

LNG Shipping News

AN LNG JOURNAL TITLE ON LNG CARRIERS

1 February 2018

Charter rates to come under pressure

Increasing vessel supply will keep LNG charter rates under pressure in 2018, despite strong growth in trade, according to the latest edition of 'LNG Forecaster', published by shipping consultancy, Drewry.

Drewry's short-term outlook for LNG charter rates remains pessimistic due to high fleet growth rate, compared with demand. The fleet is expected to expand by 11% on the back of high deliveries and low demolition activity.

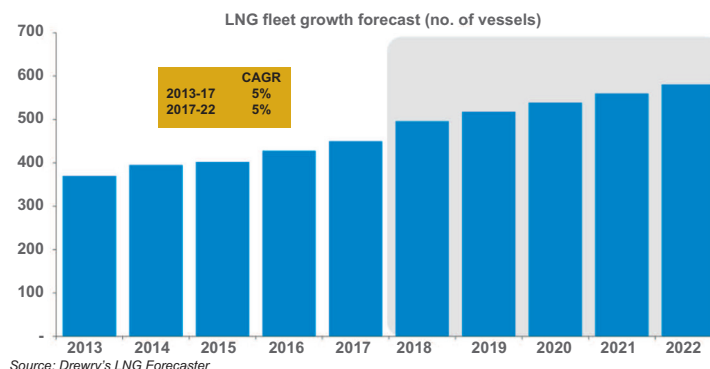
Low freight rates seen in the first three quarters of 2017 resulted in a huge pile-up of deliveries in 2018, which will further put pressure on supply.

Last year, 43 vessels were scheduled for delivery, while only 27 were delivered during the entire year, and 16 were deferred to 2018. Taking into account the slippages from 2017, 69 vessels - aggregating 11 mill cu m capacity - are scheduled for delivery in 2018.

However, Drewry believed that not all 69 ships will stick to their schedule, and therefore, projects that only 45 LNGCs, totalling 7.6 mill cu m capacity, will be delivered (about 12% of the current LNG fleet).

Drewry said it also expected demolition activity to remain low.

High slippages of vessels from 2017, along with low demolition activity, will further add pressure on the supply side. Average spot rates are projected to remain lower than seen in 2017. The first



quarter of 2018 will be weaker than the last quarter of 2017, and slide further in the second quarter on account of high tonnage availability.

Tonnage absorbed

However, in the second half of 2018, charter rates will improve, as high Chinese LNG imports will absorb the excess tonnage available in the spot market.

Overall, the LNG market in 2018 will be marked by a high number of vessel deliveries, low scrapping activity, reactivation of idle fleet and strong Chinese demand.

This year's charter rates will average \$45,000 per day, which is marginally lower than rates in 2017. The high slippages of vessels into 2018 will increase vessel sup-

ply and put pressure on charter rates. Strong projected LNG trade growth of 9% in 2018 will help to create a resistance level to prevent charter rates from falling to the lows seen in 2017.

"Spot vessel availability will remain high during the first half of 2018, leading to below average charter rates. However, we project a strong finish to the year, with increased residential heating demand from China taking charter rates to similar levels as the second half of 2017.

"We believe the conversion of coal-fired residential heating to gas-fired residential heating in China will be rapid, and thus, the base demand during winter will increase in 2018, as compared with 2017," commented Shefali Shokeen, Senior Analyst at Drewry.

NYK orders LNGC on the back of charter

NYK has ordered a 174,000 cu m LNGC at Hyundai Samho Heavy Industries on the back of a charter to EDF LNG Shipping.

On 26th January, NYK Line signed a contract with EDF LNG Shipping, a subsidiary of Electricité de France (EDF), to charter

out a newly built LNGC for seven years, with optional extension periods for up to another 13 years.

The vessel is due to be delivered on 30th April, 2020. She will be built to EDF's specific requirements and will be fitted with a GTT Mark III Flex cargo contain-

ment system, plus a dual-fuel slow-speed WinGD X-DF diesel engine.

This 2-stroke large bore slow speed diesel engine is able to operate on marine gas oil or boil off gas stored as liquid at cryogenic temperatures.

SHIPPING NEWS AGENDA

MARKETING

- Drewry pessimistic **1**
- Kwispaa project moves closer **2**

BUSINESS

- Indonesia wins large export orders **3**
- GAC's LNGC service contracts **3**



- FSRUs in the pipeline **3**

FINANCE

- GasLog Partners raises cash **5**

TECHNOLOGY



- Giant fenders for LNGFPSOs **6**
- Nakilat's BWTS retrofits **6**
- Small scale LNGC delivered **7**

LNG ORDERBOOK

- LNG carrier orderbook **8**
- LNG small scale fleet **10**

Kwispaa LNG EPC contractors short listed

Steelhead LNG and Huu-ay-aht First Nations have narrowed the field of bidders to complete front-end engineering and design (FEED) work on the Kwispaa LNG project.

