



SK SHIPPING CARRIER DUO REMAIN OFFHIRE AFTER FOUR YEARS OF REPAIRS

But one vessel appears to be trialling a cargo as rows are said to rumble on among the owner, yard and tank designer. Two South Korean-owned LNG carriers have been out of action for over four years as the battle to find a repair solution for their cargo tank containment systems continues — but one has recently loaded test volumes of product. The 174,100-cbm SK Serenity and sistership SK Spica (both built 2018), which were both constructed with South Korea's home-designed KC-1 LNG containment system, have spent the bulk of their time since delivery anchored off the South Korean coast near Samsung Heavy Industries' Geoje Island facility, or in the yard undergoing repair work.

GTT wins appeal to suspend South Korean court decision on its LNG tank work

South Korean brokers said the ships featured in domestic news reports at the start of the year. One from KBS news mentions that one of the ship's tanks had undergone repairs on four occasions. But Kpler data shows that on 30 December the SK Serenity was loaded with LNG at South Korea's Samcheok LNG terminal. Since then, tracking data shows the vessel

making a long out-and-back voyage to the north of the Japanese archipelago, returning close to its departure point near its sistership on 22 January.

The SK Spica remains in ballast and at anchor. Sources told TradeWinds that legal action over the ships is ongoing among the vessel's cargo containment system designer Kogas-controlled KC LNG Tech, the shipbuilder SHI and owner SK Shipping. TradeWinds has contacted the ships' containment system designer KC LNG Tech for an update on the repairs.

The problems on the two Kogas-chartered vessels — which are the only full-size LNG carriers to have been fitted with KC-1 systems — were identified shortly after their deliveries in 2018. The SK Serenity lifted two cargoes from the US before icing was found on its hull suggesting a possible cargo leak and the ship was pulled from service. The SK Spica never loaded a shipment. Repairs started on the SK Serenity in late 2019 after long and difficult discussions between the parties. In February 2021, KC LNG Tech said repair work had been completed on the SK Serenity's No 2 tank. At the time, the company said it was waiting for the work to be signed off before tackling similar jobs in the ship's remaining tanks. Company officials said the SK Serenity was due to be returned to service in the second half of 2021 with its sistership to follow in 2022.

Ice-breaking LNG carrier makes round trip voyage to China in harsh conditions

At the time, work had yet to start on the SK Spica. Those following the ships said it had proved more complicated for the parties involved to agree on what was wrong with the vessel and how to fix it. The KC-1 containment system was to be South Korea's rival to GTT's widely adopted Mark III membrane option. Two small-scale 7,500-cbm LNG carriers have been successfully fitted with the KC-1 system. These vessels are chartered to Kogas, and ship cargoes from South Korea's Tongyeong LNG terminal to the southern resort destination of Jeju Island. KC LNG Tech has previously spoken about developing a new system, dubbed KC-2. Source : www.tradewindsnews.com

GASLOG PARTNERS GETS BUYOUT OFFER FROM GASLOG

NYSE-listed LNG carrier owner GasLog Partners said it had received a buyout offer from GasLog. Under the unsolicited non-binding proposal, Peter Livanos-led GasLog proposes to acquire all of the outstanding common units representing limited partner interests of GasLog Partners LP (GLOP) not already beneficially owned by GasLog. GasLog plans to structure the transaction as a merger, with GLOP surviving the merger as a wholly-owned subsidiary of GasLog. Under the proposed transaction, each common unit would receive overall value of \$7.70 per common unit in cash, consisting in part of a special distribution by the partnership of \$2.33 per common unit in cash, according to a statement by GasLog Partners. The cash would be distributed to the partnership's unitholders immediately prior to the closing of the proposed transaction and the

remainder to be paid by GasLog as merger consideration at the closing of the proposed transaction. The deal is worth about \$398 million. GasLog currently owns 15,621,602 common units, representing about 30.2 percent of the total outstanding common units and 100 percent of the outstanding Class B units representing limited partner interests of GLOP. In addition, GasLog owns all of the general partner interests in GasLog Partners through its wholly-owned subsidiary GasLog Partners GP LLC, the general partner of GLOP. According to GLOP, its board of directors has authorized its conflicts committee, consisting only of non-GasLog affiliated directors, to retain advisors and to review, evaluate, negotiate and accept or reject the proposed transaction.

