

LNG Shipping News

AN LNG JOURNAL TITLE ON LNG CARRIERS

7 June 2018

Future of LNG Shipping – what matters most?

The future of LNG was debated by leading shipping industry players at an ABS panel discussion held at the start of Posidonia 2018.

The Chairman and CEO of Angelicoussis Shipping Group, John Angelicoussis; Executive Chairman of Gaslog, Peter Livanos; Chairman of Dynacom Tanker Management, George Procopiou; and Chairman Emeritus of Poten and Partners, Michael Tusiani and ABS Chairman, President and CEO, Christopher Wiernicki joined together for a two-hour discussion on 4th June.

The panellists covered a wide range of issues from the business case for investing in LNG, to the impact of shale gas, charter and spot rates prospects and future technological trends.

“What we heard today is that LNG has a bright future, and this came directly from the owners and operators who have a decisive role in delivering that future,” Wiernicki explained.

Evolving market

Opening the discussion, Poten’s Tusiani said: “The LNG shipping market has evolved as the value and size of the trade has increased. Larger vessels are now the standard, charterers are moving toward shorter-term periods and the spot market is growing. New own-

ers are moving into the sector, so the question is how much experience will matter to charterers and will they be willing to pay for it.”

Angelicoussis said: “LNG was an antiquated industry until 2005: what other sector used steam this century? We were a very traditional industry that got better very quickly. Now we have reached a plateau, but the new projects will continue. The gas demand is increasing; there may be a supply/demand mismatch in the short term, but more vessels will be needed than we think.”

Livanos commented: “It is inevitable that LNG will be the primary fuel source for marine transport. We need to address the lifecycle of existing assets and bunkering infrastructure, which is acting as a brake on adoption, but this should accelerate. The train has left the station and cannot be stopped.”

Procopiou added: “The LNG shipping business is going through an evolution, which is tracking the growth of the commodity and the services around it are becoming commoditised. Natural gas is becoming much more widely appreci-

ated and used; we are in a macro growth trend, it will be one of the main energy sources of the future.”

In conclusion, Wiernicki said: “LNG has done a lot of the heavy lifting in the shipping industry for more than a decade and the improvements in performance have been dramatic. Now we have seen a maturing in the rate of technological change and going forward we will see efficiency gains in how companies use data and digital tools to track the performance of their equipment and assets, and this is where the next big gain will be made across all of shipping not just LNG.”

ABS claimed the largest global orderbook in terms of classing LNGCs. In addition, to support the industry in the development of FSRUs, ABS has released a ‘Guide for Building and Classing LNG Regasification Vessels’.

The class society and GasLog LNG Services also completed a joint development project aimed at a new approach to evaluating LNG boil-off rates. As a result, owners are now able to better predict boil-off and account for it in future LNGC designs and operations, ABS said. ■



ABS hosted a discussion with Greek heavyweights

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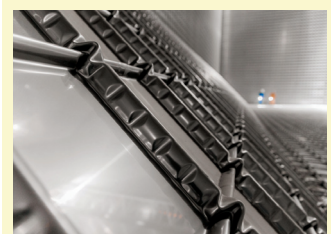
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Golar sees rate improvement

Steady rates and charter activity into the new year were supported by strong underlying demand for LNG.

This helped sustain firm Asian prices and prolong arbitrage opportunities through to February, Golar said in its first quarter results roundup (see page 4).

The proportion of US exports destined for Asia in January and February was 57% and 67%, respectively, with resultant high tonne/miles supporting rates up to \$85,000 per day during January.

A seasonal softening in activity resulted in falling LNG prices and an end to inter-basin trading opportunities in late February. Charter rates dropped accordingly to around \$65,000 per day. March fixtures for US cargoes to Asia declined by 40%, with tonne/miles and rates falling further as a result. By early April, LNGC rates

were around \$45,000 per day.

Delays to the start-up of the 5.25 mill tonnes per annum US Cove Point facility and production interruptions at the 6.9 mill tonnes per annum Papua New Guinea (PNG) facility accentuated the seasonality's negative impact.

Exports from Cove Point have now started and PNG has restarted production. Wheatstone train 2 (T2) and Ichthys LNG are also scheduled to commence production, whilst both Yamal T2 and T3 are now expected to start producing before year end.

Rates improving

This, together with a recent step-up in period cover requirements, has resulted in a sharp reduction

in available vessels. Rates are improving again and a solid year-on-year improvement is indicated, Golar said.

Looking further ahead, a nine-month delay to the start-up of the 13.2 mill tonnes per annum Freeport LNG plant has been confirmed. Shipbroker research indicated that the 2018 newbuilding delivery schedule was adjusting to accommodate this.

Around 49 LNGC deliveries are now scheduled for this year and liquefaction trains with a nameplate capacity of about 31 mill tonnes per annum are expected to commence or ramp up production.

A further 29 mill tonnes per annum of new production is expected to commence in 2019 and 33 mill tonnes in 2020. Against

this, 32 conventional newbuildings are expected to be delivered in 2019 and 20 in 2020.

Despite a recent spike in vessel orders for delivery in 2020/2021, the market will remain short by about 25 vessels over the next two to three years. Material improvements in September to March average winter daily rates, which increased from around \$40,000 in 2016/2017 to around \$60,000 in 2017/2018, can also be expected over the coming years.

Strengthening European and Japanese LNG prices (up around 50%) indicate strong demand for LNG and create good opportunities for US exports where Henry Hub prices are lower than 2017 levels, Golar concluded. ■

Höegh examines the FSRU market

LNG imports using FSRUs were 13.6% higher in 1Q18 than in the same period of 2017, Höegh LNG said in its first quarter roundup (see page 5).

The biggest contributors to this year-on-year growth were Pakistan, which imported 1.1 mill tonnes in the first quarter, and China, with 1 mill tonnes of LNG imported through Höegh LNG's 'GDF Suez Cape Ann'.

Driven by active spot market participation from Chinese buyers and an extended cold winter, LNG prices reached the highest levels in over three years during February, 2018. Although prices have declined since the busy winter season, Northeast Asian spot prices are currently forecast by IHS Markit to remain above \$7 per MMBtu through the summer, mir-

roring the healthy underlying demand for the fuel.

Since the beginning of the year, Bangladesh has become the 15th country to import LNG through an FSRU, and the 36th with a capacity to import relatively large volumes of LNG.

