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NEW FORTRESS SEEKS BUYERS FOR LAID-UP FSRU AND LNG CARRIER

US-listed outfit has clear-out by inviting offers on parked duo, but will there be takers for trading buys? A laid-up floating storage and regasification unit and a similarly idle 23-year-old steam turbine LNG carrier controlled by New Fortress Energy are being circulated for sale. LNG market players said offers have been invited on the 129,000-cbm FSRU Spirit (ex-Golar Spirit, built 1981) and 136,687-cbm LNG carrier Mazo (ex-Golar Mazo, built 2000). Both the FSRU and LNG carrier are currently listed as being laid up. They are understood to have emerged in the market at the end of last week. TradeWinds has contacted New Fortress for confirmation and comment but the company previously has not responded to questions. New Fortress said in an exchange filing on 4 May: "During the first quarter of 2023, four FSRUs and four LNG carriers were leased to customers under long-term or spot arrangements. The Spirit and the Mazo continue to be in cold lay-up, and no vessel charter revenue was generated from these vessels." Brokers following the secondhand LNG carrier market indicated that offers on the ships are likely to be close to their scrap values. The Spirit was the world's first LNG-to-FSRU conversion when it was named the Golar Spirit. But it has now been in lay-up for more than six years. The vessel and a sister ship —

the then 138,000-cbm Golar Winter (renamed Energos Winter, built 2004) — were converted into FSRUs and fixed to Brazilian giant Petrobras in groundbreaking deals in 2007, with the conversion of the Golar Spirit having been started speculatively. They were delivered to Petrobras in 2008 and 2009 but, in 2017, the Brazilian charterer redelivered the Golar Spirit from its charter a year early and the ship was put into lay-up off Greece. One broker said it would take a "significant amount of money" to put the vessel back into operation as an FSRU. Another said the regas unit would need about $100m spent "to resuscitate" it. Shipbrokers were almost as damning in their assessment of the Mazo, which they referenced as undersized and elderly. Concerns over condition, The vessel, which was employed as a newbuilding under an 18-year time charter to Indonesia's Pertamina carrying LNG from Indonesia to Taiwan for Chinese Petroleum Corp, was put into cold lay-up off east Malaysia in early 2020 after experiencing idle time. Some eyeballing the vessel voiced concerns about how this may have affected its condition.

Golar LNG opts to scrap 46-year-old FLNG 'conversion candidate'

"It is not a super-sexy period in which to be offering these ships," one sale-and-purchase broker said, adding that more owners are weighing up what to do with their oldest LNG shipping assets and, as a result, more attractive tonnage is on offer. New Fortress acquired the Spirit and Mazo when it bought out Golar LNG Partners and Hygo Energy Transition in 2021. Under this deal, the company acquired seven FSRUs and six LNG carriers, later spinning 11 of these assets off into Energos Infrastructure — a joint venture with asset management company Apollo that was set up in 2022. Source : www.tradewindsnews.com

ENI AND TECHNIPFMC MOVE ON CARBON COPY FLNG

Competition intensifies for limited floating LNG production unit berth space at Samsung Heavy Industries. Eni has signed a deal with engineering giant Technip Energies to progress work on a duplicate of its floating LNG (FLNG) unit off Mozambique as the competition for FLNG berth space hots up. Sources said Technip signed an agreement to do preliminary work for the Italian energy company on what would be a virtual carbon copy of the Coral-Sul FLNG, which has a gas liquefaction capacity of 3.4 million tonnes per annum. The work is expected to take at least three months. Eni is said to be targeting a final investment decision on the floater this year. It would be used to monetise the gas reserves in the Mamba Complex in block Area 4 — 480 km (300 miles) from Coral, in which Eni holds a 25% stake. ExxonMobil holds a similar-sized shareholding in Mamba and was at one point said to be looking at developing the field with a replica of the Coral-Sul. But insiders said the US energy major is now focusing its LNG ambitions towards onshore Mozambique reserves. Eni has been sitting on an optional berth for a large FLNG unit at Samsung Heavy Industries in South Korea. Initial talk suggested it might firm this up towards the end of 2022, but discussions are said to be continuing, with Eni tackling regulatory issues. Production at the Coral-Sul FLNG has been progressing well, insiders working with the unit said. The floater, which is offline

for scheduled maintenance, offloaded its first full commercial cargo in December and has since produced more than 16 cargoes. BP is the sole off-taker from the unit, which is monetising gas from the Coral South field in Area 4 off Mozambique.

MOL dives into Delfin Midstream as it branches out into FLNG

But those working on the Coral-Sul said the 12-month warranty periods with both SHI, which built the floater, and topsides contractor Technip on the unit still need to be signed off. The Coral-Sul FLNG is the world's sixth FLNG unit to be put into service and the first to be deployed in deep water off Africa. Interest in FLNGs has risen as the high-priced gas environment has made projects more economically viable and experience has been gained in offshore LNG production and marine operations. Delfin Midstream, which teamed with Mitsui OSK Lines on FLNGs, has been talking to SHI about the pricing of the floaters it requires for its first US project. In December, Malaysian state energy giant Petronas awarded the job of building its third multibillion-dollar FLNG production unit, dubbed ZFLNG, to a consortium of SHI and engineering company JGC Holdings. source : www.tradewindsnews.com

FIRST GEN'S FSRU BW BATANGAS ARRIVES IN BATANGAS

First Gen Corporation on June 23 announced that the floating storage and regasification unit (FSRU), BW Batangas, has arrived in Batangas Bay, Philippines. The FSRU was chartered by First Gen's subsidiary, Fgen LNG Corporation, as part of its interim offshore LNG import terminal project. First Gen said that the FSRU will play a crucial role in ensuring the country's energy supply by storing and regasifying imported LNG to fuel the natural gas power plants at the First Gen Clean Energy Complex in Batangas. The FSRU will be chartered to First Gen for up to 10 years. BW Batagangas was earlier called BW Paris. Fgen LNG and BW LNG executed a five-year deal in 2021 for the charter of BW Paris. First Gen believes the project will play a critical role in ensuring the energy security of the Luzon grid and the Philippines, particularly as the indigenous Malampaya natural gas resource is expected to decline in the next few years. Source : www.naturalgasworld.com

