



KLINE NAMED AS OWNER BEHIND TWO SHIP CARRIER ORDER@SHI

LNG contracts have continued to trickle in during the first quarter, with enquiries suggesting another busy year at yards for the sector. Japanese shipowner K Line is being linked to a KRW 674.5bn (\$517m) order for two LNG carriers at South Korean shipbuilder Samsung Heavy Industries.

QatarEnergy in talks for the next generation of Q-Max LNG giants

On Monday, SHI said it had won a contract from an “Asia-Pacific shipper” for the two vessels without naming the party behind the business. SHI said the LNG carriers will be delivered by November 2026. The price values the vessels at the strong sum of around \$258.5m each, which is in line with other top-dollar LNG orders placed. Newbuilding sources said K Line has contracted the vessels but is keen for its name not to be disclosed in connection with the new orders. Some indicate that the ships have been ordered on speculation while another said they are being targeted at a specific piece of business. While the price for these latest two vessels remains very firm at just shy of \$260m, observers are asking how K Line has managed to secure 2026 delivery dates when recent LNG orders at the yard were for ships due for handover in 2027. K Line said it is not in a position to confirm or comment on the reports when contacted by TradeWinds. LNG carrier orders have been gradually stacking up in the first quarter of 2023, after a record order haul in previous years for the sector, with enquiries indicating that it could be another busy 12 months for this vessel type.

Capital Gas linked to pair of LNG carrier newbuildings

TradeWinds has reported 17 LNG newbuildings have been signed in the first three months of this year. The bulk of the orders — 15 vessels — were inked at South Korea's big three shipbuilders. Most of the orders are for independent shipowners including Greece's Capital Gas, Dynagas and Maran Gas Maritime, along with Japanese owners Mitsui OSK Lines and NYK Line. Several are understood to be optional berths, which these owners were holding at yards. In China, where LNG berth space is exceptionally tight despite new yard entrants into the sector in 2022, TPSH Leasing's two-ship contract against charters with Sinopec is something of an outlier. There are several ongoing LNG carrier newbuilding enquiries — including those reported by TradeWinds for German energy EnBW and energy major Chevron — that could add to this year's LNG order tally, along with those from other majors.

US energy major Chevron taps shipyards for up to six LNG carrier newbuildings

But on top of this, shipyards are gearing up for QatarEnergy to firm up just over 40 LNG carrier slots that it has pre-reserved under phase II of its huge shipbuilding programme. This comes with the added complication that the Middle East producer may be interested in building some of these as Q-Max vessels, which take up more berth space. In addition, a question mark continues to hover over 17 slots that remain booked for the Mozambique LNG project at two South Korean yards. This latest LNG carrier for SHI bumps up the yard's sales total for the year to date to \$2.5bn — or 26% of its order target of \$9.5bn for 2023. Aside from two floating LNG unit contracts, which were confirmed around the turn of the year, SHI also won a single-ship LNG order from MOL in February and three vessels for NYK last month. Both of these orders were for ships that will deliver in 2027. Source : www.tradewindsnews.com

CHEVRON AND NEWMED SELECT YARDS FOR LEVIATHAN FLNG DUAL FEED CONTRACTS

Long-planned floating LNG plant off Israel moves forward again, almost nine years after shipbuilders bid for earlier floater. Energy major Chevron and Israel's NewMed Energy have selected companies to work on competitive front-end engineering and design (FEED) contracts for the planned Leviathan floating LNG (FLNG) production unit for the Mediterranean.

Gabon FLNG project plans to deploy FSU and multi-purpose vessel conversion

TradeWinds has learned that South Korea's Daewoo Shipbuilding & Marine Engineering partnered with engineers Technip and separately Sembcorp Marine of Singapore, working on its own, will undertake parallel FEED work for the unit. The partners in Leviathan are targeting a 4.6 million tonnes per annum unit and have been pushing to advance work on their project in recent months. FLNG projects have received a boost in interest due to the sky-high gas prices seen in 2022 and the recent concerns about energy security. On paper, offshore LNG developments can stack up as cheaper to bring to market, but large FLNG units can prove complex and many project partners have complicated the advancement of some developments. FLNG units also absorb considerable berth space at shipyards at a time when there is already significant competition for slots for conventional vessels. The Leviathan FLNG project has gone through many iterations. Shipyards tackled a FEED tender for a 3-mtpa FLNG unit for the gasfield back in April 2014, with pre-FEED work on a floating

