



ADNOC L&S APPROACHES MARKET FOR A STEAMSHIP

Abu Dhabi-based shipowner Adnoc Logistics & Services (Adnoc L&S) has re-emerged in the market for a steam turbine LNG carrier to take on period hire at a time when charter rates for these older vessels have plummeted. Brokers said Adnoc L&S has requested a steam turbine LNG carrier of between 137,000 cbm and 141,000 cbm under 25 years old. The company wants to charter a vessel for 12 months with an option to extend the hire for five months. Adnoc L&S, which this year has ordered a string of LNG carrier newbuildings and has just taken delivery of a first new vessel, has specified delivery between 10 and 25 January at Adnoc's Das Island LNG terminal. It has requested offers by the end of its business day on 9 December with a validity that will hold until close of business at the end of that week. Brokers said Adnoc L&S' steamship requirement has been an on-off affair for some time now, with the shipowner sometimes in the market but later withdrawing from the business. The company has several legacy LNG steamers in its fleet, which are some of the original vessels used by parent Adnoc to ship its first cargoes to Japanese buyers. More recently the company fixed a 149,000-cbm LNG steamship, which was a relet from Germany-headquartered energy company SEFE, for six months.



Best fit

Brokers suggested the shipowner is likely to need the tonnage for trading purposes as these usually smaller-capacity vessels will likely best suit their cargo lots at present. But it is also an opportune time for the company to dive in again with this requirement. Charter rates for LNG carriers have slumped to unusually low levels at what is normally the busiest time of the year for vessels in this sector. Brokers are quoting spot rates for steam turbine vessels at \$10,000 per day and under, which is below operating expenses, describing them as virtually unfixable in the current market. They peg levels for steamers at about \$13,000 per day for six-month hire periods and closer to \$18,000 per day for 12 months. There are about 200 steamers left in operation in the world LNG fleet but attention on these vintage vessels is growing as many approach the end of their worldwide trading lives. Not only are the vessels smaller and less efficient, but many are being redelivered from their long-term time charters at a time when emissions regulations are tightening. TradeWinds has reported on a string of steamers that are being circulated for sale - some publicly and others more silently - as owners test out the market for them. Brokers said that some will be used for storage or conversion, but these opportunities will be limited. This year, South Korea's SK Shipping has opted to scrap five of its redelivering steam turbine vessels, the last four in an unprecedented — for the LNG carrier sector block sale move. Source: www.tradewindsnews.com

POLAND EXPANDS LNG IMPORT TERMINAL

Poland's state-owned LNG terminal operator Gaz-System has expanded its import facility in Swinoujscie with a new jetty and a third storage tank. Gaz-System and Germany-based contractor TGE Gas Engineering announced the arrival of the first LNG cargo at the new jetty via separate social media posts. The 2022-built 174,000-cbm, Lech Kaczynski, which is owned by Knutsen and chartered by Orlen, delivered the shipment on November 29. According to its AIS data provided by Vessels Value, the LNG carrier brought the cargo from Cheniere's Sabine Pass facility in Lousiana, Gaz-System said that about 160,000 cbm of LNG have been transferred via the newly built jetty to the third storage tank. The LNG supplies will be used to commission the third tank. According to Gaz-System, this is the 323rd LNG delivery to the Sinoujscie terminal since the launch of operations in 2016 and the 55th delivery this year. The LNG facility also received one cargo this week.

Expansion

In June 2022, Gaz-System announced that its contractors had raised the roof on the third LNG storage tank at the Swinoujscie facility. The new 180,000-cbm tank is part of the expansion project that will considerably boost the capacity of the only LNG terminal in Poland. TGE Gas Engineering, part of China's CIMC, and a Polish unit of Austrian PORR Group won the contract to build the facilities. Gaz-System previously said that the expansion project will be built in two phases. The first phase was completed at the beginning of 2022, and it included boosting the terminal's regasification capacity to 6.2 bcm per year. The second phase includes the third tank and the additional jetty. Gaz-System says the new jetty is capable of unloading, loading,



and bunkering operations. Once this phase is complete, the expanded terminal will have a total regasification capacity of about 8.3 bcm per year.

Polish LNG imports

Poland's LNG imports via the Swinoujscie terminal rose almost 6 percent in 2023 compared to the year before, boosted by shipments from the US. The Swinoujscie LNG terminal received 62 cargoes or about 4.66 million tonnes of LNG in 2023. The growth of LNG imports was possible due to the expansion of Gaz System's facility in Swinoujscie, where Orlen booked a regasification capacity of 6.2 bcm per year since 2022. Orlen booked all of these volumes as part of the latest expansion phase. In addition, Orlen booked 6.1 bcm per year of regasification capacity at Gaz-System's planned FSRU-based LNG import facility in Gdansk. In April, Japan's shipping giant MOL signed a long-term FSRU charter deal with Gaz-System for the planned LNG import terminal in Gdansk. This will be the second LNG import terminal in Poland and the first FSRU-based facility. Qatar and the US are the leading suppliers of LNG to Poland as part of long-term contracts, while the US has been the dominant supplier in the last couple of years. Other suppliers include Norway, Nigeria, Trinidad and Tobago, Equatorial Guinea, and Egypt. source: www.lngprime.com

CLP, CNOOC IN HONG KONG LNG BUNKERING MOVE

Hong Kong's CLP is joining forces with China National Offshore Oil Corporation (CNOOC) to provide liquefied natural gas (LNG) bunkering services in the port of Hong Kong. According to a statement by CLP, the group's unit CLPe signed a cooperation framework agreement with China National Offshore Oil Company Guangdong Water Transport Clean Energy (CNOOC) to form a joint venture. Under the cooperation agreement between CLPe and CNOOC, the planned joint venture will sell and supply LNG as fuel to ships in the port of Hong Kong, CLP said this will support the development of the LNG fuel bunkering sector in the Guangdong Hong Kong-Macao Greater Bay Area (GBA) and further consolidate Hong Kong's position as a leading international maritime center. The group did not provide further information regarding the LNG bunkering JV. CNOOC has two operational LNG bunkering vessels in China. In July, CNOOC's new LNG bunkering vessel, Hai Yang Shi You 302, completed its first operation in China's Ningbo-Zhoushan port. This vessel has a capacity of 12,000 cbm. This LNG bunkering ship adds to to the 30,000-cbm, Hai Yang Shi You 301. CNOOC claims this is the world's largest LNG bunkering vessel and it completed the first operation with this vessel in January last year. On the other hand, Hong Kong's first FSRUbased LNG import facility, owned by a joint venture of CLP Power and HK Electric, started commercial operations last year. MOL's 263,000-cbm FSRU Bauhinia Spirit serves the offshore terminal under a charter deal. Regasified LNG is being sent to CLP Power's Black Point power station and HK Electric's Lamma power station, raising the power companies' low-carbon generation capability and fuel supply security in support of Hong Kong's energy transition. source: www.lngprime.com



