LNG NEWS WEEKLY 24TH FEBRUARY '24

RUSSIA'S ARCTIC LNG 2 PROJECT SANCTIONED BY UK

Novatek directors were also named in the list published on the eve of the second anniversary of Russia's invasion of Ukraine. The UK government has followed the US in sanctioning Russia's upcoming new liquefaction project Arctic LNG 2 two years on from the Russian invasion of Ukraine. In a list published today, the UK Foreign Commonwealth and Development Office named Russian energy company Novatek's 19.8 million tonnes per annum Arctic LNG 2 project as one of its newly sanctioned entities. It said: "This is one of the key links in Putin's plan to make Russia a major LNG player." The liquefaction project's director, Oleg Vyacheslavovich Karpushin, was also named as a sanctioned individual. Along with Karpushin, the UK has also opted to sanction six of Novatek's directors. These are listed as Lev Vladimirovich Feodosyev, Valery Anatolyevich Kryukov, Viktor Gennadiyevich Nesterenko, Alexei Vitalyevich Orel, Irina Vernerovna Gaida and Alexander Yegorovich Natalenko. The UK, which, unlike Europe, no longer imports Russian LNG, described Arctic LNG 2 as "a vital asset to Russia's future as an energy superpower". The US has already moved on Arctic LNG 2, sanctioning the project in November. Arctic LNG 2 was originally scheduled to export a first cargo at the end of 2023, but Novatek recently indicated it was aiming to send out a shipment in March. In September, the US, which is due to publish a fresh round of sanctions against Russia, also imposed

sanctions on the two giant LNG floating storage units — the 361,600-cbm Saam FSU and Koryak FSU — which were put into place in Ura Bay off Murmansk and Bechevinskaya Bay off Kamchatka Peninsula, at either end of the Northern Sea Route.

The latest UK sanctions are part of a package of more than 50 announced on the eve of Russia's invasion of Ukraine on 24 February 2022. UK foreign secretary David Cameron had also threatened a fresh round of measures against Russia in reaction to the death in custody of Kremlin critic Alexei Navalny on 16 February. The bulk of them were targeted at defence contractors but they also included electronics companies, diamond and oil traders and shipping companies. The UK has sanctioned 2,000 individuals, companies and groups under its Russia sanctions regime alone. Source : www.tradewindsnews.com

QATARENERGY REVEALS FIRST LNG NEWBUILDING NAME IN NOD TO LONG-TERM PROJECT PARTNER

First of 12 vessels ordered in China under huge vessel expansion haul due to deliver in September. Middle East-producing giant QatarEnergy plans to name the first LNG carrier under its massive fleet expansion programme after the former head of its long-term project partner ExxonMobil. QatarEnergy said on Friday that it has named the vessel the Rex Tillerson in honour of the former ExxonMobil chairman and chief executive. Tillerson, who also briefly served as the 69th US secretary of state, was at the helm of the US energy major during Qatar's development of its first LNG mega-trains and its first Q-Max and Q-Flex sized LNG carriers. A civil engineer by training, Texas-born Tillerson started work with then Exxon in 1975 and held the top job at the major from 2006 before retiring from the company at the beginning of 2017 when he took on his governmental role. QatarEnergy said Tillerson oversaw the consolidation of relations with the State of Qatar and its energy sector, resulting in strategic partnerships and significant investments in Qatar's LNG industry. The company said Tillerson played "a pivotal role in both initiating and overseeing the implementation of landmark energy projects in Qatar". The LNG newbuilding, which is under construction at Hudong-Zhonghua Shipbuilding (Group) in China, is expected to go into service in September. The vessel is one of 12 being built by the Chinese yard for QatarEnergy under a first batch of 60 LNG carrier newbuildings in total ordered at Hudong-Zhonghua and South Korea's big-three shipbuilders. QatarEnergy has also ordered eight larger Q-Max vessels at Hudong-Zhonghua under the second phase of its project and is understood to be in talks with the yard about adding more supersize vessels to its orders there. Separately, the company has firmed up another 44 of its pre-reserved LNG berth slots at Korean yards under Phase 2 of its newbuilding programme. Qatar Minister of State for Energy Affairs and QatarEnergy president and chief executive Saad Sherida Al-Kaabi said the choice of name is "… a testament to the remarkable achievements of an exceptional energy visionary, a man whose legacy will continue to be felt in Qatar for decades". Al-Kaabi said: "It is our honour to name the first LNG carrier built as part of our new fleet in his name, a tribute to his lifelong accomplishments and a symbol of a special relationship." Tillerson said: "I am deeply honoured that QatarEnergy is recognising my long history with the development of Qatar's natural gas resources and the country's establishment as the leading supplier of liquefied natural gas to fuel economies around the world." Source : www.tradewindsnews.com

