LNG Shipping News

AN LNG JOURNAL TITLE ON LNG CARRIERS 26 October 2017

Novatek reveals Arctic expansion plans

Russian energy company Novatek has signed a co-operation agreement with the Kamchatka Territorial Government to build a terminal to tranship LNG at Kamchatka.

The agreement was signed by the Chairman of Novatek's Management Board, Leonid Mikhelson and Kamchatka's Governor Vladimir Ilukhin.

The parties agreed to build a terminal for transhipping LNG from Arctic Ice Class LNGCs (Arc7s) to conventional gas carriers on Kamchatka Peninsula's east coast.

Mikhelson said: "The construction of a sea terminal facility for reloading operations will optimise the logistics of LNG supplies from the Arctic region, stimulate usage of the Northern Sea Route and create a new LNG supply hub for Asian/Pacific regional consumers."

The agreement will facilitate the development of transport infrastructure, trading, economic, research and technology ties at Kamchatka, create additional jobs in the region, as well as create conditions for Kamchatka's gasification, using the boil-off gas from the reloading terminal to generate power to support utility industries on the Peninsula, Novatek said.

Fourth Yamal train

In addition, at a recent briefing in London, Mikhelson reportedly said that Novatek is planning to add another liquefaction train at Yamal LNG, which will add an additional 1 mill tonnes per annum of capacity.

The first three trains will come on stream by the first half of 2019 and the fourth train would be in operation before 2020, Mikhelson reportedly said.

With all trains operating, the total capacity of the plant would be about 18 mill tonnes per annum.

The first two LNG cargoes from the Yamal LNG project are scheduled to be shipped in November, according to Russian reports.

Four more shipments will follow in December, and next year, it is planned that up to 10 gas carriers would transport LNG from the project per month.

In another move, Novatek also confirmed that it is planning to build a similar plant on the Gydan Peninsula, across the Gulf of Ob from Yamal LNG.

The second facility – Arctic LNG-2 – could be completed by 2023 and would export gas from Novatek's Salmanovskoye and Geofizicheskoye fields, along with production from new license areas, as exploration continues.

Mikhelson claimed that the combined plants could produce 70 mill tonnes per annum, enough to rival world leader Qatar.

Leonid Mikhelson outlined Novatek's expansion plans. Photo credit- Wikepedia

To construct Arctic LNG-2, Novatek said it would build modules near the site at a new $400 mill construction yard. Yamal LNG's giant modules were built elsewhere and shipped in purpose-built heavy lift vessels to Sabetta.

Novatek is also planning to build another 15 icebreaking LNGCs at Zvezda to support the development of the Arctic LNG-2 facility.

"Through Sovcomflot we are conducting all the documentation for the vessels of the Arctic class that will bring LNG to this transhipment point," said Mikhelson, referring to Kamchatka. ■

First of four Methane Services chartered LNGCs delivered

On 13th October, Hudong-Zhonghua Shipbuilding Group delivered the 'Pan Asia', the first of four 174,000 cu m TFDE LNGs.

The four LNGCs are owned by a joint venture involving China National Offshore Oil Corp (CNOOC), China LNG Group, BW Group and Teekay.

They are due to operate under a 20-year timecharter contract with Shell subsidiary, Methane Services.

Hong Kong flagged 'Pan Asia' is of 290 m in length with a beam of of 47 m.

Launched in April, 2016, the first LNGC completed sea trials off the coast of Shanghai in the East China Sea earlier this year.

The remaining three vessels, 'Pan America', 'Pan Europe' and 'Pan Africa', are currently under construction at the yard. Two are scheduled for completion in 2018 and the final vessel in the following year. ■

SHIPPING NEWS AGENDA

Add Energy plans to unlock smaller offshore gas assets in partnership

Energy consultancy Add Energy has partnered with Transborders Energy (TBE) and joined forces with TechnipFMC and MODEC to create a fast deployment business model for the FLNG industry.

Add Energy has joined a consortium to exploit small-scale LNG projects

This is aimed at freeing up small-scale stranded resources around the world and to establish a new concept in global gas field development.

The new business model targets discovered gas resources of ≈ 0.5 to 2 trill cu ft of gas that have little value to their current owners, as they are either in remote locations where tieback is capital intensive, or lack an economically viable development concept.

Key to the model is the deployment of a small scale FLNG. Rather than investing up to five years in identifying a gas resource, understanding its size and potential and creating a bespoke development concept, the new model establishes a pre-defined concept using a ≈1 mill tonne per annum FLNG vessel and applying it to fields that fit the concept.