liquefaction development started several years in advance of this. The gas field of the same name is located about 130 km off the shores of Haifa in Israel and, according to NewMed contains about 22.9 trillion cubic feet of recoverable gas. Pipeline gas started flowing from the first phase of its development in 2019 with volumes supplying Israel, Egypt and Jordan. In a second phase, NewMed and its partners plan to almost double the output with a liquefaction unit that would allow gas from the field to be exported to customers outside the Eastern Mediterranean to those in Europe and Asia.

New Fortress Energy targeting first FLNG production in July

NewMed said commercial negotiations have been held with two existing liquefaction facilities in Egypt — these are the Damietta and Idku plants — “while an option for liquifying natural gas on a floating facility anchored in the Israeli EEZ is being explored”. “Phase B of Leviathan is expected to propel it onto the global stage, and to secure the East Med as one of the world’s most important energy hubs,” the company said. NewMed has a 45.3% stake in Leviathan while Chevron, which bought out Noble Energy in 2020, holds 39.7% and Ratio Energies 15%. Source : www.tradewindsnews.com

DELFIN POISED TO GIVE GO-AHEAD ON FIRST FLOATING LNG UNIT FOR US GULF

Company already in talks with offtakers on floater number two as it basks in fresh investor interest. Would-be US offshore LNG producer Delfin Midstream is closing in on a final investment decision (FID) for its first floating LNG (FLNG) production unit — and is making progress on a second.

Golar LNG bags 2025-delivery yard slot for next-up FLNG conversion job

Speaking to TradeWinds in Oslo, Delfin chief operating officer Wouter Pastoor said South Korean shipbuilder Samsung Heavy Industries is working on full pricing proposals that are due to be delivered in May for its first 3.5-million-tonnes-per-annum-capacity FLNG unit. In tandem, Delfin is negotiating the engineering procurement and construction contract with engineers Black & Veatch, working on financing and finalising the main commercial agreements. Delfin has already lined up offtakers for this first unit, with trader Vitol buying 500,000 tonnes per annum, UK energy company Centrica pencilled in for one million tonnes per annum and the US’ Devon Energy Corp a further one mtpa, while also targeting investment opportunities in the floater. Pastoor said Delfin has made “very good progress” on selling additional offtake since announcing these deals in the third quarter of 2022. He added that the company is in “active negotiations” on additional sales from its first FLNG unit, as well as from its second planned floater — and expects to make further announcements shortly. Pastoor said Delfin is working towards taking a FID at the end of the second quarter of this year on this first FLNG unit for the company’s 13-mtpa anchor project Delfin LNG, located 40 nautical miles off the coast of Louisiana in the US Gulf. The fully permitted initiative — dubbed Delfin Deepwater Port — will use pipeline gas to supply four FLNG units, which will weathervane around single-point mooring systems. Pastoor said being located offshore means there is no one-way traffic and congestion for shipping, which can dog onshore facilities and Delfin’s floaters will be less affected by fog. Delfin refers to its FLNG units as “liquefiers” to differentiate them from LNG floaters, which are directly hooked up to gas reservoirs. Pastoor said its units will use more standardised onboard technology, minimising technical and operational complexities along with the overall risk profile of the project, which he claims helps when locking in financing. “We are plugged into the most liquid natural gas pool in the world,” Pastoor said. “Financing an infrastructure project like this in the US is more favourable than financing an upstream project.” Under Delfin’s model, each FLNG unit

would be an individual company with commercial contracts and finance. FIDs would be taken separately on each floater. Pastoor said this gives the company a great deal of flexibility on how to handle the financing, structure and the way the company sells the LNG from the unit. “The market is good and there is a lot of interest from a subset of investors who firmly believe in a long-term strong LNG market,” Pastoor said. “They seek commodity exposure. They believe in the upside of the market.”

