



QATARENERGY LNG CARRIER FLEET EXPANSION SURPASSES 100 VESSELS

Charter deals for 19 more vessels with CMES, Shandong Marine Energy, MISC Berhad and a K-Line-Hyundai Glovis joint venture take total orders to 104 LNG carriers. Qatari state energy giant QatarEnergy has signed long-term time charter party agreements with the four international shipowners for the operation of 19 new LNG carriers as part of the second shipowner tender under the company's LNG fleet expansion programme. The agreements cover operational charters of six vessels by CMES LNG Carrier Investment, another six vessels by Shandong Marine Energy (Singapore), three vessels by MISC Berhad and four vessels by a joint venture of Kawasaki Kisen Kaisha (K-Line) and Hyundai Glovis. The 15 vessels set for charters with CMES, Shandong Marine Energy and MISC Berhad will be built at Samsung Heavy Industries in South Korea while the four vessels set to go to the K-Line-Hyundai Glovis joint venture are to be built at Hanwha Ocean (formerly Daewoo Shipbuilding & Marine Engineering) in South Korea. All 19 conventional LNG vessels will have a capacity of 174,000 m³ once built. Qatar's Minister of State for Energy Affairs Saad Sherida Al-Kaabi, who is also chief executive of QatarEnergy, signed four separate agreements with the four shipowners in a ceremony held at QatarEnergy's headquarters in Doha and attended by senior executives from QatarEnergy, QatarEnergy LNG and the four shipowner companies. "Today's signings form a significant

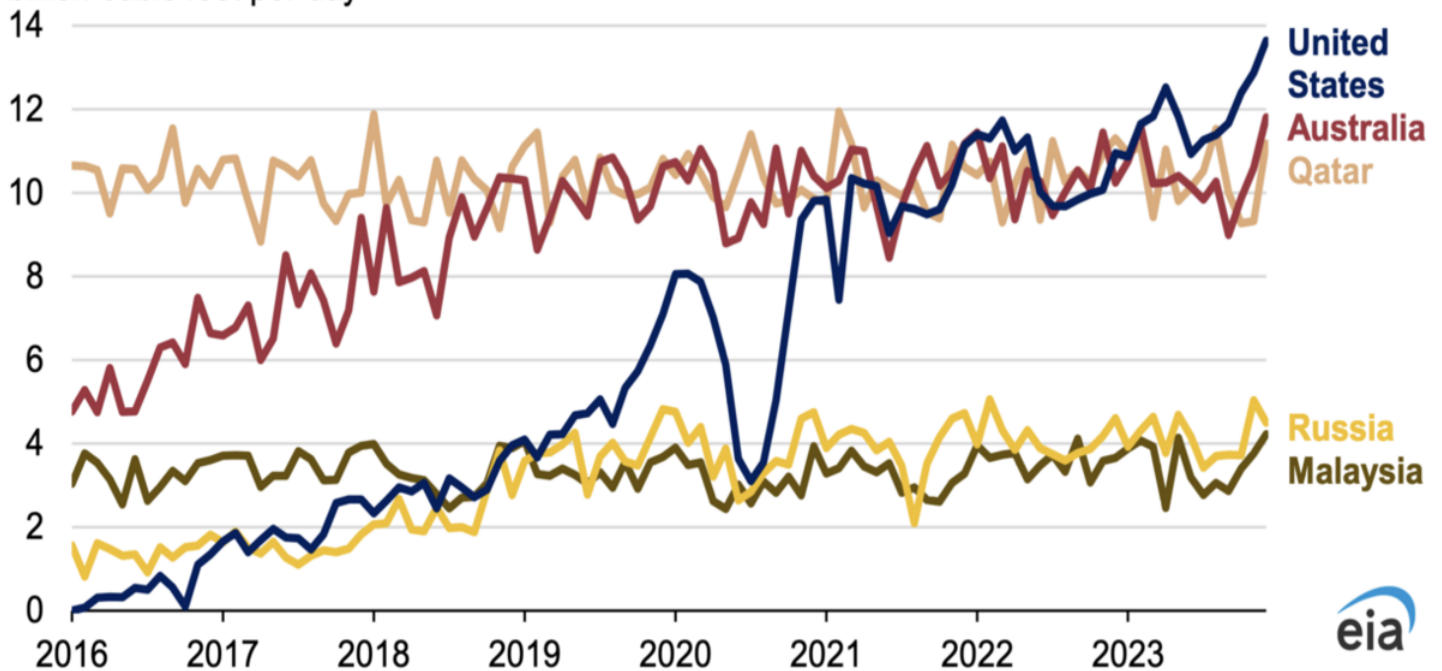
milestone in QatarEnergy's LNG fleet expansion programme, as it marks the conclusion of the conventional-size vessels portion of the programme, bringing the total number of ships for which we have signed [time charter parties] to 104 vessels, a massive undertaking that is the largest shipbuilding and leasing programme ever in the history of the industry," Mr Al-Kaabi said. In February, QatarEnergy announced it is proceeding with a new LNG project, the North Field West Project, as part of its massive North Field Expansion (NFE) that will raise Qatar's LNG production capacity from 77M tonnes per annum (mta) to 142 mta before the end of this decade, representing an increase of almost 85% from current production levels. North Field West joins two other NFE projects in North Field East and North Field South. Between them, the first two projects already were set to push the Middle East state's LNG liquefaction capacity from 77 mta to 126 mta. To support this massive liquefaction production expansion, QatarEnergy is in the second phase of its equally large LNG carrier newbuilding programme. The new LNG carriers will not only support offtake from the NFE projects, but also the Golden Pass LNG export project in the US and QatarEnergy's long-term fleet renewal requirements. Of the 104 LNG carriers thus far being built under long-term charter and operation contracts, 43 vessels will be chartered by QatarEnergy's affiliate "QatarEnergy Trading", making it the single-largest one-step ship acquisition programme of any single entity in the history of the LNG industry. On 24 March 2024, QatarEnergy inked a time-charter party deal with Qatar Gas Transport Co Ltd (Nakilat) for the operation of 25 174,000-m³ LNG carriers as part of the second shipowner tender under its fleet expansion programme. The TCP deal follows an announcement in February 2024 that Nakilat would operate up to 25 vessels for the Qatari LNG expansion efforts. source : www.rivieramm.com

EIA: US REMAINS TOP EXPORTER OF LNG IN 2023

The United States (US) exported nearly 12Bn cubic feet per day of LNG in 2023. Data from the US Energy Information Administration (EIA) pegged the nation's liquefied natural gas exports at 11.9Bn cubic feet per day (Bcf/d) in 2023 - a 12% increase compared with 2022. LNG exports from Australia and Qatar - the world's two other largest LNG exporters - each ranged from 10.1 Bcf/d to 10.5 Bcf/d annually between 2020 and 2023, according to data from Cedigaz. Russia and Malaysia round out the top five averaging 4.2 Bcf/d and 3.5 Bcf/d respectively. US LNG exports increased in the first half of 2023 after the Freeport terminal in Texas returned to service in February following an industrial accident in June 2022, which knocked it out of commission temporarily. Freeport began full production by April, and powered by the demand for LNG in Europe, which remained the primary destination for US LNG exports, set monthly records late last year: 12.9 Bcf/d in November, followed by 13.6 Bcf/d in December. EIA now estimates that utilisation of export capacity averaged 104% of nominal capacity and 86% of peak capacity across the seven US LNG terminals operating in 2023. Europe, including Turkey, accounted for 66% (7.8 Bcf/d) of US exports, followed by Asia at 26% (3.1 Bcf/d) and Latin America and the Middle East with a combined 8% (0.9 Bcf/d). As Europe's LNG import capacity continued to expand, the EIA estimates it will increase by more than one-third between 2021 and 2024. The Netherlands, France and the UK accounted for a combined 35% (4.2 Bcf/d) of all US