TBE Managing Director, Daein Cha, said: "The economies of scale pursued by mega projects have not eventuated. They are too capital intensive and risky in terms of resilience and flexibility for what is a commoditising business.

"However, the deployment of our pre-determined, low cost small scale FLNG concept on already discovered but stranded resources with innovative financial and commercial structures delivered by a small but high calibre team establishes a new value proposition to the resource owners and LNG buyers," he said.

Australia identified

Offshore Australia has been identified as suitable for an initial pilot project, with a target resource to be confirmed early next year and the project to be reach Final Investment Decision (FID) by 2020.

TBE is also in discussion with resource owners of other jurisdictions to pursue global opportunities.

Eduardo Robaina, vice president for Well Engineering, Add Energy, said: "LNG development is currently focused on fields with large scale volumes between five and 10 trill cu ft or more. However, a supply shortage in LNG is expected from mid-2020, due to demand growth and a failure to proceed with new mega project developments.

"Large scale LNG projects typically involve up to five years of front-end engineering and design work and a further six years for EPC activities, but new projects need to progress now to capture this upside.

"The Transborders' concept enables the development of previously uneconomic resources at a much faster pace than that of mega projects and will help feed the growing demand for energy, initially in Asia and elsewhere. Add Energy's role will be to ensure well construction, maintenance and well intervention activities are carried out in accordance with best practices and industry standards," he said. ■

Kogas to build storage terminal at Dangjin

South Korea's state-owned Korea Gas Corp (KOGAS) plans to build its fifth LNG storage terminal with a capacity of 2 mill kiloliters by 2031 in Dangjin, south of Seoul, the company said in a statement.

The terminal will have 10 tanks, each of 200,000 kiloliters.

"Under the first phase, the company will build four tanks by 2025, which will be followed by the second phase for the remaining six tanks by 2031," said Jeon Sang-Cheol, chief of the utility's facility planning team. "Exact location of the new terminal inside Dangjin will be finalised by the end of this year, which will be followed by a feasibility study by the finance ministry for budget."

With the new terminal, Kogas will have five storage terminals with combined capacity of 13.47 mill kiloliters.

In June this year, Kogas started commercial operation at three storage tanks of 270,000 kiloliters capacity each in Samcheok on South Korea's east coast. Built in July, 2014, the Samcheok LNG terminal has nine other tanks each with a capacity of 200,000 kiloliters, giving a total capacity 2.61 mill kiloliters.

Kogas, which has been the world's single largest LNG buyer, has expanded its gas storage capacity to ensure stable supplies for South Korea, the world's second-biggest LNG importer, Platts said.

To meet stronger demand, Kogas imported 31.847 mill tonnes of LNG last year, up 1.4% from 2015 following annual declines recorded in the previous two years.

Platts said that the new storage terminal plan comes with newly-elected President Moon Jae-In's push to reduce the country's heavy reliance on coal and nuclear in electricity generation. Moon's energy plan calls for the country to increase the use of LNG in power generation to 37% in 2030 from 20% currently. ■

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Ichthys LNGC named

A naming ceremony was held on 24th October for the LNGC built to ship about 0.9 mill tonnes of LNG per year from the INPEX-operated Ichthys LNG project to the company's Naoetsu LNG Terminal in Joetsu, Niigata Prefecture, Japan.

She was named 'Oceanic Breeze' at Mitsubishi Heavy Industries' (MHI) Nagasaki Shipyard.

The LNGC is the second vessel to be chartered by the INPEX Group to ship Ichthys-produced LNG, following the 'Pacific Breeze', which was named on 1st September, 2017.

The latest LNGC is owned by Oceanic Breeze LNG Transport (OBLT), a joint venture between INPEX Shipping (30%) and Kawasaki Kisen Kaisha (K-Line) (70%).

Through INPEX Shipping, INPEX has signed a timecharter for this vessel with OBLT. She is scheduled to be deployed in conjunction with the startup of Ichthys LNG project shipments

She has a capacity of 155,300 cu m and features the 'sayaendo' (peapod) design incorporated in MHI's newest class of LNGCs in which MOSS-type spherical tanks are shielded by an outer cover integrated with the hull.

This feature helps strengthen the tanker's overall structure, reduces weight and significantly cuts down on resistance from wind pressure during operations, the company claimed.

She is also equipped with a new type of steam turbine propulsion unit that uses reheated steam to power the main engine, slashing fuel consumption, compared to conventional turbine vessels and raising expectations for lower CO_2 emissions and transportation costs. ■

Ichthys - A second LNGC has been named for the Ichthys project

Fourth Sabine Pass train complete

Train 4 of Cheniere Energy's Sabine Pass liquefaction project in Cameron Parish, Louisiana was substantially completed on 9th October, 2017, the company said.