Bangladesh's Rupantarita Prakritik Gas (RPGCL), a unit of state-owned Petrobangla, is seeking new spot liquefied natural gas (LNG) cargoes. According to a tender document posted on RPGCL's website, the delivery windows are December 30-31, 2024, January 4-5, 2025, and January 9-10, 2025. RPGCL issued the tender to "23 organizations that have signed the MSPA (master sale and purchase agreement) with Petrobangla." The tender will close on December 8. Prior to this tender, RGPCL invited bids for one spot LNG cargo for December 30-31, 2024. RPGCL reissued the tender for the December 30-31 delivery. In addition to this new tender, Bangladesh is working to expand its list of potential LNG suppliers. RPGCL issued an invitation for enlistment to international firms to sign up as a potential LNG supplier of spot cargoes. "The interested LNG suppliers may either be a single or joint venture (JV) of more than one firm or as a consortium," RPGCL said. The closing date for submitting applications was December 1. Bangladesh currently imports LNG via two FSRU-based facilities, both of which feature Excelerate Energy's FSRUs. The 138,000-cbm FSRU Excellence serves Bangladesh's first LNG import facility, Moheshkhali Floating LNG or MLNG, operated by Petrobangla. Launched in 2018, the FSRU-based terminal completed its 100th STS transfer offshore Bangladesh in 2021. Excelerate CEO Steven Kobos said during the company's recent third-quarter earnings call that the crew of the FSRU Excellence performed their 250th ship-to-ship LNG cargo transfer in the quarter. He said more than 50 of these transfers occurred this year. Excelerate's 138,000-cbm FSRU Summit LNG serves as the second LNG import facility operated by Summit. In September, Summit said the FSRU was ready to resume sendout to the grid in Bangladesh. Source: www.lngprime.com

WINGD: LNG CARRIER OWNER SWITCHES ENGINE ORDER

Switzerland-based engine maker WinGD, a unit of China's CSSC, has won an order for 16 X-DF dual-fuel engines after a "late-stage switch" by an LNG carrier owner. WinGD announced this contract in a statement on Tuesday saying the engines will power eight newbuild LNG carriers. According to WinGD, the "major shipowner" was influenced by WinGD's track record for reliable operation of the X-DF concept and successful operational experience since the first series of X-DF2.0 engines were delivered earlier this year. WinGD said the order was received relatively late in the newbuilding planning phase as operational and delivery concerns arose around the engines originally selected. "Despite the timing, close collaboration with engine builder, yard and shipowner - which already uses X-DF engines on several LNG carriers - ensured that construction was not delayed," it said. "Although we aim to be the first choice, we were delighted to add to our orderbook from a significant customer," WinGD director sales, Volkmar Galke said. "With the longest established low-pressure two-stroke engine in the market and strong relationships with engine builders and shipyards, we were well placed to pick up the process quickly once the owner decided to switch engine type," Galke said. WinGD did not provide any other details regarding the owner of the LNG carriers or the previous engines.



ME-GA

Shipbuilding sources said that the switch was made from ME-GA dual-fuel engines to X-DF engines. According to the sources, more moves such as this order are expected to follow. In October, German engine maker MAN Energy Solutions said it will no longer offer its ME-GA engine, which was designed for the LNG carrier market. Volkswagen's MAN unveiled the ME-GA dual-fuel engine in March 2021, describing it as an Otto-cycle variant of the company's ME-GI engine. "With a view to expected changes in IMO regulations (IMO Green House Gas Strategy, MARPOL Annex VI, and the NO Technical Code 2008), to be adopted in April 2025, and the performance of our engines, we are constantly reviewing our product portfolio," MAN said in a letter sent to its customers dated October 17. According to MAN, this review would call for "significant" technical updates and investments for the G7OME-C10.5-GA type engine. "Therefore, we have decided to no longer offer the G7OME-C10.5-GA engine as of October 18, 2024," the engine maker said. In 2022, MAN said it had received 100 orders for its ME-GA engine since introducing it in 2021, all for LNG carriers. Last year, MAN announced that the first ME-GA engine had completed gas trials aboard an LNG carrier built by HD Hyundai Samho for Norwegian shipping company Knutsen. According to MAN's website, the company has received more than 270 orders for ME-GA engines since May 2021. Sources previously told LNG Prime the orders were mostly from South Korean yards, but one Chinese shipyard also booked MAN ME-GA engines for LNG carriers. Source: www.lngprime.com

LNG FLEET GROWTH OUTPACES BUNKERING VESSEL EXPANSION

The gap widens between LNG-capable vessels and bunkering infrastructure, raising challenges for the industry to ensure safe and efficient refuelling operations. The LNG shipping industry faces mounting challenges as the gap between dual-fuel LNGcapable vessels and LNG bunkering vessels continues to widen, raising concerns over the sector's ability to meet the growing demand for fuel infrastructure. Trelleborg Marine Systems managing director David Pendleton discussed this critical issue during the opening day of the LNG Shipping and Terminals Conference in London. Since the conference's inception in 2016, the number of LNG-capable vessels has surged by 500%. However, the corresponding growth in LNG bunkering vessels has lagged. "The gap is growing, and that's obviously a concern because you need to have a certain ratio of bunkering vessels to service those ships," Mr Pendleton noted, stressing the urgency of accelerating bunker vessel construction to avoid bottlenecks. Mr Pendleton highlighted the broad operational challenges accompanying this growth, including the need for enhanced training, advanced equipment and stricter safety protocols. "The whole scale of the operation is vast compared to what it was eight years ago. Training on the safety aspects of bunkering is going to be critical," he said. He further stressed the importance of efficiency, particularly in the ship-to-bunker vessel interface. "How quickly can you link your ship to your bunker vessel? How quickly can you do that transfer process and maintain that safe operation? These are going to be the challenges for the



industry." The complexities are compounded by the fact that many LNG bunkering operators are new entrants to the sector. Mr Pendleton acknowledged that this brings both opportunities and risks, as these operators must navigate regulatory frameworks such as the International Gas Carrier Code and guidelines from the Society for Gas as a Marine Fuel. "Thankfully, we have very responsible owners. People are having to receive from these bunker vessels, so they're going to want the besttrained crew with the best technology and equipment," he remarked. With LNG bunkering having grown by 500% over the past eight years. Mr Pendleton mentioned the importance of maintaining high standards across the industry. "It's the one to watch in terms of making sure that as we scale, we can keep our handle on everything that's required to maintain a safe, efficient operation." he concluded. Source: www.rivieramm.com