The site is located on the west coast of Vancouver Island, BC and is licensed to export up to 24 mill tonnes per annum of LNG for 25 years. Initial production of 12 mill tonnes per annum is expected to begin in 2024.

Four engineering, procurement and construction (EPC) contractors have been short listed. They include - Black & Veatch/ Samsung Heavy Industries, PCL Industrial Management/CB&I, Offshore Oil Engineering (COOEC)/ KBR and TechnipFMC.

Invitations to tender are expected to be issued in 2Q18. Following this, two successful

bidders will be selected to carry out FEED, including the patented floating At-Shore LNG (ASLNG) topsides, onshore power station, pre-treatment and balance of plant components, starting in 3Q18.

Steelhead LNG Vice President, Technical, Alex Brigden also confirmed that Hyundai Heavy Industries has been provisionally selected to fabricate the hull of two ASLNGs—for a total value of around \$500 mill—to support Kwispaa LNG's initial production capacity.

HHI will also collaborate with the successful EPC contractors



Hyundai has been awarded a provisional contract to build the hulls of two At-Shore LNG (ASLNG) units

to execute FEED studies.

Steelhead LNG's floating ASLNG approach is claimed to lower costs by reconfiguring proven technology of an onshore LNG plant in the most cost-effective way for the

West Coast of Canada.

Each ASLNG unit will have an LNG production capacity of up to 6 mill tonnes per annum with around 280,000 cu m of integrated LNG storage. ■

'K' Line to supply FSRU for Indian project

Indian energy company, H-Energy has signed a joint venture agreement with 'K' Line to progress an LNG re-gasification project in West Bengal.

The terminal is expected to commence commercial operations by 2020.

This agreement was signed on 12th December, 2017 and aims to jointly develop a project to import LNG. H-Energy will hold 74% in the joint venture company, while 'K' Line will hold the remaining 26% stake.

The project calls for an FSRU/FSU in the offshore Digba region of West Bengal to provide re-gasified LNG to customers in West Bengal and Bangladesh. The FSRU/FSU will be provided by 'K' Line.

Darshan Hiranandani, H-Energy CEO, said; "We greatly value the relationship with 'K' Line and are happy that a global shipping company like 'K' Line with vast experi-

ence in LNG shipping operations is part of our East Coast LNG project."

He added; "Both the companies will further strengthen their relationship through collaboration in other areas such as LNG bunkering at major ports on the East Coast and West Coast of India and supply of LNG ships for other projects of H-Energy. These are currently under discussion and are expected to come to fruition shortly."

Studies relating to navigation simulation, uptime assessment, mooring analysis and several others are underway to ensure the safe and smooth operation of the project, the company said.

Hiranandani said, "We have been able to achieve the key mile-

stones of the project and expect to start commercial operations by 2020 with the unstinted support of the Government of West Bengal and the Ministry of Shipping, Government of India. We are extremely pleased that the progress of the project will gain additional momentum with the involvement of 'K' Line."

H-Energy Gas Marketing Private will book the project's re-gasification capacity and will be responsible for sourcing LNG and for supplying regas LNG to downstream customers, providing end-to-end gas solutions to the downstream customers in West Bengal. The project will also be supply regas LNG to customers in western Bangladesh. ■

NEWS NUDGE

Fifth AP LNGC named in China

The COSCO Shipping Energy, Sinopec and Mitsui MOL joint venture has christened its fifth LNGC.

She was named 'CESI Wenzhou' at Hudong-Zhonghua Shipbuilding in China on 25th January.

The 174,000 cu m ship is the fifth of six LNGCs, which form part of the Australian Pacific LNG (AP LNG) project. They will operate between Australia and China with an annual shipping volume of over 1 mill tonnes of LNG.

COSCO Shipping said 'CESI Wenzhou' was the 16th LNGC to enter service with the company. A further 22 ships are under construction and will be delivered by 2020.

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 Fuentes
Tel: +44 (0) 20 7253 2700
elena@lngjournal.com

Production

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

No part of this publication may be reproduced or stored in any form by any mechanical, electronic, photocopying, recording or any other means without the prior written consent of the publisher. Whilst the information and articles in LNG Shipping News are published in good faith and every effort is made to check accuracy, readers should verify facts and statements direct with official sources before acting on them as the publisher can accept no responsibility in this respect. Any opinions expressed in this publication should not be construed as those of the publisher."

Golar LNG agrees long-term FSRU contract

Golar LNG Partners has signed a 15-year charter with an undisclosed energy and logistics company for an FSRU and related services in the Atlantic Basin.