The country's first FSRU is likely to be followed by a second currently under construction, again demonstrating the cost and time efficiency of these units, compared with land-based regasification facilities. India is also likely to follow Bangladesh as an FSRU-based importer towards the end of the year, when 'GDF Suez



Höegh's FSRU 'GDF Suez Cape Ann' is due to start a period charter to Indian interests

Cape Ann' starts operating at the H-Energy LNG import facility in Maharashtra state.

The combination of a further increase in LNG supply and a continued positive trend for demand is the main value driver for FSRUs. Developers in many markets are contemplating installing these units to gain access to an increasing global supply of LNG, and tendering remains busy, although progress is subject to many influencing factors.

The FSRU fleet consisted of 28 units as of 31st March, 2018.

Since then, one FSRU, 'Höegh Esperanza', has been delivered, leaving 11 FSRUs in the order book as of May, 2018.

Three units in the existing fleet appear to be uncommitted, one of which is a first-generation converted LNGC, while five to six of the FSRUs under construction are also thought to be charter free.

However, three of these are not due for delivery until 2021. ■

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Höegh charters out FSRU to Chinese interests

Höegh LNG has confirmed that it has period chartered the FSRU 'Höegh Esperanza' to CNOOC Gas & Power Trading and Marketing Ltd (CNOOC).

The charter is for a three years with a one-year extension option.

Under the terms of the contract, 'Höegh Esperanza' will be used as an FSRU at the Tianjin LNG terminal in China for no less than an agreed-upon minimum period each year. For the balance of the year, she will be traded as an LNGC and/or FSRU.

The contract will commence with immediate effect, and has a rate structure that corresponds to the vessel's usage, the company explained.

Chinese policies to encourage consumers to transition from coal to gas have caused natural gas consumption to increase sharply. This increased demand has re-

quired significant increases in LNG imports, as evidenced by China importing 12.7 mill tonnes of LNG in the first quarter of 2018, or 61% more than in the same period of 2017.

To enable further growth in Chinese LNG imports in line with these policies, additional LNG import facilities need to be developed, including FSRUs, Höegh said.

'Höegh Esperanza' was delivered from Hyundai Heavy Industries on 5th April, 2018. She was designed for open, closed or combined loop regasification operation and has a storage capacity of 170,000 cu m of LNG and a maximum regasification rate of 750 mill standard cu ft per day. She is fitted with a GTT Mark III membrane containment system and a dual-fuel diesel-electric (DFDE)

propulsion unit.

Höegh LNG's CEO and President, Sveinung Støhle, commented: "We are proud to sign this strategically important contract with CNOOC, the largest of the Chinese LNG companies by volume. Given the short lead time, deployment flexibility and clear cost advantages, FSRUs are today the preferred solution for imports of LNG.

"Höegh LNG is the only FSRU operator with operating experience in China, and we see the potential for Höegh LNG to provide additional FSRUs to this large and rapidly growing LNG market. 'Höegh Esperanza' will start generate revenues under this contract immediately, and Höegh LNG's delivered fleet is with this fully employed," he said. ■



'Höegh Esperanza' has taken by CNOOC for a period charter

FLNG starts commercial operations

Golar LNG Limited has confirmed this week that the FLNG 'Hilli Episeyo' was accepted by Perenco Cameroon and Societe Nationale Des Hydrocarbures and is now in full commercial operation.

The commissioning tests involved producing a set quantity of LNG in 16 days of continuous production from a minimum of two trains at an average of 7,500 cu m per day.

The start up of the commercial tolling rate will immediately add around \$164 mill in EBITDA of base tolling income per year, plus an additional \$45 mill operating cash flow per year based on the oil price linked element of the contract (assuming that Brent remains at an average of \$75 per barrel), Golar LNG said.

As a result, Golar is now able to draw on the \$960 mill lease financing facility that will replace the existing loan. It is estimated that a minimum of about \$140 mill in additional free cash will be released from this facility after meeting maximum remaining capital costs and net of minority interests.

A drop down of 50% of the base tolling income to Golar LNG Part-

ners is expected to be concluded shortly. The additional added contribution of around \$82 mill in effective EBITDA and effective EBITDA backlog of \$650 mill, given the eight year contract term, will significantly strengthening the MLP's financial position and sup-

porting solid distribution going forward.

FLNG 'Hilli Episeyo' is the world's first FLNG. She was converted from a conventional LNGC. This conversion approach adds value through its accelerated time to first LNG production and cost

competitive pricing.

The FLNG's commercial operations start up took place in less than four years after speculative contracts were signed with Keppel Shipyard. The project cost is expected to be about \$70 mill under budget, Golar said. ■



'Hilli Episeyo' seen undergoing conversion to an FLNG at Keppel

PETRONAS uses online trading platform

PETRONAS has sold its first online LNG cargo through its subsidiary, PETRONAS LNG Ltd (PLL) using the GLX trading platform.

GLX online is a global marketplace developed to trade LNG physical cargoes for the sale and purchase of LNG. GLX members comprise more than 40 of the world's largest LNG buyers and sellers from Asia, Europe, North America, Middle East and Australia.

The use of the online platform is in line with PETRONAS' effort in promoting digitalisation of its business and serves as an alternative platform to market its cargoes, the oil and gas major said.

PLL had issued a tender invite to 30 registered GLX members for the sale of its delivered ex-ship

(des) cargo. The bidding process ran smoothly and garnered healthy interest from bidders throughout the trade window, the company said.

PETRONAS Vice President of LNG Marketing & Trading, Ahmad Adly Alias, said: "I am pleased that PETRONAS' inaugural participation on GLX led to the firm sale of our cargo at a competitive price. Utilisation of the digital platform as an alternate tool to market PETRONAS cargoes, further proves PETRONAS' commitment in innovation and digitalisation, which we believe will

contribute towards a more transparent and efficient LNG market place."

GLX CEO, Damien Criddle, said: "The support of PETRONAS and other members was very pleasing. While there has been a number of cargoes negotiated using the platform, the recent PETRONAS trade is the first to utilise the end-to-end functionality of GLX through to closing the deal. We see the first complete live cargo traded on the platform as a significant milestone for GLX and thank PETRONAS and all members for their ongoing support." ■

Golar LNG takes a hit

Golar LNG Limited has reported a first quarter 2018 net loss of \$21 mill.

Notable contributors to the \$24.8 mill decrease on the 4Q17 result, included an interest expense increase of \$7.8 mill to \$14 mill, the 4Q17 expense having been reduced by higher capitalised interest on borrowing costs in respect of the FLNG 'Hilli Episeyo'.