NYK LINE TAKES DELIVERY OF NEWBUILD LNG CARRIER

NYK said it would continue to collaborate on LNG transport and other initiatives with charterer Kyushu Electric Power Co. Japanese shipping company Nippon Yusen Kabushiki Kaisha (NYK Line) has taken delivery of a newbuild LNG carrier the company ordered from SHI in 2022. Kyushu subsidiary Q United Energy Supply & Trading Co is chartering LNG carrier Quest Kirishima in a deal agreed in September 2022. The vessel is equipped with a WinGD-made dual-fuel slow-speed diesel engine that can operate on marine gas oil or boil-off gas stored in the cargo tank. The ship additionally has a reliquefication system that utilises surplus boil-off gas. 174,000-m3 Quest Kirishima soon will be deployed under the agreed time charter, and NYK said it would continue to collaborate on LNG transport and other initiatives with Kyushu and Q United parent company Kyuden Group. "In addition to LNG transport, NYK will continue to strengthen its co-operative relationship with the Kyuden Group in a wide range of fields, including the LNG-fuel supply business for ships, the construction of the world's first LNGfuelled Panamax and the establishment of a supply chain for next-generation energy such as green ammonia," NYK Line said. NYK Group said its core strategy in the medium term is to deepen its existing core businesses and invest in new growth businesses. "In its Energy Business division, NYK has centred its strengthened efforts on the LNG/LPG carrier business, which the company has positioned as a growth area. NYK will contribute to realising a stable energy supply in Japan by leveraging the experience, know-how and networks the NYK Group has cultivated as one of the world's largest LNG carrierowning and management companies," according to the company. Kyushu Electric Power Co, NYK Line, Itochu Enex Co and Saibu Gas Co established a joint venture company, KEYS Bunkering West Japan Co (Keys), in February 2024 with the goal of operating an LNG bunkering business for ships in Japan's Kyushu and Setouchi regions. As part of the new JV, the parties agreed a shipbuilding contract for one LNG bunker vessel to be built at Mitsubishi Shipbuilding Co in Japan. The construction of the LNG bunkering vessel was completed in March 2024, and the vessel became the first LNG bunkering vessel operated in West Japan. Source: www.rivieramm.com



K-LINE LANDS TIME CHARTER DEAL WITH INDIA STATE-OWNED NATURAL GAS COMPANY

Indian energy company GAIL will take an LNG carrier under construction at Samsung Heavy Industries (SHI) on charter. Kawasaki Kisen Kaisha (K-Line) said it has agreed a long-term time charter contract through a ship owning company established in Singapore with GAIL. According to K-Line, the new ship owning company it formed with GAIL has also agreed a shipbuilding contract with Samsung Heavy Industries for a 174,000-m3 LNG carrier to service the charter. "This is the first long-term time charter contract between GAIL and K-Line involving a newly vessel built. The plan is for this new vessel to be engaged in LNG transport for GAIL beginning in 2027," K-Line said. The company highlighted its 40 years of owning LNG carriers, starting with 1983-built Bishu Maru and said it is positioning its LNG business as one of the "top-priority areas for future investment". "This agreement is part of our strategy," the company said. "K-Line will continue to expand its long-term contracts and accommodate the growing demand for energy by responding to the diverse needs of its customers." K-Line also recently announced it has taken delivery of the first liquefied carbon dioxide (LCO2) carrier for the Northern Lights carbon capture, transport and storage project in Europe. The delivery of liquefied CO2 carrier Northern Pioneer marks a pivotal moment in the maritime industry's pursuit of carbon capture and storage (CCS) solutions. Ready for operation, the vessel will transport liquefied CO2 from capture facilities to Northern Lights' receiving terminal in Øygarden, where the CO2 will be stored underground. Managed by K Line LNG Shipping (UK) Ltd, Northern Pioneer is the first of four vessels ordered by Northern Lights JV DA, a joint venture between Equinor, Shell and TotalEnergies. As Northern Lights' shipping and commercial manager Baris Dolek noted at the Riviera CO2 Shipping & Terminals Conference in June 2024, in London, "Our first two CCS ships are operational this year, showcasing what is achievable when subsidies and collaboration align." The vessel boasts a cargo tank capacity of 7,500 m³ and is designed to carry CO2 at pressures up to 19 bar(g) at temperatures as low as -35°C. Equipped with LNG propulsion, a wind-assisted rotor sail and air lubrication systems, Northern Pioneer embodies the advanced LCO2 carrier designs emerging in the industry. Source: www.rivieramm.com

SYCAR TRANSPORTS LNG FROM PERU TO ECUADOR

Ecuador has received the first land import of LNG from Peru, a historic milestone in the national energy industry, led by the company SYCAR. The fuel was transported in a 40 ft ISO tank with 1 million ft3 of natural gas, arriving at the binational border service centre Peru-Ecuador. LNG is the cleanest and most environmentally friendly fossil fuel and, due to its high calorific value and efficiency, it contributes to emissions reduction pro-grammes and more sustainable practices of companies and industries. This LNG load will be used in the industrial plant of Tecnova S.A., a recognised private industry located in the city of Guayaquil. For SYCAR's General Manager, Nelson Jaramillo Pita, this first import of LNG from Peru reinforces the company's commitment to decarbonisation and economic efficiency and sets a precedent for future operations that integrate the Andean region in the energy field. "This milestone was possible thanks to the reforms and streamlining of the processes of the Ministry



of Energy and Mines, and the Agency for Regulation and Control of Hydrocarbons (ARC) through the new Natural Gas Operations Regulation. The reforms have allowed the modernisation of the sector, laying the foundations for natural gas to play an important role in the country's energy matrix," he said. Currently, Ecuador registers a marginal participation of natural gas in its energy matrix (1.8%); however, imports and the increase in national natural gas production have the opportunity to align the country with regional standards, where natural gas exceeds 30% of participation. These types of initiatives reinforce SYCAR's strategic vision of developing key infrastructure for natural gas, such as the development of distribution clusters and the future LNG import terminal through an FSRU, which will be executed when national demand reaches optimal levels. The arrival of the first ISO tank is the result of a strategic alliance between SYCAR and Limagas Natural Perú S.A. (subsidiary of the Lipiandes Group of Chile) that highlights the importance of regional collaboration to transform the energy landscape of Latin America. This joint effort has established a Peru-Ecuador logistics corridor, which will allow expanded access to LNG, especially for the Ecuadorian industrial sector, which is looking for cleaner and more competitive energy alternatives. "This operation not only marks a milestone in Ecuador's energy history, but also represents a decisive step towards the gasification of the country's energy matrix," concluded Jaramillo. Source: www.lngindustry.com