The charter provides the Partnership with the flexibility to nominate either the 'Golar Spirit' or the 'Golar Freeze' to service the contract provided that the nominated FSRU satisfies certain technical specifications ahead of project start-up, which is expected in the fourth quarter of 2018.

The vessel is expected to

remain in service for up to 15 years without drydocking and will therefore undergo drydocking, as well as some minor modifications, prior to entering service.

The capital element of the charter rate will vary according to demand for regasification throughput but includes a cap and a floor and so is expected to generate annual operating income before

depreciation and amortisation of between \$18 and \$22 mill.

The charter includes an option saying that after three years, the contract can be terminated, but only in the event that certain throughput targets have not been met. In addition, Golar Partners will have the right to provide an alternative solution. The charter also includes a five-year extension option.

Golar Partners CEO, Graham Robjohns, commented: "Securing this contract demonstrates the underlying value of the Partnership's existing assets, adds significant term and revenue backlog whilst simultaneously reducing re-contracting risk. It also reflects the growing interest in smaller, cost competitive FSRUs that can facilitate the opening of niche markets previously considered uneconomic for LNG."



The converted FSRU 'Golar Freeze' is one of two vessels earmarked for the contract. Picture credit- Helderline

GAC wins LNGC service contracts

Tellurian has awarded GAC LNG Services a contract to provide voyage management services for its first LNGC - 'Maran Gas Mystras'.

GAC LNG Services provides a full-service solution for the sector, covering charterers' vessel operations, as well as technical and commercial information. Under the Tellurian agreement, GAC's global network of offices and approved agents will support operations, which will be overseen by GAC LNG Services in Houston.

Bob Bandos, GAC North America's Managing Director - Shipping, said: "We look forward to growing with Tellurian as they further develop their LNG marketing and trading operations."

GAC LNG Services was formed 2016 in response to the recent surge in global LNG production, particularly in North America, to deliver technical services required for safe, compliant and efficient port calls by gas carriers.

In addition, the GAC Group has been awarded a three year global agency contract by Chevron Shipping Co (CSC).

This agreement covers CSC's crude carriers and LNGCs.

Exclusive agent

It secures GAC's status as Chevron's exclusive global agent in a partnership that spans more than 20 years, around 15 of which have seen GAC as its sole global agent, the company said.

Lars Heisselberg, GAC's Advanced Supplier Relationship Sponsor for CSC and GAC's Group Vice President - Americas, said: "This contract represents an important milestone for GAC, as it solidifies our affiliation with CSC and allows us to further strengthen our service offerings and long-term



GAC's North American Managing Director- Bob Bandos

relationship with them."

Operations will be overseen by GAC hub agency offices in Dubai, Houston and Singapore with support from GAC's network of offices and approved agents worldwide.

GAC's dedicated CSC alliance representative based in Houston will continue to supervise and drive the relationship between the two companies, GAC said.

Indonesia to export LNG to Bangladesh and Pakistan

Bangladesh has signed an agreement with Indonesia to open talks on LNG imports to fill a shortfall of domestic natural gas.

A letter of intent was signed between two state energy companies, Petrobangla and Pertamina, after a meeting between Prime Minister Sheikh Hasina and Indonesian President Joko Widodo, who arrived in Dhaka last week, Reuters reported.

Bangladesh, a country of more than 160 mill people, could import as much as 17.5 mill tonnes of LNG a year by 2025, as its domestic gas reserves dwindle and demand grows.

Petrobangla is finalising the placement of several FSRUs, the first of which is expected to commence operations in April of this year.

In September, Bangladesh signed its first LNG import deal with Qatar.

Pakistan has also inked an agreement with Indonesia to import LNG and lubricants.

This signing ceremony took place in the presence of visiting Indonesian President Widodo and Prime Minister Shahid Khaqan Abbasi recently.

The two sides agreed to further increase tariff lines under the existing mechanism of Preferential Trade Agreement (PTA) between the two countries.

There was also an agreement to work together to gradually bring the PTA up to the level of a Free Trade Agreement.

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



Innovation. Experience. Performance.®

Latest liquefaction terminal opens doors to WGC 2018 attendees

As part of the 27th World Gas Conference (WGC 2018), due to take place in Washington (DC) from June 25th-29th, 2018, delegates will have the opportunity to visit some of the region's key energy sites.

For example, Dominion Energy Cove Point Terminal, located in Lusby, Maryland, not far from Washington (DC), will open a liquefaction service in early 2018. WGC 2018 delegates will be offered an opportunity to visit the world's newest liquefaction terminal in June - the premier facility in terms of direct access to the Marcellus and Utica shale plays, two of the most prolific natural gas basins in North America.

This facility is strategically situated on the Chesapeake Bay where it is easily accessed by natural gas transmission lines and vessels. The current Cove Point liquefaction project will allow Dominion Energy to liquefy natural gas and store and load it on LNGCs for export.