US SANCTIONS LNG CARRIER NEWBUILDINGS CONTRACTED FOR RUSSIAN ARCTIC

Latest listing also hits Zvezda Shipbuilding Complex and Sovcomflot-Novatek joint venture. US sanctions have been imposed on the shipowning entities behind three specialised ice-breaking LNG carrier newbuildings ordered to ship cargoes from the Russian Arctic. As TradeWinds earlier reported, the US Treasury Department's Office of Foreign Assets Control (Ofac) also lists Zvezda Shipbuilding Complex, which is completing a further five of the Arc7 newbuildings for Novatek's Arctic LNG 2 project. A contract with Samsung Heavy Industries on 10 more LNG newbuildings that were to be completed by Zvezda has been "suspended", the shipbuilder recently clarified to TradeWinds. In addition, Ofac named Smart LNG — which was to own most of the 21 LNG carrier newbuildings for Arctic LNG 2 — as a sanctioned entity. The company is a joint venture between Russian shipowner Sovcomflot and energy company Novatek. Ofac included Elixon Shipping, Azoria Shipping and Glorina Shipping on its new sanctions list on Friday. These are the three single-purpose shipowning entities of three Arc7 newbuildings under construction at Hanwha Ocean which were originally contracted by Russian shipowner Sovcomflot. The company names are listed as the claimants in documentation filed by the shipbuilder — then Daewoo Shipbuilding & Marine Engineering (DSME) — which detailed a claim being made against it for contract terminations. DSME, which has since been taken over by Hanwha Group and is now Hanwha Ocean, cancelled the newbuilding contracts on all three Sovcomflot ships in 2022 as Western sanctions against Russia made it increasingly difficult for foreign equipment suppliers and contractors to work on the vessels.

The shipbuilder opted to continue building the trio of vessels for its own account. Sovcomflot, via the newbuilding companies on the three vessels, is currently engaged in arbitration over the contract cancellations with Hanwha Ocean through the Singapore International Arbitration Centre. The three further Arc7 newbuildings, which were also contracted at Hanwha by Japan's Mitsui OSK Lines, do not appear to be included in new sanctions listings but this has yet to be clarified. The spotlight has been shone on the six newbuildings in recent months as they neared completion. All six vessels are being built to ship cargoes from Russian energy company Novatek's Arctic LNG 2 project in the Russian Arctic. The US has already slapped sanctions on this project and on Thursday the UK followed suit. In February, an apparent name change of the owner for the first of the former Sovcomflot LNG carriers, the 172,600-cbm Pyotr Kapitsa, to a company linked to Novatek stirred fresh interest that delivery moves were underway. But the name change has since been reversed back to Hanwha Ocean. The shipbuilder is owned by Hanwha Group which among its interest is also a defence contractor with strong links to the US. Ofac added a long list of companies, people and ships to its sanctions list today on the eve of the second anniversary of Russia's invasion of Ukraine and following the death in custody of Russian government critic Aleksei Navalny. source : www.tradewindsnews.com

YARDS EXTEND BERTH DEAL — AGAIN — ON DELAYED MOZAMBIQUE TONNAGE

Will the sixth extension to project ships free up some slots for 2027 delivery dates? Two South Korean shipbuilders have made fresh extensions on a series of 17 LNG carrier newbuilding berths being held for the much-delayed TotalEnergies-led

Mozambique LNG project. LNG newbuilding sources said that decisions on the vessels — nine of which are pencilled in at HD Hyundai Samho Heavy Industries and eight at Samsung Heavy Industries — were due to have been made by the end of January 2024. But project shareholders now have until July before they need to make a call on them. The delivery dates pencilled in on the ships are now said to stretch into 2028 and 2029. Four shipowners were assigned to the berths in 2020. Japan's Mitsui OSK Lines was lined up against five and K Line four of those at Hyundai Samho. Fellow Japanese shipping giant NYK and Greece's Maran Gas Maritime were listed with four berths each at SHI. This is deemed to be the sixth extension on the 17 LNG berths. Lead shareholder TotalEnergies has been wrestling with how to proceed with its long-planned 12.9 million tonnes per annum first phase of the Mozambique LNG project due to security issues in the region. The company and its partners took a final investment decision on the project in 2019 but declared force majeure on it two years later as attacks in the region intensified. Announcing its fourth-quarter results, the French energy major appeared to offer hope that it may be planning to move ahead with the project this year. Earlier this month, TotalEnergies chief executive Patrick Pouyanne said the company was preparing to lift the force majeure and was close to a new arrangement with contractors on Mozambique LNG. But this month has seen fresh attacks by Islamist insurgent groups in the Cabo Delgado region in northern Mozambique where the project would be located. Shipping players have also highlighted that any move forward on the LNG newbuildings is likely to involve price renegotiations and a design update. As such, TotalEnergies may also consider re-tendering for the ships, one has said. Pricing at the time the newbuilding berths were originally set was around $180m per vessel, compared to current prices reaching upwards of $260m, depending on specifications. The LNG carriers' designs also pre-date some of the new environmental rulings and technology upgrades that have since been brought in, those who have experience with the project said, which would likely shorten the ships' trading lifespan if they were not updated. The fresh extension on the Mozambique newbuilding berths is significant in that it potentially frees up space in 2027 for other LNG business. TradeWinds understands that several big names are chasing slots, but they are presently being presented or nudged into positions that offer vessel deliveries in 2028. Those following the situation at South Korean yards said the key reason that shipbuilders have been able to offer the numerous extensions is the size of orders, the key client but also because they have been, and will continue to be, occupied by QatarEnergy's LNG newbuilding project for over 100 ships. source : www.tradewindsnews.com

LNG BUNKER VESSEL 'SEVERELY DAMAGED' IN COLLISION

All crews safe but Kogas-chartered LNGBV reported damage resulting in a gas leak. A Kogas-chartered LNG bunker vessel has been involved in a collision with a cargo ship off the coast of South Korea. Local reports said the two vessels — described as "a 5,900-ton cargo ship and a 9,000-ton, Panamanian-flagged LNG carrier" — collided 6 km south-west of Yeodo Island at 04:20 local time on 17 February. Gas industry players named the LNG carrier as the 7,654-cbm LNGBV SM Jeju LNG1

(built 2019). The vessel and sister ship SM Jeju LNG2 (built 2020) were designed and built to ship LNG cargoes to Jeju Island in the south of the country. Both are owned by Korea Line and fixed to LNG buyer Kogas on 20-year charter deals.