The \$1.5 mill 1Q18 equity in net earnings or losses of affiliates is primarily comprised of the following:

- * A \$4.8 mill loss in respect of Golar's 50% share in Golar Power Limited.
- * A \$1.5 mill loss in respect of Golar's 51% share in OneLNG.
- * Income of \$4.8 mill in respect of Golar's stake in Golar LNG Partners. Cash distributions received from the Partnership are in line with the previous quarters.

Operating income was \$6.4 mill, compared to \$2.8 mill in 4Q17. Further improvements in hire rates and round-trip economics contributed a \$3.6 mill increase in total operating revenue net of voyage, charterhire and commissioning expenses, from \$38.1 mill in 4Q17 to \$41.7 mill in 1Q18.

Vessel operating expenses increased by \$1.3 mill to \$18.4 mill in 1Q18, mostly due to the additional crew, repairs and maintenance and logistics expenses in

respect of the recently reactivated 'Golar Viking'.

Recent LNG price increases enhance the already solid financial returns expected from the Fortuna project. Despite an agreed development plan and extensive efforts over the last 12 months by OneLNG and Ophir management, it has not been possible to finalise an attractive debt financing package.

This, together with other capital and resource priorities, has resulted in Schlumberger ending its participation in the project. As a result, Golar and Schlumberger, based on the structure of the BP project, plan to wind down OneLNG and work on FLNG projects on a case-by-case basis.

On 19th April, CELSE, the 50% Golar Power owned project company responsible for delivering the 1.5 GW Porto de Sergipe I power project, executed a \$1.34 bill BRL based non-recourse project finance facility.

Capital expenditure

The facility proceeds will fund remaining capital expenditures for the power plant, connecting transmission lines, FSRU mooring infrastructure and a connecting gas pipeline. Excluding the FSRU, but

including interest costs during construction and a \$123 mill cash reserve, all-in project Capex is now estimated at \$1.74 bill.

The increase in project Capex is the result of higher than expected financing, cash reserve, terminal EPC and transmission line costs together with foreign exchange movements.

Golar Power also agreed with CELSE to charter the FSRU 'Golar Nanook' for 26 years. The additional year provides for the commissioning period ahead of project start-up in January, 2020 during which commissioning hire will accrue. The operating cost component will be paid in 2019, whilst the capital component will accrue and be paid over the remaining 25 years commencing January, 2020.

Annual EBITDA, accruing to Golar Power from the FSRU, is projected to be around \$41 mill, with annual escalation indexed to US-CPI. Having executed timecharter agreements, Golar Power is now in a position to conclude financing discussions for the FSRU, which are well progressed.

Other FSRU conversion prospects are also being pursued. Golar's unrestricted cash position as at 31st March, 2018 was \$172.4 mill. ■

Awilco LNG goes into the black

Awilco LNG reported that freight income for the first quarter of this year was \$13.8 mill, up from \$9.6 mill in 4Q17, due to full exposure to a spot market seeing increased activity following a firm winter market.

Fleet utilisation for the quarter ended at 97%, compared to 83% in 4Q17. EBITDA for the quarter was \$9.5 mill (4Q17 = \$4.2 mill).

Profit for the period was \$1 mill, compared to a loss of \$4.5 mill in 4Q17.

Total current assets were \$36.5 mill as at 31st March, 2018 (\$35.7 mill = 4Q17), of which cash and cash equivalents were \$30.1 mill (\$29 mill in 4Q17).

Total equity as of the same date was \$128 mill. Total non-current liabilities were \$265.1 mill (4Q17 = \$266.2 mill).

Both the LNGCs 'WilForce' and 'WilPride' are currently trading in the spot/short term market. ■

NEWS NUDGE

Klaipeda receives 50th cargo

On 25th May, the 50th LNG reloading operation took place at the KN (AB Klaipėdos Nafta) LNG terminal.

The milestone cargo was delivered to Klaipėda by the 'Arctic Voyager', which has already called at the terminal several times. The LNGC brought 140,000 cu m of LNG from Norway.

Since October, 2014, when the FSRU 'Independence' began operations, the terminal has received 42 LNG import cargoes, ie 5.4 mill cu m of LNG. ■

Höegh sees income and EBITDA drop

Höegh LNG Holdings Ltd and its subsidiaries reported total income of \$72.3 mill for the first quarter of 2018, compared to \$76.1 mill in 4Q17.

Profit after tax was \$13.2 mill, compared with \$20 mill in 4Q17.

The income reduction was mainly down to fewer revenue calendar days and less deferred revenue recognition in the quarter (deferred revenue of \$0.8 mill in 1Q18, compared with \$5.6 mill in 4Q17) offset by higher revenues for 'Höegh Giant', following the start-up of her three-year LNGC/FSRU timecharter with Gas Natural SDG SA (GNF) on 7th February, 2018.

Results were further affected by 10 days of planned maintenance on 'Höegh Gallant' and positioning expenses for 'Höegh Giant', resulting in EBITDA of

\$38.1 mill for 1Q18, compared with \$43 mill for the previous quarter.

As of 31st March 2018, Höegh LNG had \$226.7 mill in current cash and marketable securities (31 December 2017: \$233.9 mill) and net interest-bearing debt of \$908.5 mill (\$908.1 mill in 4Q17).

During the period, Höegh LNG also agreed main terms with an export credit agency (ECA) for debt financing of FSRU No 9, which are subject to credit approval, and is working with a group of banks to secure the funding of both the commercial and ECA tranches of the facility.

Subsequently, on 5th April, the

FSRU 'Höegh Esperanza' was delivered from Hyundai (see page 3). The FSRU is fully financed at a fixed interest rate of around 4%, with the \$200 mill debt portion expandable to \$230 mill once long-term employment has been secured.

The FSRU was subsequently vetted by oil majors for LNG trading and entered a spot charter under which her maiden cargo was loaded on 21st May, 2018 at Queensland Curtis LNG in Australia.

On 7th February, 2018, 'Höegh Giant' commenced her GNF timecharter. Since then, she has been trading as an LNGC, where

she earns an LNGC spot-market-linked day rate. The initial term of the contract is three years, and includes an option for GNF to use the unit as an FSRU at a pre-defined day rate.

'Höegh Gallant' is employed on a five-year time charter with Egas in Ain Sokhna, Egypt. In the first quarter of 2018, Egas requested to start a discussion over terms for an early termination of the contract, which runs to April, 2020.