This is the first time in 30 years that WGC 2018 has been held in the US, arriving at an exciting time, with the US recently becoming a net gas exporter for the first

time in 60 years.

Conference delegates will also have the opportunity to visit two other key sites in the region - BGE's LNG Plant and Gas Control Centre and LNG Peak Shaving Facility in Baltimore (MD) and the Washington Gas Pipetown and Gas Control Operations Facility in Springfield (VA).

All the technical tours will take place on 25th June prior to the conference and exhibition opening on the following day. ■

Topics for LNG2019 being planned

In April, 2019, Shanghai will play host to the 19th International Conference & Exhibition on Liquefied Natural Gas (LNG2019).

China is the world's fastest growing LNG market. Data recently compiled from the Thomson Reuters Eikon terminal said; "China's 2017 imports of pipeline gas and LNG will top 67 mill tonnes, up by more than a quarter from a year earlier." LNG imports alone surged more than 50% in 2017.

The event is held every three years, alternating between exporting and importing countries.

LNG2019 will take place between 1st-5th April, 2019 and will be supported by the Shanghai Municipal People's Government and hosted by the China LNG Association, China Gas Society, The Chinese Association of Refrigeration and the China Gas Association.

The national organising committee, made up of representatives from China's national associations, together with the steering committee, comprising of the event owners; International Gas Union (IGU), Gas Technology Institute (GTI) and the International Institute of Refrigeration

(IIR), recently announced the plenary session topics. These will include:

- The global outlook for LNG.
- New LNG markets.
- LNG: A sustainable fuel for a sustainable future.
- The changing map of LNG supply.
- Business models for a competitive LNG market.
- LNG infrastructure and downstream application.
- Opportunities in the China LNG market.

The conference aims to highlight and discuss how the industry can adapt to rising global demand and

play a major role in creating a sustainable energy future. The rest of the programme will be compiled of paper and poster sessions selected through the 'Call for Abstracts' process currently underway.

Dr Nirmal Chatterjee, LNG2019 Programme Committee Chairman, who oversees the 'Call for Abstracts', said "The future of LNG never looked brighter. We welcome submissions from the entire LNG spectrum across all levels and we encourage specialists to showcase their expertise."

The deadline for abstract submission is 24th April, 2018. ■

NEWS NUDGE

Roxtec chosen for four new LNGCs

Hudong-Zhonghua Shipbuilding Group and power system provider ABB specified Roxtec EMC sealing solutions for four LNGC newbuildings.

The LNGCs 'Pan Asia', 'Pan America', 'Pan Europe' and 'Pan Africa' were built for the Queensland Curtis LNG project in Australia.

Each vessel will have a capacity of 174,000 cu m.

Roxtec cable transits are used for the electric propulsion system and the reliquefaction system. The seals combine protection against fire, smoke, gas, water, dust, dirt, vibration and the risk of explosion with elimination of electromagnetic interference (EMI).

The sealing system has been designed to withstand offshore conditions and is approved by all major classification societies.

"We had a great time working with Roxtec. When we had an installation problem or special sealing requirements, we got very quick response. Roxtec provided us not only with good quality products, but also with excellent service," said Ling Xiaoming, head of electric workshop of the PULNG team at Hudong-Zhonghua.

GasLog Partners gains from IPO

LNGC owner and operator GasLog Partners has collected \$111 mill from its public offering.

The funds are likely to be used for future acquisitions from its parent company GasLog, adding that the partnership has 10 eligible LNGCs for dropdown from its parent.

The net proceeds will also be used for debt repayment, capital expenditures and additions to working capital.

The offering of 4 mill of 8.2% Series B cumulative redeemable perpetual fixed to floating rate preference units, priced to the public at \$25 per unit, closed on

17th January. The underwriters have also exercised the option to purchase all 600,000 additional units, resulting in 4.6 mill units sold.

The Series B Preference Units will be listed on the New York Stock Exchange under the symbol GLOP PR B, GasLog Partners said. ■

NEWS NUDGE

Oman signs LNG SPA with BP

State owned Oman LNG has signed a sales and purchase agreement (SPA) for the supply of LNG to BP Singapore.

The free-on-board (FOB) contract, which commenced in January, will span a period of seven years for lifting 1.1 mill tonnes per annum, equivalent to around 18 LNG cargoes annually, Oman LNG said in a statement on Oman News Agency.

"The revenues from this transaction will benefit Oman's national economy and boost our GDP," said Mohammed bin Hamad al-Rumhy, Oman's Minister of Oil and Gas and Chairman of Oman LNG. "This new agreement will not only unlock additional reserves but will also sustain our LNG business. Oman will continue to be a global preferred destination for sourcing clean energy."