A report on South Korea's MBC News said the starboard side of the LNG carrier was "severely damaged" and said a gas leak occurred. All the crew and personnel on board both vessels — 19 on the LNGBV and 58 on the cargo ship — are reported to have been rescued safely. The Wando Coast Guard is said to have sent rescue boats, teams and helicopters to the scene and remained on site to prevent any oil spills or further damage. Photos and video show rescue efforts in progress and damage to the side of the LNGBV and the bow of the cargo ship, which has the words JL Ocean painted on its hull. The causes of the accident are being investigated and the captains of both vessels are being questioned. Data provider iGIS/LNG reported the position of the SM Jeju LNG1 as idle and lying to the west of Yeoseo-Ri Island. This is among the first collisions reported for the emerging LNG bunkering sector, which is ramping up to meet the incoming demand from the raft of delivering LNG dual-fuel newbuildings. The Jeju LNGBVs are pioneering vessels in that they were the first large units to be put into domestic use. The duo, which were built by Samsung Heavy Industries, are also the first small-scale vessels to be built with the first iteration of Kogas' own design of cargo containment system KC-1. TradeWinds has contacted Korea Line for details of the damage to its ship. source : www.tradewindsnews.com

CHEVRON'S LNG CARRIERS TO GET RELIQUEFACTION UNITS

South Korea's HD Hyundai Marine Solution has secured a contract from US energy giant Chevron to install reliquefaction units and other tech on the latter's two liquefied natural gas (LNG) carriers. The unit of HD Hyundai, previously known as Hyundai Global Service, revealed the contract award in a statement issued on Thursday. In addition to reliquefaction units, HD Hyundai Marine will also install air lubrication technology and new gas compressors. HD Hyundai Marine said that the 2014-built 160,000-cbm, Asia Energy, is one of the two LNG carriers which will receive the upgrade. The firm did not provide the price tag of the deal. Last year, the company also won an order from LNG carrier operator CoolCo to retrofit five TFDE LNG carriers with sub-coolers for LNG boil-off reliquefaction in order to slash emissions and improve fuel consumption. This deal is worth $50 million or some $10 million per vessel. A reliquefaction unit reliquefies BOG generated during the operation of LNG cargo tanks, either returning the gas to the cargo tank or preventing natural evaporation using sub-cooled LNG. So far, HD Hyundai Marine won $100 million in orders to install reliquefaction units on eight LNG carriers, including the CoolCo order, it said. HD Hyundai Marine said there are about 100 LNG carriers without reliquefaction systems, and the total cost to install the technology on them is estimated at $700 million. As per Chevron, the company's shipping unit contracted last year a subsidiary of Singapore's Sembcorp Marine to install reliquefaction systems and other tech on Chevron's LNG carriers as part of a move to further slash emissions. According to Chevron's website, its shipping unit operates ten LNG carriers, including Asia Energy. As part of its shipbuilding program, Chevron Shipping took delivery of six LNG carriers over the period of 2013-2017. source : www.lngprime.com

THAILAND'S GULF ENERGY TO RECEIVE FIRST LNG SHIPMENT

Thailand's Gulf Energy Development expects to receive this month the first LNG shipment to supply Hin Kong Power's plant. "At the end of February 2024, Gulf will make the first LNG shipment to support the electricity production of Hin Kong Power project unit 1, with an installed capacity of 770 MW," the power producer said in its 2023 results report. With this, Gulf becomes the first private company in Thailand to initiate LNG imports, the firm claims. Also, the import of LNG is in line with the Thailand's natural gas supply plan as it "will help minimize risks in gas procurement and increase energy security for the country as well," the firm said. Gulf expects the first gas-fired unit of Hin Kong Power project to start commercial operation in March. The firm did not provide any additional details regarding the LNG shipment.

Gunvor deal

Last year, a unit of Geneva-based energy and LNG trader, Gunvor, has signed a term LNG supply deal with Hin Kong Power, a joint venture owned by Gulf Energy Development and Ratch Group. Under the deal, Gunvor Singapore will supply HKH with about 0.5 million tons per year of LNG on a DES basis. Back in 2020, Gulf Energy Development secured licences from the government of Thailand to import LNG as part of its plans to reduce power prices in the country. The company's JV with Ratch Hin Kong Power won a license to import 1.4 mtpa of LNG to supply the Hin Kong power plant with capacity of 1,400 MW, located in Hin Kong subdistrict. In addition, Gulf Energy Development and PTT Tank Terminal, a unit of state-owned PTT, are developing an LNG import terminal in Map Ta Phut with a capacity of 10.8 mtpa. Last year, Saipem and its partner CTCI completed PTT's Nong Fab LNG import plant in Thailand, the country's second such facility. This 7.5 mtpa terminal adds to PTT's first Map Ta Put LNG terminal (LMPT 1) with a capacity of 11.5 mtpa. Source : www.lngprime.com

DEUTSCHE REGAS EXPECTS TO LAUNCH MUKRAN FSRU TERMINAL BY END OF WINTER

LNG terminal operator Deutsche ReGas expects to launch its FSRU-based LNG import facility in Germany's port of Mukran by the end of this winter. "As planned and announced, the "Deutsche Ostsee" Energie-Terminal in the industrial port of Mukran will go into operation until the end of this winter, subject to approval," a spokesman for Deutche ReGas told LNG Prime on Tuesday. He said that Deutsche ReGas is currently waiting for "permission of early start" (BImSchG), which would allow a test operation of the terminal. Initially, regasification would take place via the 2021-built 174,000-cbm, Transgas Power, which would later be supplemented by the 2009-built 145,000-cbm, Neptune, the spokesman said. "FSRU Energos Power's usage as LNG carrier is intermediate until "Deutsche-Ostsee" Energie-Terminal's finalization," he said. In June last year, the German firm led by Ingo Wagner and Stephan Knabe signed a deal with the German government to sub-charter the vessel delivered in 2021 by Hudong-Zhonghua. Deutsche ReGas took over the charter of Energos Power in October and the vessel has been working as an LNG carrier since then. In the meantime, the FSRU, previously named Transgas Power, changed its owner as Greece's Dynagas sold the vessel to US-based Energos Infrastructure, owned by asset manager Apollo. Energos Power's AIS

data showed on Wednesday that the FSRU was located in Denmark's Fredericia after arriving there from the Dutch port of Rotterdam during the weekend.