VENTURE GLOBAL SET TO BECOME GERMANY'S LARGEST LNG SUPPLIER AS IT INKS DEAL WITH SEFE

US LNG exporter Venture Global said it would become Germany's largest LNG supplier as it signed a sales and purchase deal with German gas importer Securing Energy for Europe (SEFE). Under the agreement, SEFE's unit Wingas will purchase 2.25 million tonnes per annum of liquefied natural gas from CP2 LNG, Venture Global's third project, for 20 years, according to a statement by the US LNG exporter. Venture Global previously signed deals with German energy firm EnBW for about 2 million tonnes per annum of LNG supplies from its Plaquemines and CP2 facilities. This means that Venture Global and the two German firms signed a combined 4.25 mtpa of 20-year offtake agreements. "Venture Global is thrilled to begin a

strategic partnership with SEFE, making our company the largest long-term LNG supplier to Germany," Mike Sabel, CEO of Venture Global LNG, said in the statement. He said that SEFE is playing a leading role in ensuring security of energy supply for not only Germany but the rest of the European gas market. "Germany has acted decisively to diversify its energy portfolio and LNG will be a vital part of that mix as it seeks to strengthen its energy security while at the same time advancing environmental progress," Sabel said.

ALMOST HALF OF CP2 LNG VOLUMES SOLD

SEFE joins other CP2 LNG customers, including ExxonMobil, Chevron, Jera, New Fortress Energy, Inpex, China Gas, and EnBW. To date, 9.25 mtpa of the 20 mtpa nameplate capacity for CP2 has been sold with "active discussions ongoing" for the remaining capacity, according to Venture Global. Besides offtake agreement, Australian engineering firm Worley and Venture Global recently signed a deal for the construction of the latter's proposed LNG export terminal in Louisiana. The two firms have agreed substantive terms for a reimbursable engineering, procurement and construction (EPC) contract for Phase 1 of the CP2 LNG terminal. Venture Global expects to start construction on the CP2 LNG project later in 2023. The plant will be located next to its existing Calcasieu Pass liquefaction plant in Louisiana. It will have 18 liquefaction blocks, each with a capacity of about 1.1 mtpa of LNG, but also four 200,000-cbm full containment LNG storage tanks.

SEFE'S REGAS CAPACITY

"By joining forces with Venture Global LNG, SEFE makes another important step on our mission to secure energy for German and European customers and meet the energy demand of the region," Egbert Laege, CEO of SEFE, said in the statement. Earlier this year, state-owned SEFE booked long-term capacity at Hanseatic Energy Hub's planned Stade LNG import terminal in Germany. Starting in 2027, SEFE, previously known as Gazprom Germania, plans to import at least 4 bcm per year of LNG via the terminal. SEFE booked the capacity for 20 years and with future flexibility to switch to ammonia. The firm also reportedly booked 3.5 bcm of regasification capacity at the Dunkirk LNG terminal in France. In addition, commodity trader Trafigura said in December it would supply US LNG to SEFE. SEFE also has a fleet of five chartered LNG carriers, according to its website. Source:www.lngprime.com

US DOE DENIES LAKE CHARLES LNG'S REHEARING REQUEST

The US DOE has denied a rehearing request by Energy Transfer's Lake Charles LNG regarding its proposed LNG export facility in Louisiana. The department said in a filling dated June 21 it has denied Lake Charles LNG's rehearing request for the second extension of deadline to commence exports of LNG from the proposed project to non-free trade countries. Lake Charles LNG's existing authorizations, including its extended deadline to start non-FTA exports under both orders by December 16, 2025, remain in effect. In

addition, should Lake Charles LNG Export be unable to commence exports by December 16, 2025, "it is welcome to submit a new non-FTA application, which would be evaluated under current policies with the most recent market information," the DOE said.

Contracts signed for about half of planned volumes

In April this year, the department declined the request to extend the deadline to start exports by December 2028. The department said that Lake Charles LNG has not shown "good cause" for an "unprecedented" second extension. After that, Energy Transfer's co-CEO, Tom Long**,** said the firm "strongly disagrees" with the DOE decision and Lake Charles LNG filed a request for rehearing on May 22. Lake Charles LNG said in the request it had made "substantial progress" in the commercial development of the development, as evidenced by fully-executed long-term LNG offtake contracts for 7.9 million tons of LNG per annum, about half of the FERC-approved LNG production capacity of the facility. The firm also said it is in "active discussions" with customers related to the remaining capacity. Also, Energy Transfer said that it obtained EPC bids from two contractors in May this year. Energy Transfer announced six SPAs during last year and the customers include China Gas, Gunvor, ENN, SK Gas, and Shell. The company's Lake Charles LNG project seeks to convert the company's existing regasification terminal to an LNG export facility. It has a proposed liquefaction capacity of 16.45 mtpa and includes three trains and also modifications to the Trunkline Gas pipeline.

Energy Transfer to continue to develop the project

LNG Prime invited Energy Transfer to comment on DOE's decision. "We are disappointed by yesterday's decision of the Department of Energy related to Lake Charles LNG," a spokesperson for Energy Transfer said in an emailed statement. "In light of the significant progress of Lake Charles LNG, we plan to continue to develop the project which may include the use of Lake Charles' existing DOE export authorization," the spokesperson said. Source:www.naturalgasworld.com

DEUTSCHE REGAS: DYNAGAS FSRU TO SERVE MUKRAN LNG TERMINAL

LNG terminal operator Deutsche ReGas confirmed that it plans to install the 174,000-cbm FSRU Transgas Power, owned by Dynagas, to serve the LNG import terminal in the port of Mukran. The German firm led by Ingo Wagner and Stephan Knabe said in a statement on Wednesday it has signed a deal with the German government to sub-charter the vessel delivered in 2021 by Hudong-Zhonghua. According to the agreement, Deutsche ReGas will assume the rights and and obligations of the charter agreement between Germany and Dynagas, including all costs for the full charter. Also, the FSRU will work along the 2009-built 145,000-cbm, FSRU Neptune, which Deutsche Regas chartered from French energy giant TotalEnergies, in Mukran as part of the second phase of the "Deutsche Ostsee" LNG terminal. Deutsche Regas will move FSRU Neptune from Lubmin to the Mukran port on the island of Rügen later this year. The firm recently said it will start the binding open season procedure for the second phase on June 29 and plans to launch the facility this winter. The FSRU-based terminal will connect to the gas transmission network via a new connecting pipeline to be built between Mukran and Lubmin. Germany's

Gascade, which built the Lubmin LNG pipeline, is in charge for this pipeline as well. The second phase of the terminal will have a capacity of up to 13.5 bcm per year, it said.