Oman LNG is 51% owned by the state of Oman and local and international energy majors, including Shell Gas, Total, Korea LNG, Mitsubishi Corp, Mitsui & Co, Partex Corp Oman, and Itochu.

'East Energy' to be recycled

Brokers have reported that the 1977- built LNGC 'East Energy' has been sold to Indian recyclers for a reported \$425 per ldt.

She will be better remembered as the 'LNG Port Harcourt' and prior to that - 'Nestor', which together with her sister 'Gastor', were laid up in Loch Striven, Scotland upon their delivery from St Nazaire in the late 1970s until they were sold to Bonny Gas Transport in 1993.

Giant fender for LNGFPSOs

Yokohama Rubber has unveiled an ultra-large fender with a diameter of 6 m.

The fender, claimed to be the world's largest, is designed to be used for LNG offshore cargo transfer operations from LNGFPSOs to LNGCs.

Demand for LNGFPSOs is expected to increase as demand for natural gas rises, the company said. LNGFPSOs must be capable of efficiently and safely offloading LNG stored at a temperature of around -160 deg C to LNGCs.

Yokohama Rubber's newly developed ultra-large fender increases the safety of offloading operations by enabling the LNGFPSO and the LNGC to maintain a greater distance apart compared to existing fenders. The new fender is also expected to be used to enhance safety during construction of large marine structures and other offshore



Yokohama Rubber has developed the world's largest fender primarily for LNGFPSOs

construction work.

The pneumatic fender is a rubber cushioning product inflated with air and floated between two ships or between a ship and a quay wall to prevent damage to the hull and the quay wall during ship-to-ship operations or when ships are moored.

Yokohama Rubber is one of the world's leading manufacturers of pneumatic fenders, marine hoses and other products for the marine equipment market and claimed to be the world's first company to manufacture and sell rubber-based pneumatic marine fenders, which started in 1958. ■

Fender specifications

Nominal Dimension (Outer Diameter x Length)	φ6.0m x 11.0m
Weight of Fender Body	Approx. 7100 kg
Initial Internal Pressure	70 kPa
GEA Deflection	50 +/-5 %
Guaranteed Energy Absorption (GAE)	6347 kN-m
Reaction Force at GEA Deflection	5988 kN
Hull Pressure at GEA Deflection	123 kPa
Minimum Endurable Pressure	490 kPa

Alfa Laval to retrofit two Nakilat LNGCs

Among owners of LNGCs and other large vessels, the number who choose UV ballast water treatment (BWTS) over electrochlorination continues to grow, manufacturer Alfa Laval claimed.

To date, the company said it had won orders for nearly 90 Alfa Laval PureBallast 3.1 BWTS of 1,000 cu m per hour capacity or over.

UV ballast water treatment systems are challenging the notion that electrochlorination is the default for large ballast

water flows. Today's UV systems compete easily in terms of footprint and energy efficiency, even at flows of 1,000 cu m per hour or above. This adds to their long-standing operational advantages, which include a chemical-free process that poses no corrosion risk, the company claimed.

Among recent orders for Alfa Laval's BWTS was a contract from Nakilat, manager of the world's largest LNGC fleet, who will retrofit two PureBallast 3.1 systems of 2,000 cu m per hour each on LNGCs.

"PureBallast 3.1 was selected not only for its small footprint and simple installation, but also for its ease of use," explained Anders Lindmark, Head of Alfa Laval PureBallast. "No chemicals are needed to treat the ballast water or to neutralise residuals, which means there will be no chemical handling on the part of the crews. And just as importantly, there will be no risk of corrosion in the system components or ballast water tanks. Those things make a difference for any vessel, large or small." ■

First super Ice Class LNGC delivered

'Coral EnergICE', the first LNGC to hold an Ice Class 1A Super notation, was named on 25th January at Turku, Finland.

The 18,000 cu m LNGC was delivered to Anthony Veder by Neptun Werft in Rostock, Germany.

She is specifically designed and built to operate in the Baltic Sea and is operated by Skangas to bring LNG to the company's LNG terminal in Pori and the joint venture Manga LNG terminal at Tornio, both in Finland.

The vessel's hull is reinforced to break through 1 m thick ice. The engines and generators were designed to give the vessel extra power when sailing through thick ice and harsh winter conditions. Furthermore, the vessel is equipped with a dual-fuel engine using LNG boil-off gas as a fuel for its main and auxiliary engines, making the vessel fully compliant with future emission regulations.

On deck innovations also provide for safe operations. For example, a cap on deck protects the equipment and prevents external icing. The vessel also has additional shelters on deck with warmer platforms for the crew's feet. Heat tracing on the doors helps to ensure that they will al-

ways open, no matter how harsh the conditions might be.

Skangas CEO, Kimmo Rahkamo, said; "Skangas helps its customers reach their environmental and operational targets by offering efficient and stable LNG deliveries. The new vessel supports our goal to develop the Nordic LNG infrastructure and gas market. This way, we can offer the end users in the maritime and industry sectors an even more competitive product."