38 LNG carriers

GLOP's fleet consists of 12 wholly-owned LNG carriers as well as two vessels on bareboat charters, with an average carrying capacity of about 159,000 cbm. In total, the fleet of both GasLog and GLOP consists of 38 LNG carriers with 34 on the water plus four under construction. Back in June 2021, GasLog completed its transaction with BlackRock's Global Energy & Power Infrastructure team, taking the firm private. source : www.rivieramm.com

INDIAN OIL, GAIL IN LNG OFFTAKE TALKS WITH ADNOC

Indian state-run energy firms Indian Oil Corp. (IOCL) and Gail are in talks with Abu Dhabi National Oil Company (ADNOC) for long-term LNG supply contracts. The discussions are at a fairly advanced stage, Mint reported on January 26 quoting India's ambassador to the UAE Sunjay Sudhir. The south Asian country is holding talks with the UAE to work out a mechanism for long-term offtake from an upcoming LNG plant in Fujairah, the newspaper reported. "Two of our companies, Gail and IOCL are in discussions with ADNOC for long-term LNG contracts. Right now, as we speak, discussions have progressed very, very far. And it's just a question of getting the right numbers. We are very hopeful of concluding it soon," said Sudhir. Gail and ADNOC in November last year signed a memorandum of understanding to explore collaboration opportunities in LNG supply and decarbonisation. ADNOC's Fujairah project - comprising two 4.8mn metric tons/year LNG trains - is expected to increase the state-run company's LNG production capacity by 9.6mn mt/yr, as it looks to respond to the growing global demand for natural gas. ADNOC has appointed US-based engineers McDermott International as the design contractor. The design stage is expected to be followed by the award of an EPC contract in 2023. source :

www.naturalgasworld.com

PHILIPPINES GREENLIGHTS SEVENTH LNG PROJECT, GEARS UP FOR GAS IMPORTS

The Philippines' Department of Energy said on Friday it has approved a \$67-million LNG import terminal project, the country's seventh such facility, as it gears up for the launch of its liquefied natural gas industry this year. The DOE said in a statement it has issued a notice to proceed to Samat LNG Corp, which plans to construct a small-scale LNG terminal in

Mariveles municipality in Bataan province, about 60 kilometres (35.2 miles) north of the capital Manila. The Southeast Asian country will need to rely on LNG imports to fuel gas-fired power plants with a combined capacity of more than 3,000 megawatts, as output from its Malampaya gas field in the South China Sea is expected to continue declining and be depleted by 2027. Aside from importing LNG for power generation and transport sectors, the Philippines is also ramping up efforts to discover new indigenous gas resources, as it seeks to phase out coal-fired power plants. Under its proposal, Samat LNG aims to begin commercial operation by the first half of 2024, with a capacity of 200,000–400,000 tonnes of LNG annually. It plans to supply gas to fuel small-scale power producers, manufacturing companies, and transport fleets. Three of the government-approved LNG import terminal projects are expected to begin commercial operations this year, including those of Singapore-based Atlantic, Gulf and Pacific and Philippine power producer First Gen Corp. Australia-listed Energy World Corp's LNG terminal is also almost complete, according to Laura Saguin, head of the DOE's natural gas management division. Energy Secretary Raphael Lotilla, in an interview with Reuters in October, said allowing LNG imports should not be seen as a disincentive to renewable energy development, which the government has been supporting. source :

www.naturalgasworld.com

EXPRO PENS \$300MN LNG FACILITY CONTRACT IN CONGO

Energy services provider, Expro Group, has signed a \$300mn contract with Eni for an LNG pre-treatment facility in Congo, it said on January 25. Under the 10-year contract, Expro will design, construct, operate and maintain a fast-track onshore LNG pre-treatment facility, part of Eni's Marine XII development offshore Congo. The facility will be built near the Litchendjili gas plant – which supplies gas to the adjacent Centrale Electrique du Congo (CEC) Pointe-Noire power plant. The facility will allow incremental gas production for low carbon electricity generation, Expro said. It will link to Eni's offshore floating LNG (FLNG). The facility is expected to process approximately 80mn ft³/day of gas. Eni last year said it is committed to developing the huge gas resources of Congo; it currently supplies gas to the Congo Power Plant, which guarantees 70% of the country's electricity production. In August 2022, the Italian major bought the Tango FLNG plant that will be used to export LNG from Congo. Eni is planning to develop two FLNG projects in the African nation as part of Marine XII development. Eni is looking to source more non-Russian gas in light of the Ukraine war. The company last year signed an agreement to supply more LNG from its Egyptian upstream portfolio in partnership with the national government. source :

www.naturalgasworld.com

LNG CROATIA RECEIVES FIRST LNG CARGO FROM MOZAMBIQUE

LNG Croatia has received its first LNG cargo from Mozambique, it said on January 23. The company said that the vessel British Mentor docked at the floating terminal on January 23 and will leave on January 25. Croatia became the world's 40th importer of LNG in 2021 and has since announced plans to double Krk's regas capacity to 6.1bn m³/year. LNG Croatia last