Up to 13.5 bcm per year

This FSRU with a regas capacity of up to 7.5 bcm per year will work along the FSRU Neptune in Mukran as part of the second phase of the LNG terminal with a capacity of up to 13.5 bcm per year. Deutsche ReGas previously said it plans to move the FSRU Neptune from Lubmin to the Mukran port later this year. The firm officially launched its Lubmin FSRU-based LNG import terminal, first private LNG terminal in Germany, in January last year. Deutsche ReGas chartered the 2009-built 145,000-cbm, FSRU Neptune, from French energy giant TotalEnergies for this project. Besides the two FSRUs, the Mukran project includes the 50-kilometer-long pipeline Ostsee Anbindungsleitung (OAL). Germany's Gascade built this pipeline which connects the LNG terminal in the port of Mukran with the German gas transmission network in Lubmin. Gascade said in January that the pipeline had fully been connected through and laid on the seabed. The firm said that that the mechanical completion of the pipeline enables first gas feed-ins into this pipeline in the winter of 2023/24. source : www.lngprime.com

ROTTERDAM LNG THROUGHPUT UP 3.7 PERCENT IN 2023

LNG throughput in the Dutch port of Rotterdam rose 3.7 percent in 2023 as Europe continued to boost LNG imports and demand for LNG as fuel increased. The port, home to Gasunie's and Vopak's Gate LNG import terminal, said that total LNG throughput reached 11.92 million tonnes last year, compared to 11.49 million tonnes in 2022 when it rose 64 percent year-on-year. In the first half of last year, total LNG throughput reached 5.94 million tonnes, up by 9.8 percent. Incoming LNG volumes rose 2.3 percent in the January-December period to 11.6 million tonnes, while outgoing volumes surged 111 percent to 313,000 tonnes, according to the Rotterdam port's report. Total cargo throughput in the port of Rotterdam last year amounted to 438.8 million tonnes, 6.1 percent less than in 2022. The port said that LNG throughput was higher as Europe continues to import large amounts of LNG to replace pipeline imports of Russian natural gas. There was also more bunkering in seagoing LNG tankers, it said. The port said last month that its LNG bunkering volumes reached a record level in 2023 as prices dropped from 2022 and demand continues to increase. Europe's largest bunkering port reported LNG volumes of 619,243 cubic meters in 2023, a rise of 53 percent compared to 406,599 cbm in 2022 when volumes dropped considerably due to high prices. As previously reported by LNG Prime, the Gate LNG terminal handled a record number of vessels last year mainly due to a rise in demand for LNG as fuel. Including unloading and loading operations, the LNG terminal handled 328 vessels last year. Gate's small-scale jetty, which launched operations in 2016, handled record 151 vessels, loading close to 900,000 cbm of LNG last year. source : www.lngprime.com

JAPAN'S JANUARY LNG IMPORTS DECLINE

Japan's liquefied natural gas (LNG) imports dropped in January compared to the same month last year, according to the provisional data released by the country's Ministry of Finance. The country's LNG imports decreased by 10.5 percent year-on-year in January to 6.1 million tonnes, the data shows. LNG imports dropped compared to 6.49 million tonnes in the previous month, which marked an increase year-on-year. Japan's coal imports for power generation decreased in January compared to the last year. Coal imports were down by 6.8 percent to 9.95 million tonnes, and Japan paid about $1.62 billion for these imports, a drop of 53.6 percent compared to the last year, the data shows.

LNG import bill down

According to the preliminary data, the December LNG import bill of about $4.15 billion decreased by 28.8 percent compared to the same month last year. State-run Japan Oil, Gas and Metals National Corp (JOGMEC) did not publish both the contract-based and the arrival-based monthly spot LNG price in January as there were less than two companies that imported spot LNG. The average price of spot LNG cargoes that were delivered in Japan within the month of December regardless of the month when the contract was made (arrival-based price) was $16.9/MMBtu. JOGMEC also said in a report this week that the "Northeast Asian assessed spot LNG price JKM for the previous week (February 12 - 16) decreased to high $8s on February 16 from low $9s the previous week." JKM fell due to sufficient supply and high inventory, it said. METI announced on February 14 that Japan's LNG inventories for power generation as of February 11 stood at 2.06 million tonnes, down 0.23 million tonnes from the previous week.