Anthony Veder CEO, Jan Valkier, added: "'Coral EnergICE' is the third LNGC we have delivered to our long-term customer Skangas in the past five years. The high-tech vessel is capable of serving the northern Finnish harbour of Tornio all year around, even when temperatures reach as low as -25 deg C. To ensure that it's a comfortable and friendly place for our crew to work, we engaged an ergonomic engineer to look closely at the accommodation design. I am extremely proud of the end-result."

Neptun Werft Managing Director, Raimon Strunck, commented:

"Following the successful delivery of 'Coral Energy' in 2012, we were delighted that Anthony Veder awarded us the construction of 'Coral EnergICE'. The new vessel's design is based on 'Coral Energy', enhanced with technological innovations and construction adaptations for extreme cold weather conditions, thereby giving her the 1A Super ice class classification."

Her construction was funded with the first sustainable shipping loan, fully certified in accordance with the Clean Shipping Index Guidelines by Bureau Veritas, who also verified the sustainable credentials of the transaction.

Due to the LNG capabilities of 'Coral EnergICE', the business sector's NOx fund gave support for the development of this vessel. ■

NEWS NUDGE

Egypt to cease LNG imports this year

Egypt has said that it plans to stop importing LNG by the end of the 2017/18 fiscal year ending in June.

This is due to speeding up production at recently discovered gas fields, Petroleum Minister Tarek El Molla said last week, reported Reuters.

Egypt said previously that it would halt imports by the start of 2019.

Molla claimed that the country would save \$250 mill per month by no longer importing LNG.

Main characteristics 'Coral EnergICE'

Length overall	164 m
LNG capacity	18,000 cu m
Service speed	15.5 knots
Ice Class	1A Super with cold notation



Anthony Veder has taken delivery of the Super Ice Class small scale LNGC 'Coral EnerICE' which will be operated by Skangas

WORLD LNG CARRIER ORDERBOOK

Name	Yard	Containment System	Capacity	Propulsion	Delivery Date	Ordered	Primary Owner
Pacific Breeze	Kawasaki	Moss	180000	TFDE	30/11/2017	2013	K-Line
Daewoo 2424	DSME	GT NO 96	172410	TFDE - Azipod	01/12/2017	2014	MOL
Kawasaki Sakaide 1731	Kawasaki	Moss	177000	TFDE	01/01/2018	2015	MOL
Castillo De Merida	Imabari	TZ Mk. III	178000	MEGI	01/01/2018	2014	Elcano
CESI Wenzhou	Hudong-Zhonghua	Membrane	174000	TFDE	01/01/2018	2013	China LNG Shipping Holdings
Sk Serenity	Samsung	KC-1	174000	TFDE	01/01/2018	2014	SK Shipping
SK Resolute	Samsung	TZ Mk. III	182000	XDF	01/01/2018	2013	SK Shipping