year said the floating terminal located on the island of Krk will begin sending LNG to gas-powered ships and vehicles across Italy and eastern Europe, under a joint collaboration agreement struck by its operator Prvo Plinarsko Drustvo and Avenir LNG. Mozambique shipped its first LNG cargo in November last year. The Coral Sul FLNG has a gas liquefaction capacity of 3.4mn metric tons/year and will put in production 450bn m3 of gas from the Coral reservoir, located in the offshore Rovuma basin. Coral Sul FLNG is the first floating LNG facility ever deployed in the deep waters of the African continent.

source : www.naturalgasworld.com

GRAIN LNG POSTS RECORD-BREAKING YEAR, WITH 60% JUMP IN SHIPMENTS

As the energy crunch grips Europe, its largest LNG receiving terminal responds, welcoming 91 ships in 2022 and pushing 40% more gas into the UK's grid than 2021. Smashing an 11-year-old record, the UK's Grain LNG terminal recorded its busiest year ever in 2022, welcoming 91 ships, as the flexibility of LNG proved critical in helping Europe meet its energy security needs. Europe's largest LNG receiving terminal, Grain LNG, had 60% more ship arrivals in 2022 than in 2021, according to owner National Grid. The previous record year was set in 2011, when the terminal unloaded 66 ships. During 2022, Grain LNG sent over 82 TWh into the UK's National Transmission System (NTS), compared to 59 TWh in 2021, an almost 40% increase. Once LNG is offloaded and converted to natural gas, it is sent out either to the UK's NTS, or exported via pipeline to Europe. During a cold snap in December, Grain LNG broke several records, reaching over 90% of its capacity while pushing out 600 GWh of gas into the UK's network during the month. This compares to between 200 and 400 GWh in a typical December. The UK has been pivotal in refilling European gas reserves, which are in the region of 100 billion cubic metres (bcm). During this winter season in the western hemisphere, the UK was responsible for filling about 16% of Europe's gas reserves. With Europe pivoting from Russian pipeline gas, LNG has filled the gap, enabling the continent to reach its 90% storage target. Q4 2022 was a record quarter for Grain LNG, with 37 ships calling at the terminal between September and December, compared to a seasonal average of 16. Prior to the Russia-Ukraine war, the UK received around 30% of its LNG from Russia. Now, around a third of the ships calling at Grain LNG are from the US. "Over the last year we have seen a real uplift in LNG imports from the US," says Grain LNG importation terminal manager Simon Culkin. Calling it a "remarkable year" for Grain LNG, Mr Culkin, says: "UK energy security is dependent on a diverse mix of energy generation and sources, and LNG is an important part of that." And, as LNG Shipping & Terminals previously reported, the terminal,

originally commissioned in the 1980s, is also undergoing a pioneering midlife upgrade to meet future energy demands. Speaking to LNG Shipping & Terminals, National Grid (Grain LNG) technical development manager James Hooker says the expansion has three components: one to increase storage capacity; the second to increase regasification capacity; and a third to extend the life of the asset. “The expansion project is critical to the UK security of energy supply and also Europe,” says Mr Hooker. Future-proofing is a central element of extending the asset life of Grain LNG. National Grid recently commissioned an initial study on what needs to be done at the terminal to meet National Grid’s net-zero targets and transition for the energy shift. One of the technologies being considered is carbon capture and storage, notes Mr Hooker. “We have access to jetties, and we are looking at whether we can extend that infrastructure in preparation for carbon capture and storage and berth smaller ships. At the moment, the jetties are built for LNG tankers,” he says. source :