HARBOUR ENERGY JOINS PAE AND GOLAR TO DEVELOP FLNG PROJECT IN ARGENTINA

London-listed oil and gas firm Harbour Energy has joined Pan American Energy and Golar LNG on a floating LNG export project in Argentina. Harbour Energy said in a statement it had signed a participation agreement with PAE and Golar LNG to acquire a 15 percent interest in Southern Energy, a company which is planning to develop the FLNG project in Argentina. The company did not provide financial details of the deal. The FLNG project involves deploying Golar LNG's floating liquefaction vessel, Hilli, in the San Matías Gulf, Río Negro province, alongside the construction of supporting infrastructure. Also, the vessel will have a production capacity of 2.45 million tons per year (mtpa) of LNG, equivalent to 11.5 million cubic meters or 0.4 billion cubic feet of natural gas per day. "It is anticipated that the upstream partners in Southern Energy will supply the natural gas for the FLNG project, enabling Harbour's Vaca Muerta natural gas to access global LNG export markets and international natural gas prices," Harbour Energy said. In addition, Harbour's participation in Southern Energy "provides the company with the opportunity to work with its partners to continue to mature the proposed FLNG project towards a final investment decision and to unlock the full potential of its Vaca Muerta acreage," the company said.

Pampa Energia, YPF

This announcement comes just days after Argentina's Pampa Energia said it will hold a 20 percent stake in Southern Energy, the entity established by PAE and Golar to undertake the FLNG project in Argentina, becoming its second-largest shareholder. With an estimated investment of \$2.9 billion over the next 10 years, the FLNG project represents a strategic milestone to



monetize Pampa's Vaca Muerta reserves and position Argentina in the global LNG market. During the FLNG project's initial stage, Pampa has committed to supplying up to 3 mcm or over 100 mcf of natural gas per day from its Neuguina basin blocks. Pampa currently produces an annual average of over 13 mcm or 0.5 bcf per day, with peaks of 17 mcm or 0.6 bcf per day in winter in the basin. In addition to Pampa, YPF CEO Horacio Marin recently said that Argentina's state-owned oil and gas company YPF will join the FLNG project developed by Pan American Energy and Golar LNG. Marin said YPF will join this initiative that "marks a milestone in the energy industry of our country and that represents a big step to be able to carry out our Argentina LNG project, with which we expect to export \$15 billion in LNG by 2030."

Hilli

In July, Golar LNG entered into definitive agreements with PAE for a 20-year deployment of FLNG Hilli, which is currently located offshore Cameroon's Kribi, in Argentina. As part of the agreements, Golar will hold a 10 percent stake in Southern Energy. The FLNG project will monetize Argentine gas, tapping into the vast resources from the Vaca Muerta shale formation in the Neuquen basin, the world's second-largest shale gas resources. Golar expects the project to start LNG exports within 2027. The floating LNG player said in its third-quarter report that PAE issued a reservation notice reserving FLNG Hilli for the project in October 2024. The project's definitive contracts are subject to satisfying defined conditions precedent, including an export license, environmental assessment, and FID by PAE. "Work on the conditions precedent is progressing with their satisfaction and FID is expected within Q1 2025," Golar said. Golar said the FLNG project will initially utilize spare capacity in Argentina's existing pipeline network. Work to construct a dedicated pipeline connecting the FLNG terminal location directly to the Vaca Muerta shale formation is also being pursued. "This could support a multi-FLNG vessel project in Argentina, including opportunities for our MKII FLNG(s)," Golar said.

/TTI, SNAM WRAP UP ACQUISITION OF ITALY'S ADRIATIC LNG TERMINAL

Rotterdam-based storage terminal owner VTTI, co-owned by Vitol, IFM, and Adnoc, and Italian energy firm Snam have completed their previously announced acquisition of Italy's Adriatic LNG terminal. The two firms announce the completion of the transaction in a statement on Tuesday. Italy's largest LNG terminal is now owned by VTTI and Snam with 70 percent and 30 percent ownership, respectively. US energy firm ExxonMobil previously had a 70.7 percent stake in Adriatic LNG, while state-owned LNG giant Qatar Energy held 22 percent and Snam owned 7.3 percent. Earlier this year, VTTI signed an agreement to acquire a majority stake in Adriatic LNG. After that, Snam exercised a right of first refusal to increase its stake in Adriatic LNG from 7.3 percent to 30 percent. In this new structure, Alexandra Thomas has been appointed as CEO and Alessandro Conta as COO of Adriatic LNG, according to the statement. Thomas joins Adriatic LNG from Neptune Energy, where she was most recently managing director for Egypt, while Conta joins Adriatic LNG from Snam Rete Gas. Launched in 2009, the world's first offshore gravity-based LNG import terminal sits about 14 kilometers offshore of Porto Levante and has



regasification capacity of about 9.6 bcm per year. Adriatic LNG import terminal achieved a new record in the first half of this year with deliveries to the grid from its facility in the Adriatic Sea. The regasification terminal sent 4.4 bcm of natural gas into the national pipeline network during January-June, covering over 14.2 percent of national gas consumption. In the first 11 months of the year, Adriatic LNG injected more than 8 bcm of natural gas into the Italian gas grid (equivalent to 15 percent of national consumption), 3 percent more compared to the same period in 2023. Adriatic LNG is the third entry source for gas imports into Italy, after pipeline imports from Algeria and Azerbaijan. source: www.lngprime.com

INPEX: FIRST ICHTHYS LNG TRAIN RESUMES FULL **OPERATIONS**

The first liquefaction train at the Inpex-operated Ichthys LNG export plant in Australia has resumed full operations, a spokesman for Inpex told LNG Prime on Tuesday. "I can elaborate that T1 is currently at more or less 100 percent," the spokesman said. On September 10, Inpex announced it had decided to reduce Train 1's rate of operations to about 70 percent to carry out inspections as the unit "is using the same equipment (heat exchangers) as Train 2." In November, Inpex revealed in its results report that the train was operating at a slightly reduced production level for the inspection and repair of heat exchangers. The company said at the time the train is expected to resume full-scale operation at the beginning of December. On the other hand, Ichthys LNG Train 2 was taken offline on August 20 due to a heat exchanger issue. It was then returned to service on October 9 after the inspection and repair were completed.