Pan Americas	Hudong-Zhonghua	GT NO 96	174000	TFDE	01/01/2018	2014	Teekay LNG
Patris	DSME	GT NO 96	174000	MEGI	05/01/2018	2014	Chandris
Flex Enterprise	DSME	GT NO 96	172400	MEGI	10/01/2018	2014	Flex LNG
Seri Camar	Hyundai Heavy	Moss	150000	STRH	01/02/2018	2013	MISC
Magdala	DSME	GT NO 96	173400	MEGI	01/02/2018	2014	Teekay LNG
Samsung 2148	Samsung	GTT Mark III Flex	177000	TFDE	01/02/2018	2014	MOL
Gaslog Hong Kong	Hyundai Heavy	TZ Mk. III	174000	XDF	01/02/2018	2014	GasLog
Castillo De Caldelas	Imabari	TZ Mk. III	178000	MEGI	01/03/2018	2014	Elcano
Energy Liberty	Japan Marine United Corp	SPB	165000	TFDE	01/03/2018	2014	MOL
Sk Spica	Samsung	KC-1	174000	TFDE	01/03/2018	2014	SK Shipping
Mitsubishi Nagasaki 2316	Mitsubishi H.I.	Moss	153000	STRH	01/03/2018	2014	NYK
Gaslog Genoa	Samsung	TZ Mk. III	174000	XDF	01/03/2018	2014	GasLog
Bw Lilac	DSME	GT NO 96	173000	MEGI	01/03/2018	2014	BWGas
Oceanic Breeze	Mitsubishi H.I.	Moss	155300	STRH	31/03/2018	2013	K-Line
Myrina	DSME	GT NO 96	173400	MEGI	01/04/2018	2014	Teekay LNG
Seri Cemara	Hyundai Heavy	Moss	150000	STRH	01/04/2018	2014	MISC
Daewoo 2441	DSME	GT NO 96	173400	MEGI	01/04/2018	2014	BP
CESI Lianyungang	Hudong-Zhonghua	Membrane	174000	TFDE	01/05/2018	2012	China LNG Shipping Holdings
Samsung 2149	Samsung	GTT Mark III Flex	177000	TFDE	01/05/2018	2014	MOL
Flex Ranger	Samsung	TZ Mk. III	174000	MEGI	01/05/2018	2013	Flex LNG
Kawasaki Sakaide 1734	Kawasaki	Moss	177000	STaGE	01/06/2018	2015	MOL
Kawasaki Sakaide 1720	Kawasaki	Moss	164000	TFDE	01/06/2018	2014	K-Line
Kawasaki Sakaide 1728	Kawasaki	Moss	155000	STRH	01/06/2018	2014	MOL
Diamond Gas Orchid	Mitsubishi H.I.	Moss	165000	STaGE	01/06/2018	2015	NYK
Kawasaki Sakaide 1729	Kawasaki	Moss	155000	STRH	01/06/2018	2014	MOL
Pan Europe	Hudong-Zhonghua	GT NO 96	174000	TFDE	01/06/2018	2014	Teekay LNG
Mitsubishi Nagasaki 2325	Mitsubishi H.I.	Moss	165000	STaGE	01/06/2018	2015	NYK
Mitsubishi Nagasaki 2326	Mitsubishi H.I.	Moss	180000	STaGE	01/06/2018	2015	NYK
Mitsubishi Nagasaki 2327	Mitsubishi H.I.	Moss	180000	STRH	01/06/2018	2015	NYK
Megara	DSME	GT NO 96	173400	MEGI	01/07/2018	2014	Teekay LNG
Flex Rainbow	Samsung	TZ Mk. III	174000	MEGI	25/07/2018	2013	Flex LNG
Jmu Tsu 5071	Japan Marine United Corp	SPB	165000	TFDE	31/07/2018	2014	NYK
Rudolf Samoylovich	DSME	GT NO 96	172410	TFDE - Azipod	01/08/2018	2014	Teekay LNG
Samsung 2150	Samsung	GTT Mark III Flex	177000	TFDE	01/08/2018	2014	MOL
Mitsubishi Nagasaki 2323	Mitsubishi H.I.	Moss	180000	STaGE	01/08/2018	2015	MOL
Kawasaki Sakaide 1735	Kawasaki	Moss	177000	STaGE	01/09/2018	2015	MOL
Daewoo 2462 MOL E.On	DSME	GT NO 96	180000	TFDE	01/09/2018	2015	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 = 26 October 2017