New Fortress Energy targeting first FLNG production in July

Aside from its anchor project, Delfin has identified other sites for its liquefiers, which it said provides the company with more than 40 mtpa of liquefaction opportunities. But it sold out of the three-mtpa Cedar LNG in Kitimat, Canada, in which it was a partner with the Haisla Nation, although it still has an economic interest in the project. Pastoor said the investor interest in LNG changed after Russia invaded Ukraine last year. “We experienced specific interest because the cheque size is less,” he said, explaining that compared with an onshore project that may want to take a FID on a 15-mtpa project, Delfin can do this after securing just 2.5 mtpa in offtake agreements. “That is of interest to investors,” he said. “There are fewer partners around the table. There are less offtakers, lenders and parties that we need to bring for the equity. It is much more easy to structure a deal.”

Gabon FLNG project plans to deploy FSU and multi-purpose vessel conversion

Privately-owned Delfin has now built up its team to between 40 and 50 people, including advisors, and Pastoor said the company is in “expansion mode”. Technical activities are run out of Oslo and the outfit is expected to grow by between 12 and 15 staff by the middle of the year, with commercial offices in London and the US. Pastoor said Delfin has had interest from companies that want to take stakes in the FLNG units. “We have had very good discussions with a number of infrastructure parties,” he said. “We are talking to a number of strategics who want to participate in Delfin Midstream. We see strong interest from producers in the US who seek opportunities to develop their gas assets and seeking exposure to international gas markets.” Source : www.tradewindsnews.com

FLNG REBOUND: US\$35BN IN INVESTMENTS ON NEW PROJECTS OVER NEXT FIVE YEARS

Despite a recent history of cost overruns, construction delays and operational setbacks, floating LNG (FLNG) projects will see US\$35Bn in new investment over the next five years, according to a leading Westwood Global Energy analyst. Africa will dominate these near-term FLNG investments, but opportunities abound in the Americas, points out Westwood Global Energy’s SubseaLogix & PlatformLogix director Mark Adeosun in his analysis of the market. Based on current and planned investments for 2023–2027, Westwood Global Energy forecasts 18.3 mta of additional FLNG capacity onstream by 2027, with an associated engineering, procurement and construction (EPC) award value of US\$13Bn. A further 36.5 mta is anticipated onstream post-2027 from FLNG units sanctioned over 2023–27, with an EPC value of US\$22Bn. Mr Adeosun says Africa will account for 56% (10.2 mta) of additional FLNG capacity onstream over the 2023–27 period. Four FLNG units destined for Africa are under construction or reactivation. These include Golar LNG’s Golar Gimi FLNG vessel, which is under conversion in Singapore for deployment at BP’s Tortue project, offshore Mauritania. Production will start in Q4 2023, with the first LNG export cargo set for Q1 2024. A converted Moss-type carrier, Gimi will use Black & Veatch’s PRICO liquefaction technology, the same as in Hilli Episeyo. LNG produced by Gimi will be lifted by BP under a 20-year contract. Meanwhile, another FLNG using PRICO liquefaction technology, the Eni-owned Tango FLNG, will start-up in December 2023 at the Marine XII block, offshore the Republic of Congo. Built in 2017, the barge-like Tango FLNG has a storage capacity of 16,100 m³ and liquefaction capacity of up to 0.6 mta. A second FLNG vessel, with a capacity of 2.4 mta, is being built by Wison (Nantong) Heavy Industry and is expected to be installed in the same block by 2025. Elsewhere, Perenco has sanctioned a 0.7 mta FLNG unit for deployment at the

Cap Lopez Oil Terminal LNG off the coast of Gabon, and UTM Offshore has contracted FEED design studies for an FLNG vessel for the OML 104, offshore Nigeria, with plans for sanctioning in 2024. However, Mr Adeosun points out that UTM has not yet finalised a gas sales agreement with the block owners, ExxonMobil and Nigerian National Petroleum Corp (NNPC). Other proposed units forecast to be sanctioned in Africa over the next five years include a second unit at Eni's Area 4 development, offshore Mozambique, and BP's Yakaar-Teranga and BirAllah gas discoveries, offshore Senegal and Mauritania, respectively. Additionally, Golar LNG has secured an option to acquire a 148,000 m³ Moss-design LNG carrier for a 3.5 mta MKII FLNG conversion. If the unit acquisition completes in Q2 2023 as planned, it could be deployed offshore Africa.