German FSRUs

Several sources previously told LNG Prime that Deutsche ReGas will install FSRU Transgas Power in the Mukran port. Energy firm RWE also confirmed that it will not take part in the German government's plans to develop the terminal in Mukran. This terminal has faced strong opposition from environmental groups in Germany. The German government, helped by Uniper, RWE, and a consortium of Engie, TES, and E.ON chartered in total five FSRUs to import LNG and replace pipeline gas supplies from Russia. Uniper and RWE already installed Hoegh LNG's FSRUs in Wilhelmshaven and Brunsbüttel. Transgas Force, owned by Dynagas, will work in Stade, while Excelerate Energy's FSRU Excelsior will serve the second project in Wilhelmshaven. Deutsche ReGas officially launched its Lubmin FSRU-based LNG import terminal with a capacity of 5.2 bcm per year, the first private LNG terminal in Germany besides the government-backed facilities, in January this year. Source:www.naturalgasworld.com

DONSOTANK ORDERS LNG-POWERED TANKER DUO AT CHINA'S WUHU

Swedish shipping firm Donsotank has ordered two additional LNG-powered oil and chemical tankers from China's Wuhu yard. According to a statement by Donsotank, Wuhu will deliver the LNG dual-fuel 22,500-dwt vessels in the second and fourth quarters of 2025. The shipping firm did not provide the price tag of the deal. The construction and equipment of these vessels will follow the same blueprints as Donsotank's previous hybrid vessels Prospero and Pacifico, it said. With dual fuel propulsion (LNG-LBG/diesel), 500 kWh battery pack,shore, power connection, SCR-Catamiser, and a waste heat recovery system, Donsotank said the vessels will enable the firm to achieve "cleaner and more efficient" operations. Donsotank said the vessels will have a cargo capacity of 27,800 cbm and they will be 167 meters long and 26.5 meters wide with a draft of 9.4 meters. In addition, the LNG-powered tankers will have Wartsila 10V31 DF engine. Donsotank took delivery of the 22,000-dwt hybrid tanker, Pacifico, in May last year and Prospero in December 2021. Designed by FKAB, both of the ice-class 1A ships have Wartsila LNG propulsion and Wuhu also equipped them with a battery pack. Source:www.lngprime.com

GREECE'S BLUE GRID IN BIO-LNG MOVE

Greece's small-scale LNG player Blue Grid, a unit of Molgas, has purchased a biogas plant in Greece as it plans to produce bio-LNG for the heavy-duty road transport sector and the maritime industry. Blue Grid said on Wednesday it purchased the Biomesti biogas plant in Mesti, Evros via its unit BlueFuel. This marks the company's first entry into biogas. According to Blue Grid, Biomesti currently produces electricity via anaerobic digestion of organic waste, mainly cow manure and whey

cheese, provided by the largest cow farm in Greece Campus and Evrofarma. “Our future plans for this plant include its expansion, upgrade, and ultimately the production of bio-LNG, a fully renewable fuel for road transportation and shipping,” it said. Back in 2021, Blue Grid and Elion Oil created Greece’s first LNG fuel supplier for road transport, BlueFuel, to develop a nationwide network of filling stations for heavy-duty vehicles, enabling the use of LNG as a road fuel in Greece but also the wider region. Elinoil transferred its 50 percent share in the JV to Blue Grid last year. The two firms recently announced plans to launch their first LNG and CNG fueling station for vehicles in Greece in the first quarter of 2024. Earlier this year, Blue Grid and Mytilineos also completed the first truck loading operation at DESFA’s LNG import terminal located on the island of Revithoussa. The two firms are supplying LNG via trucks from the terminal to Greek industrial users. Source: www.lngprime.com

ROYAL CARIBBEAN’S LNG-POWERED GIANT RETURNS TO MEYER TURKU AFTER COMPLETING TRIALS

Royal Caribbean International’s LNG-powered Icon of the Seas has on Thursday returned to the Meyer Turku yard in Finland after completing its initial sea trials. Earlier this week, Meyer Werft announced that the vessel was sailing through the Turku archipelago. “Work on Icon continues, and the next major event on Icon’s road to delivery will be her second sea trials later this year,” the shipbuilder said in a social media post on Thursday. The vessel’s maiden voyage is scheduled to be in January 2024, when it will set sail from Miami for a week-long cruise in the Caribbean, it said. Meyer Werft launched Royal Caribbean International’s 365 meters long Icon of the Seas in December last year. Royal Caribbean International, a unit of Royal Caribbean, and Meyer Werft claim this is the world’s largest cruise ship and the shipbuilder in Turku plans to deliver the vessel at the end of 2023. Meyer Turku, a unit of Meyer Werft, started building this vessel in June 2021, and laid the keel in April 2022. This new Icon Class series of ships will comprise three luxury liners with a tonnage of about 250,800 GT and enough room for up to 5,610 passengers. Meyer Turku plans to deliver the second vessel in 2025, followed by the third ship in 2026. Besides these vessels, Royal Caribbean International has also an LNG-powered ship under construction at French shipbuilder Chantiers de l’Atlantique. Source:www.lngprime.com

CHENIERE PENS LONG-TERM LNG SUPPLY DEAL WITH EQUINOR

US LNG exporting giant Cheniere has signed a long-term supply deal with Norway's Equinor. Under the sales and purchase agreement, Cheniere Marketing will supply about 1.75 million tonnes per annum (mtpa) of LNG to Equinor on a free-on-board basis. According to a statement by Cheniere, the Henry Hub-indexed deal includes a fixed liquefaction fee. Delivery of half of the volume associated with the SPA will start in 2027, and delivery of the remaining half, which is subject to, among other things, a positive final investment decision with respect to the first train of the Sabine Pass expansion project, will start at the end of this decade, it said. The term of the SPA is 15 years from the start of delivery of the full 1.75 mtpa of LNG volumes.