Höegh LNG's said that its main commercial objective is to secure long-term employment for FSRUs Nos 9 and 10, which are due for delivery in December, 2018 and May, 2019 respectively. ■

Flex LNG remains in the red - buys two newbuildings

Flex LNG reported a net loss of \$1.8 mill for the first quarter of this year, compared to a net loss \$1 mill in 1Q17.

The increase was due to weak utilisation of the 'Flex Enterprise' during the quarter, as well as increased financing costs related to \$315 mill term loan facility.

Flex LNG also reported revenues of \$15.1 mill, compared to \$1.3 mill in 1Q17 and a positive EBITDA of \$2.4 mill, compared to a negative \$2.4 mill in 1Q17.

On 9th and 11th January, 2018 Flex LNG took delivery of its first LNGC newbuildings, 'Flex Endeavour' and 'Flex Enterprise', respectively.

'Flex Endeavour' commenced

her timecharter to Uniper Global Commodities, while 'Flex Enterprise' is operating on the spot market.

Subsequently, on 18th April, 2018 Flex LNG agreed a 12 month timecharter with Enel Trade SpA. The timecharter will commence during the second half of 2019. Enel also has the option to extend the contract by an additional 12 months subsequent to the firm period.

On 28th May, 2018, Flex LNG received credit approval for a sale leaseback of the LNGC newbuild-

ing 'Flex Rainbow' with an Asian lessor, based on term sheet signed by the parties on 20th March, 2018. The sale price under the lease is about 75% of the relevant shipbuilding price for the LNGC, while the remaining 25% represents the advance hire for the 10-year lease period.

Newbuildings

On the same day, Flex LNG entered into an agreement to acquire two 174,000 cu m X-DF LNGC newbuildings under construction at HHI for a price of \$184 mill each, which includes the newbuilding supervision.

Payment terms were claimed to be favourable with 20% of the total due following signing of the agreement, while remaining 80% is due on delivery.

Flex LNG Management Ltd's CEO, Jonathan Cook, decided to resign to pursue other interests. As a result, Board member Marius Hermansen was appointed interim CEO and will actively pursue the recruitment process of a permanent CEO.

The company has also hired Marius Foss as Head of Commercial. Foss came from a similar role at Golar LNG Ltd.

CFO Øystein M Kalleklev, commented; "Although we are disappointed by the financial performance in first quarter, we are pleased to be able to announce an attractive sale-leaseback of 'Flex Rainbow'. This lease enables the company to grow organically based on its existing paid-in equity by the acquisition of two additional high specification LNGC newbuildings at very attractive terms and conditions. The newbuildings are both fitted with X-DF propulsion, giving us a broader offering to our customers once delivered from yard mid-2020.

"The market for LNG transportation is cyclically recovering from lows experienced beginning of first quarter and we remain very confident about the long-term structural prospects for this market and are thus positioning for this up-turn with this accretive fleet expansion," he said. ■



'Flex Endeavour' has been chartered to Uniper for three years, plus options

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GTT receives FSRU order and class society approvals

GTT has received an order notification from Hyundai Heavy Industries (HHI) to equip a new FSRU with a Mark III cryogenic membrane containment system.

The 170,000 cu m FSRU will be built on behalf of an undisclosed European shipowner and is scheduled to be delivered in 2020.

"We are very pleased to pursue our long term partnership with HHI through this project," commented Philippe Berterottière, GTT Chairman and CEO.

He added: "FSRU are the prime solution chosen by operators as they constitute an economical alternative to onshore storage terminals and offer a higher flexibility, with reduced construction delays. The Mark III technology is perfectly competitive and adapted to this vessel type."

Meanwhile, Bureau Veritas (BV) has issued a range of approvals for GTT's new gas containment systems and LNG technology applications.

These include -

- Approvals for Mark III Flex+ and GTT MARS.
- Approvals in principle for LNG carrier and bunker vessel designs.
- Approval for improved performance on existing containment systems.

BV's experts have been working with GTT to approve two new containment systems - the Mark III Flex+, an evolution of the Mark III but with a lower boil-off rate (BOR), and the GTT MARS, a containment system developed for LPG carriers that is adaptable to any size of tank or ship.

Approval in Principle (AiP) has also been given for a 6,500 cu m bunker barge (jointly developed between DSEC and GTT) and an AiP for the design of an 180,000 cu m LNGC is being finalised.

Both demonstrate GTT's move beyond containment technology systems to full ship design, BV said.

Additional AiPs have been granted for:

- A solution for vapour pocket management allowing LNGCs, in compliance with the revised IGC Code, to operate with an increased filling limit (above 98%).
- GTT's NO96 pressurisation system evolution to provide enhanced maintenance flexibility and safety.
- Reduced cooling down features of both the NO96 and Mark III systems to improve cargo operations.

Matthieu de Tugny, COO, Bureau Veritas Marine & Offshore, said: "These approvals are helping GTT

expand the range and depth of their technologies. The increasing sophistication of containment systems and expansion of their application - as in CMA CGM's breakthrough order for large containerships with membrane tanks - is driving the adoption and development of gas transportation and LNG as a marine fuel, as well supporting the marine gas trades."

Berterottière, said: "We are very pleased to be granted these approvals by Bureau Veritas with whom GTT has a very close partnership for decades. We have demonstrated the reliability of our latest developments and their ability to meet the owners' requirements. I believe these new systems and designs will help the shipping industry to move forward and reduce the ecological footprint." ■



BV has given approvals to several GTT projects

BW increases KVH communications roll out

KVH Industries has announced that BW Group has chosen KVH's connectivity services for another 45 vessels in its fleet.

The two companies will also continue with a connectivity contract for the LPG and LNG carriers in BW's fleet that have been using KVH's VSAT systems and services since 2013. BW has a large fleet that includes LNGCs and FSRUs.

"We chose KVH because of their commitment to excellence, the ease of working with a sole provider, and the cost advantages that we can achieve with fast, reliable connectivity and global coverage," said Tor-Egil Gjulem, BW

Group's global head of procurement. "Connectivity is the key to digitalisation of many maritime operational functions."

"We are thrilled to work with a maritime leader such as BW, whose commitment to performance, operational efficiency, and crew welfare is well known," said Mark Guthrie, KVH vice president, Asia/Pacific. "The fact that they are choosing to add more vessels, based on their experience with KVH for the past five

years, is a testament to the strong relationship that has developed between our two companies."