Before this. Inpex shut down the train in July.

About 116 LNG cargoes

The 8.9 mtpa Ichthys LNG plant sent 96 LNG cargoes during January-October this year. Besides LNG cargoes, the Ichthys project also shipped 16 plant condensate cargoes, 23 offshore condensate cargoes, and 25 LPG cargoes during the period. Inpex said that approximately 10 LNG shipments per month are expected each for November and December. This means that Inpex expects to ship about 116 LNG cargoes this year. Last year, the LNG plant sent a record 129 LNG cargoes, 17 cargoes more compared to 2022, as part of the company's plans to boost production to about 9.3 mtpa due to debottlenecking. The plant shipped 11 LNG cargoes in 2018, 104 LNG cargoes in 2019, 122 LNG cargoes in 2020, 117 LNG cargoes in 2021, and 112 LNG cargoes in 2022. Ichthys LNG is a joint venture between operator Inpex and major partner TotalEnergies. Earlier this year, Inpex also purchased a small stake in Ichthys LNG from compatriot Tokyo Gas to boost its stake from 66.245 percent to 67.82 percent. Besides TotalEnergies, other partners in the Ichthys project include Australian units of CPC, Osaka Gas, Kansai Electric Power, Jera, and Toho Gas. Natural gas arrives to the LNG plant at Bladin Point, near Darwin, from the giant Ichthys field offshore Western Australia via an 890-kilometer-long export pipeline. source: www.lngprime.com



Snam's 170,000-cbm FSRU BW Singapore has left Dubai and is on its way to Italy to start work offshore Ravenna. The Italian energy firm revealed the departure of the FSRU from Dubai in a social media post on Monday. According to Kpler data, BW Singapore set from DP World Drydocks shipyard in Dubai on November 25 after undergoing extensive repairs and modifications. The vessel had been in the yard since April this year. Last year, the FSRU worked in Egypt under a charter with Egas which expired in November. In December last year, Snam completed the purchase of BW LNG's 2015-built FSRU BW Singapore for about \$400 million. Snam recently said that a new mooring platform off Italy's Ravenna is almost ready to welcome the FSRU by the end of this year. Snam expects the terminal to be operational within the first quarter of 2025. Once in service, it will provide Italy with an additional regasification capacity of 5 billion cubic meters per year, thus reaching 40 percent of the nation's total gas demand. According to Snam, the Ravenna FSRU project is worth about 1 billion euros (\$1.05 billion). On the other hand, Snam's FSRU-based LNG import terminal in the Italian port of Piombino has received more than 39 LNG cargoes since its launch last year. The 170,000-cbm Italis LNG, previously known as Golar Tundra, received its first commercial shipment from Eni in July last year. Eni booked regasification capacity at the FSRU-based facility as part of its strategy to diversify LNG supplies to Italy through its internationally produced equity gas. In April, the unit received its first LNG cargo from Eni's Congo FLNG project. Snam said in its financial report that the unit regasified a total of 2.45 billion cubic meters with 27 unloads from LNG carriers in the first nine months of 2024. Including its Panigaglia onshore terminal in Liguria, Snam regasified 3.42 bcm of LNG during the nine-month period, a rise of 44.3 percent year-on-year. Overall, Italian volumes decreased 9.5 percent year-on-year to 10.89 bcm in the nine-month period. Adriatic LNG volumes reached 6.76 bcm during the period, up 3.8 percent on year, while FSRU Toscana volumes dipped 78.5 percent year-on-year to 0.66 bcm due to scheduled maintenance. Italy's OLT Offshore recently received the first LNG carrier at its FSRU Toscana since the unit started maintenance earlier this year. Snam holds a 49.07 percent stake in the LNG terminal, while Igneo Infrastructure Partners owns a 48.24 percent share. Source: www.lngprime.com

TITAN, UECC EXPAND BIO-LNG SUPPLY DEAL

Norwegian shipping firm UECC has signed a new deal with Dutch LNG supplier Titan to bunker its pure car and truck carriers with bio-LNG. Under the new agreement, Titan will deliver most liquefied natural gas supplies to UECC's multi-fuel ships in the form of liquefied biomethane or bio-LNG for the remainder of 2024 and then most of 2025. Titan and UECC did not provide further details regarding the agreement. This deal expands upon UECC and Titan's established commitment to use bio-LNG. Since July this year, over 95 percent of the fuel delivered to UECC's PCTCs by Titan has been bio-LNG. This results in the avoidance of more than 30,000 tonnes of greenhouses gasses emitted, the partners claim. According to Titan's analysis, the quantity of bio-LNG in 2025, which Titan and UECC are realistically targeting, will avoid more than 75,000



tonnes of greenhouse gases being emitted. "That reduction is equivalent to the annual emissions of around 10,000 EU citizens or 540 million kilometres driven in an average car," it said. This transition to biomethane amplifies the success of UECC's 'Sail for Change' sustainability strategy, as it will exceed its carbon intensity targets, which use the same metric as the industry's forthcoming Fuel EU Maritime regulation. "In fact, the use of LBM will offer UECC overcompliance with Fuel EU Maritime across its overall fleet, and so it is actively exploring pooling and banking options," the partners said.