LNG exports. Dutch exports increased with the expansion of the Gate LNG regasification terminal and the commissioning of two new floating storage and regasification units (FSRUs). The EIA expects supplies to Germany will continue to remain high for the foreseeable future with four terminals, three of which are FSRUs, expected to come online between 2024 and 2027. Japan, China and India all increased LNG imports from the United States by a combined 0.6 Bcf/d, compared with 2022 while the Philippines and Vietnam began importing LNG in 2023. However, readers should note the Biden Administration placed a temporary pause on future LNG export permits in late January. The move is believed to be a concession to anti-fossil fuel energy activists who make up a small but visible and vociferous pressure group within President Biden's Democratic Party, ahead of elections in November. Nevertheless, US officials have said they are open to ending the pause on approvals to get a Ukraine aide package passed in Congress. The US has leapfrogged the competition to emerge as the top exporter of natural gas (Source: EIA)

Monthly liquefied natural gas exports from select countries (Jan 2016–Dec 2023) billion cubic feet per day



source : www.rivieramm.com

KYUSHU AND SETOUCHI LNG BUNKER SHIP DELIVERED

Keys Bunkering West Japan Co, a joint venture established by Kyushu Electric Power and NYK Line, Itochu Enex Co, Ltd and Seibu Gas, has taken delivery of its first bunkering vessel. KEYS Azalea arrived from a yard owned by Mitsubishi Heavy Industries and will become the first LNG bunkering vessel to operate in the Kyushu and Setouchi regions. The newbuild was announced in 2022 and the yard launched the vessel and held a naming ceremony in July last year. The vessel will be

engaged in the LNG bunkering business and LNG domestic transportation business for overseas vessels calling at ports in the Kyushu and Setouchi regions. The vessel construction was supported by funds from Japan's Ministry of Land, Infrastructure, Transport and Tourism's under its Reiwa 3rd Year LNG Bunkering Base Formation Project. KEYS Azalea will feature a dual-fuel engine that can operate on both LNG as a main fuel, and fuel oil as an alternative. The 82-m, 4,850 gt ship will be Japan's first LNG bunkering project to supply LNG to vessels over the vast Kyushu and Setouchi area. source : www.rivieramm.com

KARPOWERSHIP TAPS SEATRIUM TO CONVERT LNG CARRIER TRIO TO FSRUS

Singapore's Seatrium has secured a contract from Turkey's Karpowership to convert three LNG carriers into floating storage and regasification units. Seatrium said in a statement on Wednesday that the conversion deal includes an option for a fourth LNG carrier. The group, previously known as Sembcorp Marine and renamed as Seatrium following its merger with Keppel Offshore & Marine, revealed a series of major contracts with an aggregate value of S\$350 million (\$259 million), to be completed by end 2025. Besides the Karpowership deal, Seatrium won a series of LNGCs dry docking under the favored customer contract with South Korea's Hyundai LNG Shipping, life-extension and remediation work for floating production systems, cruise ships' repairs and refurbishments, offshore and naval work.



Image: Karpowership

FSRU conversion work to start in Q2

Seatrium did not reveal the names or other details of the Karpowership vessels. Brokers said last year that Karpowership, part of Karadeniz, bought four steam NWS LNG carriers. The vessels in question have a capacity of some 127,000 cbm while they were built between 1989 and 1994. They are Northwest Sanderling, Northwest

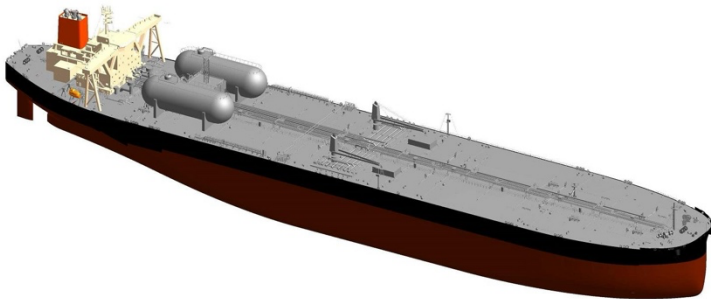
Sandpiper, Northwest Snipe, and Northwest Stormpetrel. Seatrium said that the conversion work involves installing a regasification skid, as well as other supporting systems such as cargo, utility, spread-mooring, offloading, electrical, and automation systems. Scheduled to start in the second quarter of this year, this "milestone contracts exemplifies a succession of FSRU conversions executed by Seatrium for Karpowership," it said. Also, it builds upon a track record of successful deliveries, including Karmol LNGT Powership Africa, Karmol LNGT Powership Asia, and Karmol LNGT Powership Europe, the firm said. KARMOL is a joint venture of Karpowership and Japan's MOL. The company's first FSRU Karmol LNGT Powership Africa departed Singapore in March 2021. source : www.lngprime.com

PERU LNG TERMINAL SENT FIVE CARGOES IN MARCH

Peru LNG's liquefaction plant at Pampa Melchorita has shipped five liquefied natural gas cargoes in March, one shipment more compared to the previous month. According to the shipment data by state-owned Perupetro, during March the 4.4 mtpa LNG plant sent two shipments each to South Korea and Thailand and one shipment to Japan. The shipments loaded onboard the LNG carriers Seapeak Madrid, Megara, Maran Gas Olympias, Barcelona Knutsen, and Maran Gas Hydra equal about 352,262 tonnes, the data shows. These five LNG cargoes loaded at the Peru LNG plant last month compare to five cargoes in March last year, while Peru LNG shipped four cargoes in February and five cargoes in January this year. Peru LNG increased its exports last year compared to the year before, and it also expects to boost the number of shipments in 2024. The terminal loaded 55 vessels in 2023, compared to 51 vessels in 2022. It expects to load 60 vessels in 2024. US-based Hunt Oil holds a 50 percent operating stake in the Pampa Melchorita LNG plant, while SK and Marubeni have 20 percent and 10 percent, respectively. MidOcean Energy, the LNG unit of US-based energy investor EIG, recently agreed to purchase the 20 percent stake in Peru LNG from a unit of South Korean conglomerate SK. LNG giant Shell also holds a 20 percent stake in Peru LNG and takes all the volumes produced at the facility. source : www.lngprime.com

MOL SECURES LOAN TO FUND LNG-POWERED VLCC

Japan's shipping giant MOL has signed a deal with Sumitomo Mitsui Trust Bank to raise funds through a transition-linked loan for the construction of an LNG dual-fuel very large crude carrier (VLCC). This is MOL's sixth financing package based on the sustainable finance framework formulated in January of this year, the firm said in a statement on Wednesday. MOL did not provide any details regarding the loan. The firm said that the 309,000-dwt LNG-powered VLCC will be 339.5 meters long and about 60 meters long. Kawasaki Heavy Industries /Dalian COSCO KHI Ship Engineering will build the vessel, it said. Back in August 2022, MOL ordered two 309,000-dwt LNG-fueled VLCCs saying that China's Dalian COSCO KHI Ship Engineering, jointly operated by KHI and China COSCO Shipping, will build and deliver them in 2025 and 2026. Last year, MOL added two more VLCCs to this order. MOL has set a target to operate 90 LNG-powered and methanol-fueled vessels by 2030. The firm recently took delivery of the LNG dual-fuel car carrier, Cerulean Ace. source : www.lngprime.com