DEAL SUPPORTS SABINE PASS LNG EXPANSION PLANS

This agreement brings the total volumes that Equinor has contracted with Cheniere up to around 3.5 million tonnes per year. Cheniere and Equinor announced a SPA in June last year for about 1.75 mtpa with half of the volumes related to the additional liquefaction capacity at the Corpus Christi LNG terminal beyond the seven-train Corpus Christi Stage III project. Sabine Pass currently has a capacity of about 30 mtpa following the launch of the sixth train in February last year, while Cheniere's three-train Corpus Christi plant in Texas can produce about 15 mtpa of LNG and is undergoing expansion. In February this year, Cheniere initiated the pre-filing review process with the US FERC for the proposed Sabine Pass Stage 5 expansion project. The project will include up to three large-scale liquefaction trains, each with a production capacity of about 6.5 mtpa of LNG, a boil-off-gas (BOG) re-liquefaction unit with a production capacity of 0.75 mtpa of LNG, and two 220,000-cbm LNG storage tanks. "We are pleased to expand our relationship with Equinor, one of Europe's leading energy companies, building upon the SPA we executed last year," Jack Fusco, Cheniere's CEO said in the statement. Fusco said this SPA is expected to provide further commercial support to the SPL expansion project, which the company continues to "rigorously" develop in order to meet the world's growing demand for LNG.

EQUINOR INCREASING ITS ROLE AS LNG SUPPLIER

Equinor said in a separate statement that the LNG market is expected to grow "significantly" because of the role it will play in providing energy security as well enabling a transition to a cleaner energy mix in many markets. With more US LNG in its portfolio, Equinor will increase its role as a supplier of natural gas in global markets while maintaining its position as the major supplier of natural gas to Europe, it said. Equinor operates the 4.3 mtpa Hammerfest LNG export plant on the island of Melkoya, Norway. Source:www.lngprime.com

INDIA'S LNG IMPORTS DECLINE IN MAY

India's liquefied natural gas (LNG) imports dropped in May when compared to the same month last year, according to the preliminary data from the oil ministry's Petroleum Planning and Analysis Cell. The country imported 2.22 billion cubic meters, or about 1.6 million tonnes of LNG, in May, a drop of 24.1 percent when compared to the same month in 2022, PPAC said.

During April-May, India took 4.74 bcm of LNG, or some 3.4 million tonnes, down by 5.4 percent, PPAC said. India paid $1.4 billion for May LNG imports, down from $1.8 billion last year, while costs dropped from $3.2 billion in the April-May period last year to $2.5 billion during the same two months this year, it said. As per India's natural gas production, it reached 2.90 bcm, almost flat when compared to the corresponding month of the previous year. During April-May, gas production dropped 1.5 percent to 5.65 bcm, PPAC said. India's monthly LNG imports have been constantly dropping last year due to mostly high spot prices. However, Asian spot LNG prices dropped significantly this year, prompting some buyers in India to return to the spot market. Compared to the year before, India's LNG imports rose in January, February, and April, but they dropped in March. At the moment, India imports LNG via seven facilities with a combined capacity of about 47.7 million tonnes. India's Adani and France's TotalEnergies started supplying natural gas in April to the grid from their Dhamra LNG import facility located in Odisha, on India's east coast, as part of the terminal's commissioning phase. Petronet LNG's 17.5 mtpa Dahej terminal operated at 95.4 percent capacity, while Shell's 5 mtpa Hazira terminal operated at 21.2 percent capacity in April, PPAC said. Source:www.lngprime.com

DYNAGAS LNG PARTNERS LOGS LOWER NET INCOME IN Q1

Dynagas LNG Partners, the owner of six LNG carriers which operate under long-term charters, reported a drop in its first-quarter net income. The NYSE-listed limited partnership formed by shipowner Dynagas posted a net income of $9.6 million for the three months ended March 31, 2023. This marks a decrease of $14.3 million, or 59.8 percent, compared to the same period last year, the LNG shipper said in a statement.

Dynagas LNG attributed this to the decrease in the gain on its interest rate swap transaction and the increase in the interest and finance costs, net. Net income also dropped compared to the prior quarter of $11.6 million. Adjusted net income decreased 35 percent to $6.5 million in the first quarter mainly due to the increase in the interest and finance costs, net, compared to the corresponding period in 2022, the firm said. Voyage revenues for the three-month period reached $37.3 million, up 12 percent compared to the same quarter last year. Dynagas LNG attributed this to the increase in the deferred revenue amortization relating to the new time charter party agreement with Equinor for the new employment of the 155,000-cbm LNG carrier, Arctic Aurora, which will start in September 2023. In addition, Dynagas LNG attributed the rise to the higher revenue earning days of its LNG carrier Clean Energy in the three months ended March 31, 2023 compared to the corresponding period of 2022. The partnership reported gross of commissions of about $62,130 per day per vessel in the three-month period, compared to about $63,130 per day per vessel for the corresponding period of 2022. During both three-month periods, the partnership's vessels operated at 100 percent utilization.

Outlook remains "positive"

Chief executive Tony Lauritzen said all six LNG carriers in the company's fleet are operating under their respective long-term charters with international gas companies with an average remaining contract term of 6.1 years. As of June 20, 2023, the company's estimated contracted revenue backlog was $0.96 billion. "We have remained committed to our strategy of creating equity value through reducing debt and have since September 2019, repaid $218.4 million in debt," he said, adding that the company's current debt outstanding is $456.6 million. "Gas prices in the main pricing hubs are currently significantly lower compared to a year ago when gas prices were driven to new highs as a result of the Russian – Ukraine situation. The spread however between US feed gas prices and LNG prices in Europe and the Far East continues to be healthy," Lauritzen said. He said that the company believes this is "positive" for economic sustainability and therefore global growth as well as for gas producers. "It is being increasingly appreciated that LNG is a necessary ingredient to managing global emissions as well as energy security and, despite cost increases, we expect the continuation of final investment decisions being received by mature LNG production projects, the execution of new long-term LNG sales and purchase agreements and consequently the continued demand for LNG shipping," he said. "In light of these developments, we believe that the outlook for LNG shipping and the partnership remains positive," Lauritzen said. Source:www.lngprime.com