Commissioning has been completed and Cheniere Partners' EPC partner Bechtel Oil, Gas and Chemicals has turned over care, custody, and control of Train 4 to Cheniere.

Under a sale and purchase agreement (SPA) with GAIL (India), the date of first commercial delivery for Train 4 of the SPL project is expected in March 2018, upon which the SPA's 20-year term commences.

Over the last 17 months, Cheniere Partners and Bechtel have declared substantial completion on four liquefaction trains at Sabine Pass.

With the achievement of the latest substantial completion, financial results of LNG sales from Train 4 going forward will be reflected in the statement of operations of Cheniere Partners and its affiliates, the gas producer said. ■

Newbuilding LNGC for Tokyo Gas

On 16th October, Mitsui OSK Lines (MOL) held a naming ceremony for a newbuilding LNGC, jointly owned by MOL and Tokyo LNG Tanker.

The 165,000 cu m TFDE 'Energy Liberty' was named at the Tsu Shipyard of Japan Marine United Corp (JMU).

'Energy Liberty' will be the eighth LNGC to be owned and managed by Tokyo LNG Tanker. MOL will directly manage six of the vessels, including this newbuilding.

Following her delivery, she will transport LNG from the US Cove Point Project for Tokyo Gas.

She is fitted with self-supporting prismatic shape IMO type B tanks, designed to prevent sloshing. ■

Samsung wins FSRU order

Samsung Heavy Industries (SHI) has won a $221 mill order to build an FSRU.

The 170,000 cu m FSRU will be built for a consortium consisting of Marubeni, Sojitz, and Pertamina.

She will be equipped with Samsung's newly developed in-house regasification system - S-Regas(GI) - which is claimed to reduce corrosion from the usual method of heating LNG directly with seawater and saves energy by 5%.

On 19th September, SHI unveiled the system to a group of shipowners. "Successful showcase of the in-house regasification system led to an actual application in the new LNG-FSRU in just a month," an SHI representative said. ■

NEWS NUDGE

Golar declares quarterly dividend - finalises 'Solaris' dropdown

Golar LNG Partners has agreed a quarterly cash distribution with respect to the third quarter of this year of $0.5775 per unit.

The cash will be paid on 14th November, 2017 to all unit holders of record as of the close of business on 30th October, 2017.

Golar LNG Partners has also announced the finalisation of the acquisition from Golar of 100% of the shares in the entity that owns and charters the 155,000 cu m TFDE LNGC 'Solaris'.

The 2014-built vessel is currently on a multi-year timecharter with a wholly owned subsidiary of Shell through June, 2021. Shell has two consecutive extension options which, if exercised, would extend the charter for a period of either five or 10 years.

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Nakilat in profit fall

Nakilat has announced a fall in net profit to QR607 mill for the first nine months of this year, compared to QR749 mill of the same period in 2016.

The drop in profit was mainly attributed to the effect of changing the estimated scrap value of vessels in accordance with applicable International Accounting Standards and the lower number of charter hire days this year, compared to the same period last year (2016 was a leap year).

On the other hand, the company said that it had effectively maintained its operating expenses and reduced its finance costs, due to timely repayment of the periodic loan instalments.

The Board of Directors noted that Nakilat's strategic long-term charters for its LNGCs have ensured a stable business profile. The Board also reaffirmed its commitment to Nakilat's growth and development strategy, in line with Qatar's National vision 2030.

Nakilat CEO, Eng Abdullah Fadhalah Al Sulaiti, said, "We are constantly exploring and capitalising on various strategic business opportunities to diversify our business portfolio and align with our vision to be a provider of choice for energy transportation and maritime services. Our strategic growth is sustained through our dedicated workforce who continuously strive towards excellence, without compromising safety in our daily operations. We remain committed to our mission of seeking more opportunities for further growth and for the benefit of our shareholders." ■

'Mozah' - Nakilat has reported a fall in revenue

NEWS NUDGE

Gail in another three cargo tenders

Teekay LNG Partners announced it has priced its public offering of 6 mill 8.5% Series B fixed-to-floating rate cumulative redeemable perpetual preferred units, representing limited partner interests, at $25 per unit.

Distributions will be payable on the Series B units from and including the original issue date to, but excluding 15th October, 2027 at (i) a fixed rate equal to 8.5% per annum of the stated liquidation preference of $25 per unit and (ii) from and including 15th October, 2027, at a floating rate equal to three-month LIBOR, plus a spread of 624.1 basis points.