www.rivieramm.com

RUSSIA’S SAKHALIN PLANT PRODUCED ABOUT 11.5 MILLION TONNES OF LNG LAST YEAR

Russia’s Sakhalin-2 LNG export terminal has produced about 11.5 million tonnes of LNG last year, according to Sakhalin Energy LLC, the new plant operator controlled by Gazprom. The export terminal produced and shipped record 11.6 million tonnes of LNG in 2021. Sakhalin Energy said in a statement on Thursday that “first Sakhalin oil and LNG cargoes have been successfully delivered to the buyers in Asia Pacific this year.” Currently, Sakhalin Energy continues hydrocarbon production and shipping operations “in normal mode in line with the schedule,” it said. In 2022, the company said it had exceeded the targets, producing about 11.5 million tonnes of LNG and 3.7 million tonnes of Sakhalin Blend oil. “All products were delivered to the buyers on time in full compliance with the SPA terms,” it said. The major LNG markets were Japan, China, South Korea, and Indonesia, while oil was mainly sold to China, South Korea, and Japan, the firm said. “Amidst unprecedented pressure on its business and operations caused by external factors, Sakhalin Energy was able to ensure stable and safe business processes, while exceeding the targets,” **Andrey Oleinikov**, Sakhalin Energy’s managing director, said in the statement. “All the time we remained fully committed to our obligations, including the one to secure reliable gas supply to the Sakhalin Oblast and the Far East. Given the importance of the project for the whole region, the company has been implementing a rational field development scenario to ensure stable production and full implementation of social development plans,” he said. President Vladimir Putin signed a decree in June last year allowing Russia to take charge of the Sakhalin-2 project due to Western sanctions imposed on Russia. Sakhalin Energy LLC launched its operations on August 19. Shell had a 27.5 percent interest in the original entity, while Russia’s Gazprom had a 50 percent operating stake. Japan’s Mitsui

owned 12.5 percent stake and compatriot Mitsubishi had 10 percent in the plant. Gazprom remains the operator of the new entity, while Mitsui and Mitsubishi won approvals from the Russian government to take stakes in the new operator. Shell said it would not take equity in the new terminal operator. The Sakhalin-2 LNG facility started producing LNG back in 2009 with a design capacity of 9.6 mtpa, but due to technical improvements and upgrades, together with weather and temperature conditions, production rose by 20 percent. Source : www.rivieramm.com

GERMANY'S WILHELMSHAVEN FSRU TERMINAL GETS ANOTHER US LNG CARGO

Germany's first FSRU-based import facility in Wilhelmshaven has received another liquefied natural gas (LNG) cargo from the US, according to shipping data. The 2021-built 174,000-cbm LNG carrier, Diamond Gas Victoria, owned by a joint venture led by NYK and chartered by a unit of Mitsubishi, arrived at the FSRU in Wilhelmshaven on Monday, according to its AIS data provided by VesselsValue. Diamond Gas Victoria delivered a cargo to the 170,000-cbm FSRU Hoegh Esperanza, owned by Norway's Hoegh LNG, from Sempra's Cameron LNG terminal in Louisiana, the data shows. Prior to this, the 2021-built 174,000-cbm LNG carrier, Maran Gas Ithaca, delivered the first commercial cargo from Cheniere's Sabine Pass LNG terminal in Louisiana while the 174,000-cbm LNG carrier, Maria Energy, brought a cargo from Venture Global LNG's Calcasieu Pass terminal in Louisiana. The Calcasieu Pass shipment was used for the commissioning process. Hoegh Esperanza arrived in Wilhelmshaven on December 15 while Uniper and its partners launched the facility two days later. Prior to arriving in Wilhelmshaven, the FSRU took a cargo in Spain at the Saggas regasification plant in Sagunto operated by Enagas as well. The vessel started supplying this gas to the German grid on December 21. Uniper developed the Wilhelmshaven FSRU-based facility on behalf of the German government, along with Niedersachsen Ports that performed the works on the port infrastructure, such as the jetty, while OGE was responsible for the 26 kilometers long connecting pipeline.

FIRST CARGO FROM ANGOLA

Besides these US LNG shipments, Hoegh Esperanza is expected to receive its first LNG cargo from Angola this week. The 2011-built 160,000-cbm LNG carrier, Malanje, owned by a consortium consisting of NYK, Mitsui, and Seapeak arrived offshore Wilhelmshaven on Monday, its AIS data shows. Malanje is carrying a cargo from the Chevron-operated Angola LNG plant in Soyo, the data shows. The Wilhelmshaven facility is the first of six FSRU-based terminals in Germany that are expected to go online by winter 2023/2024. Moreover, the government backed the charter of five FSRUs while Deutsche ReGas built the first private FSRU-based facility in Lubmin. The five government-backed FSRUs will be operated by new state-owned firm Deutsche Energy Terminal GmbH. Earlier this month, Deutsche Regas officially launched its FSRU-based

LNG import terminal in Lubmin, Germany's second such facility, while the 170,000-cbm Hoegh Gannet, the country's third FSRU and the second backed by the government, arrived in Brunsbuettel last week. Source : www.lngprime.com