SEASPAN, ZIM NAME TWO LNG-FUELED CONTAINERSHIPS IN SOUTH KOREA

South Korea's Samsung Heavy Industries has hosted a naming ceremony for two 15,000-teu LNG-powered containerships it built for owner Seaspan and charterer ZIM. The shipbuilder held the naming ceremony for the LNG-powered vessels, ZIM Mount Denali and ZIM Mount Rainier, at its Geoje yard on Wednesday, according to a social media post by Israel's ZIM. These are the fourth and fifth of ten 15,000-teu vessels which will go on charter to ZIM. The two firms named the first vessel in this batch, ZIM Sammy Ofer, in February this year and ZIM Mount Everest and ZIM Mount Blanc in April. Back in 2021, Seaspan and ZIM signed a charter deal for ten 15,000-teu vessels that will serve the latter's Asia-US East Coast trade. These 366 meters long vessels feature MAN ME-GI engines and GTT's Mark III membrane technology. GTT said the tanks have a capacity 12,000 cbm. Besides these ten ships, Seaspan and ZIM also signed charter deals for 15 7,000-teu LNG-powered container vessels. China's Jiangsu New Yangzi, a part of Yangzijiang Shipbuilding, is building these ships and in May launched the first vessel in this batch, ZIM Amber. Source:www.lngprime.com

AUSTRALIA'S TAMBORAN INKS DEAL FOR SMALL LNG FACILITY

Australian firm Tamboran has entered into a framework deal with the Clean Energy Fuels Australia (CEFA) group of companies to obtain exclusivity over gas compression and liquefaction facilities for potential early production from the onshore Beetaloo Basin. According to a statement by Tamboran, these facilities have the potential to accelerate gas production and also minimize flaring from appraisal wells under the Northern Territory's "beneficial use of gas" regulation as early as 2024, subject to standard regulatory, stakeholder and joint venture consents and approvals. The framework deal includes Clean Energy Fuels Australia Marketing (CEFAM), a joint venture between (CEFA), Tamboran, and the Mitchell Group. Perth-based CEFA, backed by US infrastructure investor I Squared Capital, is developing the Mount Magnet LNG production hub in Western Australia.

MINI LNG FACILITY

Tamboran said that the parties will now work together to finalize a contract for long-term use of the compression and gas conditioning facility for the proposed pilot development. Exclusivity will last until the end of 2023 when the parties expect to move into longer term arrangements, it said. The existing compression facilities can be expanded to utilize any available capacity in either the Amadeus Gas Pipeline (AGP) or McArthur River Pipeline (MRP), it said. Also, Tamboran has secured exclusivity over a mini-LNG facility for four months, which it could deploy to supply remote NT communities or mines by the end of 2024, subject to approvals, it said. The supply of LNG into the region aims to provide a "cleaner and economic alternative" to diesel for electricity generation and fuel in the transport and mining industries, the firm said. Tamboran managing director and CEO, Joel Riddle, said in the statement that securing exclusivity over these facilities is a "significant" step towards achieving first production from the Beetaloo Basin. He said that the firm has committed to the NT government to deliver early gas from the Beetaloo Basin to the domestic market and this is the first step in fulfilling the company's promise.

Large LNG terminal

Tamboran is also targeting first LNG production from its proposed 6.6 mtpa LNG plant in NT by 2030 after it secured land for the development. Ealrier this month, Tamboran said that the government has provided the firm exclusivity over 170-hectares (420-acres) on the Middle Arm Sustainable Development Precinct for its project, Northern Territory LNG (NTLNG). The LNG project would receive gas from the onshore Beetaloo Basin. The Middle Arm Sustainable Development Precinct is located on a peninsula south of Darwin that already hosts the Inpex-led Ichthys LNG plant and also the Santos-led Darwin LNG terminal. Source:www.lngprime.com

JAPAN'S MOL AND PARTNERS WRAP UP BIO-LNG TRIAL

Japan's shipping giant MOL and partners have completed a bio-LNG trial with the LNG-powered coastal bulk carrier, Ise Mirai, in Ise Bay**.** According to a joint statement released on Wednesday, this marks Japan's first use of "carbon-neutral" LBM, or bio-LNG, derived from biomass. Besides MOL and its unit MOL Coastal Shipping, other partners in the project were Air Water, Techno Chubu, Cenergy, IHI Power Systems, Jera, and Kyoudou Kaiun. The 2020-built bulker Ise Mirai belongs to a joint venture consisting of MOL's coastal shipping unit, Chubu Electric's unit Techno Chubu, and Kyoudou Kaiun. In the trial, Air Water supplied LBM produced from cattle manure in the Tokachi region of Hokkaido as part of a technology development and demonstration project adopted by Japan's Ministry of the Environment. In October 2022, Air Water started operation of what it says is the first plant in Japan to produce LBM. All the parties involved confirmed through ocean transport of Jera's cargo that LBM can be transported through the existing domestic LNG supply chain, truck-to-ship bunkering of LBM can be completed using existing LNG tank trucks, and LBM can be used by existing vessel (Ise Mirai) as marine fuel, the statement said. MOL and Air Water said they will continually contribute to the development of low-carbon and decarbonized ocean transport by leveraging each other's knowledge and experience in the use of LBM as marine fuel. The two firms joined forces in February to study the use of LBM in MOL's LNG-powered vessels. MOL is building a fleet of LNG-powered vessels as part of its plans to slash emissions, and this year it placed in service Japan's first two LNG-powered ferries. Source:www.lngprime.com