LNG deliveries

As per LNG shipments going to Japan in January, deliveries from Asia decreased by 14.7 percent to 1.6 million tonnes, the ministry's data shows. Middle East LNG shipments dropped by 7.4 percent to 728,000 tonnes in January. Moreover, shipments from Russia decreased by 7.2 percent to 654,000 tonnes, while US deliveries rose by 19.6 percent to 601,000 tonnes in January. Japan was the world's top LNG importer in 2022, overtaking China, but both of the countries took fewer volumes compared to the year before. China has overtaken Japan to become the world's top importer of LNG last year. China's LNG imports rose 12.6 percent to about 71.32 million tonnes in the January-December period. The country imported some 5.17 million tonnes of LNG more than Japan in 2023. Japan's power utilities such as Kansai Electric increased their nuclear power utilization rate in 2023. The Institute of Energy Economics, Japan (IEEJ) said in a recent report that due to the restart of some nuclear power plants and an increase in solar photovoltaics capacity, coupled with a rise in coal-fired power generation capacity, Japan's LNG imports are expected to decline below 60 million tonnes in FY2024. source : www.lngprime.com

FIRST GEN SEEKS NEW LNG CARGO FOR BATANGAS FSRU TERMINAL

Power producer First Gen is seeking one spot LNG cargo for its FSRU-based import terminal in Batangas, Philippines. The firm controlled by the Lopez family said in a statement it seeks to procure a single cargo of LNG via its unit First Gen Singapore on a DES basis, to be utilized by FGEN's existing gas-fired power plants in its complex in Batangas. According to First Gen,

the selected bidder will deiver the 154,500 cbm LNG cargo to the 162,000-cbm FSRU BW Batangas from March 15 to March 31, 2024. First Gen expects to award the tender on March 6.

Fourth LNG cargo

This is the fourth LNG cargo for the FSRU-based facility. LNG giant Shell suppled the first LNG cargo for commissioning purposes to the LNG terminal in August. Shell delivered the LNG cargo from Australia onboard the 2021-built 174,000-cbm, LNGShips Manhattan. Moreover, First Gen selected Trafigura to supply the second LNG cargo and the energy trader supplied the cargo with the 2021-built 174,000-cbm LNG carrier, Hellas Diana, owned by Latsco and chartered by Trafigura. TotalEnergies Gas & Power Asia, a unit of French energy giant TotalEnergies won a tender to supply the third cargo. The 2020-built 174,000-cbm LNG carrier, Qogir, owned by TMS Cardiff Gas and chartered by TotalEnergies, recently delivered the third LNG cargo to the FSRU from the Inpex-operated Ichthys LNG plant in Australia, its AIS data shows.

Second LNG terminal in Philippines

As per the FSRU, First Gen awarded in 2021 the five-year FSRU contract to BW LNG, as it looks to replace declining volumes from the Malampaya gas field. BW Batangas arrived in the Philippines in June last year to start serving First Gen's LNG import terminal developed by its unit FGEN LNG. Prior to arriving in Batangas, the FSRU underwent modifications at the MMHE Shipyard in Johor, Malaysia. This is the second LNG import facility in the Philippines as Singapore's LNG firm AG&P kicked off commissioning activities in Apriil 2023 at the country's first import terminal following the arrival of the 137,500-cbm FSU Ish at the terminal's jetty in Batangas Bay. source : www.lngprime.com

CROATIAN FSRU WELCOMES 85TH LNG CARGO

Croatia's Krk liquefied natural gas (LNG) terminal has received its 85th cargo since the launch of operations in January 2021. The 2018-built 173,400-cbm, BW Tulip, arrived at the 140,000-cbm FSRU on February 20, according to a short statement by state-owned LNG terminal operator LNG Croatia. BW Tulip's AIS data provided by VesselsValue shows that the LNG carrier previously picked up the cargo at Venture Global LNG's Calcasieu plant in Louisiana. The Croatian FSRU mainly receives shipments from the US, but it also received cargoes from Qatar, Nigeria, Egypt, Trinidad, Indonesia, and reloads from European terminals. Hungary's MFGK and a unit of Switzerland-based trading firm MET are some of the users of the facility. From the start of commercial operations, the LNG terminal has shipped more than 7 billion cubic meters of natural gas into the Croatian system, LNG Croatia said in a separate statement on Tuesday. The LNG terminal regasified more than 11.5 million cubic meters of LNG and completed 308 truck loading operations, it said. Due to high demand, LNG Croatia is currently working to boost the capacity of its FSRU-based Krk LNG terminal. Last year, Finland's Wartsila won a contract to supply one regasification module for the FSRU. Under the contract, Wartsila Gas Solutions, a unit of Wartsila, will build the regas module with a maximum capacity of 250,000 m3/h. The firm awarded the module contract to China's CIMC SOE. The current three

LNG regasification units have a maximum regasification rate of 451,840 m3/h. Following the upgrade, the Krk LNG facility will have a capacity of about 6.1 bcm per year in 2025. source : www.lngprime.com

ITALY'S OLT SAYS TO START FSRU MAINTENANCE IN MARCH

Italy's OLT Offshore LNG Toscana now aims to start maintenance at its FSRU terminal, located about 22 km off the coast between Livorno and Pisa, on March 1, one month ahead of its previous plans. Last month, OLT Offshore said that it plans to shut its FSRU terminal from the beginning of April to the end of October this year for "extraordinary" maintenance. The LNG terminal operator decided to carry out an intervention aimed at replacing the bearing of the anchoring system of the terminal, a system designed and built to ensure the rotation of the terminal around the geostationary turret permanently anchored to the seabed. OLT Offshore said in a statement on Monday that the "FSRU Toscana terminal will undergo the announced extraordinary maintenance period on March 1st, 2024." "The maintenance activity is expected to end by October 31, 2024. During this period the regasification service shall be interrupted," the firm said. OLT Offshore did not provide further information. The FSRU a maximum regasification capacity of 5 bcm a year and it sends natural gas to Italy's national grid via a 36.5 kilometers long pipeline. Italy's Snam holds a 49.07 percent stake in the LNG terminal, while Igneo Infrastructure Partners owns a 48.24 percent share. Golar LNG, that provided the 2003-built 137,100-cbm FSRU has a minor 2.69 percent stake in the LNG import facility. Source : www.lngprime.com