For the 45 additional vessels, BW has chosen the patented dual mode C/Ku-band TracPhone V11-IP satellite antenna system and the Ku-band TracPhone V7-HTS. The particular system for each vessel is dependent on the vessel type. The TracPhone systems are designed for KVH's mini-VSAT Broadband connectivity service. The

vessels will also receive news and entertainment content via KVH's IP-MobileCast content delivery service.

"With our vessels transiting the oceans, it is extremely important to have a connectivity provider like KVH, which has the technical and service capability to address issues immediately, and ensure that our fleet is always benefiting from uninterrupted connectivity," said Juzer Vasi, BW's head of business solutions - fleet. ■

Ghana to buy Russian gas

Last week, Russia's Rosneft and Ghana National Petroleum Corp. (GNPC) signed a preliminary 12-year LNG supply deal to deliver gas to Tema, according to Ghanaian media.

The agreement, subject to approval by both boards, covers the supply of 1.7 mill tonnes per annum of LNG. The Russian gas supplies will meet a quarter of Ghana's energy demand, strengthen its energy security and reinforce the country's position as the key LNG hub

in the region, Rosneft said.

"The signed documents open a new stage in the development of co-operation between Russia and the Republic of Ghana," Rosneft CEO Igor Sechin reportedly said, also adding that the signing also opens up "wide possibilities" for exploration,

production and trading.

"We are happy to co-operate with Rosneft, one of the global oil majors, under such a large-scale agreement. I am sure that as a partner to GNPC, Rosneft will play a leading role in the development of Ghana's energy sector," said GNPC Chairman, Fredrick Blay. ■

AIE selects NSW LNG import site

Australian Industrial Energy (AIE) has chosen Port Kembla as the site for New South Wales' first LNG import terminal.

The terminal would have the ability to supply in excess of 100 PJ/a, sufficient to meet more than 70% of NSW's total gas needs.

The new terminal will be named - Port Kembla Gas Terminal

(PKGT). A Memorandum of Understanding was signed with NSW Ports to enable AIE to start the project's engineering and design phase.

AIE has also entered into 12 MOUs for the supply of gas, ac-

cording to local reports.

A consortium, comprising Andrew Forrest's Squadron Energy, Marubeni Corp and JERA, has been put together to develop the project. The terminal is hoped to be operational by 2020. ■

First Russian LNG arrives in India

The first Russian long-term LNG cargo arrived at the Dahej LNG terminal in Gujarat on Monday.

Local sources said that Indian firms have inked long-term LNG contracts totalling 22 mill tonnes per annum.

"The first LNG cargo under the long term contract between GAIL and Gazprom Marketing & Trading

Singapore (GMTS) of Russia arrived today (Monday) at the LNG terminal of Petronet LNG (PLL) in Dahej, Gujarat," GAIL said in a statement.

"GAIL became the first Indian public-sector company to source

LNG from Russia on a long term. It has contracted to import 2.5 mill tonnes per year of LNG from Gazprom Marketing and Trading Singapore on a long term basis," the company added. ■

NEWS NUDGE

Final LNGC delivered for project

Mitsui OSK Lines (MOL) delivered the sixth and last LNGC ordered by China COSCO Shipping Corp (CCSC) and China Petroleum & Chemical Corp (SINOPEC), at Hudong-Zhonghua Shipbuilding (Group) on 31st May.

'CESI Lianyungang' is the last vessel for the China LNG transportation project announced in April, 2013, and will sail under a long-term charter to ship LNG purchased by SINOPEC from the Australia Pacific LNG project.

The DFDE powered 174,100 cu m vessels are controlled by a joint shipmanagement company owned by MOL (20%), CCSC and SINOPEC (80%).

MOL said that it was currently involved in the operation of 96 LNGCs (including FSRUs and vessels under construction) and aims to further expand its fleet.

Golar LNG declares dividend

Following the first quarter results (see page 4), Golar LNG has declared a total dividend of \$0.05 per share.

This will be paid on 5th July, 2018 with a record date of 14th June, 2018. ■

GasLog orders another LNGC

GasLog Ltd has signed of a seven year timecharter contract with a wholly owned subsidiary of Centrica for a newbuilding LNGC.

To cover the charter, a 180,000 cu m LNGC (HN 2262) fitted with low pressure 2-stroke (LP-2S) propulsion system was ordered from



Paul Wogan's GasLog has ordered another LNGC on the back of a long term charter

Samsung Heavy Industries with an expected delivery in 3Q20.

The rate of hire for the charter is broadly in line with mid-cycle rates, the company said.

Further, GasLog and Centrica have separately agreed an option to allow either HN 2262, HN 2212 or HN 2274 to be chartered. The latter two are currently uncommitted GasLog newbuilding LNGCs, due for delivery in 3Q19 and 2Q20, respectively.

GasLog Partners LP has the right to acquire the vessel to be chartered under the omnibus agreement with GasLog Ltd. As a result, GasLog Partners' potential dropdown pipeline will increase to nine LNGCs with charter lengths of five years or longer.

GasLog CEO Paul Wogan, stated, "I am delighted that Centrica has chosen GasLog to provide

them with a second LNG carrier on long-term charter. We appreciate Centrica's confidence in GasLog's ability to deliver high operating and safety standards and we look forward to continuing to build our strategic partnership with them.

"Robust LNG demand and supply fundamentals underpin a positive outlook for LNG shipping. These fundamentals are allowing us to grow our fleet at attractive returns, to extend the drop-down pipeline for GasLog Partners and to make progress toward the growth target set out at our recent investor day," he said.

***Broking sources have reported that Maran Gas has firmed up options on an LNGC and an FSRU at DSME.

Both vessels are of 173,400 cu m capacity each. They are due to be delivered in 2020. ■

NEWS NUDGE

PETRONAS buys into LNG Canada

PETRONAS' wholly-owned entity, North Montney LNG Limited Partnership (NMLLP), has signed a Purchase and Sales Agreement for an equity position in the LNG Canada project in Kitimat, British Columbia (BC).

Upon the completion of the transaction, which is subject to international regulatory approvals and the completion of other associated agreements, the composition of ownership in the project will be PETRONAS (through NMLLP) (25%); Shell Canada Energy, a subsidiary of Royal Dutch Shell (Shell) (40%); PetroChina Canada Ltd (15%); Diamond LNG Canada Ltd, a subsidiary of Mitsubishi Corp (15%); and Kogas Canada LNG Ltd (5%).

It is anticipated that this transaction will go through in the next few months.

GAC to provide Translux voyage management

GAC LNG Services is to provide voyage management services to Translux Limited, which has entered the LNG business.