NO BIDS IN PAKISTAN LNG'S TENDER FOR SIX SHIPMENTS

State-owned Pakistan LNG said it had received no offers for its tender seeking bids for a total of six spot LNG shipments. The firm released this tender on June 13 for delivery in October and December and said it will close on June 20. The delivery windows included October 5-6, October 20-21, October 31, December 7-8, December 13-14, and December 24-25. However, Pakistan LNG said in an evaluation report posted on Tuesday it had received no offers for these cargoes. Pakistan LNG did not provide any additional information. Besides this tender, Pakistan LNG also launched another tender on June 20 for three spot cargoes with delivery over January-February 2024. This tender closes on July 14. Prior to these tenders, Pakistan LNG has not issued a tender for cargoes since August last year. Spot LNG prices dropped considerably this year, promting the country to return to the spot market in order to secure gas supplies for its power plants. In October last year, Pakistan LNG said it had received no offers for its tender seeking bids for a total of 72 LNG shipments. Also, it received no bids in July for a tender seeking ten spot cargoes. Pakistan currently imports LNG via the FSRU BW Integrity which serves Pakistan GasPort's terminal in Port Qasim, Karachi, and the Energo Elengy facility, served by the FSRU Exquisite. Source:www.lngprime.com

ONCE BITTEN, TWICE SHY. PRICE VOLATILITY HAS DAMAGED CONFIDENCE

Gas prices are falling, following a fervid and sometimes chaotic year in 2022. US Henry Hub gas futures have dropped back to just above $2/mn Btu, having reached a peak close to $10/mn Btu in August last year. The price fall reflects a worrisome slowdown in the US economy, which has become split between depressed industries and a still resilient service sector. Inflation has caused a major round of interest hikes across the world, increasing the cost of new investment. The US has raised its key interest rate 10 times in the last 14 months, pushing the benchmark rate up from near zero to 5-5.25%. Signs are, however, that the upward cycle may have ended. US inflation has been on a steady downward trend since July last year, although at 4.9% in April, it remains some way above the Federal Reserve's 2% target. European gas prices, which drove the increases last year as the continent scrambled for LNG in the face of lost Russian pipeline supplies, have also calmed. European gas buyers are rebuilding inventories more slowly than last year for the simple reason that they ended Winter 2022/23 with much higher stocks than expected. Strong inventory levels at the end of the heating season usually presage weaker summer pricing (and vice versa). Storage capacity, moreover, is not elastic. In Europe, total storage capacity is about 1,138 TWh and buyers currently feel they can meet the EU's mandate of being 90% full by November 1 with ease. This, and the LNG import capacity added in the last year and this year, will limit concerns over gas supply in the coming winter. This means less of a panic and more moderate prices this summer, at least until the winter cold hits. European gas prices have already fallen to half their level at the start of the year, a development which will flow through into power markets and bring welcome relief to consumers and industry across the continent. However, whether low prices will encourage consumption after a year of high prices and intense conservation efforts is uncertain. As in the US, European interest rates have been on the rise and forecasts for economic growth are poor. EU GDP is expected to grow by only 0.8% this year and the euro-area by 0.9%. EU inflation is falling, but remains well above levels with which central banks are typically comfortable. Gas demand is therefore unlikely to get a significant boost from non-power sectors in the short term, even if prices continue their downward trend. Looming recession, or a mid-cycle period of weak growth, look likely to limit a rebound in gas demand.

ASIAN DEMAND REMAINS MUTED.

Another key factor behind the fall in gas prices has been weaker than expected Asian demand for LNG. The Japan-Korea Marker, which tracks LNG spot prices in the Asia-Pacific market, has been on a steady downward trend since the beginning of the year, falling below $10/mn Btu in early May. Platts assessed the JKM for delivery of LNG in June on May 5 at $9.882/mn Btu, the lowest level in two years. The arbitrage for US LNG exports to Asia remains open, but it has narrowed significantly as the JKM has fallen further and faster than US domestic gas prices. Like Europe, Asia has started the summer with higher gas stocks than normal, which has kept a lid on spot market demand. In particular, Chinese LNG

requirements have remained low, denting expectations based on a stronger economic revival following the removal of the country's zero tolerance policies on Covid. In both Europe and Asia, prices could weaken further as storage levels return to tank top levels ahead of next winter. It may take lower prices still to stimulate a robust demand-side response, particularly in the context of weak economic growth and potential recession.

Confidence Needs to be Rebuilt.

There is, however, another factor at play. The period of high and volatile prices has taken a toll on confidence. Such periods, as in the oil market, where there are less alternatives, typically result in some permanent demand destruction. They instil caution – buyers continue with strategies that reduce their exposure to international price volatility until a commodity market -- in this case LNG – looks more stable and predictable. At present, while available LNG volumes are increasing, stability and predictability are still absent. A hot summer pushing up Asian cooling demand and a cold winter impacting northern hemisphere heating requirements in the still extant environment of truncated Russian gas supplies to Europe, driven by an unpredictable conflict, mean price volatility could re-emerge at short notice. It is therefore hard to blame buyers who are reluctant to put their feet back in the water.