SHELL EXPANDS LNG BUNKERING NETWORK WITH FIRST ZEEBRUGGE OP

LNG giant Shell has expanded its global LNG bunkering network with the completion of its first operation in the port of Zeebrugge, Belgium. According to a social media post by Shell’s head of downstream LNG, Tahir Faruqi, Shell completed



the maiden operation in the port of Zeebrugge, the second-largest port in Belgium, last weekend. During the operation, Shell supplied LNG to a pure car and truck carrier (PTPC) owned by its customer, Anji Shipping (Hong Kong), a subsidiary of Shanghai Automotive Industry Corporation, Faruqi said. The LNG dual-fuel PCTC with a capacity of 7,600 units, SAIC Anji Sincerity, took LNG from the 5,200-cbm bunkering vessel, Green Zeebrugge. Shell joined forces with the port of Zeebrugge and its agency Hoppe Maritime Group for this first bunkering, which expands the

company’s global marine LNG fueling network to 20 locations across 12 countries, Faruqi said. In January this year, China’s Jiangnan Shipyard delivered SAIC Anji Sincerity to compatriot SAIC Anji Logistics. Jiangnan claims this is currently the world’s largest LNG-powered car carrier in operation. SAIC Motor said that SAIC Anji Sincerity will transport the first batch of new vehicles of China’s brands SAIC, Dongfeng Motor, and Yutong to Europe. As per Shell’s LNG bunkering network, the LNG giant added last year two more LNG bunkering locations in Europe, Flushing, and Antwerp. After this, Shell also completed the first LNG bunkering operation in the Caribbean with the 18,000-cbm bunkering vessel, New Frontier 2. source : www.lngprime.com

ADNOC GAS TO SPEND OVER \$13 BILLION ON GROWTH OPPORTUNITIES BY 2029

Adnoc’s gas and LNG unit, Adnoc Gas, plans to invest over \$13 billion in domestic and international growth opportunities over the next five years. UAE’s Adnoc Gas said on Monday it has held its first annual general meeting (AGM) since its initial public offering in March 2023. During the meeting, led by chairman Ahmed Al Jaber, the company’s shareholders approved the board of directors’ proposal to distribute a full-year 2023 dividend of \$3.25 billion. He said that the company saw its share price surge 30 percent from March 2023 to year-end, driving its market capitalization to \$65 billion and ranking Adnoc Gas among the top 20 oil and gas companies worldwide. In 2023, Adnoc Gas awarded contracts worth \$4.9 billion to expand its processing capacity and reach more customers, and these projects will provide additional sales volumes of up to 20 percent.

Boosting LNG volumes

“Our international sales momentum grew in 2023 with the signing of liquefied natural gas (LNG) export agreements worth up to \$12 billion, securing our returns in the coming years and capitalizing on the increasing global demand for LNG as a transition

fuel,” Al Jaber said. “Between 2024 and 2029, we plan to invest over \$13 billion in domestic and international growth opportunities, with our predictable margin business expected to increase our Ebitda by up to 40 percent by 2029,” he said. “In addition, we are looking to increase our LNG export volumes in a growing global market. Our aim is to acquire the new Ruwais LNG plant and more than double our LNG production capacity by 2028,” Al Jaber said. Adnoc recently signed a heads of agreement with a unit of German gas importer Securing Energy for Europe (SEFE) to supply the latter with LNG from its planned LNG terminal in Al Ruwais. Prior to that, the company signed its first LNG supply deal for this terminal with China’s ENN. Adnoc plans to take a final investment decision on the 9.6 mtpa plant this year. Adnoc already owns a 70 percent stake in Adnoc LNG, that currently produces about 6 mtpa of LNG from its facilities on Das Island. source : www.lngprime.com

PETRONAS: STEEL CUT FOR THIRD FLNG IN SOUTH KOREA

South Korea’s Samsung Heavy Industries has officially started building the third floating LNG production unit for Malaysian energy giant Petronas. The shipbuilder held a steel-cutting ceremony for the FLNG at its yard in Geoje, according to a statement by Petronas issued on Monday. Petronas said this event marks the beginning of the construction phase of the project, which will become Malaysia’s first nearshore FLNG facility once in operation. This third FLNG facility is designed to produce up to 2 million tonnes per annum (MTPA) of LNG and is targeted to start commercial operations by the second half of 2027. Upon completion, the nearshore FLNG will be moored at the Sipitang Oil and Gas Industrial Park (SOGIP) in Sabah. Japan’s JGC confirmed in January last year it had won the contract with SHI to build the FLNG for Petronas. SHI and JGC already built the second FLNG, PFLNG Dua, for the Malaysian firm. The nearshore LNG plant will increase Petronas’ LNG production from floating LNG facilities from 2.7 mtpa to 4.7 mtpa. Currently, Petronas operates two floating LNG facilities, namely the 1.2 mtpa PFLNG Satu as well as the 1.5 mtpa PFLNG Dua, both located offshore Sabah. Petronas delivered 38 LNG cargoes from these two floating LNG producers during 2023, down by 5 cargoes compared to 2022. The company is currently also working with Argentina’s state-owned oil and gas company YPF on their planned Argentina LNG export project, which includes FLNG units. YPF recently launched a tender for engineering work for the FLNG units. source : www.lngprime.com

TRAFIGURA GETS \$560 MILLION LOAN TO SUPPLY LNG TO JAPAN

Commodity trader Trafigura secured a loan worth about \$560 million from two Japanese banks to supply liquefied natural gas (LNG) to a Japanese utility. The state-owned Japan Bank for International Cooperation (JBIC) said in a statement it has signed on March 28 a loan agreement amounting to up to \$390 million with Singapore-based Trafigura Pte Ltd. Moreover, JBIC said the loan is co-financed with Sumitomo Mitsui Banking, bringing the total co-financing amount to about \$560 million, meaning that Sumitomo Mitsui Banking will provide about \$170 million. The loan is intended to provide the funds required for a Japanese utility company to import LNG from Trafigura, JBIC. It did not provide the name of the utility. “Amid the growing global demand for LNG and the increasing uncertainty over resource prices, the loan, which supports the Japanese utility company in procuring

term LNG through Trafigura, will contribute toward securing a stable supply of LNG, which is an important energy resource for Japan,” JBIC said. Trafigura’s LNG volumes dropped 13.8 percent in the fiscal year ending September 30 while the company’s profit rose. LNG volumes declined to 11.2 million tonnes compared to 13 million tonnes during the same period last year, which also declined from the previous year. Trafigura buys LNG from various sources, including under a long-term deal with US LNG exporting giant Cheniere. It recently signed LNG deals with Canada’s largest natural gas producer Tourmaline as well.