The offering was expected to close on 23rd October, 2017.

Teekay LNG has granted the underwriters a 30-day option to purchase up to an additional 900,000 Series B units. The Partnership said that it expected to use the net proceeds for general partnership purposes, which may include funding instalment payments on newbuilding deliveries and debt repayments.

GTT reports revenue fall

French gas engineering company, Gaztransport & Technigaz (GTT) said that revenues for the first nine months fell by 4.6% to €168.5 mill, compared to €177 mill in the same period of 2016.

Revenues related to royalties also fell to €157.1 mill, down 6.3%. Royalties related to LNGCs and ethane carriers decreased by 8.2% to €138.8 mill, as a result of a low number of orders in 2016, while royalties for FSRUs rose 14.8% to €16.4 mill.

Other royalties derived from FLNGs came in at €1.8 mill, up 12.7% and a barge (€0.1 mill), GTT said.

However, revenues related to services went up by 26.6% to €11.4 mill, compared to the first nine months of 2016, mainly driven by engineering studies and maintenance contracts for ships in service.

Philippe Berterottière, GTT Chairman and CEO, commented: "Third-quarter sales activity was marked by a new order for an FSRU, highlighting the market's appetite for this type of solution. Our Services activity has seen strong growth, largely thanks to our engineering studies. Our R&D efforts have concentrated on finalising a new variant of Mark III Flex, a proven technology whose performance now stands at a level comparable to that of our latest-generation Mark V technology, itself currently the focus of a new development phase.

"The high level of new orders since the start of 2017 and the growth in our services activity unable us to confirm our revenue, net margin, and dividend targets for the full financial year," he explained.

Since 1st January, 2017, GTT's order book, which then stood at 96 units, has evolved as follows:

- 14 new orders: eight LNGCs, five FSRUs, one FLNG.
- 24 deliveries: 21 LNGCs and ethane carriers, two FSRUs, one FLNG.

As at 30th September, 2017, the order book stood at 86 units:

- 70 LNGCs.
- 11 FSRUs.
- Two FLNGs.
- Two onshore storage tanks.
- One LNG bunker barge

GTT also confirmed its targets for 2017, namely:

- 2017 revenues in a range of €225-240 mill.
- Net margin ratio above 50%.
- 2017 dividend amount at least equivalent to those of 2015 and 2016, and, for the two subsequent years, a payout ratio of at least 80% of net income available for distribution.

Service contract award

Later, GTT announced that the company had been awarded a contract for membrane cargo containment system services for Shell's 'Prelude' FLNG. This contract will provide support for the engineering, inspection, maintenance, as well as the testing of the containment system.

'Prelude' recently arrived at its location 475 km northeast of Broome where the hook-up and commissioning phase of the project is underway. The FLNG has a liquefied gas storage capacity of 326,000 cu m in 10 tanks (six for LNG and four dedicated to LPG), each equipped with GTT's membrane containment system Mark III.

Berterottière said: "We are very proud to continue to work with Shell on the 'Prelude' FLNG project, building on the portfolio of innovative services we have developed. This contract is somewhat of a landmark for GTT." ■

Trelleborg to lead task force for new SSL standard

Trelleborg's Andrew Stafford is to head up the American Society for Testing and Materials (ASTM) 'Standard for Liquefied Gas Ship Shore Links' (SSL) standardisation group.

As technical director, Stafford, will be the task group leader.

He said: "Linked ship-shore Emergency Shut-Down (ESD) systems have been a recognised safety feature of traditional LNG carrier transfer operations for many years. However, provisions of linked ESD systems in the emerging trades of LNG FSRU and LNG bunkering, as well as the non-methane gas distribution between ships and terminals, are being hampered by the lack of an accepted industry standard for equipment, to achieve the required connection.

"To that end, myself and the team that will be built for the task group will look to develop an industry-wide standard, covering the minimum requirements for the safe transfer of liquefied gasses using SSLs. Ultimately, providing recommendations for how we can take welcome steps forward in evolving the inter-connection of ESD systems for universal adoption."

Trelleborg has supplied SSL systems since 1996 and claims to be the leading supplier globally, having received contracts for over 650 systems. The company developed the Trelleborg's SMART SSL system, which can be supplied as a stand-alone system for existing tonnage or for integration with other key safety and monitoring systems. It provides a significant improvement over previous operator interfaces and simplifies control and set-up, the company said.

Trelleborg's SSL falls within the company's SmartPort portfolio, which is the company's answer to the need for a standardised method to collect and store data. It is a technology platform that connects port operations, allowing users to analyse asset performance and apply data insights, to improve day-to-day decision making.