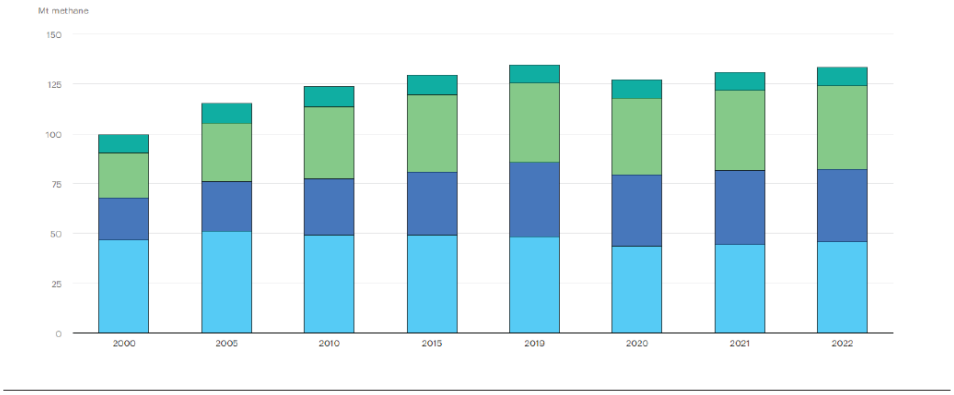
New Supplies are Coming

There are some certainties. First, in the absence of Russian gas pipeline supplies, European consumption of LNG should continue to underpin the market, seasonal swings in demand notwithstanding. Second, US investment in new liquefaction plants, in addition to the ongoing large-scale expansion of Qatari LNG, will increase supply substantially this decade. According to US Energy Information Administration data, the timelines are for Golden Pass to add 18mn mt/yr of new capacity in 2024/25, Plaquemines Phase 1 13.33mn mt/yr in 2024 and a further 6.66mn mt/yr from Phase 2 in 2025, while Corpus Christi Stage III will see 11.45mn mt/yr come into operation also in 2025. These should be followed by Port Arthur LNG Phase 1 – 13.5mn mt/yr – in 2027/28, at which point new Qatari volumes should also be coming to market. But this makes this year and next -- before this new capacity comes onstream -- a difficult period for the LNG industry. There is a high risk of further damaging price volatility amid the uncertain implications of an imminent Ukrainian counter offensive. In this period, buyers and power system planners will remain cautious and pursue other options, for example continued reliance on coal-fired generation and, without question, the accelerated expansion of renewable energy. The first option simply delays a problem which LNG is well suited to address. The second represents more permanent demand destruction for the industry. A period of stabilisation that rebuilds confidence in LNG not just as a lower carbon alternative to the mass use of coal, but a predictably affordable and available alternative, is sorely needed. Qatar's large-scale capacity expansion and those US developers which have managed to cross the line to financial close are key to creating this environment. But it may also be a period of weak global economic growth which keeps demand down, bridging the gap before new LNG supply comes onstream. Source : www.naturalgasworld.com

WEIGHING UP THE LNG EMISSIONS FOOTPRINT

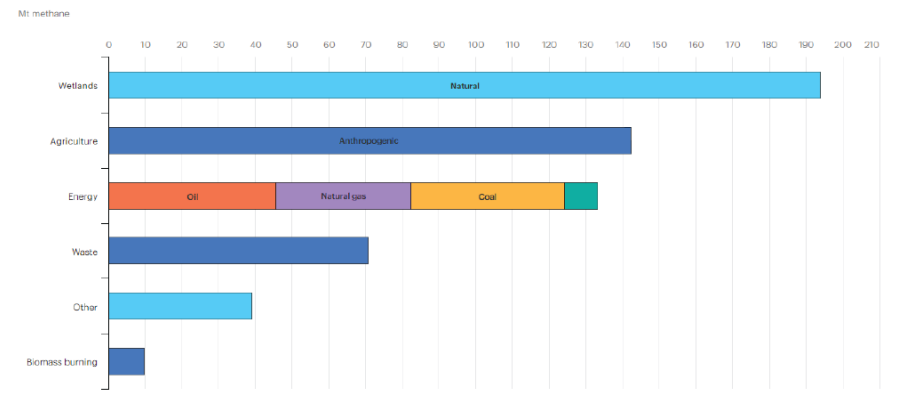
In the space of less than a year we had two major legislations developed and are on their way to be enacted into law by the US and the EU to reduce methane emissions. In early May, the European Parliament (EP) approved new legislation with tighter rules to reduce methane emissions in energy, a sector that accounts for about 20% of EU's methane emissions. It is designed to ensure transparency and consistency in the measurement, reporting and verification (MRV) of LNG emissions, as well as introduce more stringent leak detection and repair (LDAR) requirements to tackle leaking infrastructure. The parliament also asked the European Commission (EC) to ensure that exporting countries abide by similar rules.

FIGURE 1 | Global methane emissions from the energy sector, 2000-2022 | Source: IEA



This was preceded by the US Inflation Reduction Act (IRA), approved by the US Senate in August 2022, that includes a 'Methane Emissions Reduction Program.' This is timely. The International Energy Agency (IEA) reported, in its Global Methane Tracker 2023 report, that the global energy sector was responsible for nearly 135mn metric tons of methane emissions in 2022, a slight rise from the amount in 2021 (*see figure 1*). The IEA estimates that "in the oil and gas sector, emissions can be reduced by over 75% by implementing well-known measures such as leak detection and repair programmes and upgrading leaky equipment." Furthermore, "based on average natural gas prices from 2017 to 2021, we estimate that around 40% of methane emissions from oil and gas operations could be avoided at no net cost because the outlays for the abatement measures are less than the market value of the additional gas that is captured." IEA's report includes recommendations and an actionable roadmap for curbing methane emissions. Emissions of

FIGURE 2 | Global methane emissions from the energy sector, 2000-2022 | Source: IEA



methane during oil and gas production and supply are a serious contributor to climate change. Methane is over 80 times more potent that CO2 over a 25-year timeframe and 28 to 36 times more potent over 100 years. Given that methane's atmospheric lifespan is around 10 years, much less than that of CO2, actions to reduce methane emissions now can have a faster impact on the rate of temperature increases than actions on carbon dioxide. Hence the urgency. The IEA estimates that the energy sector is responsible for about 23% of global methane emissions (*see figure 2*). The IEA is warning that methane emissions are increasing faster than ever. Today, they are 2.5 times higher compared to pre-industrial levels and are responsible for 30% of the rise in global temperatures since then. This demonstrates the urgency of taking action to reduce them.

EU methane reduction legislation

The EU focused its methane reduction legislation on the oil and gas sector, responsible for 19% of Europe's methane emissions, as the relatively easier route to introduce such regulation. The agriculture sector, which is responsible for 53% of EU methane emissions, or waste, responsible for 26%, are politically much more sensitive and require much more careful handling. The European Council had already agreed new rules in December 2022 that require oil and gas operators "to carry out surveys of methane leaks in different types of infrastructures at set intervals, using devices with proposed minimum leak detection limits, detect and repair methane leaks." Venting and flaring, which release methane into the atmosphere, will be banned except for narrowly defined exceptional circumstances, like construction, repair, decommissioning, safety or testing of the components. Member states will also have to develop mitigation plans to remediate, reclaim and permanently plug inactive wells and temporarily plugged wells.