Name	Yard	Containment System	Capacity	Propulsion	Delivery Date	Ordered	Primary Owner
Daewoo 2426	DSME	GT NO 96	172410	TFDE - Azipod	01/09/2018	2014	MOL
Kinisis	DSME	GT NO 96	173400	MEGI	30/09/2018	2015	Chandris
Daewoo 2442	DSME	GT NO 96	173400	MEGI	01/10/2018	2014	BP
Daewoo 2427	DSME	GT NO 96	172410	TFDE - Azipod	01/10/2018	2014	Dynagas
Daewoo 2443	DSME	GT NO 96	173400	MEGI	01/11/2018	2014	BP
Daewoo 2428	DSME	GT NO 96	172410	TFDE - Azipod	01/11/2018	2014	Dynagas
Jmu Tsu 5073	Japan Marine United Corp SPB		165000	TFDE	30/11/2018	2014	MOL
Mitsubishi Nagasaki 2321	Mitsubishi H.I.	Moss	177000	STaGE	01/12/2018	2015	NYK
Daewoo 2429	DSME	GT NO 96	172410	TFDE - Azipod	01/12/2018	2014	Dynagas
Maran Gas Spetses	DSME	GT NO 96	173400	MEGI	01/01/2019	2015	Maran Gas Maritime
Daewoo 2444	DSME	GT NO 96	173400	MEGI	01/01/2019	2014	BP
Maran Gas Chios	DSME	GT NO 96	173400	MEGI	01/01/2019	2015	Maran Gas Maritime
Pan Africa	Hudong-Zhonghua	GT NO 96	174000	TFDE	01/01/2019	2014	Teekay LNG
Maran Gas Hydra	DSME	GT NO 96	173400	MEGI	01/01/2019	2015	Maran Gas Maritime
Hyundai Samho S856	Hyundai Heavy	TZ Mk. III	174000	MEGI	01/01/2019	2015	Teekay LNG
Samsung 2131	Samsung	TZ Mk. III	174000	XDF	01/01/2019	2014	GasLog
Hyundai Samho S857	Hyundai Heavy	TZ Mk. III	174000	MEGI	01/01/2019	2015	Teekay LNG
Hyundai Ulsan 2937	Hyundai Heavy	GTT Mark III Flex	180000	XDF	01/02/2019	2016	SK Shipping
Daewoo 2445	DSME	GT NO 96	173400	MEGI	01/02/2019	2014	BP
Daewoo 2489	DSME	GT NO 96	173400	MEGI	01/02/2019	2015	BWGas
Mitsubishi Nagasaki 2332	Mitsubishi H.I.		165000	STaGE	01/02/2019	2015	Mitsubishi
Daewoo 2446	DSME	GT NO 96	173400	MEGI	01/03/2019	2014	BP
Jmu Tsu 5072	Japan Marine United Corp SPB		165000	TFDE	31/03/2019	2014	MOL
Hyundai Ulsan 2938	Hyundai Heavy	GTT Mark III Flex	180000	XDF	01/04/2019	2016	SK Shipping
Maran Gas Syros	DSME	GT NO 96	173400	MEGI	01/04/2019	2014	Maran Gas Maritime
Hyundai Ulsan 2964	Hyundai Heavy	GTT Mark III Flex	180000	MEGI	01/05/2019	2017	Knutsen
Mitsubishi Nagasaki 2322	Mitsubishi H.I.	Moss	177000	STaGE	01/06/2019	2015	MOL
Samsung 2212	Samsung	GTT Mark V	180000	XDF	01/06/2019	2016	GasLog
Flex Constellation	DSME	GT NO 96	173400	MEGI	01/06/2019	2017	John Fredriksen
Hyundai Ulsan 2963	Hyundai Heavy	GTT Mark III Flex	180000	MEGI	01/06/2019	2017	Knutsen
Daewoo 2430	DSME	GT NO 96	172410	TFDE - Azipod	01/07/2019	2014	Teekay LNG
MOL Hudong-Zhonghua 1/4	Hudong-Zhonghua	GT NO 96	174000	MEGI	01/07/2019	2017	MOL
Daewoo 2431	DSME	GT NO 96	172410	TFDE - Azipod	01/08/2019	2014	Teekay LNG
Flex Courageous	DSME	GT NO 96	173400	MEGI	01/08/2019	2017	John Fredriksen
Daewoo 2432	DSME	GT NO 96	172410	TFDE - Azipod	01/09/2019	2014	MOL
Samsung 2213	Samsung	GTT Mark V	180000	XDF	01/09/2019	2016	GasLog
Daewoo 2466	DSME	GT NO 96	173400	MEGI	01/10/2019	2016	Maran Gas Maritime
Daewoo 2433	DSME	GT NO 96	172410	TFDE - Azipod	01/10/2019	2014	Teekay LNG
MOL Hudong-Zhonghua 2/4	Hudong-Zhonghua	GT NO 96	174000	MEGI	01/10/2019	2017	MOL
Daewoo 2467	DSME	GT NO 96	173400	MEGI	01/11/2019	2016	Maran Gas Maritime
Daewoo 2434	DSME	GT NO 96	172410	TFDE - Azipod	01/11/2019	2014	Teekay LNG
Imabari Saijo 8200	Imabari	GTT Mark III Flex	178000	MEGI	01/01/2020	2015	K-Line
MOL Hudong-Zhonghua 3/4	Hudong-Zhonghua	GT NO 96	174000	MEGI	01/01/2020	2017	MOL
MOL Hudong-Zhonghua 4/4	Hudong-Zhonghua	GT NO 96	174000	MEGI	01/04/2020	2017	MOL

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	Tripura (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 Innvation	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	JS Ineos Inspiration	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	LNG Prime	2,250	LNG	Northwest Europe	Yes	Veka Deen LNG
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 = 9th November 2017

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
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
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 = 9th November 2017

Small-LNG.com

LNG Journal & Gas to Power Journal Subscription Package

The journals' comprehensive coverage is dedicated to the entire gas-value-chain. In addition to our LNG Journal & Gas to Power Journal Daily newsletters, each platform provides exclusive, accurate and up-to-date news and analysis divided in the following sector-focused publications:

- ➔ LNG Journal - Monthly issues
- ➔ Gas to Power Journal - Daily e-newsletter + PDF
- ➔ Gas Power Tech Quarterly - Quarterly PDF
- ➔ LNG Unlimited - Weekly magazine + PDF
- ➔ LNG Shipping News - Fortnightly e-newspaper + PDF
- ➔ LNG Fuelling - Fortnightly e-newspaper + PDF
- ➔ LNG North America - Monthly e-newspaper + PDF

United Kingdom **GBP 750**
Europe and Africa **EUR 925**
Asia and Americas **USD 1150**

Multiuser options under request **new subscribers only



For further information on subscribing please contact us at elena@lngjournal.com or + 44 20 7017 3416