ARROYO IN US LNG BUNKERING MOVE

Houston-based Arroyo Investors said it had closed an investment in Seaside LNG, which owns the LNG bunkering barge, Clean Canaveral, and a stake in the JAX LNG production facility in Jacksonville, Florida. According to a statement by Arroyo, the investment manager focused on power and energy infrastructure assets recently closed the investment in Seaside LNG and its affiliated entities. Arroyo did not provide any additional information regarding the deal. Seaside LNG has a 50 percent interest in the small-scale facility JAX LNG with a capacity of 360,000 gallons per day. In addition, Seaside owns the 5,400-cbm LNG bunkering barge, Clean Canaveral, and tug Polaris through Polaris New Energy. Polaris New Energy's articulated tug and barge unit completed its first LNG bunkering operation in March last year in Jacksonville. The barge sources fuel from Jax LNG, where Pivotal LNG also has a 50 percent stake. US-based Fincantieri Bay Shipbuilding is also building the second LNG bunkering barge for Seaside LNG. **Brandon Wax**, managing director at Arroyo, said in the statement that the company believes this investment represents a "differentiated opportunity" for Arroyo. With this move, Arroyo will own and operate infrastructure assets that are "strategically positioned to help facilitate the global marine industry's transition from traditional heavy fuel to cleaner LNG, in compliance with IMO 2020," he said. Wax added that, as an economic and "environmentally friendly" fuel supply alternative, Arroyo believes LNG is a "key component" in the transformation of the energy landscape. Source : www.lngprime.com

EUROPE NOW HAS 635 LNG FUELING STATIONS

European network of liquefied natural gas (LNG) fueling stations for vehicles reached 635 stations, as it continues to grow despite high prices, according to NGVA Europe. Besides 635 LNG stations, there are 4159 CNG fueling stations for vehicles in Europe, data by the Brussels-based association shows. Since late September in 2022, NGVA added some 50 LNG fueling stations to its database, mostly from Germany. Germany continues to host the highest amount of LNG stations for trucks with 162 stations, followed by Italy with 130, the data shows. Moreover, Spain has 90 LNG filling stations, France 70, the Netherlands 33, Sweden 28, Belgium 26, Poland 24, Finland 15, and the UK 14. The number of LNG fueling stations for trucks reached 600 stations some three months ago while NGVA Europe announced in February last year that the LNG fueling network had doubled its size in less than two years, reaching a new milestone of 500 LNG stations. There has been an increasing share of renewable gas in its fuel mix, or bio-LNG, as well. Some of the main players investing in European bio-LNG production for supply to the heavy transport sector include Shell, Scandinavian Biogas, Gasum, as well as other

firms in the Netherlands, Germany, Italy, etc. Spain's Molgas also made one the notable moves lately in this market by purchasing a network of French LNG and CNG fueling stations for trucks from Air Liquide. Source : www.lngprime.com

CROATIAN FSRU RECEIVES FIRST LNG CARGO FROM MOZAMBIQUE

State-owned terminal operator LNG Croatia has received the first LNG cargo from Mozambique since the launch of operations of the Krk FSRU-based facility in January 2021. LNG Croatia said in a short statement that the 2019-built 173,400-cbm, British Mentor, had arrived at the 140,000-cbm FSRU on January 23. The LNG terminal operator said that this is the 53rd LNG cargo in total and the first LNG cargo to arrive from Mozambique to the FSRU-based terminal. According to its AIS data provided by VesselsValue, the vessel owned by Kmarin and chartered by BP, loaded the cargo at Eni's 3.4 mtpa Coral Sul FLNG located offshore Mozambique at the end of December. Eni shipped the first cargo from this FLNG in November, adding Mozambique to the LNG producing countries. BP takes all of the volumes produced at the FLNG as part of a long-term deal. Prior to arriving at the Krk FSRU-based facility, British Mentor was anchored offshore Piraeus in Greece, the data shows. European LNG demand spiked in the last 12 months as European countries look to boost energy security and replace Russian pipeline gas. Due to high demand, Croatia also decided to further increase the capacity of its FSRU-based LNG import terminal. The capacity of the terminal will rise to 6.1 bcm and the expansion project will cost about 180 million euros (\$196 million) and includes the construction of a new pipeline from Zlobin to Bosiljevo. The Croatian FSRU mainly receives LNG volumes from the US. It also received shipments from Egypt, Nigeria, Trinidad and Tobago, and reloads from Dunkirk, Zeebrugge, and Barcelona. Source : www.lngprime.com