ASTM is a leader in the development and delivery of voluntary consensus standards. Today, over 12,000 ASTM standards are used worldwide to improve product quality, enhance health and safety, strengthen market access and trade, and build consumer confidence. ■

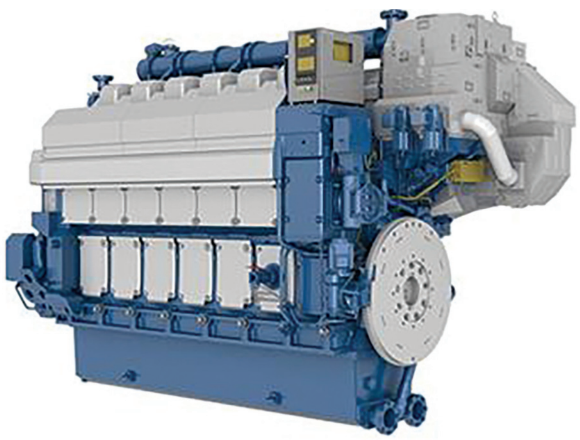
Four newbuilding LNGCs to be powered by Wärtsilä dual-fuel engines

Through its joint venture company CSSC Wärtsilä Engine (Shanghai) Co (CWEC), Wärtsilä, has won a contract to deliver 16 engines for four new LNGCs being built at Hudong Zhonghua shipyard in China.

The order was booked in August, 2017.

Each of the four 174,000 cu m capacity vessels will be fitted with four Wärtsilä 34DF dual-fuel generating sets running primarily on LNG fuel to provide the ships with auxiliary power. The four engines total power output will be 56 MW.

Among the reasons given for the Wärtsilä 34DF engine being chosen for these ships was its proven reliability, efficiency, and economic fuel consumption, the company claimed. Delivery of the engines to the yard will commence in the second half of 2018.



The Wärtsilä 34DF type engine has found favour with LNGCs

The vessels are scheduled to be delivered starting in 2019.

"This valuable order once again emphasises Wärtsilä's leading position in gas and dual-fuel engine technology. We are pleased to be working on this project with the Hudong Zhonghua yard, a company with whom we have enjoyed a good relationship for some years. The order also confirms our growing presence in China and our ability to serve the Chinese market," said Lars Anderson, vice president, engine sales, Wärtsilä Marine Solutions.

The Wärtsilä 34DF engine features advanced dual-fuel technology and is used for both main engine and generating set applications. The engine is manufactured in configurations from 6L to 16V, giving 500 kW per cylinder and a total maximum mechanical output of 8,000 kW. The engine speed is 720/750 rev/min.

Based on the proven Wärtsilä 32 diesel engine introduced in the mid-1990s, the engine's fuel flexibility means that it can be optimised for constant speed generating sets, as well as for variable speed mechanical drives in main engine applications.

The Wärtsilä 34DF dual-fuel engine was upgraded in 2013 with a higher MCR (maximum continuous rating) and better efficiency than in the earlier version, the first of which was delivered in 2010.

Furthermore, the efforts made to upgrade the propulsion performance with controlled pitch propellers (CPP) are now also being applied to fixed pitch propellers (FPP).

The 100th Wärtsilä 34DF dual-fuel marine engine was delivered from the factory in 2016. ■

New Port Qasim channel for LNGCs

Growing shipping traffic, particularly LNGCs, has warranted the need for an additional channel at Pakistan's Port Qasim.

Port Qasim Authority Chairman, Agha Jan Akhtar, told local media that the port was planning to dredge another channel.

As a safety measure, the port authority currently stops general ship movements when an LNGC arrives or leaves, causing delays, he said.

At present, a vessel loaded with LNG calls at the port every five days and after the opening of another LNG terminal by the end of this year, this cycle could be reduced to every third day, he added.

Thus far to the beginning of October, 109 LNGCs have called at Port Qasim.

The Chairman said that four more LNG terminals are in pipeline. ■

Wärtsilä signs up another tranche of GasLog LNGCs

Wärtsilä has signed a maintenance agreement with GasLog LNG Services, covering eight LNGCs powered by the company's dual-fuel engines.

This agreement covers four new LNGCs and service renewals for another four LNGCs.

The two companies already have a maintenance agreement in force, signed in 2014, which covers seven more vessels.

"By analysing the operating conditions of the ship engines and streamlining maintenance accordingly, the operative efficiency of GasLog's vessels is optimised at all times. Instead of concentrating on the theoretical lifetime of engine components, we monitor their actual condition.