Japan’s LNG imports

China overtook Japan as the world’s largest LNG importer last year and Japan logged a decline in LNG imports during January–February this year. State-run JOGMEC did not publish both the contract-based and the arrival-based monthly spot LNG price in January and February as there were less than two companies that imported spot LNG. Japan’s METI recently said that Japan’s LNG inventories for power generation as of March 24 stood at 1.52 million tonnes, down 0.9 million tonnes from the previous week and the lowest level since the end of January 2021. Citing a Jera spokesperson, Reuters reported on Friday that the power firm and LNG trader temporarily suspended production at LNG-fired power plants in Futtsu, Yokohama, Kawasaki and Chiba, all near Tokyo, and curtailed at Higashi-Ohgishima to secure sufficient LNG inventory. “The move comes as a recent drop in temperatures in the Tokyo area boosted power demand while stormy weather caused delays in the arrival of LNG cargoes, causing a drop in LNG stock levels,” the report said. JERA plans to bring the plants back to normal operations from Saturday, it said. source : www.lngprime.com

MOLDOVA GETS US GAS VIA GREECE’S ALEXANDROUPOLIS FSRU

Moldova will during the first two days of April receive US natural gas supplies via Gastrade’s FSRU-based LNG import terminal off Greece’s Alexandroupolis, according to Moldova’s state-owned energy firm Energocom. Energocom said in a statement it purchased these test volumes from Greece’s Depa and sold them to compatriot gas supplier Moldovagaz for usage in households. “On Monday and Tuesday, we will purchase 14,000 MWh of natural gas each day at the port of Alexandroupolis. There are about 28,000 MWh in total, which is equivalent to 2.6 million cubic meters of gas,” Victor Binzari, Energocom’s acting director said in the statement. He said that the price is “competitive” and if the company agrees on a deal for the continuation of this collaboration, it “will notify the citizens in the near future”. Binzari said that diversification of gas sources will further strengthen the country’s energy security and prepare market operators, as the Russian gas transit contract through Ukraine expires at the end of 2024 and the neighboring country has said it will not negotiate an extension. Moldova is bounded by Ukraine to the north, east, and south, and by Romania to the west.

First Greek FSRU

In April last year, Energocom signed a framework contract with DEPA as part of its plans to import LNG via Greece. DEPA is a shareholder in Gastrade and previously said that it brought a commissioning cargo to the 153,600-cbm FSRU

Alexandroupolis. The 2018-built 174,000-cbm LNG carrier, GasLog Hong Kong, delivered on February 18 the commissioning cargo from the US to the FSRU. The LNG carrier, chartered by France's TotalEnergies, brought the shipment from Sempra's Cameron LNG plant in Louisiana. Following completion of the ship-to-ship LNG transfer, GasLog Hong Kong left the FSRU on February 27. Gastrade told LNG Prime on February 29 that it expects to launch commercial operations at its FSRU-based LNG import terminal by the end of April. The FSRU is located in the sea of Thrace at a distance of 17.6 km SW from the port of Alexandroupolis and 10 km from the nearest coast of Makri. Also, it is connected to a high-pressure subsea and onshore gas transmission pipeline. The pipeline will deliver natural gas to the Greek transmission system and onwards to the final consumers in Greece, Bulgaria, Romania, North Macedonia, Serbia and further to Moldova and Ukraine to the East and Hungary and Slovakia to the West, Gastrade previously said. The Alexandroupolis LNG terminal will have a capacity of 5.5 Bcm. This is Greece's first FSRU and the second LNG import facility, adding to DESFA's import terminal located on the island of Revithoussa. source : www.lngprime.com

JAPAN'S MITSUBISHI INVESTS IN EIG'S LNG UNIT MIDOCEAN

Japanese trading house Mitsubishi Corp has made a strategic investment in MidOcean Energy, the LNG unit of US-based energy investor EIG. EIG revealed the investment in a statement issued on Monday but the firm did not provide any additional details regarding the move. It said that Mitsubishi's investment will accelerate MidOcean's strategy to create a "high quality, diversified, global 'pure play' integrated LNG company." Mitsubishi has been an active player in the LNG sector for over 50 years, with investments spanning 12 projects across eight countries. EIG said this investment deepens MidOcean's blue-chip investor base and builds on MidOcean's significant momentum since launching in late 2022. MidOcean recently announced the close of its acquisition of a portfolio of Australian LNG projects from Tokyo Gas. The firm is working to significantly expand its business and last year energy behemoth Saudi Aramco agreed to buy a minority stake in the firm. Besides this move, MidOcean recently purchased a stake in LNG terminal operator Peru LNG from a unit of South Korean conglomerate SK. SK Earthon, a unit of SK Innovation, agreed to sell its 20 percent share in Peru LNG to MidOcean for about \$256.5 million. MidOcean's CEO **De la Rey Venter** welcomed Mitsubishi as an anchor investor in MidOcean. "Mitsubishi Corp has been a pioneer of the global LNG industry and has consistently demonstrated its expertise and foresight in identifying valuable opportunities. Their investment is a testament to the strong fundamentals of the LNG market and MidOcean's strategy to create a competitive long-term growth platform in LNG for its investors," he said. source : www.lngprime.com

HANWHA OCEAN TO BUILD LNG CARRIER QUARTET FOR \$920 MILLION

South Korean shipbuilder Hanwha Ocean, previously known as DSME, has received an LNG carrier order worth about \$920 million as part of QatarEnergy's massive shipbuilding program. Hanwha Ocean said on Tuesday it will build four LNG carriers

for an Asian shipowner and deliver the vessels by August 2027. The shipbuilder did not reveal the name of the company behind the order. However, QatarEnergy announced on Sunday that it has signed time charter agreements for 19 LNG carriers as part of the second phase of the shipbuilding program, saying that four of these 174,000 cbm vessels will be built by Hanwha Ocean. The four carriers will be owned by a joint venture of Japan's K Line and South Korea's Hyundai Glovis. K Line also said in a separate statement that Hanwha Ocean will deliver these four QatarEnergy X-DF LNG carriers in 2027. The price of about \$230 million per LNG carrier is also in line with the previous orders under the second part of the QatarEnergy program. It is also much less than the current price of about \$265-270 million for 174,000 cbm LNG carriers in South Korea.

12 LNG carriers for Hanwha Ocean

Prior to this, Hanwha Ocean signed a memorandum for 12 LNG carriers tied to QatarEnergy's shipbuilding program and after that it secured an LNG carrier order worth about \$1.84 billion for 8 carriers. Eight of these vessels will be owned by Qatar LNG shipping giant Nakilat. QatarEnergy signed time charter agreements on March 24 with Nakilat for 25 conventional-size LNG carriers as part of the second phase of its shipbuilding program. Seventeen of the 25 LNG vessels are being constructed at the Hyundai Heavy Industries (HHI) shipyards in South Korea, while the remaining eight are being constructed at Hanwha Ocean. Last year, QatarEnergy signed a deal for 17 LNG carriers worth about \$3.9 billion with HD Hyundai Heavy, kicking off the second phase of the shipbuilding program. QatarEnergy now confirmed orders for 44 vessels for the second phase boosting the total to 104 ships. The company also said it completed the conventional LNG vessels portion of the program. LNG Prime recently reported, citing shipbuilding sources, that QatarEnergy has selected shipowners to own and operate 18 Q-Max LNG carriers as part of its massive shipbuilding program. These giant vessels will be built by China's Hudong-Zhonghua. source :

www.lngprime.com

SNAM BOOSTS STAKE IN ADRIATIC LNG TERMINAL

Italian energy firm Snam has decided to increase its stake in the Adriatic LNG terminal after Rotterdam-based storage terminal owner VTTI and German asset manager IKAV joined forces to take a majority stake in the facility. Last week VTTI, co-owned by Vitol, IFM, and Adnoc, and IKAV entered a consortium to acquire majority ownership of the JV which operates the regasification terminal located off the coastline of Veneto region in Italy. US energy firm ExxonMobil has a 70.7 percent stake in Adriatic LNG, while state-owned LNG giant QatarEnergy holds 22 percent and Snam owns 7.3 percent. Snam said in a statement on Wednesday it has exercised its pre-emption right to increase its stake in the Adriatic LNG terminal from current 7.3 percent to 30 percent.