EQUINOR SEALS 15-YEAR LNG SUPPLY DEAL WITH INDIA'S DEEPAK FERTILISERS

Norway's Equinor and India's Deepak Fertilisers have signed a 15-year deal for supplies of liquefied natural gas (LNG) with deliveries starting in 2026. The agreement covers an annual supply of around 0.65 million tons (ca 9 TWh) of LNG, Equinor said in a statement on Monday. The firm said its growing global LNG portfolio is based on LNG from its operated plant in Hammerfest, Norway and LNG supply sourced mainly from the US. This portfolio will be the base of supply to Deepak, which will use the gas mainly as feedstock for production of ammonia in its newly commissioned plant for manufacturing fertilizers and petrochemicals. Equinor's senior VP for gas and Power, **Helge Haugane**, said Deepak's new ammonia plant has created new gas demand in the growing Indian market. "I am very happy that we have landed this agreement with Deepak Fertilisers. The agreement is another proof of how we use our position in the Atlantic basin to strengthen our relationship with key players in the growing Indian market," he said.

Equinor's LNG portfolio

Equinor and its partners in the 4.3 mtpa Hammerfest LNG export plant are currently working to upgrade the facility located on Melkoya island. Hammerfest LNG liquefies natural gas coming from the Snohvit field in the Barents Sea. As per the US supplies, US LNG exporting giant Cheniere signed last year a long-term supply deal with Equinor. Under the SPA, Cheniere Marketing will supply about 1.75 mtpa of LNG to Equinor on a free-on-board basis. This agreement brings the total volumes

that Equinor has contracted with Cheniere up to around 3.5 mtpa. Delivery of half of the volume associated with the new 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. Source : www.lngprime.com

VENTURE GLOBAL SEEKS MORE TIME TO COMPLETE CALCASIEU PASS LNG TERMINAL

US LNG exporter Venture Global LNG has requested more time from the US FERC to complete the commissioning of its Calcasieu Pass LNG export terminal in Louisiana. Calcasieu Pass produced its first LNG on January 19, 2022, and the first commissioning cargo left the facility on March 1. However, Venture Global has not yet declared the start of commercial operations at the 10 mtpa facility which consists of 18 modular units configured in 9 blocks.

One-year extension

"Calcasieu Pass has now completed nearly all of the construction of the project, but the commissioning phase continues with respect to certain essential facilities," Venture Global told the US FERC in a filling dated February 15. According to Venture Global, the 2019 FERC authorization says that the Calcasieu Pass proposed liquefaction facilities shall be constructed and made available for service within five years of the order date, or by February 21, 2024. "Calcasieu Pass believes that it has complied with that condition, as written and read literally, because all of the project's "proposed liquefaction facilities" (i.e., the 18 liquefaction trains configured in 9 blocks) have been placed in-service, following the Commission Staff's October 2023 authorization for Calcasieu Pass to place its liquefaction blocks 7-9 in-service," it said. "While the in-service condition in the order does not utilize a more encompassing term or phrase, such as: "all of Calcasieu Pass' facilities", or "the export terminal," or Calcasieu Pass' "proposed project," some interested stakeholders may nevertheless interpret the condition more broadly than its plain language suggests," Venture Global said. According to Venture Global, if the condition were to be so interpreted, Calcasieu Pass "would not be able to comply with the condition as a result of the continuing need for further commissioning, repair, rectification, and completion of certain facilities."

Work to be completed in Q4 2024

Venture Global said that Calcasieu Pass has encountered "circumstances that have prevented it from being able to bring all its facilities into service at this time." That conclusion is reflected in the previously mentioned liquefaction in-service NTP, which recognized that reliability issues with certain other facilities, notably the heat recovery steam generators or "HRSGs", require those facilities to remain in the commissioning process and the subject of a future in-service authorization, it said. Venture Global said the project's power generation facilities would remain in commissioning and "cannot be placed in-service until that on-going remediation work is completed, which Calcasieu Pass currently expects to happen during the fourth quarter of 2024."

"Accordingly, to ensure compliance with the authorization order and full transparency, Calcasieu Pass hereby requests a one-year extension of the in-service condition set forth in ordering paragraph (B) to the extent that the Commission deems it necessary because certain of Calcasieu Pass' authorized facilities — other than its liquefaction trains — will not be in-service by February 21, 2024," Venture Global said. "Alternatively, if the Commission interprets the in-service condition as applicable only to those liquefaction facilities, Calcasieu Pass requests that the Commission instead confirm that Calcasieu Pass has complied with the in-service condition," it said.

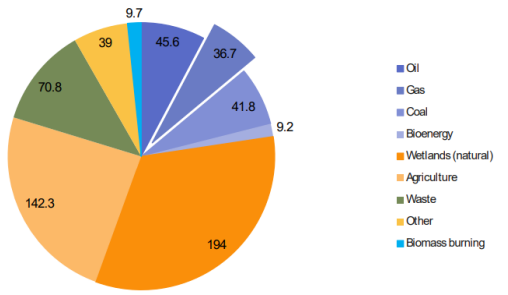
Shell, BP

Long-term customers of the Calcasieu pass facility include Shell, BP, Edison, Repsol, Galp, and PGNiG. Energy giants Shell and BP and other firms are in an dispute with Venture Global over the launch of commercial operations at the facility and previously launched arbitration proceedings against Venture Global. Shell's CEO Wael Sawan recently said that Venture Global has sold around 250 commissioning cargoes up to date. "And what we see is that the plant is at or near capacity and has been consistently. So, we're very much focused on continuing to enforce our legal rights and protect the sanctity of contracts that are there. I won't get into the details of the legal proceedings," he said. "As far as Venture Global itself, it continues in commercial dispute. I'm not going to get into any details on it other than to say that we will enforce our rights rigorously," BP's CEO Murray Auchincloss recently said responding to a question about the dispute during the company's earnings call. Source : www.lngprime.com