Officially formed in 2016, GAC LNG Services provides a full-service solution for the sector, covering charterers' vessel operations, as well as technical and commercial information.

Under the Translux agreement, GAC's worldwide network of offices and approved agents will support operations, which will be overseen by GAC LNG Services in Houston.

Bob Bandos, GAC's Group Vice President - Americas, said: "We are excited for the new opportunities an exclusive contract with Translux Limited will provide for GAC LNG Services. As we continue to grow in the LNG market, it becomes increasingly apparent that there is a strong need for the voyage management provided by

GAC LNG Services every step of the way."

Translux has been an active supplier and distributor of various energy commodities across the Middle East for more than 13 years. Due to its current business activities the firm has expanded into natural gas to support its existing customers in the Middle East, as well as Europe and Asia.

Marcellus Catalano, Translux Managing Director of LNG, said, "The development of a global LNG capability is a natural expansion for Translux Limited. GAC LNG Services provides the perfect support to meet our LNG shipping needs and facilitate our transition from a regional to global commodities firm." ■

Baltic LNG moves a step closer

The heads of Gazprom and Shell recently discussed strategic co-operation issues, including a joint feasibility study on the Baltic LNG project.

This took the form of a working meeting between Alexey Miller, Gazprom Management Committee Chairman, and Ben van Beurden, CEO of Royal Dutch Shell, which took place at the St Petersburg International Economic Forum 2018.

During the meeting, an agreement on Baltic LNG was signed moving the project on from the Heads of the Joint Venture Agreement.

The new document contains, inter alia, an agreement on the priority use of Russian technical standards when designing and preparing equipment specifications, which is aimed at Russian LNG industry development.

The agreement also listed the key operating aspects of the future joint venture, including occupational safety, industrial safety

and social responsibility.

Baltic LNG involves the building of a natural gas liquefaction plant near Ust-Luga in the Leningrad Region, which will have an annual capacity of 10 mill tonnes.

The potential markets for the project include countries in the Atlantic region, Middle East, and South Asia, as well as small-scale LNG markets in the Baltic and North Seas. The possibility of LNG swap deals is also under consideration.

In June 2017, Gazprom and Shell signed a Heads of Agreement to set up the joint venture. This document describes the concept behind the joint venture, including the securing of finance and the carrying out of the design, construction and operation of the LNG plant. ■

“Energy is a major cost driver in running an LNG plant. But with efficient Atlas Copco mixed-refrigerant compressors, we’re using less energy and saving more money.”

Zhang Jia-Hua

Operations Team Leader
Baotou Lu Ding Natural Gas Co. Ltd.
Inner Mongolia, China

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WORLD LNG CARRIER ORDERBOOK

Name	Yard	Containment System	Capacity	Propulsion	Delivery Date	Ordered	Primary Owner
Diamond Gas Orchid	Mitsubishi H.I.	Moss	165000	STaGE	01/06/2018	2015	NYK
Flex Ranger	Samsung	TZ Mk. III	174000	MEGI	01/06/2018	2013	Flex LNG
Pan Europe	Hudong-Zhonghua	GT NO 96	174000	TFDE	01/06/2018	2014	Teekay LNG
British Partner	DSME	GT NO 96	173400	MEGI	01/06/2018	2014	BP
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
LNG Schneeweisschen	DSME	GT NO 96	180000	TFDE	31/07/2018	2015	MOL
Rudolf Samoylovich	DSME	GT NO 96	172410	TFDE - Azipod	01/08/2018	2014	Teekay LNG
Energy Liberty	Japan Marine United Corp	SPB	165000	TFDE	01/08/2018	2014	MOL
Diamond Gas Rose	Mitsubishi H.I.	Moss	165000	STaGE	01/08/2018	2015	NYK
Enshu Maru	Kawasaki	Moss	164000	STRH	30/08/2018	2014	K-Line
Castillo De Caldelas	Imabari	TZ Mk. III	178000	MEGI	01/09/2018	2014	Elcano
Vladimir Vize	DSME	GT NO 96	172410	TFDE - Azipod	01/09/2018	2014	MOL
Kinisis	DSME	GT NO 96	173400	MEGI	15/09/2018	2015	Chandris
British Achiever	DSME	GT NO 96	173400	MEGI	01/10/2018	2014	BP
Georgiy Brusilov	DSME	GT NO 96	172410	TFDE - Azipod	01/10/2018	2014	Dynagas
Marvel Eagle	Kawasaki	Moss	155000	TFDE	19/10/2018	2014	MOL
Jmu Tsu 5071	Japan Marine United Corp	SPB	165000	TFDE	01/11/2018	2014	NYK
British Contributor	DSME	GT NO 96	173400	MEGI	01/11/2018	2014	BP
Boris Davydov	DSME	GT NO 96	172410	TFDE - Azipod	01/11/2018	2014	Dynagas
Marvel Hawk	Samsung	GTT Mark III Flex	174000	XDF	01/12/2018	2014	MOL
Marvel Crane	Mitsubishi H.I.	Moss	177000	STaGE	01/12/2018	2015	NYK
Nikolay Zubov	DSME	GT NO 96	172410	TFDE - Azipod	01/12/2018	2014	Dynagas
Samsung 2150	Samsung	GTT Mark III Flex	174000	XDF	01/01/2019	2014	MOL
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
Mitsubishi Nagasaki 2323	Mitsubishi H.I.	Moss	177000	STaGE	01/01/2019	2015	MOL
Maran Gas Chios	DSME	GT NO 96	173400	MEGI	01/01/2019	2015	Maran Gas Maritime
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
Gaslog Gladstone	Samsung	TZ Mk. III	174000	XDF	01/01/2019	2014	GasLog
Yamal Spirit	Hyundai Heavy	TZ Mk. III	174000	MEGI	01/01/2019	2015	Teekay LNG
Pan Africa	Hudong-Zhonghua	GT NO 96	174000	TFDE	01/01/2019	2014	Teekay LNG
Shinshu Maru	Kawasaki	Moss	177000	STRH	01/02/2019	2015	MOL
British Mentor	DSME	GT NO 96	173400	MEGI	01/02/2019	2014	BP
Nohshu Maru	Mitsubishi H.I.	Moss	180000	STaGE	01/02/2019	2015	NYK
Jmu Tsu 5072	Japan Marine United Corp	SPB	165000	TFDE	01/03/2019	2014	MOL
British Sponsor	DSME	GT NO 96	173400	MEGI	01/03/2019	2014	BP
Hyundai Ulsan 2937	Hyundai Heavy	GTT Mark III Flex	180000	XDF	01/04/2019	2016	SK Shipping
Diamond Gas TBN	Mitsubishi H.I.	Moss	165000	STaGE	01/05/2019	2015	Mitsubishi
Hyundai Ulsan 2964	Hyundai Heavy	GTT Mark III Flex	180000	MEGI	01/05/2019	2017	Knutsen