"By applying real-time installation data, we can strive for optimum lifecycle utilisation of the entire installation. Overall, I'm very pleased to see how we are extending the close co-operation between our companies through another long-term partnership agreement," said Yiannis Christopoulos, director service unit Greece-Cyprus & managing director of Wärtsilä Greece.

Wärtsilä has signed a further service agreement with GasLog

The agreement, which became effective on 1st October, 2017, consists of dynamic maintenance planning (DMP), technical support, secured availability of spare parts and specialised technical personnel 24/7, as well as constant performance monitoring.

Wärtsilä's digital services enable remote troubleshooting and tuning of engines, as well as software updates. In addition, continuous collection of performance data allows for detailed analysis which is reported to GasLog on a regular basis.

"Wärtsilä is a critical contributor to our effort to secure long-term reliability and efficiency of our vessels' operations and to control and maintain respective costs in order to be competitive in the LNG market. We believe that both aspects are addressed in this agreement and we hope to continue improving our co-operation further," said Theofanis Sallis, GasLog LNG Services' general manager operations. ■

NEWS NUDGES

'Asia Venture' arrives at Wheatstone

The LNGC 'Asia Venture' arrived at Chevron's Wheatstone LNG project on 16th October to load the first gas cargo.

This comes a week after Chevron announced the first LNG production from the $34 bill project.

'Asia Venture' is a sistership of the 'Asia Excellence' that shipped the first LNG cargo from Chevron's other gas project in Australia, Gorgon, in March last year.

The LNGC arrived at Ashburton Port, west of Onslow, according to the vessel monitoring website marinetraffic.com.

Gail in another three cargo tenders

Gail India launched a tender last week to secure three LNG cargoes between mid-November and January, according to Reuters.

The Indian energy concern is seeking one cargo for delivery between 15th November and the end of December, a second cargo for 1st to 15th January and a third for 16th to 31st January, trade sources told the newswire.

Bids must be submitted by 24th October and the tender is valid until 25th October.

This follows an earlier tender for three cargoes announced at the end of September.

Depa to participate in LNG terminal

Greece's state-controlled natural gas firm DEPA has signed a co-operation agreement with natural gas company Gastrade to participate in the development of an LNG terminal in northern Greece.

Greece currently has one LNG terminal on Revythousa, a small island near Athens.

Gastrade, part of Greek energy group Copelouzos, is planning a second LNG terminal near the northern city of Alexandroupoli.

The project has been described as a 'project of common interest' by the European Union.

Gastrade will hold at least 20% stake in the scheme with LNGC operator GasLog holding another 20%.

FLNG 'Hilli Episeyo' departs Singapore

Golar LNG's FLNG 'Hilli Episeyo' left Singapore at 10:00 local time on 12th October.

The earlier than anticipated departure was as a result of an operational decision to complete LNG bunkering in Cameroon rather than in Singapore.

The voyage to Cameroon is expected to take between 32 and 40 days, Golar said.

Fourchon applies to DOE to export LNG

The US Department of Energy (DOE) said that it had received an application from Fourchon LNG requesting authorisation to export LNG from a facility to be located in Port Fourchon.

Comments must be received by 26th December, the DOE said.

OLT Offshore LNG Toscana appoints new managing director

OLT Offshore LNG Toscana has appointed Richard Fleischmann as the new Managing Director of the company, representing Uniper shareholders.

Formerly Senior Project Manager for the E.ON Group and later for Uniper Global Commodities, Fleischmann will support Alessandro Fino – Managing Director representing Iren shareholders – and will replace Silvano Calcagno whom was asked by Uniper to follow other projects within the Group.

Italian moves

As part of a restructuring plan, Gas Natural Fenosa, the Spanish utility and liquefied natural gas market participant, has sold its gas distribution assets in Italy to Rete Gas and French-owned Italian utility Edison for a combined total of €1.02 bill.

Elsewhere, Italian natural gas infrastructure company Snam, owner of the Panigaglia import facility near Genoa, has bought a stake in the offshore Adriatic regasification terminal on the east coast, previously held by Edison.

