitsubishi H.I.	Moss	STaGE	180,000	Mar-18	2015	NYK
Mitsubishi Nagasaki 2325	LNGC	Mitsubishi H.I.	Moss	STaGE	165,000	May-18	2015	NYK
Mitsubishi Nagasaki 2327	LNGC	Mitsubishi H.I.	Moss	STRH	180,000	Jun-18	2015	NYK
Mitsubishi Nagasaki 2321	LNGC	Mitsubishi H.I.	Moss	STaGE	177,000	Dec-18	2015	NYK
Hyundai Samho S856	LNGC	Hyundai Samho	TZ Mk. III	MEGI	174,000	Jan-19	2015	Teekay LNG
Hyundai Samho S857	LNGC	Hyundai Samho	TZ Mk. III	MEGI	174,000	Jan-19	2015	Teekay LNG
Imabari Saijo 8200	LNGC	Imabari		MEGI	178,000	Oct-21	2015	Trinity LNG Transport SA
Daewoo 2441	LNGC	DSME	GT NO 96	MEGI	173,400	Apr-18	2014	BP
Daewoo 2442	LNGC	DSME	GT NO 96	MEGI	173,400	Oct-18	2014	BP
Daewoo 2443	LNGC	DSME	GT NO 96	MEGI	173,400	Nov-18	2014	BP
Daewoo 2444	LNGC	DSME	GT NO 96	MEGI	173,400	Jan-19	2014	BP
Daewoo 2445	LNGC	DSME	GT NO 96	MEGI	173,400	Feb-19	2014	BP
Daewoo 2446	LNGC	DSME	GT NO 96	MEGI	173,400	Mar-19	2014	BP
Bw Tulip	LNGC	DSME	GT NO 96	MEGI	173,000	Sep-17	2014	BWGas
Bw Lilac	LNGC	DSME	GT NO 96	MEGI	173,000	Dec-17	2014	BWGas
Patris	LNGC	DSME	GT NO 96	MEGI	174,000	Jan-18	2014	Chandris
Boris Vilkitsky	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Aug-17	2014	Dynagas
Fedor Litke	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Sep-17	2014	Dynagas
Daewoo 2427	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Oct-18	2014	Dynagas
Daewoo 2428	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Nov-18	2014	Dynagas
Daewoo 2429	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Dec-18	2014	Dynagas