The firm did not provide the financial details of the deal. Snam said the closing of the transaction is expected by the end of 2024 and is subject, among other things, to the necessary regulatory authorizations. Upon closing of the transaction, the corporate capital of Adriatic LNG shall be held by VTTI at 70 percent and Snam at 30 percent. Located about 15 kilometers off the Veneto coast, Adriatic LNG's terminal is Italy's largest offshore infrastructure for unloading, storage, and regasification

of LNG, with an annual technical regasification capacity of 9.6 billion cubic meters, corresponding to about 14 percent of the current domestic gas demand. “This operation strengthens Snam’s presence in LNG infrastructure, which is increasingly strategic for the security and diversification of Italy’s energy supplies,” CEO **Stefano Venier** said. “We look forward to working together with VTTI to ensure continuous and world-class management of Adriatic LNG, which is fundamental for the Italian energy system, and to support its expansion projects,” he said.

Italian regas capacity

To date, Snam holds stakes in all the remaining regulated LNG regasification plants currently operating in Italy. These include the Panigaglia terminal, in operation since 1971 near La Spezia, the OLT FSRU Toscana off Livorno, operational since 2013, and the FSRU Golar Tundra, operating in Piombino since July 2023, for a total regasification capacity of about 23 billion cubic meters. As part of the initiatives undertaken since 2022 to further diversify the country’s gas supplies following the Russian-Ukrainian crisis, Snam has also acquired the FSRU BW Singapore, which will start activities off the coast of Ravenna in the first months of 2025, it said. The total regasification capacity of the country will thus rise to 28 billion cubic meters, evenly distributed between the Tyrrhenian and Adriatic sides, an amount corresponding to overall volumes imported via pipeline from Russia in 2021, Snam said. source : www.lngprime.com

DEUTSCHE REGAS MAKES FIRST STEP TO RELOCATE LUBMIN FSRU TO MUKRAN

German LNG terminal operator Deutsche ReGas is moving forward with its plans to relocate the 2009-built 145,000-cbm, FSRU Neptune, from Lubmin to the port of Mukran. Deutsche ReGas previously said it will move this FSRU it chartered from France’s TotalEnergies to Mukran on the island of Rügen as part of the second phase of its FSRU-based LNG terminal with a capacity of up to 13.5 bcm per year. The unit, owned 50 percent by Hoegh LNG, will join the 2021-built 174,000-cbm, Energos Power, which recently received its first LNG tanker as part of the commissioning phase. Deutsche ReGas officially launched its Lubmin FSRU-based LNG import terminal, first private LNG terminal in Germany, in January last year. Besides Neptune, the project included the 137,814-cbm LNG carrier Seapeak Hispania which served as a floating storage unit for the project. The firm also chartered three small LNG carriers from Anthony Veder to transport LNG from the FSU Seapeak Hispania to the FSRU due to draft restrictions in Lubmin. According to a statement by Deutsche ReGas issued on Wednesday, the company said it has terminated the LNG shuttle service in the Greifswald Bodden as planned. The German firm led by Ingo Wagner and Stephan Knabe said Seapeak Hispania will leave its location on Wednesday as well as the shuttle tankers. Deutsche ReGas is thus initiating the first step towards relocating the Neptune from Lubmin to the new “Deutsche Ostsee” terminal in the industrial port of Mukran, it said.

FSRU to arrive in Mukran in beginning of summer

As per the FSRU, the vessel will first regasify the remaining loaded volumes and feed it into the grid. This will be followed by a temporary stay in a European shipyard for necessary refitting work, Deutsche ReGas said. Following completion of refitting work, the FSRU is expected to arrive in Mukran in the beginning of summer. During the operation of the LNG terminal in Lubmin, Deutsche ReGas carried out 480 ship-to-ship transfers without incidents and demonstrated its ability to supply about 1.3 million households per year, the firm said. source : www.lngprime.com

KOGAS INKS SOUTH KOREAN LNG PUMP DEAL

South Korean LNG importing giant Kogas has signed a deal with compatriot Hyundai Heavy Industries Turbomachinery to support the production of liquefied natural gas pumps in South Korea. Kogas said in a statement it will open its facilities at the Pyeongtaek LNG import terminal to Hyundai Heavy Industries Turbomachinery from April this year until September 2025. This will allow access to the company for the necessary environment for testing cryogenic pumps. During the demonstration period, Kogas will also transfer the operating know-how and technology of the Pyeongtaek LNG terminal and provide various safety devices, it said. In addition, Kogas will provide funds to assist in the technology's commercialization. Kogas said the localization of LNG pump equipment production would enable the expansion of its business operations into related fields such as LNG carriers, domestic LNG terminals, and overseas liquefaction plants. The firm operates 77 LNG storage tanks at five LNG import terminals in South Korea. The large terminals include Incheon, Pyeongtaek, Tongyeong, and Samcheok, while the firm has a small-scale regasification terminal at the Aewol port on Jeju island as well. Also, the firm is building a large terminal in Dangjin and expects to launch the first phase in December 2025. Kogas sold 34.6 million mt during 2023, down from 38.3 million mt in 2022. source : www.lngprime.com

CHINA'S SIPG PENS LNG BUNKERING PACT WITH SOUTH KOREA'S HMM

South Korea's HMM is joining forces with China's terminal operator Shanghai International Port (SIPG) to fuel its LNG-powered vessels. In that regard, the two firms signed a memorandum of understanding which primarily focuses on bunkering LNG and methanol fuel at the Shanghai port, according to a statement by HMM. HMM did not provide any additional details regarding the agreement. HMM said it is continuously expanding to develop "sustainable eco supply chain networks at Shanghai Port and other key ports such as Singapore and Busan." The company said it has nine newbuilding 9,000 teu vessels powered by methanol on order and expects to start operations with two 7,700 teu LNG-powered vessels by the end of this year. In December 2023, HMM also joined forces with compatriot Hyundai Glovis to order six LNG dual-fuel pure car and truck carriers from China's Guangzhou Shipyard International (GSI). The deal for the PCTCs with a capacity of 10,800 ceu also includes an

option for four additional vessel. On the other hand, SIPG signed last year a framework LNG bunkering agreement with Switzerland-based shipping giant MSC SSES, a unit of SIPG and Shenergy, operates the 20,000-cbm LNG bunkering vessel, Hai Gang Wei Lai, and fuels various ships in Shanghai. In March 2022, SSES completed the first LNG bunkering operation under a deal with France’s CMA CGM. The JV said in October last year it completed more than 55 LNG bunkering operations to CMA CGM vessels, as well as vessels owned by EPS. Besides LNG bunkering, currently, all preparations for green methanol bunkering in the Shanghai port have been completed, HMM said. SSES said in a statement January that it will use what it says is the world’s largest methanol bunkering vessel, Hai Gang Zhi Yuan, to fuel methanol-powered ships. Zhoushan Putuo Changhong International Shipyard converted the vessel, previously known as Jiuli 668, to add methanol bunkering equipment. China’s first methanol bunkering ship has a capacity of 16,000 cbm, SSES said. source : www.lngprime.com

STABILIS INCREASES LNG DELIVERIES TO US SPACE INDUSTRY

Houston-based small-scale LNG firm Stabilis Solutions expects a significant demand rise for LNG fuel from the US commercial space launch market. The firm said in a business update on Wednesday that demand for next generation connectivity and observational capabilities has contributed to a “historic” increase in US commercial rocket launch activity. According to Stabilis, over the last 10 years, the number of US launches has increased by more than 400 percent, while accounting for more than 50 percent of total global launches in 2023. “US led demand for high-purity LNG continues to grow as a preferred fuel for commercial rockets, allowing for quicker turnaround of reusable boosters, improved engine efficiency and thrust, and ease of storage,” it said.