UECC expanding fleet

This move follows news that UECC has ordered two more LNG-powered hybrid PCTCs with a capacity of 4,500 ceu in China. The newbuild order placed with China Merchants Jinling Shipyard Nanjing is for two firm multi-fuel battery hybrid vessels scheduled for delivery in 2028, with options for two more units. If exercised, this would bring the number of LNG-powered newbuilds in the UECC fleet to nine after five similar deliveries within the past decade. In October 2022, UECC took delivery of the third and final LNG-powered hybrid PCTC from China's Jiangnan Shipyard. With an overall length of 169 meters and a width of 28 meters, Auto Advance, Auto Achieve, and Auto Aspire each have a car carrying capacity of 3,600 units on 10 cargo decks. The new vessels boosted the UECC dual-fuel fleet to five ships in total as it already operated two LNG-powered PCTCs, Auto Eco and Auto Energy, but these do not feature battery power. Source: www.lngprime.com

WOODMAC SAYS ASIA NEEDS MORE US LNG TO CURB **EMISSIONS**

Coal use and accompanying emissions from power generation in Asia will surge in the coming decades unless there is "significant" new supplies of LNG imported from the US, global consultancy Wood Mackenzie said December 2. In a study commissioned by the Asia Natural Gas & Energy Association (ANGEA), WoodMac found that continued growth in US LNG production was "essential" to balancing global markets and providing emerging Asian economies with an affordable and available alternative to coal, currently the dominant fuel in the region for power generation. WoodMac forecasts that Asian LNG demand will increase to 510mn tonnes/year in 2050 from 270mn tonnes/year in 2024, fueling economic growth and supporting greenhouse gas emissions reductions, alongside investments in renewables. The Wood Mackenzie study models two scenarios: one in which the current pause in LNG export permits to non-FTA countries is lifted in early 2025, as President-elect Donald Trump has promised, and one in which the pause stays in effect for a longer period. "If the pause is lifted and approvals and development of export facilities resume, then US LNG is expected to comprise a third of global supply by 2035," ANGEA CEO Paul Everingham said. "But if it remains in place and planned and proposed US LNG projects are not developed, there is a risk that LNG developments in other regions will fail to keep pace with anticipated demand growth." The study, he said, demonstrates there is considerable LNG supply poised to hit global markets through the second half of this decade. But beyond 2030, strong uncertainty surrounds what new supply growth will look like and how this might impact energy planning in Asia. "This aligns with ANGEA's experience engaging with key energy decision makers around Asia, who are planning to make long-



term investments in gas supply and infrastructure worth tens of billions of dollars," Everingham said. "The most common question they ask us is 'where is our gas supply for future decades going to come from?" If long-term LNG supplies aren't going to be available from the US or Australia, gas would need to be sourced from less cost-competitive projects elsewhere, with a likely outcome of higher LNG prices than what many emerging economies in Asia and Southeast Asia can afford. "Nations like Bangladesh, Vietnam, the Philippines, Indonesia and Malaysia will not be able to realise their plans to transition to gas-fired power if LNG prices are high and coal use, which hit record levels in both 2022 and 2023, will keep growing." Everingham said. "Without certainty of an affordable supply, their fallback position, quite understandably, is to stick with a fuel they are familiar with and which they know is likely to be inexpensive and plentiful; coal." Higher LNG prices. WoodMac's study suggests, would lead to a 30% reduction in its projections for Asian LNG demand in 2035, resulting in 100mn tonnes/year of additional CO2 emissions in that year alone. "This is roughly equivalent to the annual emissions of 20mn cars and will impact Asia's progress towards climate objectives," Everingham said. Source: www.naturalgasworld.com

RUSSIAN GAS FLOWS VIA UKRAINE TO EU, AUSTRIA EDGE UР

Russian gas exports to Europe via Ukraine were up by around 1.2% on Tuesday from Monday and nominations for gas to Austria from Slovakia also edged up, data from Gazprom and pipeline operator EU stream showed. Russian gas producer Gazprom said it would send 41.3 million cubic metres (mcm) of gas to Europe via Ukraine on Tuesday, up from 40.8 mcm on Monday. That's still slightly below levels of more than around 42 mcm seen in previous few months. Gazprom halted supply to Austria's OMV in mid-November due a contractual dispute over interrupted supply to Germany in 2022. Other companies stepped in to buy the freed-up volumes. Gazprom's average daily supply to Europe in November was up by 8.7% from a year earlier and up by 1.5% versus October, Reuters calculations showed. Nominations for flows to Austria from Slovakia were also slightly higher on Tuesday after dipping over the weekend. Nominations to the Czech Republic from Slovakia were in line with levels seen over the past month, data from EU stream showed. Nominations for natural gas flows into Slovakia from Ukraine were also a tad higher on Tuesday at 38.7 mcm after a drop over the weekend but remained around 7% below November averages. Source: www.naturalgasworld.com

US LNG EXPORTS TO EUROPE SURGE IN NOVEMBER ON HIGHER PRICES

U.S. LNG exports to Europe surged in November as the world's largest producer of the super chilled gas sent more cargoes to the continent and fewer to Asia and Latin America, according to preliminary data from financial firm LSEG. European natural gas prices climbed in November to their highest levels in two years on fears remaining Russian pipeline supplies to Europe will be halted or face further curtailment. European natural gas prices averaged \$12.90 per mmbtu in November, more than a



dollar higher than \$11.79 in October and higher than \$12.32 in September, with the benchmark front-month contract at the Dutch TTF hub reaching 49.03 euros per megawatt hour on Nov. 22, equivalent to \$14.97 per million British thermal units (mmBtu). The United States is the world's largest LNG exporter and played a major role in 2022 after Russia's invasion of Ukraine led to sharp reductions in Europe's access to Russian gas imports. Nearly seven of every 10 U.S. LNG cargoes headed to Europe in November as LNG exports rose to more than 7.75 million metric tons (MT), up from 7.56 MT in October, with cooler weather favoring higher output, according to LSEG data. Exports to Europe reached 5.09 MT in November or 68% of total LNG exports, up from 3.65 MT, or just under 48% of total exports recorded in October. Asia accounted for about a fifth oftotal exports, according to LSEG data. The U.K. was a major player in the market, buying .81 MT, or one in every seven cargoes sold to the continent, according to LSEG data. With the arbitrage favoring Europe, U.S. LNG exports to Asia fell to 1.64 MT or 21% of total exports in November, from 2.67 MT or 35% in October, LSEG data showed. There were fewer U.S. LNG cargoes destined for Latin America in November with only .58 MT sold to the U.S. neighbors in November, down from .9 MT in October, LSEG data showed. There were three cargoes sent to Egypt for a total of .23 MT and three cargoes for a total .21 MT that were for orders with no set destination as of Nov. 30. U.S. producers have been ramping up output as the weather cools with top exporter Cheniere Energy LNG.N leading the way. On Monday, Cheniere was expected to pull over 5 billion cubic feet (bcf) of natural gas for the fifth time in seven days at its Sabine Pass, Louisiana, export plant, according to LSEG data. Overall U.S. LNG natural gas demand averaged 13.65 bcf per day in November and could have been higher had the second-largest U.S. LNG exporter, Freeport LNG, not experience several outages in November, LSEG data showed. With the United States expecting first LNG in December from Venture Global's 20 MTPA Plaquemines LNG plant in Louisiana and Cheniere's 10 MTPA midscale expansion project, also in the Pelican state, this month could challenge the U.S. record LNG production. Source: www.naturalgasworld.com