DFDE = dual fuel diesel engines, STRH = steam turbine reheat / ultra steam turbine, MEGI = marine electric gas injection, DRL = slow speed diesel, FSRU = vessel with regas capacity, FLNG = floating LNG production unit
Data last updated = 6th June 2018

Name	Yard	Containment System	Capacity	Propulsion	Delivery Date	Ordered	Primary Owner
Bushu Maru	Mitsubishi H.I.	Moss	180000	STaGE	01/06/2019	2015	NYK
Flex Constellation	DSME	GT NO 96	173400	MEGI	01/06/2019	2017	Flex LNG
Hyundai Ulsan 2963	Hyundai Heavy	GTT Mark III Flex	180000	MEGI	01/06/2019	2017	Knutson
Sohshu Maru	Kawasaki	Moss	177000	STRH	01/07/2019	2015	MOL
Hyundai Ulsan 2938	Hyundai Heavy	GTT Mark III Flex	180000	XDF	01/07/2019	2016	SK Shipping
Jmu Tsu 5073	Japan Marine United Corp	SPB	165000	TFDE	01/07/2019	2014	MOL
Daewoo 2430	DSME	GT NO 96	172000	TFDE - Azipod	01/07/2019	2014	Teekay LNG
Maran Gas Syros	DSME	GT NO 96	173400	MEGI	01/07/2019	2014	Maran Gas Maritime
Gaslog Windsor	Samsung	GTT Mark III Flex	180000	XDF	01/07/2019	2017	GasLog
Kawasaki Sakaide 1729	Kawasaki	Moss	155000	TFDE	01/08/2019	2014	MOL
Daewoo 2431	DSME	GT NO 96	172000	TFDE - Azipod	01/08/2019	2014	Teekay LNG
Flex Courageous	DSME	GT NO 96	173400	MEGI	01/08/2019	2017	Flex LNG
Daewoo 2432	DSME	GT NO 96	172410	TFDE - Azipod	01/09/2019	2014	MOL
Mitsubishi Nagasaki 2322	Mitsubishi H.I.	Moss	177000	STaGE	01/09/2019	2015	MOL
Daewoo 2466	DSME	GT NO 96	173400	MEGI	01/10/2019	2016	Maran Gas Maritime
Daewoo 2433	DSME	GT NO 96	172000	TFDE - Azipod	01/10/2019	2014	Teekay LNG
Daewoo 2467	DSME	GT NO 96	173400	MEGI	01/11/2019	2016	Maran Gas Maritime
Daewoo 2489	DSME	GT NO 96	173400	MEGI	01/11/2019	2015	BWGas
Daewoo 2434	DSME	GT NO 96	172000	TFDE - Azipod	01/11/2019	2014	Teekay LNG
MOL HUDONG-ZHONGHUA 1/4	Hudong-Zhonghua	GT NO 96	174000	MEGI	01/12/2019	2017	MOL
DSME 2490	DSME	GT NO 96	173400	MEGI	01/02/2020	2018	BWGas
MOL HUDONG-ZHONGHUA 2/4	Hudong-Zhonghua	GT NO 96	174000	MEGI	01/03/2020	2017	MOL
HHI NYK/EDF	Hyundai Heavy	GTT Mark III Flex	174000	XDF	30/04/2020	2018	NYK
DSME 2491	DSME	GT NO 96	173400	MEGI	01/05/2020	2018	BWGas
Daewoo 2478	DSME	GT NO 96	173400	MEGI	31/05/2020	2017	Maran Gas Maritime
Samsung 2213	Samsung	GTT Mark III Flex	180000	XDF	01/06/2020	2016	GasLog
HHI / Total	Hyundai Heavy	GTT Mark III Flex	174000	XDF	01/06/2020	2018	Cardiff Marine
HHI / Total / Sovc	Hyundai Heavy	GTT Mark III Flex	174000	XDF	01/06/2020	2018	Sovcomflot
HHI / Cardiff #1	Hyundai Heavy	GTT Mark III Flex	174000	XDF	01/06/2020	2018	Cardiff Marine
HHI / Cardiff #2	Hyundai Heavy	GTT Mark III Flex	174000	XDF	01/06/2020	2018	Cardiff Marine
Flex Aurora	Hyundai Heavy	GTT Mark III Flex	174000	XDF	01/06/2020	2018	Flex LNG
SHI Gaslog #1	Samsung	GTT Mark III Flex	180000	XDF	01/06/2020	2018	GasLog
Hyundai Ulsan 3086	Hyundai Heavy	GTT Mark III Flex	180000	MEGI	01/06/2020	2018	Knutson
Daewoo 2469	DSME	GT NO 96	173400	MEGI	30/06/2020	2016	Maran Gas Maritime
MOL HUDONG-ZHONGHUA 3/4	Hudong-Zhonghua	GT NO 96	174000	MEGI	01/07/2020	2017	MOL
DSME 2479	DSME	GT NO 96	173400	MEGI	01/08/2020	2018	John Fredriksen
Flex America	Hyundai Heavy	GTT Mark III Flex	174000	XDF	01/08/2020	2018	Flex LNG
DSME 2480	DSME	GT NO 96	173400	MEGI	01/09/2020	2018	John Fredriksen
SHI Gaslog #2	Samsung	GTT Mark III Flex	180000	XDF	01/09/2020	2018	GasLog
MOL HUDONG-ZHONGHUA 4/4	Hudong-Zhonghua	GT NO 96	174000	MEGI	01/10/2020	2017	MOL
DSME 2483	DSME	GT NO 96	173400	MEGI	01/10/2020	2018	Alpha Gas
DSME 2484	DSME	GT NO 96	173400	MEGI	01/12/2020	2018	Alpha Gas
DSME Minerva #1	DSME	GT NO 96	173400	MEGI	01/03/2021	2018	Minerva Marine
DSME Minerva #2	DSME	GT NO 96	173400	MEGI	01/07/2021	2018	Minerva Marine