More than 40 percent rise in 2024

Stabilis said it is “positioned to remain the largest supplier of next generation fuel to the domestic space economy.”

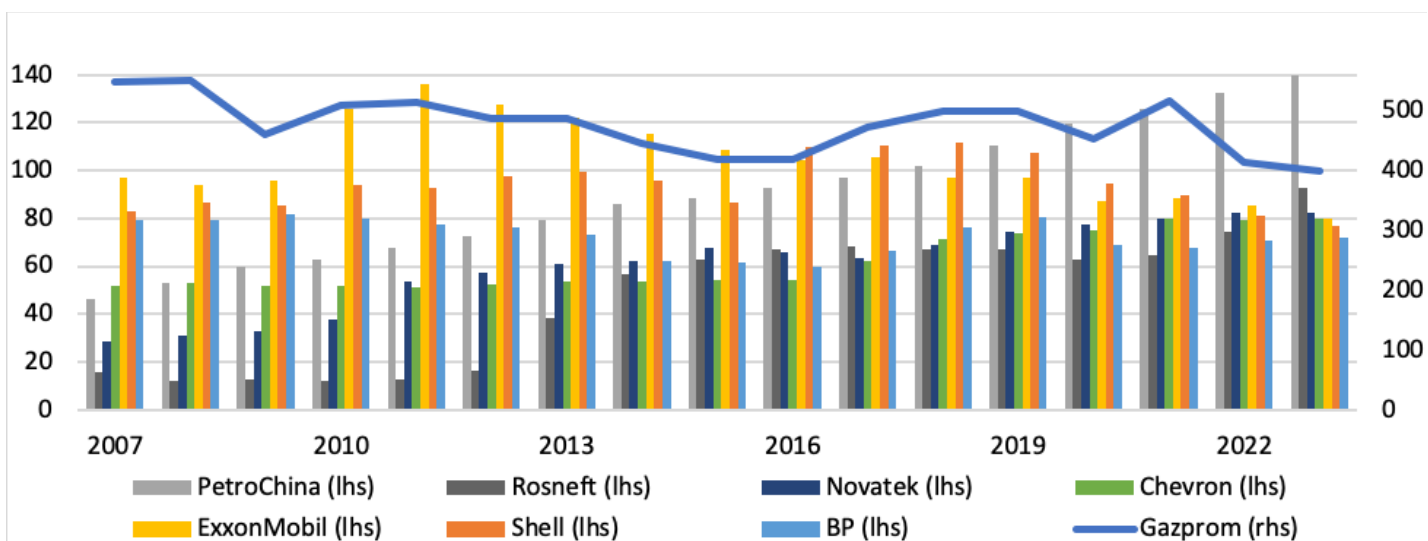
Stabilis previously said that its total sales volumes of LNG to aerospace customers amounted to about 3.4 million gallons in 2023, or 6.8 percent of Stabilis’ total sales volumes. In 2024, the company expects its aerospace market-related volumes will increase by more than 40 percent over the prior year, representing about 10 percent of its full-year sales volumes.

“Over the next five years, domestic demand for high-purity LNG is expected to increase by 65 percent to approximately 25 million gallons annually,” Stabilis said. Stabilis estimates that it is among the largest suppliers of high-purity LNG to space launch providers in the US, currently supplying about 40 percent of the market, with the potential to significantly increase its market share subject to future investments in liquefaction capacity. The firm did not provide names of its clients. According to its previous social media posts, one of the projects is Intuitive Machines’ Nova-C lunar lander, Odysseus. The firm was also previously said to be supplying LNG to Elon Musk’s SpaceX. Besides rocket fuel, Stabilis in October last year secured a contract from cruise operator Carnival to provide LNG fuel for the latter’s vessel Carnival Jubilee. Under the deal, Stabilis said it will supply firm LNG deliveries on a ratable basis from its small liquefaction facility in Texas over the two-year contract. source

: www.lngprime.com

GAZPROM STAYS ON TOP IN 2023 PRODUCER RANKINGS

Russia's Gazprom remains the undisputed leader among top gas producers, with a 10% worldwide share of the market in 2023, followed, just as in the previous year, by PetroChina. As Gazprom was the major provider of worldwide spare gas capacity, the removal of most Russian gas from Europe also de-facto took away this spare capacity. The inconvenient truth is that three Russian companies are now among the top four major gas producers, alongside PetroChina. The first international oil company (IOC) is Chevron, in fifth position. And since the International Energy Agency (IEA) published its net-zero scenario in 2021, most European IOCs renamed themselves into international energy companies (IECs), pursuing greener less profitable options while producing less gas and becoming de-facto less relevant. The 2007-2023 evolution of the top gas producers (listed companies producing more than 60bn m3/year)



Source: Company data, thierrybros.com

The top four companies, headquartered in Russia and China, are producing nearly double as much as the next four Western companies in the rankings. Those are ExxonMobil, then Chevron, then Shell and BP. EU companies, absent from this list, are losing market power.

- As Russia further cut its pipe exports to “unfriendly” Western countries (-36bn m3 in 2023 versus 2022), Gazprom had to further reduce its production by 15bn m3, or 3.6%. The drop in production is, this year, lower than the drop in its EU exports, showing that the Chinese exports are starting to have a meaningful impact on production data. Even after a 23% drop in the last two years, Gazprom still accounts for 10% of global production, but the future looks bleak with its domestic competitors taking some of its lost market share.
- PetroChina, with its prioritisation of gas production, overtook ExxonMobil in 2018 and Shell in 2019, and now sits firmly in the second position. Its Gas output was up again by 5.5% in 2023. Gas production reached the highest level in history, and the proportion of gas in its oil and gas equivalent output continued to increase. The marketable domestic natural gas output increased by 6%, while it decreased by 5.1% for overseas production, even as PetroChina increased focus on

exploration abroad, making new discoveries in the Doseo Basin in Chad and the eastern margin of Pre-Caspian Basin. The group has actively participated in the “Belt and Road Initiative”, supporting the completion of the North Field Expansion Project in Qatar and signing an agreement on the transfer of operating rights for the West Qurna-1 oilfield in Iraq. PetroChina alone produces nearly as much as the two leading Western companies, Chevron and ExxonMobil.

- Gas production at Russia’s Rosneft hit a new all-time record of 92.7bn m3 in 2023, up 24.6%. As a result, the company moved from seventh to third position. The 19.75% stake held by BP must now change hands: if “given” back to the Russian government it could allow Russia to recover a majority stake.

- After a modest growth in gas production, Novatek managed to overtake ExxonMobil to take the fourth position.

- Chevron’s gas production was slightly up in 2023, by 0.9%, overtaking ExxonMobil.

- ExxonMobil’s gas production growth in 2010 came as a result of its purchase of US shale gas producer XTO. But since this acquisition, production has been trending down, leaving ExxonMobil in sixth position, down two places versus 2022. In 2023, its gas production dropped by 6.8% versus an increase of 4% for its oil. The \$59.5bn merger with Pioneer announced in October last year will allow ExxonMobil, at closing, to more than double its Permian production to 1.3mn barrels of oil equivalent/day. This should allow ExxonMobil to reiterate its 2010 gas growth jump. This proves that, as expected, it is easier and safer for major US companies to concentrate on US unconventional production versus conventional production outside the US for both security and flexibility.