FLNG in Americas

In March, Delfin Midstream took FID on the first of its four proposed FLNG vessels as part of its Delfin LNG Project, an offshore export terminal located 40 nautical miles from the coast of Louisiana. The project envisions four FLNG vessels connected to existing offshore pipelines that transport natural gas from the US pipeline grid to the vessels. The company successfully conducted all permitting work under the Deepwater Port Act, governed by the US Maritime Administration, and received the non-FTA export licence from the US Department of Energy for the 13.3-mta project. SHI and Black & Veatch have completed FEED analysis for the first FLNG, and the LSTK EPC is "under final negotiations", according to Delfin. Delfin has an access agreement in place for the HIOS pipeline, with capacity to accommodate feedgas for all four FLNG vessels. The company also owns the UTOS offshore pipeline, the only 42-inch pipeline in the US Gulf, which was formerly owned and operated by Canadian pipeline operator Enbridge. The pipeline will be repurposed to transport natural gas from the onshore grid to the deepwater port site. Last year, Delfin Midstream signed a 15-year supply deal with energy trader Vitol. The company has also signed a heads-of-agreement to supply LNG to UK-based energy firm Centrica. The firm also aims to install two FLNG units under the Avocet LNG project, running parallel to the current project. Furthermore, Delfin Midstream says it has identified over 40 mta of liquefaction opportunities, including two projects in Canada, one of which is the Haisla Nation-led Cedar LNG in British Columbia, and offshore Mexico and south Texas. Aside from NFE's plans to host liquefaction plants on converted jack-up rigs and fixed platforms, the US-based LNG player has entered into master service agreements with Sembcorp Marine for the engineering and conversion of two Sevan cylindrical drilling units (Sevan Driller and Sevan Brazil) to FLNG units.

Energy demand drives investment

Increasing energy demand and the challenges of energy security are driving renewed interest in FLNG projects. Mr Adeosun says another factor in FLNG investment is "the role gas will play in transitioning to a low-carbon-energy future." This spate of investments comes despite setbacks on some high-profile projects, most notably Shell's Prelude FLNG off of Australia. Mr Adeosun says that when Shell took FID on Prelude FLNG in May 2011, "it was meant to be the start of an era. An era that would herald the development of stranded gas fields at lower costs. However, 12 years on, the supposed flood of new units has instead been a trickle and only five FLNG units, with 12.1 mta of FLNG capacity, have commenced commercial operations." Prelude has been plagued by issues, including construction delays, cost overruns and electrical problems, and labour action. Development costs and financing appear to have shelved the enthusiasm for other FLNG projects, including the Kumul FLNG and Western LNG Projects off the coast of Papua New Guinea, Steelhead LNG's Kwispaa LNG Project (Canada) and Main Pass Energy Hub, off the coast of Louisiana in the US Gulf of Mexico. Developers can also point to post-Prelude FLNG success stories. These include Petronas' PFLNG Satu from the Kumang Cluster development, offshore Malaysia, where it commenced operations in Q2 2016 to the Kebabagan field in 2019 without drydock. Other

producing units include Golar LNG's FLNG Hilli Episeyo in Cameroon, Petronas' PFLNG Dua in Malaysia and Eni's Coral Sul FLNG in Mozambique. Source : www.rivieramm.com

TOTALENERGIES, EXXONMOBIL, SANTOS LAUNCH PAPUA LNG FEED

Operator TotalEnergies and its partners ExxonMobil and Santos have launched fully-integrated front-end engineering and design (FEED) for the Papua LNG project in Papua New Guinea. TotalEnergies has a 40.1 percent operating stake in the LNG export project, ExxonMobil has 37.1 percent, and Santos owns a 22.8 percent interest. In July last year, the Papua LNG joint venture launched the first phase of front-end engineering and design (FEED) studies for the LNG project's upstream production facilities. After that, Technip Energies, leader of a consortium with Australia's Clough, won a contract to perform the front-end engineering design (FEED) for the project's upstream production facilities. The upstream production facilities cover the development of the Elk and Antelope onshore gas fields including the well pads and the central processing facility. It also incorporates a carbon capture and sequestration (CCS) scheme to remove the fields' native CO₂ and reinject it into the reservoirs.