HARVEST AND IGU WORKING ON SMALL LNG PLANT IN ALASKA

Houston-based Harvest Midstream is joining forces with Alaska's Interior Gas Utility (IGU) to construct a small LNG plant and truck loading facility near Deadhorse, Alaska. In that regard, the two firms signed a long-term supply agreement from the natural gas treating and liquefaction facility, according to a statement by Harvest issued last week. The facility would be capable of producing 150,000 gallons of LNG per day with an ability to expand, Harvest said. The amount of feed gas for the facility would be about 15 million cubic feet per day and would be supplied from existing production at Prudhoe Bay, the firm said. After processing at the facility, the LNG would be transported by truck to Fairbanks and distributed through IGU's existing infrastructure, according to Harvest. Pending regulatory approvals, Harvest expects to start construction of the facility in the summer of 2023 and to launch operations in late 2024. According to its website, utility IGU already operates a

liquefaction facility, Titan, located in Cook Inlet. On the other hand, privately held midstream service provider Harvey operates various crude oil and natural gas gathering, storage, and transportation assets across the United States. Back in 2020, the firm purchased BP's upstream assets in Alaska, including a 49 percent interest in the Trans-Alaska Pipeline System (TAPS) as well as 49 percent of Alyeska Service Company. Alaska hosts the closed Kenai LNG export plant that Marathon's unit Trans-Foreland Pipeline aims to bring back online as an import facility while state-owned Alaska Gasline Development Corporation is developing the Alaska LNG export project. Source : www.lngprime.com

GERMANY'S THIRD FSRU ARRIVES IN BRUNSBUETTEL

The 170,000-cbm Hoegh Gannet, Germany's third FSRU, has arrived in Brunsbuettel, where it will soon start the commissioning phase as part of the Elbehafen LNG terminal. According to its AIS data, the 2018-built FSRU arrived at Brunsbuettel's Elbehafen port on Friday morning local time. German energy firm RWE, the developer of the government-backed Elbehafen LNG facility near Hamburg, confirmed the FSRU arrival in a statement later on Friday. The firm said that the vessel would initially operate at an existing berth in the Elbehafen of Brunsbuettel Ports. From the end of 2023, the FSRU will be moved to a new jetty to the west of the Elbehafen and this jetty will be built and operated by Brunsbuettel Ports. RWE also said that Reganosa would operate and maintain the land-based infrastructure of the facility while Marine Service supports the project with technical know-how as a development partner for the terminal design. As previously reported, the FSRU picked up a partial cargo at Reganosa's Mugardos LNG import terminal in the Ferrol port in Spain prior to heading to Germany. A spokesman for RWE told LNG Prime on Thursday that following arrival of the unit in Brunsbuettel, "a commissioning and trial operation phase of several weeks begins" and that the company expects to start commercial operation in the second half of February. RWE said in the new statement on Friday that it would temporarily move the vessel during the commissioning phase. The trial operations will include connection to the newly built gas pipeline so that first gas volumes can be fed into the German gas network from the beginning of February, it said.

First LNG tanker

Following tests, the FSRU will receive the first LNG delivery from UAE's Adnoc as part of a deal RWE signed in September last year. Adnoc agreed under the deal to deliver the LNG shipment from the 6 mtpa Das Island plant off the coast of Abu Dhabi to the Elbehafen LNG terminal. Together with Uniper and EnBW, RWE is responsible to supply LNG to the FSRU Hoegh Gannet. According to current plans, the first LNG cargo would arrive at Brunsbuettel at the end of January 2023, RWE said.

Third FSRU-based facility

Hoegh LNG announced a binding 10-year charter deal with Germany for its 170,000-cbm FSRU Hoegh Gannet on Thursday. The firm signed the deal with the German Federal Ministry for Economic Affairs and the vessel would be located at the Elbehafen LNG project in Brunsbuettel, operated by new state-owned firm Deutsche Energy Terminal GmbH. This is Hoegh's second 10-year deal with the German Federal Ministry for Economic Affairs and Climate Action after the contract for the FSRU Hoegh Esperanza. Hoegh Esperanza has already received two cargoes in Wilhelmshaven, the home of Germany's first FSRU-based terminal. The Elbhafen LNG terminal will be the third operational FSRU-based terminal in Germany and the second out of five backed by the German government. Deutsche Regas officially launched its FSRU-based LNG import terminal in Lubmin, Germany's second such facility and the first private terminal, on Saturday. TotalEnergies chartered FSRU Neptune, which is 50 percent owned by Hoegh, to Deutsche Regas. Source : www.lngprime.com