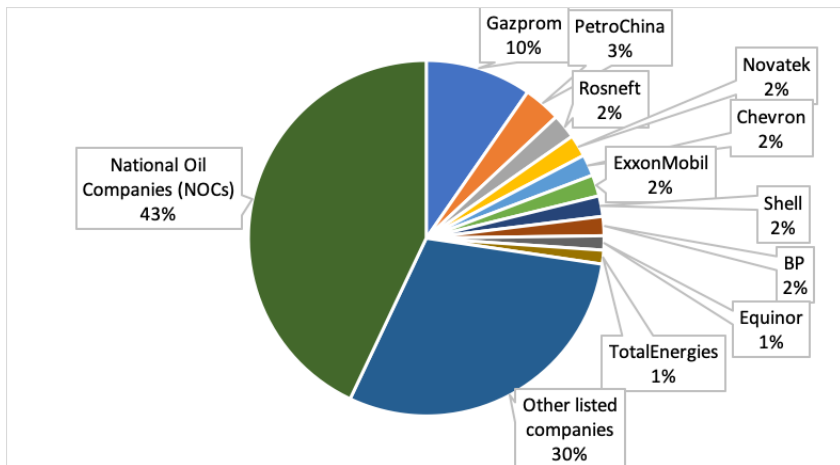
- Shell again witnessed a drop, of 5.3%, due to supply issues and divestments. As expected, Shell continues to lose ground in this ranking, and is now in seventh position. The former green narrative to divest away from oil and gas is now having its effect, and could become difficult to fast overturn. On March 14, Shell softened its targets for carbon emission cuts in a strategy update. Shell now aims to reduce its net carbon intensity by 15–20% by 2030, compared with a previous target of 20%.

- BP grew its total gas production by 1.2% in 2023, and “expects both reported and underlying upstream production to be slightly higher in 2024 compared with 2023,” thanks again to strong growth at its subsidiary bpx energy, which boosted gas flow by 16.6%.

- Equinor gas production decreased by 5.7% in 2023. In 2022, responding to the energy crisis unfolding in Europe, Equinor’s gas production in Norway increased by 8.5% at the expense of liquid production, which dropped 5.9% versus the level in 2021. With the energy crisis easing in Europe, Equinor switched to focusing on maximising long-term oil output, at the expense of Norwegian gas, which fell by 6.8%.

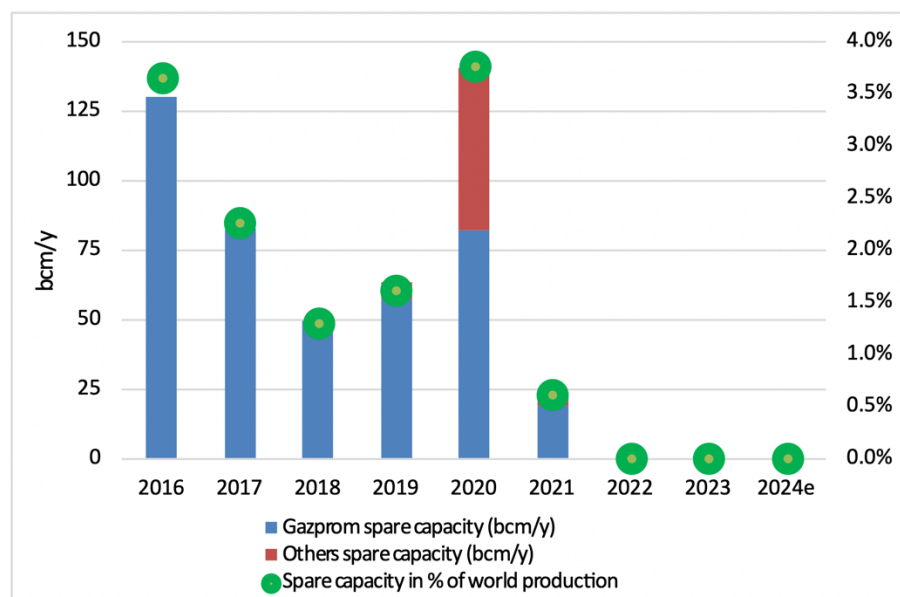
- TotalEnergies’ gas production dropped substantially in 2023 versus 2022, due to the deconsolidation of its stake in Novatek as of January 1, 2023. With 52bn m3 produced in 2023, TotalEnergies dropped off the list of the top eight gas producers.

2023 split of gas production (listed companies producing more than 50bn m3/year)



With Russia a pariah state since 2022, the global gas system has no spare production capacity available, making the gas prices more volatile.

Spare gas production capacity in 2023



But if China, the world's third largest gas consumer and fourth producer, is becoming not only the top LNG buyer but also an astute player, soon set to account for more than the entire EU, it could make sure Europe pays a premium for its LNG. source : www.naturalgasworld.com

US GAS PRODUCERS CONTEND WITH LOW PRICES

Low natural gas prices - already seen in 2023 - fell even further in the US in early 2024. Henry Hub prices have been trading below \$2/mn Btu since the first week of February with few prospects for a significant boost in the short term. This translates into challenging market conditions for the US' gas producers, and with no immediate relief in sight, they have been exploring different options for mitigating against low prices. One popular strategy when prices drop is scaling back production and spending on new drilling. Several major gas-focused producers including Chesapeake Energy, Comstock Resources, Antero Resources and EQT are all taking steps to cut back some of their production in various ways. EQT started curtailing around 1bn ft³/day of gross production in late February, with the curtailment expected to last at least until the end of March and the company due to reassess market conditions thereafter. Comstock said in its last earnings call that it would cut its

number of operating rigs from seven to five and lowered its capex guidance for the year. Antero said its 2024 drilling and completion capex would be 26% lower than in 2023, while its gas output was expected to decline 3% year on year following the recent dropping of one rig and one completion crew. Chesapeake, meanwhile, announced a nearly 20% cut in capex, as well as plans to cut two rigs and two completion crews. This is expected to result in around a nearly 15% decrease in production versus its prior guidance. However, Chesapeake's approach involves deferring turn-in-lines (TILs), leaving a number of wells almost complete and ready to be brought online quickly if market conditions change. "Chesapeake has talked about the turn-in-line approach, which is where you're drilling and completing a well, but you're not actually doing the final step to turn it on," Stephen Ellis, an energy and utilities strategist for Morningstar, tells NGW. "You're spending a little more on capex upfront and you take more of a production hit, but you end up having a well that is able to respond to price changes, essentially within days – a week-type thing instead of weeks or months. It's far more flexible." Ellis adds that he would not be surprised if other producers were to adopt such an approach if their wells and market conditions allowed them to do so. However, while Chesapeake's approach has been described as "innovative" by analytics firm RBN Energy, it remains broadly in line with US gas producer strategies as a whole. "Producers are taking steps to choke back wells and defer completions," natural gas analysts at RBN tell NGW. "We have written before about how producers have a playbook for dealing with temporary low prices, allowing them to make 'game-time decisions' to temporarily scale back natural gas production. We saw a lot of these methods used at the start of the COVID crisis, and we are seeing them again in the current low-price environment." These efforts are already having an impact on US gas production, illustrating the speed of operator responses. "Lower 48 dry gas production this March is averaging 4.2bn ft³/d lower than in December, so a lot of production has come off already," the RBN analysts say. "But these cutbacks are not designed to be permanent, because producers want to produce, and will prepare to produce in the future when they can't produce in the present."