WORLD LNG CARRIER ORDERBOOK

Name	Yard	Containment System	Capacity	Propulsion	Delivery Date	Ordered	Primary Owner
Fedor Litke	DSME	GT NO 96	172410	TFDE - Azipod	01/10/2017	2014	Dynagas
Murex	DSME	GT NO 96	173400	MEGI	01/11/2017	2013	Teekay LNG
Boris Vilkitsky	DSME	GT NO 96	172410	TFDE - Azipod	01/11/2017	2014	Dynagas
Pacific Breeze	Kawasaki	Moss	180000	TFDE	30/11/2017	2013	K-Line
Eduard Toll	DSME	GT NO 96	172410	TFDE - Azipod	01/12/2017	2014	Teekay LNG
Daewoo 2424	DSME	GT NO 96	172410	TFDE - Azipod	01/12/2017	2014	MOL
Bw Tulip	DSME	GT NO 96	173000	MEGI	01/12/2017	2014	BWGas
Bishu Maru	Kawasaki	Moss	164700	TFDE	31/12/2017	2013	K-Line
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
Gaslog Houston	Hyundai Heavy	TZ Mk. III	174000	XDF	01/01/2018	2014	GasLog
Patris	DSME	GT NO 96	174000	MEGI	05/01/2018	2014	Chandris
Flex Endeavour	DSME	GT NO 96	172400	MEGI	10/01/2018	2014	Flex LNG
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

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Name	Yard	Containment System	Capacity	Propulsion	Delivery Date	Ordered	Primary Owner
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
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

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WORLD SMALL SCALE LNG FLEET*

Built	Name	CBM	Cargo Type	Trading area	Trading in LNG?	Ship Owner / Operator
1974	Seagas	187	LNG	Sweden	Yes	AGA
1988	Kayoh Maru	1,517	LNG	Japan	Yes	Daiichi
1993	Aman Bintulu / Lucia Ambition	18,928	LNG	Malaysia - Japan	Yes	Perbadanan/NYK
1996	Surya Aki	19,475	LNG	Indonesia - Japan	Yes	MCGC
1997	Aman Sendai	18,928	LNG	Malaysia - Japan	Yes	Perbadanan/NYK
1998	Aman Hakata	18,800	LNG	Malaysia - Japan	Yes	Perbadanan/NYK
2000	Triputra (ex Surya Satsuma)	23,096	LNG	Indonesia - Japan	Yes	MCGC
2003	Pioneer Knutsen	1,100	LNG	Norway	Yes	Knutsen
2003	Shinju Maru No.1	2,540	LNG	Japan	Yes	Shinwa
2005	North Pioneer	2,500	LNG	Japan	Yes	Japan Liquid Gas
2007	Sun Arrows	19,531	LNG	Malaysia - Russia - Japan	Yes	Mitsui
2008	Kakurei Maru	2,536	LNG	Japan	Yes	Hogaki Zosen
2008	Shinju Maru No.2	2,540	LNG	Japan	Yes	Shinwa
2009	Coral Methane	7,551	LNG/LPG/Ethylene	Northwest Europe/Baltics	Yes, sometimes	Anthony Veder
2010	Norgas Creation	10,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2010	Norgas Innovation	10,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2011	Akebono Maru	3,556	LNG	Japan	Yes	Chuo Kaiun
2011	Norgas Bahrain Vision	12,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2011	Norgas Conception	10,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2011	Norgas Invention	10,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2011	Norgas Unikum	12,000	LNG/LPG/Ethylene	Worldwide	No	Norgas Carriers
2012	Coral Energy	15,600	LNG	Northwest Europe/Baltics	Yes	Anthony Veder
2013	Coral Anthelia	6,500	LNG/Ethylene			Anthony Veder
2013	JX Energy TBN	2,500	LNG	Japan	Yes	JX Energy
2013	Kakuyu Maru	2,500	LNG	Japan	Yes	Tsurumi Sunmarine
2014	LNG-Oil combi**	2,000	LNG	Germany	Yes	Veka
2014	Short Sea LNG Tanker **	4,000	LNG	Germany	Yes	Veka
2015	10 small carriers TBN**	5,000	LNG			Bimantara Group
2015	Jahre TBN**	6,200	LNG	Norway	Yes	Donsotank/Jahre Marine
2015	JS Ineos Ingenuity	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2015	JS Ineos Insight	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2015	JS Ineos Intrepid	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2015	LNG Barge TBN	3,000	LNG	US Coast	Yes	LNG America
2015	LNG bunker barge 1†	2,250	LNG	China	Yes	Anhui Huaqiang Natural Gas
2015	LNG bunker barge 2†	2,250	LNG	China	Yes	Anhui Huaqiang Natural Gas
2015	LNG bunker barge 3†	2,250	LNG	China	Yes	Anhui Huaqiang Natural Gas
2015	LNG Inland bunker**	800	LNG	Germany	Yes	Veka
2015	Norgas TBN**	17,000	LNG/LPG/Ethylene	Worldwide		Norgas Carriers
2015	Norgas TBN**	17,000	LNG/LPG/Ethylene	Worldwide		Norgas Carriers
2015	PetroChina TBN	30,000	LNG	China		PetroChina
2015	TBN	14,000	LNG	China	Yes	Zhejiang Huaxiang
2015	TBN 1	27,500	LNG	China?		Danyang?
2015	TBN 2	27,500	LNG	China?		Danyang?
2015	TBN 3	27,500	LNG	China?		Danyang?
2016	Clean Jacksonville	2,200	LNG	US Coast	Yes	CME
2016	Dalian TBN	28,000	LNG	China	Yes	Dalian Inteh Group
2016	Hai Yang Shi You 301	30,000	LNG	Bali FSU	Yes	CETS (CNOOC)
2016	JS Ineos Indepence	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	JS Ineos Innvovation	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	JS Ineos Inspiration	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2016	LNG Prime	2,250	LNG	Northwest Europe	Yes	Veka Deen LNG
2016	Navigator Aurora	35,000	Ethane/Ethylene	Markus Hood - Stenungsund	Ethane, for Borealis	Navigator
2016	Gaschem Beluga	36,000	Ethane/Ethylene	US - Teeside	Ethane, for Sabic	Gaschem Services
2016	Gaschem Orca	36,000	Ethane/Ethylene	US - Teeside	Ethane, for Sabic	Gaschem Services