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 = 20 July 2017

Fearnley LNG

Name	Segment	Yard	Containment System	Propulsion	Capacity	Delivery Date	Ordered	Primary Owner
Castillo De Caldelas	LNGC	Imabari	TZ Mk. III	MEGI	178,000	Aug-17	2014	Elcano
Castillo De Merida	LNGC	Imabari	TZ Mk. III	MEGI	178,000	Nov-17	2014	Elcano
Gaslog Houston	LNGC	Hyundai Heavy	TZ Mk. III	XDF	174,000	Jan-18	2014	GasLog
Samsung 2130	LNGC	Samsung	TZ Mk. III	XDF	174,000	Jan-18	2014	GasLog
Gaslog Hong Kong	LNGC	Hyundai Heavy	TZ Mk. III	XDF	174,000	Feb-18	2014	GasLog
Samsung 2131	LNGC	Samsung	TZ Mk. III	XDF	174,000	Jan-19	2014	GasLog
Flex Endeavour	LNGC	DSME	GT NO 96	MEGI	172,400	Jan-18	2014	John Fredriksen
Flex Enterprise	LNGC	DSME	GT NO 96	MEGI	172,400	Jan-18	2014	John Fredriksen
Kawasaki Sakaide 1720	LNGC	Kawasaki	Moss	TFDE	164,000	Mar-18	2014	K-Line
Daewoo 2457	LNGC	DSME	GT NO 96	MEGI	173,400	Apr-19	2014	Maran Gas Maritime
Seri Cemara	LNGC	Hyundai Heavy	Moss	STRH	150,000	Apr-18	2014	MISC
Jmu Tsu 5070	LNGC	Japan Marine United Corp	SPB	TFDE	165,000	Jul-17	2014	MOL
Daewoo 2424	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Dec-17	2014	MOL
Samsung 2148	LNGC	Samsung	Mark III Flex	TFDE	177,000	Feb-18	2014	MOL
Jmu Tsu 5073	LNGC	Japan Marine United Corp	SPB	TFDE	165,000	Apr-18	2014	MOL
Kawasaki Sakaide 1729	LNGC	Kawasaki	Moss	STRH	155,000	Apr-18	2014	MOL
Samsung 2149	LNGC	Samsung	Mark III Flex	TFDE	177,000	May-18	2014	MOL
Kawasaki Sakaide 1728	LNGC	Kawasaki	Moss	STRH	155,000	Jun-18	2014	MOL
Samsung 2150	LNGC	Samsung	Mark III Flex	TFDE	177,000	Aug-18	2014	MOL
Daewoo 2426	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Sep-18	2014	MOL
Jmu Tsu 5072	LNGC	Japan Marine United Corp	SPB	TFDE	165,000	Dec-18	2014	MOL
Daewoo 2432	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Sep-19	2014	MOL
Jmu Tsu 5071	LNGC	Japan Marine United Corp	SPB	TFDE	165,000	Aug-17	2014	NYK
Mitsubishi Nagasaki 2316	LNGC	Mitsubishi H.I.	Moss	STRH	153,000	Jan-18	2014	NYK
Sk Spica	LNGC	Samsung	KC-1	TFDE	174,000	Sep-17	2014	SK Shipping
Sk Serenity	LNGC	Samsung	KC-1	TFDE	174,000	Jan-18	2014	SK Shipping
Pan Asia	LNGC	Hudong-Zhonghua	GT NO 96	TFDE	174,000	Sep-17	2014	Teekay LNG
Eduard Toll	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Oct-17	2014	Teekay LNG
Magdala	LNGC	DSME	GT NO 96	MEGI	173,400	Jan-18	2014	Teekay LNG
Pan Americas	LNGC	Hudong-Zhonghua	GT NO 96	TFDE	174,000	Jan-18	2014	Teekay LNG
Myrina	LNGC	DSME	GT NO 96	MEGI	173,400	Apr-18	2014	Teekay LNG
Pan Europe	LNGC	Hudong-Zhonghua	GT NO 96	TFDE	174,000	Jun-18	2014	Teekay LNG
Megara	LNGC	DSME	GT NO 96	MEGI	173,400	Jul-18	2014	Teekay LNG
Rudolf Samoylovich	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Aug-18	2014	Teekay LNG
Pan Africa	LNGC	Hudong-Zhonghua	GT NO 96	TFDE	174,000	Jan-19	2014	Teekay LNG
Daewoo 2430	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Jul-19	2014	Teekay LNG
Daewoo 2431	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Aug-19	2014	Teekay LNG
Daewoo 2433	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Oct-19	2014	Teekay LNG
Daewoo 2434	LNGC	DSME	GT NO 96	TFDE - Azipod	172,410	Nov-19	2014	Teekay LNG
Yuan He 1	LNGC	Ningbo Xinle Shipbuilding			30,000	Aug-17	2013	
Cesi Tianjin	LNGC	Hudong-Zhonghua	Membrane	TFDE	174,000	Sep-17	2013	China LNG Shipping Holdings
Hudong-Zhonghua H1719a	LNGC	Hudong-Zhonghua	Membrane	TFDE	174,000	Jan-18	2013	China LNG Shipping Holdings
Qi Yuan	LNGC	Dalian Inteh		DFDE	28,260	Aug-17	2013	Dalian Inteh
Samsung 2107	LNGC	Samsung	TZ Mk. III	MEGI	174,000	Jan-18	2013	Flex LNG
Samsung 2108	LNGC	Samsung	TZ Mk. III	MEGI	174,000	Mar-18	2013	Flex LNG
Oceanic Breeze	LNGC	Mitsubishi H.I.	Moss	STRH	155,300	Jul-17	2013	K-Line
Kawasaki Sakaide 1718	LNGC	Kawasaki	Moss	TFDE	180,000	Aug-17	2013	K-Line
Bishu Maru	LNGC	Kawasaki	Moss	TFDE	164,700	Sep-17	2013	K-Line
Seri Cempaka	LNGC	Hyundai Heavy	Moss	STRH	150,000	Jul-17	2013	MISC
Seri Camar	LNGC	Hyundai Heavy	Moss	STRH	150,000	Oct-17	2013	MISC
SK Resolute	LNGC	Samsung	TZ Mk. III	XDF	182,000	Oct-17	2013	SK Shipping
Sk Audace	LNGC	Samsung	TZ Mk. III	XDF	182,000	Jan-18	2013	SK Shipping
Murex	LNGC	DSME	GT NO 96	MEGI	173,400	Jul-17	2013	Teekay LNG
Macoma	LNGC	DSME	GT NO 96	MEGI	173,400	Sep-17	2013	Teekay LNG
Hudong-Zhonghua H1720a	LNGC	Hudong-Zhonghua	Membrane	TFDE	174,000	May-18	2012	China LNG Shipping Holdings
Trinity J/V (Mitsui & Co.)	LNGC	Imabari	GTT Mark III Flex	MEGI	178,000	Jan-20		K-Line
MOL E.On.	LNGC	DSME	GT NO 96	TFDE	179,900	Apr-18		MOL

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 = 20 July 2017

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 Independence	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 = 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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