Associated gas

The drop-off in output, however, could be offset by broader industry behaviour, which is not linked to gas price movements. "Unfortunately for producers in major gas-heavy basins, the producers in oil-heavy regions like the Permian consider natural gas to be a byproduct, limiting supply destruction no matter what the gas price," say the RBN analysts. Ellis notes that much of the oil production growth in the Permian Basin has come from privately owned companies in the last couple of years, but that with some private producers being taken over by public firms, their output growth could slow. Examples of private-to-public consolidation currently underway include Endeavor Energy Resources being acquired by Diamondback Energy and CrownRock being taken over by Occidental Petroleum – with both transactions due to close this year. If private operators' oil output growth slows once they are incorporated into public companies, "that's also going to mean that associated gas production from those wells is going to come down", Ellis says.

A challenging year

Even if associated gas production drops, though, US gas prices are not expected to receive a significant boost until more LNG export capacity comes online. “I think originally, we were hoping that more LNG demand would come online in 2024, but since we’ve constantly seen delays in new LNG terminals coming online and they keep getting pushed back,” says Ellis.

As a result, Ellis does not see feed gas demand from LNG terminals rising until 2025. RBN agrees, though it notes that it “explicitly disclaims” price forecasts and that this is more of a view on how it expects the market to develop. “The new LNG export facilities scheduled to come into service in 2025 should put upward price pressure on the market, intensifying as even more facilities come online in 2027,” the RBN analysts say. “However, we also believe that production will continue on an upward trajectory over the next few years, blunting the price impact of the LNG feed gas increase. It will continue to be a long hard road for gas producers even once new LNG capacity develops. That being said, 2024 should prove particularly challenging.”

Vertical integration

Gas producers will therefore have to continue looking for ways to mitigate against challenging market conditions. One more approach has been demonstrated recently by EQT, which announced in mid-March that it had agreed to buy Equitrans Midstream in an all-stock deal worth around \$14bn including debt. Equitrans is building the Mountain Valley gas pipeline in the US Northeast, which is being targeted for start-up this year after various delays. Equitrans was originally spun off from EQT in 2018, when the company agreed to separate its upstream and midstream businesses under pressure from certain shareholders. Now, EQT is reintegrating Equitrans in a bid to boost margins by having more control of transport and processing costs. EQT’s president and CEO, Toby Rice, described the deal as “the most strategic and transformational transactional EQT has ever pursued.” There are still hurdles to be overcome, including bringing Mountain Valley online. And Ellis notes that E&P firms’ investments in the midstream sector have had mixed results in the past. However, he adds that there is a difference between owning midstream assets in a region with multiple takeaway capacity options, such as the Permian, compared with infrastructure-constrained regions such as Appalachia – as well as differences between oil and gas midstream costs. “It potentially could lead to a much better outcome for EQT than we would have seen in the past,” Ellis says. RBN also views the deal as a positive for EQT and suggests that other producers may want to follow suit with similar deals. “The majority of EQT production flows through the Equitrans gathering system,” say the RBN gas analysts. “The gas-gathering item is a huge factor in profitability for EQT and other gas-weighted E&Ps. So, the vertical integration exemplified by the merger acts as a kind of hedge against sustained low prices by helping producers stay profitable even in a low-price environment. Similar mergers are likely as a way for producers to stay relevant.” source :www.naturalgasworld.com

QATARENERGY PENS CHARTER DEALS FOR 19 LNG CARRIERS

LNG giant QatarEnergy said on Sunday it has signed four long-term deals with Asian shipowners to charter 19 LNG carriers as part of the second phase of its massive shipbuilding program. Qatar's energy minister and chief executive of QatarEnergy, Saad Sherida Al-Kaabi, signed the deals during a ceremony held at QatarEnergy's headquarters in Doha, and attended by senior executives from QatarEnergy, QatarEnergy LNG, and the four shipowner companies. Under the deals, state-owned QatarEnergy will charter six 174,000-cbm vessels from China's CMES LNG Carrier Investment, six vessels from a unit of China's Shandong Marine, Shandong Marine Energy (Singapore), three vessels from Malaysia's MISC, and four vessels from a joint venture of Japan's K Line and South Korea's Hyundai Glovis. QatarEnergy said in a statement later on Sunday that these 15 LNG carriers are being built at South Korea's Samsung Heavy Industries. LNG Prime reported on March 28 citing shipbuilding sources, that QatarEnergy had selected shipowners to own and operate 18 Q-Max LNG carriers and 15 174,000-cbm LNG carriers as part of the giant program. QatarEnergy booked 15 vessels at South Korea's Samsung Heavy Industries in February this year and Shandong Marine and CMES will each own six of these ships, while MISC will own three ships.

K Line and Hyundai Glovis

As per the four vessels QatarEnergy chartered from K Line and Hyundai Glovis, these vessels are being built at Hanwha Ocean, previously known as DSME, QatarEnergy said. Hanwha Ocean recently signed a memorandum for 12 LNG carriers tied to QatarEnergy's shipbuilding program and after that it secured an LNG carrier order worth about \$1.84 billion for 8 carriers. Eight of these vessels will be owned by Qatari LNG shipping giant Nakilat. QatarEnergy signed time charter agreements on March 24 with Nakilat for 25 conventional-size LNG carriers as part of the second phase of its shipbuilding program. Each of the 25 vessels will have a capacity of 174,000 ccbm and will be chartered out by Nakilat to affiliates of QatarEnergy under the 15-year TCP agreements. Seventeen of the 25 LNG vessels are being constructed at the Hyundai Heavy Industries (HHI) shipyards in South Korea, while the remaining eight are being constructed at Hanwha Ocean. Last year, QatarEnergy signed a deal for 17 LNG carriers worth about \$3.9 billion with HD Hyundai Heavy, kicking off the second phase of the shipbuilding program.

104 vessels

QatarEnergy previously entered into deals with Hudong-Zhonghua and South Korea's three shipbuilders to reserve LNG shipbuilding slots for its giant shipbuilding program. The firm signed in 2022 a series of time charter deals for the long-term charter and operation of 60 conventional-size LNG ships, concluding the first phase of its program. QatarEnergy now confirmed orders for 44 vessels for the second phase boosting the total to 104 ships. According to QatarEnergy, 43 ships out of the 104 will be chartered by its affiliate QatarEnergy Trading. Including the mentioned Q-Max LNG carriers, the number of vessels would reach 122 ships. "Today's signings form a significant milestone in QatarEnergy's LNG fleet expansion program, as it marks the conclusion of the conventional sizes vessels portion of program, bringing the total number of ships for which we have signed TCPs to 104 vessels, a massive undertaking that is the largest shipbuilding and leasing program ever in the

history of the industry,” Al-Kaabi said during the ceremony. “The careful shipowner selection process followed a detailed and rigorous global tender, signifying QatarEnergy’s commitment to expanding its fleet of modern LNG carriers in collaboration with world-class shipowners and in an open and transparent manner,” he said.

North Field expansions

The shipbuilding program aims to support and meet future requirements of QatarEnergy’s North Field East and North Field South expansion projects, as well as the Golden Pass LNG project in the US. In addition, part of the program is intended to cater for replacement requirements of the existing Qatar LNG fleet. The first phase of the North Field expansion project will increase Qatar’s LNG production capacity from 77 to 110 Mtpa, while the second phase will further boost capacity to 126 Mtpa. Besides these projects, the company also recently announced the third North Field expansion phase to boost Qatar’s capacity to 142 mtpa. source : www.lngprime.com

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