First production by end of 2027 or early 2028

Australia's Santos announced the launch of fully-integrated FEED in a statement on Tuesday. Papua LNG would have liquefaction capacity of up to six million tonnes of LNG per year with first production expected by the end of 2027 or early 2028, it said. Following pre-FEED studies, the Papua LNG partners have selected a concept using four electric LNG trains (e-trains) with a combined capacity of four million tonnes per annum, Santos said. The trains will be built within the existing PNG LNG terminal in Caution Bay, operated by ExxonMobil. Also, selecting e-trains and re-injection of reservoir CO₂ will reduce the carbon intensity of the project, the firm said. Papua LNG has also secured access to up to two million tonnes of existing liquefaction capacity from PNG LNG. Integrating the Papua LNG midstream development within PNG LNG maximizes the value of both projects and delivers increased capital efficiency by reducing upfront capital expenditure and maximizing integration synergies, Santos said. PNG LNG will receive an access fee, pro-rata opex sharing and ongoing processing toll revenue that compensates PNG LNG for making the capacity available.

FID

The partners expect that the selected concept for Papua LNG would have a lower capital expenditure outcome than the previous concept. Costs will be refined during the FEED phase and the project participants intend to explore project finance opportunities for a portion of the project cost, Santos said. Santos said that the government of Papua New Guinea may exercise a back-in right for up to a 22.5 per cent interest in the LNG project at the final investment decision. Should PNG exercise its full back-in right, Santos' interest in the project would reduce to 17.7 percent. Santos also has a 42.5 percent interest in PNG LNG and announced a conditional agreement to sell a five per cent interest in PNG LNG to Kumul Petroleum. ExxonMobil holds a 33.2 percent operating interest in PNG LNG. The Papua LNG partners plan to take FID by the end of 2023 or early 2024, according to the firm.

TotalEnergies Sells Papua LNG Stake

According to a separate statement by TotalEnergies issued later on Tuesday, the firm signed a head of agreement with JX Nippon to sell a 2 percent interest (post Kumul back-in right) in Papua LNG. JX Nippon is an affiliate of Eneos and already holds a 4.7 percent interest in PNG LNG. TotalEnergies also said that the construction and operation of the Papua LNG electrical liquefaction trains will be delegated to ExxonMobil. Source : www.lngprime.com

ENERGY TRADER GUNVOR POSTS RECORD \$2.36 BLN NET PROFIT IN 2022

Gunvor Group posted a record net profit of \$2.36 billion in 2022 with a strong performance across all trading desks, the energy trader said in a statement on Wednesday. Gunvor's rivals also had a bumper year amid high price volatility and as Russia's war in Ukraine reshaped global commodity flows, with Vitol and Mercuria previously posting record net profits of \$15 billion and \$2.98 billion, respectively. Gunvor said its trading volumes fell to 165 million tonnes in 2022 from 240 million tonnes the previous year, due primarily to reduced trading in natural gas, but expected volumes to rebound in the coming year. "The performance was broad-based across all geographies and all desks, including refining and shipping," Gunvor said. Gross profit hit \$4.88 billion for the year, but the net result included legal provisions and an impairment related to a minority, non-controlling investment in the Ust-Luga Oil Products Terminal in Russia. A former Gunvor employee pleaded guilty in 2021 to what U.S. federal prosecutors called a scheme to bribe Ecuadorean government officials to win business from state-controlled oil company Petroecuador. The U.S. Department of Justice and financial market regulator the CFTC have continued investigating the firm and Gunvor expects to pay a fine. Last month, CEO Torbjorn Tornqvist told Reuters that it was considering whether to book a provision in the 2022 year. Equity spiked to a record \$5.286 billion in 2022 from \$3.079 billion a year earlier amid reports Gunvor was in talks with strategic investors, including the UAE's Abu Dhabi National Oil Co (Adnoc), about a sale of a stake. Industry sources familiar with the matter said Adnoc has been looking to buy Gunvor, or at least a stake, since last year. Tornqvist has said it is "no secret" the pair were in contact. The sector's strong performance has carried over to the new year, with commodities trader Trafigura beating its previous record to make around \$3.5 billion in profit in the first quarter of its current financial year. Source : www.naturalgasworld.com

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