CHINA'S CNOOC SAYS WORLD'S LARGEST LNG BUNKERING SHIP COMPLETES FIRST OP

China's state-owned energy giant CNOOC has completed the first operation with what it says is the world's largest liquefied natural gas (LNG) bunkering vessel. CNOOC's gas and power unit said in a statement that the 30,000-cbm, Hai Yang Shi You 301, had completed the bunkering operation in the Yantian port in Shenzhen on January 18. The LNG bunkering ship delivered about 6,000 cbm of LNG to the 23,000-teu CMA CGM Concorde during the operation, according to CNOOC Gas & Power. CMA CGM took delivery of this giant LNG-powered containership, one of the nine ULCVs, from China's Hudong-Zhonghua in April 2021. The LNG-powered giant features WinGD's dual-fuel engines as well as GTT's 18,600-cbm fuel tank. CNOOC Gas & Power said this LNG bunkering operation with Hai Yang Shi You 301 confirms the company's ability to provide LNG bunkering services for international ships. In November last year, CSSC's Guangzhou Shipyard International (GSI) converted this 184.7 meters long LNG carrier with Wartsila DF engines and TGE Marine type C tanks to enable it to perform ship-to-ship LNG bunkering operations. The converted vessel now has a capacity to deliver up to 1650 cubic meters of LNG per hour during an STS operation. Besides the Yantian port, CNOOC Gas & Power said it plans to expand LNG bunkering operations to other ports in 2023, such as the Ningbo port and the Guangzhou port. In November last year, state-owned energy giant CNPC completed the first ship-to-ship LNG bunkering operation with ENN's newbuild in the Yantian port. With this move, the port in Shenzhen became the second port in China to provide ship-to-ship LNG bunkering services after Shanghai, where Hai Gang Wei Lai fuels CMA CGM vessels as well. Source : www.lngprime.com

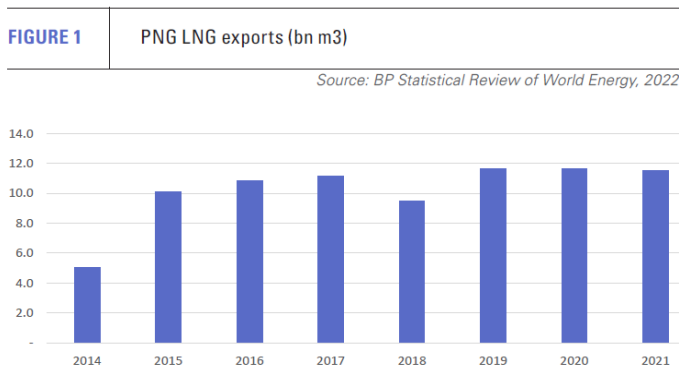
PNG INCHES TOWARDS MORE LNG

With the world's biggest LNG markets on its doorstep in East Asia, untapped proven gas reserves and experienced developers, all the ingredients are in place for Papua New Guinea (PNG) to expand its LNG capacity. US major ExxonMobil,

France's TotalEnergies and Australia's Santos seem committed to the country, and it looks likely that a final investment decision will be taken on at least one new planned project next year.

“The final investment decision on Papua LNG is due about the end of 2023, with first production timetabled for end-2027.”

The existing LNG project, PNG LNG, began production in 2014. ExxonMobil had originally investigated the possibility of piping gas 3,000 km south to Australia, presumably for LNG production on the north coast, but the Papuan government preferred domestic liquefaction to retain more of the project's economic benefits within the country. The fact that PNG LNG involved tapping onshore gas fields gave the government's argument more weight than the similar debate in Timor-Leste over domestic liquefaction or piping gas south to Australia. The liquefaction plant was eventually built at Caution Bay, 20 km northwest of the capital Port Moresby, on the south coast of PNG's Central Province. ExxonMobil PNG operates the facility with a 33.2% stake. The remaining equity is held by Santos (42.5%), PNG state-owned Kumul Petroleum Holdings (16.8%), JX Nippon Oil & Gas Exploration Corporation (4.7%) and another PNG state firm, Mineral Resources Development Company (2.8%), which represents landowner equity interests in both the mining and hydrocarbon sectors. Santos increased the size of its stake last year when it completed the takeover of original investor Oil Search. However, Kumul, which is owned by the National Petroleum Company of PNG (Kroton), offered Santos \$1.4bn for an additional 5% in late September. The Australian firm must decide before 31 December 2022 whether to accept the offer. The deal is dependent on Kumul's ability to raise the necessary finance and on no pre-emptive rights being exercised.



The managing director of Kumul Petroleum Wapu Sonk said that the purchase would “ensure a boost in our annual cash flow and significantly raise national ownership in the project”. The Kumul deal would increase the state's interest in PNG LNG to the level that it is now automatically permitted to purchase in any gas project that has not yet been completed, as stipulated under legislation passed since the PNG LNG plant was completed. The plant was originally built with two

trains producing a combined 6.9mn mt/year, but improvements have boosted this to around 9mn mt/year. It is supplied

with 1bn ft³/d of gas from fields in Hela Province via a 697 km pipeline, of which 407 km runs offshore to avoid mountainous terrain and culturally significant sites. Mitsui O.S.K. Lines operates a fleet of four LNG carriers on behalf of PNG LNG to ship the gas to the project’s four main customers: Osaka Gas, Tokyo Electric Power Company, Sinopec and CPC Corporation.