METHANE EMISSIONS REGULATION IS GETTING TOUGHER, MUCH TOUGHER

Methane has been identified as a potent greenhouse gas (GHG), particularly over shorter time frames, and the impetus to control emissions of the gas is strong. In its report The Imperative of Cutting Methane from Fossil Fuels, published last October, the International Energy Agency (IEA) said that actions to tackle methane emissions from fossil fuel production and use were essential to limiting global warming to 1.5°C above pre-industrial levels. The primary targets, and the most cost effective, are the elimination of routine venting and flaring, alongside the rapid identification and repair of leaks. According to the IEA, fugitive methane emissions from LNG operations are relatively low. Liquefaction and shipping in 2022 resulted in methane emissions of just 0.4mn t, compared with the IEA estimate that fossil fuel operations generated close to 120mn tonnes of methane in 2020, nearly one third of those generated from all human activities. However, this ignores methane emitted upstream to supply the feedstock on which LNG plants depend. With a raft of regulations hitting the market from this year in the EU and US, controlling methane emissions from all parts of the gas value chain is now central to sustaining a social license for LNG production and use.

FIGURE 1 | Methane emissions by source, 2022 (mn tons) | Source: IEA, Global Meathane Tracker



INFO BOX: LNG – a small but important source of methane emissions: IEA

Methane leaks can occur at LNG liquefaction facilities from gas service valves, reciprocating compressors, pump seals or metering equipment as well as during the transfer of LNG to ships. During shipping, methane leaks can also occur if boil-off gas from the cargo is vented or used as propulsion but not fully combusted in the ship's engines (methane slip). The IEA estimates that total fugitive methane emissions from LNG liquefaction and shipping in 2022 were about 0.4mn t, equivalent to around 0.1% of total annual LNG transported globally. Shipping accounts for the majority and it is essential to ensure that boil-off gas is injected into engines or reliquefied rather than vented. Manufacturers are increasingly promoting technologies that reduce methane slip, for example by recirculating exhaust gases, using high-pressure direct injection or methane oxidation catalysts.

Regulation has become more overtly obligatory

Tougher methane regulation is here and with it a much greater emphasis on obligatory as opposed to voluntary actions. Both in the EU and the US, regulation will extend to existing facilities and new developments, as well as including legacy operations, such as abandoned wells. In Europe, the EU's methane regulation is close to adoption. Following a deal between the European Parliament and European Council in November, an agreed text was endorsed by the Committee of the Permanent Representatives of the member states on December 15 and by the ENVI and ITRE committees of Parliament on January 11.

It now needs a final vote in a parliamentary plenary session and publication in the EU's Official Journal before becoming law, which is likely before European parliamentary elections in June. The regulation is wide ranging, applying to oil and gas upstream exploration and production, including inactive wells, temporarily plugged wells and permanently plugged and abandoned wells, fossil gas gathering and processing, gas transmission, distribution, underground storage and LNG terminals. There is an exemption allowing slower implementation for EU countries with more than 40,000 old wells and for offshore wells in deep water. The regulation requires operators to report regularly on methane emissions at source level, including non-operated assets and obliges companies to carry out regular surveys on their equipment to detect and repair leaks. It also bans routine venting and flaring and restricts non-routine flaring to unavoidable circumstances. It also requires oil, gas and coal companies to carry out an inventory of closed, inactive, plugged and abandoned assets, such as wells and mines. Companies have to monitor the emissions of these inactive assets and adopt a plan to mitigate any emissions as soon as possible. Some time is allowed to bring these new rules into practical operation. Routine inspections need to be completed 21 months after the regulation's date of entry into force and the subsequent inspection period should be no longer than three years. With regard to monitoring and reporting, operators are required to deliver quantification of source level methane emissions within 18 months

for operated assets and within 30 months for non-operated assets. Site level emissions measurement is required within 30 months for operated assets and within 48 months for non-operating assets. In addition, operators need to submit a leak detection and repair programme to the relevant authorities within nine months of the regulation coming into force and within six months from the start of operations at new sites. The Commission may choose to specify minimum detection limits within 12 months and the regulation says that repair needs to take place immediately after a detection of a leak over the threshold and no later than five days for a first attempt and 30 days for a complete repair. There is an exemption for offshore wells at a depth of more than 700 metres, provided evidence can be shown that emissions from these wells are likely to be negligible.

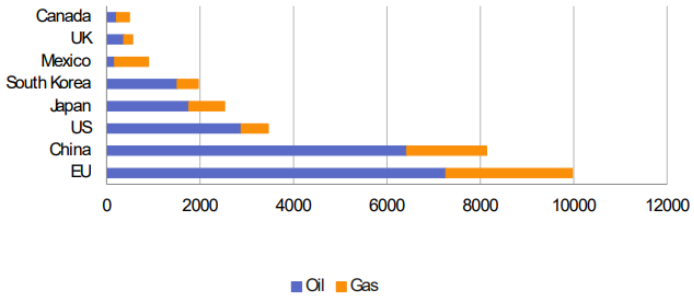
INFO BOX: Romanian oil site methane emissions valued at €90mn

A study coordinated by UNEP's International Methane Emissions Observatory released in September 2023 estimated that oil production in Romania emitted about 120 kilotonnes of methane in 2019, at least two times more than the national inventory estimate. The lost methane was valued at about €90mn based on average prices at the Dutch Title Transfer Facility in the first half of 2023. The study quantified methane emissions from onshore oil production sites in Romania at source and facility level using a combination of ground and drone-based measurement techniques. About 10% of the sites accounted for more than 70% of total emissions. Major causes of methane emissions from oil production sites in Romania are the venting of gas through open-ended lines, followed by malfunctioning equipment. The study also found that sites associated with emissions of the dangerous gas hydrogen sulphide were better maintained and had a lower number of detected emission points compared with oil production sites without these emissions.