RUSSIA'S JAN-NOV LNG EXPORTS UP 5%, DATA SHOWS

Russia's January to November exports of liquefied natural gas (LNG) increased by 4.7 % from a year earlier to 29.1 million metric tons with just over half going to Europe, LSEG data showed on Monday. Europe took around 14.7 million tons, or 51% of total Russian exports, in the first 11 months of the year. Total supplies in November alone were stable, at 2.9 million tons, according to the data. October data was revised down to 2.87 million tons from an initially reported 2.97 million tons. Last month, supplies to Europe rose to 1.27 million tons from 1.0 million tons in October 2024 and declined from 1.66 million tons in November 2023. The Novatek-led Yamal LNG plant increased exports in January to November by 6.6% year-on-year to 17.8 million tons. In November, shipments rose by 3% from October 2024 to 1.68 million tons but declined also by 3% from November 2023. According to data from the U.S. Department of the Treasury, U.S.-sanctioned Arctic LNG 2 has dispatched six cargoes since it started exports in August. A source familiar with the matter said Novatek shut down commercial operations at the first and only operational train of its Arctic LNG 2 project in October with no plans to restart it during winter. Sakhalin-



2, controlled by Gazprom, exported 8.9 million tons from the Pacific Island in January-November, down 2.2% year on year. Last month supplies from the plant rose to 1.0 million tons from 890,000 tons in October and 950,000 tons in November 2023. Source: www.naturalgasworld.com

QATARENERGY SIGNS LONG-TERM LNG DEAL WITH SHELL FOR DELIVERY TO CHINA

State-owned Qatar Energy QATPE.UL has signed a long-term sales and purchase agreement with oil and gas major Shell to supply it with liquefied natural gas (LNG) for delivery to China. The deal is for the supply of three million metric tons per annum year of LNG, said Qatar Energy in a statement on Monday, adding that the agreement will start in January 2025. Qatar Energy added that the agreement highlights the continued growth of China's LNG market, but did not say how long the duration of the supply deal with Shell would be. China is the world's largest importer of LNG. It shipped in 71 million metric tons of the superchilled fuel in 2023, and a record high of nearly 79 million metric tons in 2021, according to the country's customs data. Qatar is the third largest LNG exporter globally after the U.S. and Australia. It has exported 73 million metric tons of LNG so far this year, according to data from analytics firm Kpler. Source: www.naturalgasworld.com

JORDAN, EGYPT SEAL FSRU DEAL

Jordan will import LNG via Egypt's FSRU-based LNG terminal under a new deal revealed on Monday. According to a statement by Jordan's energy ministry, the two countries signed on Sunday a cooperation agreement in Cairo under which Jordan will import LNG via Egypt over the next two years. The deal was signed by Egypt's EGAS and Jordan's National Electric Company (NEPCO). Jordan will import LNG via Egypt until the end of 2026, after which it will use an onshore regasification LNG terminal currently being implemented in Agaba, the statement said. This will help Jordan to secure LNG supplies in case of emergencies. According to the statement, the deal includes determining priority use for the FSRU between Egypt and Jordan in case of simultaneous needs, with around 350 million cubic feet per day allocated to Jordan. The ministry said this would represent 50 percent of the LNG terminal capacity for a single FSRU or 25 percent for two FSRUs. Egypt's Ministry of Petroleum and Mineral Resources also confirmed the signing of the deal in a separate statement. However, the ministries did not provide any details regarding the FSRU-based terminal. Egypt currently imports LNG via Hoegh Evi's 170,000-cbm FSRU, Hoegh Galleon, which is located in Ain Sokhna. In May, Norwegian FSRU player Hoegh LNG confirmed it has signed a deal with Australian Industrial Energy (AIE) and EGAS to deploy the 2019-built FSRU Hoegh Galleon to Egypt. Hoegh said the agreement with EGAS is for an interim period of June 2024 to February 2026 and will help Egypt to address potential gas shortages and fuel power plants during summer months.



Energos Eskimo

In August, AG&P and its unit Gas Entec and local partners Issa Haddadin secured a contract from Agaba Development Corporation to build the onshore regasification LNG terminal at the port of Aqaba in Jordan. In addition, Oslo-based BW LNG, a unit of Singapore's gas shipping giant BW, recently signed a 10-year charter deal with NEPCO to deploy a floating storage unit (FSU) in Jordan. The vessel will be moored at the Sheikh Sabah LNG terminal. Jordan currently imports LNG via the 160,000-cbm FSRU, Energos Eskimo, located in Agaba. Energos Eskimo is owned by Energos Infrastructure, a part of US asset manager Apollo. Jordan has chartered the FSRU until 2025, while Egypt also uses this unit to secure natural gas supplies. Local reports suggest that EGAS would take on charter Energos Eskimo following its contract expiration in Jordan. With this move, Egypt would host two FSRUs next year. LNG Prime could not confirm this by the time this article was published. Source: www.lngprime.com

PARTNER TO ARGENTINA PAE, GOLAR WELCOME NEW FLNG PROJECT

Argentina's Pampa Energia has joined Pan American Energy and Golar LNG on a floating liquefied natural gas export project. Pampa said in a statement it will initially hold a 20 percent stake in Southern Energy (SESA), the entity established by PAE and Golar to undertake the FLNG project in Argentina, becoming its second-largest shareholder. The company did not provide financial details of the deal. The FLNG project involves deploying Golar LNG's floating liquefaction vessel, Hilli, in the San Matías Gulf. Río Negro province, alongside the construction of supporting infrastructure. The vessel will have a production capacity of 2.45 million tons per year (mtpa) of LNG, equivalent to 11.5 million cubic meters or 0.4 billion cubic feet of natural gas per da Operations are expected to begin in the second half of 2027. During the FLNG project's initial stage, Pampa has committed to supplying up to 3 mcm or over 100 mcf of natural gas per day from its Neuquina basin blocks, Pampa said. Pampa currently produces an annual average of over 13 mcm or 0.5 bcf per day, with peaks of 17 mcm or 0.6 bcf per day in winter in the basin. With an estimated investment of \$2.9 billion over the next 10 years, the FLNG project represents a strategic milestone to monetize Pampa's Vaca Muerta reserves and position Argentina in the global LNG market, the company said. Pampa noted that SESA has also applied for Argentina's incentive regime for large investments (RIGI), as the FLNG project meets the criteria.