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*Includes multi-gas, ethylene and LNG bunker ships with 40,000 cubic metres LNG cargo capacity or less
TBN = To Be Nominated indicates ships are still at construction/planning stage
** = project shelved † =Data to be verified Data last updated = 24th May 2017

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Built	Name	CBM	Cargo Type	Trading area	Trading in LNG?	Ship Owner / Operator
2016	Ocean Yield TBN**	36,000	Ethane/Ethylene	US - Teeside	Ethane, for Sabic	Gaschem Services
2016	Shell Bunker Barge TBN 1	6,500	LNG	Northwest Europe	Yes	Shell
2016	Shell Bunker Barge TBN 2	6,500	LNG	Northwest Europe	Yes	Shell
2016	Shell Bunker Barge TBN 3	6,500	LNG	Northwest Europe	Yes	Shell
2016	Shell Bunker Barge TBN 4	3,000	LNG	Northwest Europe	Yes	Shell
2017	Yuan He 1	30,000	LNG	China	Yes	CSR
2017	ENGIE Zeebrugge	5,000	LNG	Northwest Europe	Yes	NYK
2017	CME TBN†	2,200	LNG	US Coast	Yes	CME
2017	CME TBN†	2,200	LNG	US Coast	Yes	CME
2017	Coral EnergICE	18,000	LNG	Northwest Europe/Baltics	Yes	Anthony Veder
2017	Coralius	5,800	LNG	Northwest Europe/Baltics	Yes, for Skangas	Anthony Veder
2017	JS Ineos Invention	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2017	JS Ineos Intuition	27,500	LNG/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2017	LNG-Gorskaya TBN	7,300	LNG	Russia	Yes	LNG-Gorskaya
2017	LNG-Gorskaya TBN	7,300	LNG	Russia	Yes	LNG-Gorskaya
2017	LNG-Gorskaya TBN	7,300	LNG	Russia	Yes	LNG-Gorskaya
2017	Navigator Eclipse	35,000	Ethane/Ethylene	US	Ethane	Navigator
2017	Navigator Nova	35,000	Ethane/Ethylene	US	Ethane	Navigator
2017	Navigator Prominence	35,000	Ethane/Ethylene	US	Ethane	Navigator
2018	Bernhard Schulte TBN	7,500	LNG	Baltic	Yes	Bernhard Schulte
2018	CME TBN†	2,200	LNG	US Coast	Yes	CME
2018	Evergas TBN	32,000	Ethane/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2018	Evergas TBN	32,000	Ethane/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2018	Evergas TBN	32,000	Ethane/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2018	Evergas TBN	32,000	Ethane/Ethylene	Markus Hook - Rafnes	Ethane, for Ineos	Evergas
2019	KLine TBN	7,500	LNG	Korea	Yes	Korea Line
2019	KLine TBN	7,500	LNG	Korea	Yes	Korea Line
2019	Stolt TBN	7,500	LNG	Mediterranean	Yes	Stolt-Nielsen Gas
2019	Stolt TBN	7,500	LNG	Mediterranean	Yes	Stolt-Nielsen Gas
2020	Stolt TBN (option)	7,500	LNG		Yes	Stolt-Nielsen Gas
2020	Stolt TBN (option)	7,500	LNG		Yes	Stolt-Nielsen Gas
2021	Stolt TBN (option)	7,500	LNG		Yes	Stolt-Nielsen Gas

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