EU regulation will extend to imports

Given the growth in US-European LNG trade, one of the most significant aspects of the EU's regulation is that, from January 2027, new import contracts for oil, gas and coal can only be concluded, if the same monitoring, reporting and verification obligations are applied by exporters. Prior to this, the Commission will establish methane performance profiles of importing countries and companies as part of a methane transparency database. It will also establish a super emitter rapid reaction mechanism. January 2027 is some time off, but the requirement on contracts applies to all those concluded or renewed after the entry into force of the regulation, which should be in the first half of this year. For contracts concluded before the entry into force of the regulation, the principle of undertaking all reasonable efforts in relation to monitoring, reporting and verification applies. Non-compliance will carry penalties, but these are to be decided at the national level and will depend on the approach of individual member states' own regulatory authorities. According to the EU regulation, penalties must be effective, proportionate and dissuasive and shall include fines proportionate to the environmental damage and impact on human safety and public health. Periodic penalties are also foreseen to ensure operators put an end to infringements. EU member states have to notify the Commission of their penalty regime 12 months after the regulation comes into force.

FIGURE 2	Methane emissions associated with imported oil and gas to selected countries, 2020 (Kt CH4)	Source: IEA, Curtailing methane emissions from fossil fuel operations



US EPA gets tough on methane

The toughening of the US regime surrounding methane emissions comes via the Environmental Protection Agency's (EPA) Section 111 Methane Rule, which aims to prevent an estimated 58mn t of methane emissions between 2024 and 2028. Like the EU regulation, for the first time, the new rule addresses methane emissions from existing and new facilities. The EPA rule covers standards for performance for oil and gas facilities which were built or modified after December 6, 2022 and provides emissions guidelines for GHG emissions from existing oil and gas facilities. The former standards should come into effect this year, 60 days after the rule's publication in the Federal Register, with exceptions for some equipment. The latter will take longer. They are guidelines which states must implement in their state air quality regulations for existing oil and gas facilities. They have two years to submit their plans and compliance must take place within three years, so potentially up to a five-year time frame (early 2029) to fully implement the rules in any given US state. The rule extends the number of emissions sources to include dry seals, liquids unloading, super emitters and well closures. It allows the use of continuous monitors and other advanced technologies to detect leaks, rather than, as previously, only handheld technologies such as optical gas imaging. The new regulations restore methane rules for the oil and gas upstream, which the previous Trump administration rolled back, strengthens emissions requirements for oil and gas production, including the addition of requirements to reduce routine flaring and requiring process controllers to be zero emissions. It will phase out routine flaring of associated gas from newly constructed wells. It includes a two-year phase-in period for eliminating routine flaring of natural gas from new oil wells, and a one-year phase-in of zero-emissions standards for new process controllers and most new pumps outside of Alaska. Monitoring of unintended methane leaks must be increased to at least once a quarter and the rule lays down specific timeframes for repairing leaks. It will also use third-party data to develop a super emitter programme to address large, intermittent emissions events, which are estimated to account for almost 50% of total methane emissions from the oil and gas sector. The Section 111 Methane rule is likely to face legal challenge and is vulnerable to the US electoral cycle, as it could potentially be rolled back by a new administration, following presidential elections in November this year. If such a situation were to occur, there could be a significant mismatch between EU and US methane control complicating the agreement of new US-Europe LNG contracts.

Section 111 is not the only initiative on methane

The EPA rule is not the only initiative to address methane emissions in the US. The EPA has proposed an update to the GHG Reporting Program and there is a forthcoming rule to implement the Inflation Reduction Act's Waste Emissions Charge (WEC). The Bureau of Land Management and the Pipeline and Hazardous Materials Safety Administration have also proposed rules to limit methane emissions from other segments of the oil and natural gas sector. The WEC for methane applies to petroleum and natural gas facilities that emit more than 25,000 t/yr of CO2 equivalent as reported under Subpart W of the GHG Reporting Program, that exceed statutorily specified waste emissions thresholds set by Congress, and that are not otherwise exempt from the charge. This covers on- and offshore petroleum and natural gas production, onshore natural gas processing, onshore petroleum and natural gas gathering and boosting, onshore gas transmission compression, onshore natural gas transmission pipeline, underground natural gas storage, LNG import and export equipment, and LNG storage. The WEC starts at $900/t for methane emissions reported in 2024 and will rise to $1,200/t in 2025 and $1,500/t from 2026 onwards. The proposed rule has been published in the Federal Register and the EPA is seeking public comment until March 11. source : www.naturalgasworld.com

CYGNUS ENERGY
Gas & OIL
LEVEL 43/44, CHAMPION TOWER,
3 GARDEN ROAD, CENTRAL, HONG KONG
SANDP@CYGNUS-ENERGY.COM (SALE N PURCHASE)
GAS@CYGNUS-ENERYG.COM (GAS PROJECTS)