There was also a requirement for methane emissions of EU's energy imports to be traced, by putting forward "global monitoring tools that will increase transparency of methane emissions from imports of oil, gas and coal into the EU." These would allow the EC to consider further actions in the future. These rules were the basis of the legislation proposed and approved by the EP, with some tighter rules for monitoring emissions. The Parliament requires companies operating fossil fuel infrastructure to check for leaks as often as every two months. In addition, gas infrastructure operators must replace or repair all methane-leaking components immediately upon detection or within a maximum of five days. EP's legislation also includes rules for accurate measurement, reporting and verification of methane emissions in the energy sector, as well as for the abatement of those emissions, and extends these rules to the petrochemical sector. It proposes third party verification to ensure greater independence and transparency, requiring that transparent information on methane emissions should be made available to the markets. But the most

significant change is extending the rules to apply to imports of oil and gas. From 2026, those importing oil and gas into the EU will have to prove that they are adhering to these requirements, especially MRV and methane mitigation. Gas and LNG imports from countries with comparable laws will be exempted. Given that the EU imports 97% of its oil and 90% of its natural gas consumption, extending the rules to apply to imports of oil and gas, if approved by the European Council, would be a major development and would contribute to reducing methane emissions globally. In addition, the EC has been asked to propose by 2025 a binding methane emission reduction target for all relevant sectors by 2030. Member states should then set national reduction targets as part of their integrated national energy and climate plans. It is important that this legislation succeeds. Otherwise, without effective measures in place to reduce methane emissions, Europe will miss its 2030 climate targets. In a rare convergence of views, Eurogas, industry groups and green campaigners all have expressed support for EP's proposed legislation. These will now need to go back to the European Council, which is likely to make changes before final approval. Once approved, expected this year, this will become EU's first major legislation to reduce methane emissions.

Impact of the IRA on emission monitoring

The US has gone further. In addition to emission monitoring and mitigation, the IRA has introduced a charge on methane emitted by oil and gas companies who report emissions under the US Clean Air Act, starting at $900/mt for emissions reported in 2024, rising to $1,200/mt in 2026 and $1,500/mt in 2027 and thereafter. This charge will apply to facilities with methane emissions that exceed 0.2% of the natural gas sent to sale from such a facility, or exceed 25,000 mt of CO2 equivalent/year. Making methane emissions expensive is expected to play a critical role in curbing them. It has been estimated that the Act could lead to a reduction in US greenhouse gas emissions by as much as 40% below 2005 levels by 2030. The IRA was followed in November 2022 by a proposal for the regulation of methane and volatile organic compounds from new facilities, as well as methane from existing oil and gas facilities, issued by the US Environmental Protection Agency (EPA). It requires routine monitoring of all oil and gas well sites and facilities, for their entire life, and repair of all fugitive emissions – including orphaned and unplugged wells. The proposal introduced a 'Super Emitter Response Program' (SERP), allowing approved third-parties to deploy continuous monitoring systems, satellite surveillance, and drone and airplane surveys to produce data on methane emissions. These monitoring technologies would need to be approved by the EPA. Operators would then be notified and will be required to remediate any emissions. The time to be allowed for notification and remediation is still to be defined. The US Bureau of Land Management (BLM)

has also introduced a 'waste prevention rule' to prevent methane waste and loss of natural gas at oil and gas lease sites on public lands. The Biden Administration is aiming to finalise these rules and regulations before COP28 in November, aiming also to make it harder for a new administration to roll them back.

Global Methane Pledge

Together, the US and the EC took a leading role in the Global Methane Pledge (GMP) initiative, launched at COP26 in 2021. It "aims to catalyse global action and strengthen support for existing international methane emission reduction initiatives to advance technical and policy work that will serve to underpin Participants' domestic actions." Since its launch, OGP has generated strong momentum for methane action, with 150 countries endorsing its goal to reduce global methane emissions by 30% by 2030. Many of these countries are expected to enact tighter regulations and new guidelines for reducing methane emissions. With the US and the EU putting in place detailed rules for the reduction of methane emissions, it is hoped that other OGP signatories will follow their lead. Otherwise, they will not be able to achieve their 2030 goal. There is also the additional incentive that gas and LNG imports to the EU from countries with EU-comparable laws will be exempted. The forthcoming Methane Mitigation Global Summit, to be held in June in Houston, will provide an insight into regulations, commitments. methods and innovations to tackle oil and gas methane emissions globally.

Going forward

US and EU policymakers appear to be coordinating their respective methane reduction regulations, but alignment is not yet clear. It is hoped that such coordination will eventually lead to the development of uniform standards. This should then make it easier to extend such regulations to the other big methane emitting sectors, not just energy. With emission monitoring gaining traction, a number of companies are developing systems based on satellite networks equipped with sophisticated cameras to monitor methane leaks and emissions from space, or by using drones. The threat of fines and preference for verifiable and certifiable 'cleaner' gas is spurring investment and deployment of such systems, with increasing oil and gas company support. With such systems now becoming available to all, regulators, operators and to the public, they are ushering in a new era of emission monitoring, reliability and transparency, but also accountability. The UN launched its own high-tech, satellite-based, global methane detection system at COP27. The 'Methane Alert and Response System' (MARS) is a new initiative "to scale up global efforts to detect and act on major emissions sources in a transparent manner and accelerate implementation of the

GMP." The UN intends to use this "to alert governments, companies and operators about large methane sources to foster rapid mitigation action of this potent gas." With 90% of its natural gas imported, sooner than later the EU will prioritise obtaining its gas from 'cleaner' sources. But it is not clear how and when gas and LNG suppliers will be able to meet such requirements. And given security of energy supply concerns, it is also not clear whether the EU and European countries are ready to move in that direction. Nevertheless, it is something that will happen, likely by 2026. There are also many concerns about verification and acceptability of standards where gas changes hands – where the producer, liquefier and supplier are different parties, as is the case with US LNG. There is some way to go before such systems can be put in place and can be applied effectively. But what is positive, is that, with the US and the EU determined to put in place appropriate regulations, it should be possible to achieve a substantial reduction in global methane emissions from the energy sector within this decade. Source : www.naturalgasworld.com

CYGNUS ENERGY
Gas & OIL
LEVEL 45, CHEUNG KONG CENTER,
2 QUEEN'S ROAD CENTRAL, HONG KONG
SANDP@CYGNUS-ENERGY.COM (SALE N PURCHASE)
GAS@CYGNUS-ENERYG.COM
(GAS PROJECTS)