DFDE = dual fuel diesel engines, STRH = steam turbine reheat / ultra steam turbine, MEGI = marine electric gas injection, DRL = slow speed diesel, FSRU = vessel with regas capacity, FLNG = floating LNG production unit
Data last updated = 6th June 2018

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 Conception	10,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2011	Norgas Invention	10,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2011	Vision Spirit	12,000	LNG/LPG/Ethylene	Worldwide	No	Teekay
2011	Unikum Spirit	12,000	LNG/LPG/Ethylene	Worldwide	No	Teekay
2012	Coral Energy	15,600	LNG	Northwest Europe/Baltics	Yes	Anthony Veder
2013	JX Energy TBN	2,500	LNG	Japan	Yes	JX Energy
2013	Kakuyu Maru	2,500	LNG	Japan	Yes	Tsurumi Sunmarine
2013	Coral Anthelia	6,500	LNG/Ethylene			Anthony Veder
2014	LNG-Oil combi**	2,000	LNG	Germany	Yes	Veka
2014	Short Sea LNG Tanker **	4,000	LNG	Germany	Yes	Veka
2015	LNG Inland bunker**	800	LNG	Germany	Yes	Veka
2015	LNG bunker barge 1†	2,250	LNG	China	Yes	Anhui Huaqiang Natural Gas
2015	LNG bunker barge 2†	2,250	LNG	China	Yes	Anhui Huaqiang Natural Gas
2015	LNG bunker barge 3†	2,250	LNG	China	Yes	Anhui Huaqiang Natural Gas
2015	LNG Barge TBN	3,000	LNG	US Coast	Yes	LNG America
2015	10 small carriers TBN**	5,000	LNG			Bimantara Group
2015	Jahre TBN**	6,200	LNG	Norway	Yes	Donsotank/Jahre Marine
2015	Norgas TBN**	17,000	LNG/LPG/Ethylene	Worldwide		Norgas Carriers
2015	Norgas TBN**	17,000	LNG/LPG/Ethylene	Worldwide		Norgas Carriers
2015	JS Ineos Ingenuity	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2015	JS Ineos Insight	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2015	JS Ineos Intrepid	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2015	TBN 1	27,500	LNG	China?		Danyang?
2015	TBN 2	27,500	LNG	China?		Danyang?
2015	TBN 3	27,500	LNG	China?		Danyang?
2015	PetroChina TBN	30,000	LNG	China		PetroChina
2016	Clean Jacksonville	2,200	LNG	US Coast	Yes	CME
2016	LNG Prime	2,250	LNG	Northwest Europe	Yes	Veka Deen LNG
2016	HUA XIANG 8	13,720	LNG	China	Yes	Zhejiang Huaxiang
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	Hai Yang Shi You 301	30,000	LNG	Bali FSU	Yes	CETS (CNOOC)
2016	Navigator Aurora	35,000	Ethane/Ethylene	Markus Hood - Stenungsund	Ethane, for Borealis	Navigator
2016	Gaschem Beluga	36,000	Ethane/Ethylene	US - Teeside	Ethane, for Sabic	Gaschem Services
2016	Gaschem Orca	36,000	Ethane/Ethylene	US - Teeside	Ethane, for Sabic	Gaschem Services
2016	Ocean Yield TBN**	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 = 6th June 2018

Built	Name	CBM	Cargo Type	Trading area	Trading in LNG?	Ship Owner / Operator
2017	Oizmendi	600	LNG	Bilbao	Yes	Itsas Gas
2017	CME TBN†	2,200	LNG	US Coast	Yes	CME
2017	CME TBN†	2,200	LNG	US Coast	Yes	CME
2017	ENGIE Zeebrugge	5,000	LNG	Northwest Europe	Yes	NYK
2017	Coralus	5,800	LNG	Northwest Europe/Baltics	Yes, for Skangas	Anthony Veder
2017	Cardissa	6,500	LNG	Northwest Europe	Yes	Shell
2017	LNG-Gorskaya TBN	7,300	LNG	Russia	Yes	LNG-Gorskaya
2017	LNG-Gorskaya TBN	7,300	LNG	Russia	Yes	LNG-Gorskaya
2017	LNG-Gorskaya TBN	7,300	LNG	Russia	Yes	LNG-Gorskaya
2017	Coral EnergiICE	18,000	LNG	Northwest Europe/Baltics	Yes	Anthony Veder
2017	JS Ineos Invention	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2017	JS Ineos Intuition	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2017	Yuan He 1	30,000	LNG	China	Yes	CSR
2017	Navigator Eclipse	35,000	Ethane/Ethylene	US	Ethane	Navigator
2017	Navigator Nova	35,000	Ethane/Ethylene	US	Ethane	Navigator
2017	Navigator Prominence	35,000	Ethane/Ethylene	US	Ethane	Navigator
2018	CME TBN†	2,200	LNG	US Coast	Yes	CME
2018	Shell Bunker Barge TBN 4	3,000	LNG	Northwest Europe	Yes	Shell
2018	Shell Bunker Barge TBN 2	6,500	LNG	Northwest Europe	Yes	Shell
2018	Shell Bunker Barge TBN 3	6,500	LNG	Northwest Europe	Yes	Shell
2018	Kairos	7,500	LNG	Baltic	Yes	Bernhard Schulte
2018	Qi Yuan	28,000	LNG	China	Yes	Dalian Inteh Group
2018	Evergas TBN	32,000	Ethane/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2018	Evergas TBN	32,000	Ethane/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2018	Evergas TBN	32,000	Ethane/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2018	Evergas TBN	32,000	Ethane/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2018	Bunker Breeze	0	LNG	Barcelona	Yes	Suardiaz Energy Shipping
2019	KLine TBN	7,500	LNG	Korea	Yes	Korea Line
2019	KLine TBN	7,500	LNG	Korea	Yes	Korea Line
2019	Stolt TBN	7,500	LNG	Mediterranean	Yes	Stolt-Nielsen Gas
2019	Stolt TBN	7,500	LNG	Mediterranean	Yes	Stolt-Nielsen Gas
2020	Shell Bunker Barge	4,000	LNG	US Coast	Yes	Q-LNG Transport / Harvey Gulf
2020	Stolt TBN (option)	7,500	LNG		Yes	Stolt-Nielsen Gas
2020	Stolt TBN (option)	7,500	LNG		Yes	Stolt-Nielsen Gas
2020	Total TBN	18,600	LNG	NWE	Yes	MOL
2020	FuelLNG TBN	7,500	LNG	Singapore	Yes	FuelLNG
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 = 6th June 2018

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