YPF

This move follows an announcement by YPF CEO Horacio Marin. Marin said that Argentina's state-owned oil and gas company YPF will join the FLNG project developed by Pan American Energy and Golar LNG. The CEO said YPF will join this initiative that "marks a milestone in the energy industry of our country and that represents a big step to be able to carry out our Argentina LNG project, with which we expect to export \$15 billion in LNG by 2030." Earlier this month, Marin said that YPF is in negotiations with supermajors to become equity partners in the planned Argentina LNG project. The company also held



many meetings with potential off takers. YPF and Malaysia's Petronas recently decided to build their \$30 billion Argentina LNG export project in the Patagonian province of Río Negro. YPF and Petronas decided that the project would be in Sierra Grande, Río Negro instead of the initial Bahia Blanca, Buenos Aires plan. However, it appears that YPF's project partner, Petronas, is considering whether to continue developing Argentina LNG. Petronas "have to decide" by the end of December if the company is continuing, Marin said. A presentation posted on YPF's website shows that during its first phase, Argentina LNG would have two floating liquefaction units with a production capacity of around 9 mtpa. The following phases of the project entail the construction of an onshore modular plant which would progressively expand to achieve a final capacity up to 30 mtpa.

Hilli

Golar's FLNG Hilli, located offshore Cameroon's Kribi, recently offloaded its 122nd cargo of liquefied natural gas since it started operations in 2018. In July, Golar LNG entered into definitive agreements with PAE for a 20-year deployment of this FLNG in Argentina. The FLNG project will monetize Argentine gas, tapping into the vast resources from the Vaca Muerta shale formation in the Neuquen basin, the world's second-largest shale gas resources. The floating LNG player said in its third-quarter report that PAE issued a reservation notice reserving FLNG Hilli for the project in October 2024. The project's definitive contracts are subject to satisfying defined conditions precedent, including an export license, environmental assessment, and FID by PAE. "Work on the conditions precedent is progressing with their satisfaction and FID is expected within Q1 2025," Golar said. Golar said the FLNG project will initially utilize spare capacity in Argentina's existing pipeline network. Work to construct a dedicated pipeline connecting the FLNG terminal location directly to the Vaca Muerta shale formation is also being pursued. "This could support a multi-FLNG vessel project in Argentina, including opportunities for our MKII FLNG(s)," Golar said. Source: www.lngprime.com

JAPAN'S NYK ADDS NEWBUILD LNG CARRIER TO FLEET

Japan's shipping giant NYK has added another newbuild liquefied natural gas carrier to its large LNG fleet. South Korea's Samsung Heavy Industries delivered the 174,000-cbm Quest Kirishima on Monday. NYK said the vessel will be deployed under a time-charter contract with Q United Energy Supply & Trading, a unit of Kyushu Electric Power. Back in 2022, Kyushu Electric Power's trading unit and NYK signed a charter deal for this LNG carrier. The vessel features a WinGD-made dualfuel slow-speed diesel engine (X-DF) that can operate on marine gas oil or boil-off gas stored in the cargo tank. In addition, the ship has a reliquefication system that uses surplus boil-off gas. The LNG carrier is about 293 meters long and 46 meters wide. NYK's fleet of operational LNG carriers stood at 89 vessels at the end of September this year. The shipping firm had 91 operational LNG carriers at the end of March this year and 86 operational LNG carriers at the end of September last year. According to a presentation by NYK, its LNG carrier fleet included 76 owned or co-owned LNG carriers and 13 chartered vessels at the end of September this year. NYK previously said it has "obtained new long-term stable contracts in the LNG carrier business and expanded the number of vessels involved to more than 120 by FY2027." This includes pre-delivery



vessels with long-term charters. Besides LNG carriers, NYK is expanding its fleet of "environment-friendly" vessels, including LNG-fueled vessels, LPG-fueled vessels, and methanol-fueled vessels. According to NYK, its fleet included 17 LNG-fueled vessels and two LNG bunkering vessels at the end of September this year. Source: www.lngprime.com

MOLGAS WRAPS UP ITS FIRST UK LNG BUNKERING OP

European small-scale LNG player Molgas continues to expand its LNG bunkering network, having completed its first operation in the UK. The Madrid-based group completed the maiden truck-to-ship LNG bunkering operation in Troon, Scotland, on Thursday, Molgas bunkered LNG to the recently delivered LNG dual-fuel ferry, Glen Sannox, which is operated by the Scottish government-owned CalMac Ferries. This is the first of two LNG dual-fuel ferries Ferguson Marine (Port Glasgow) built for the Scottish government-owned Caledonian Maritime Assets (CMAL). The delivery of the two CMAL dual-fueled ferries has been pushed back for about six years partly due to financial issues at the yard, which has been owned by the Scottish government since December 2019. Previously, CMAL had expected to take delivery of the ships in early 2018. CalMac claims these are UK's first LNG dual-fuel ferries. In May last year, the firm awarded a contract to Molgas Energy UK to supply LNG for Glen Sannox and its sister vessel Glen Rosa. This project marks a further expansion for Molgas in Europe. Molgas said in an emailed statement the company plans to further expand its truck-to-ship LNG bunkering business and deliver across multiple ports in the UK. In addition to the operation in Troon with Calmac, the company aims to supply companies and ships in Inverness, Aberdeen, and Peterhead in Scotland. According to Molgas, the firm also plans to add English ports of Immingham and Sunderland to the network. Earlier this year, Molgas completed its first LNG bunkering operations in Italy and Belgium. Prior to Belgium, the group, owned by French private equity firm InfraVia Capital Partners, wrapped up its first LNG bunkering operation in France. Molgas also bought a 45 percent stake in Dutch LNG supplier Titan. Source: www.lngprime.com

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