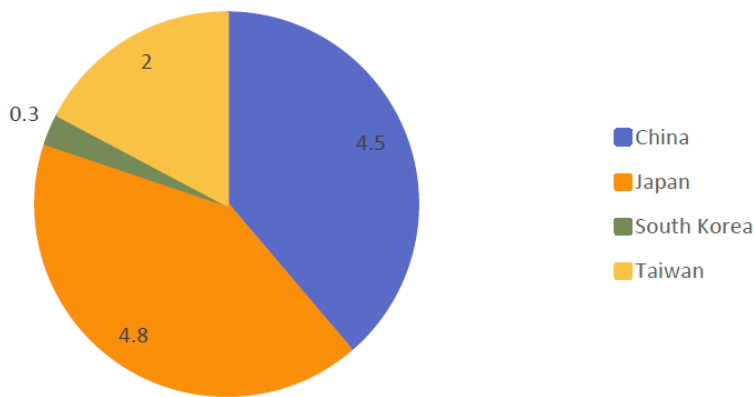
Papua LNG

Additional trains will now be added to the PNG LNG Caution Bay site by a separate consortium, although with some of the same equity investors. The Papua LNG consortium incorporates operator Total E&P PNG with a 40.13% stake, alongside partners ExxonMobil (37.03%) and Oil Search (22.84%), although it is likely that the state, possibly in the form of Kumul Petroleum Holdings, will take an equity share at some point.

FIGURE 2

PNG LNG exports by destination, 2022 (bn m3)

Source: GIIGNL



The project will comprise two 2.7mn mt/yr trains, which will be supplied by a 320 km pipeline from Total’s Elk and Antelope onshore fields on licence PRL 15. The project is to include carbon capture and sequestration technology to re-inject CO₂ from the fields themselves back into the reservoirs. The project consortium has been keen to highlight their efforts to minimise greenhouse gas emissions. Project negotiations were held up during the COVID-19 pandemic, requiring the

licence to be extended in February 2021. However, this July, TotalEnergies announced that it would launch the first phase of front-end engineering design (FEED) studies for the project’s upstream production facilities, while the downstream FEED studies are already underway. In August, Total awarded the FEED contract for the upstream facilities to Technip Energies. The consortium aims to launch the integrated FEED by the end of 2022. The final investment decision on Papua LNG is due about the end of 2023, with first production timetabled for end-2027. The addition of extra capacity at the existing LNG plant will require wider infrastructural improvements, including the extension of the existing terminal quay and the construction of additional LNG storage capacity and condensate tanks. Julien Pouget, Senior Vice President Asia Pacific for Exploration & Production and Renewables at TotalEnergies, said: “The Papua LNG project is well positioned to contribute to growth in LNG supply worldwide, especially for customers in Asia seeking to decarbonize from coal to gas, in line with our strategy to lower global greenhouse gas emissions.”

P’nyang project

There are also plans for a third 2.7mn mt/yr train, which would be supplied by the P’nyang Field in Western Province, which has estimated reserves of 4.36 trillion ft³ of gas. After years of uncertainty, the P’nyang consortium of ExxonMobil (49%), Santos (38.5%) and JX Nippon (12.5%) signed an agreement in February with the PNG government relating to the project’s fiscal terms.

TABLE 1 Long-term contracts in place - PNG LNG Source: IIGNL

Country	Company	Volume (mn mt/ yr)	Start date	End date	Delivery format
Portfolio	BP Singapore	0.9	2018	2023	DES
Taiwan	CPC	1.2	2014	2023	DES
Japan	JERA	1.8	2014	2034	DES/FOB
Japan	Osaka Gas	1.5	2014	2034	DES/FOB
China	Sinopec	2	2014	2034	DES

ExxonMobil is in talks with the government over the latter’s interest in buying equity in the project. The partners have already to ring fence up to 5% of P’nyang for domestic power generation, probably in Western Province, which was one of the government’s main aims. The development consortium has agreed to as much local procurement as possible, as well as a range of training programmes for local people and social investment initiatives. In a statement, ExxonMobil said that work on the project will “commence following the Papua LNG project”, in order to provide a “phased approach to gas development”. Papua LNG is due for completion by the end of 2027 and ExxonMobil estimates that construction work on P’nyang will take four years, so first production is likely sometime after 2032.

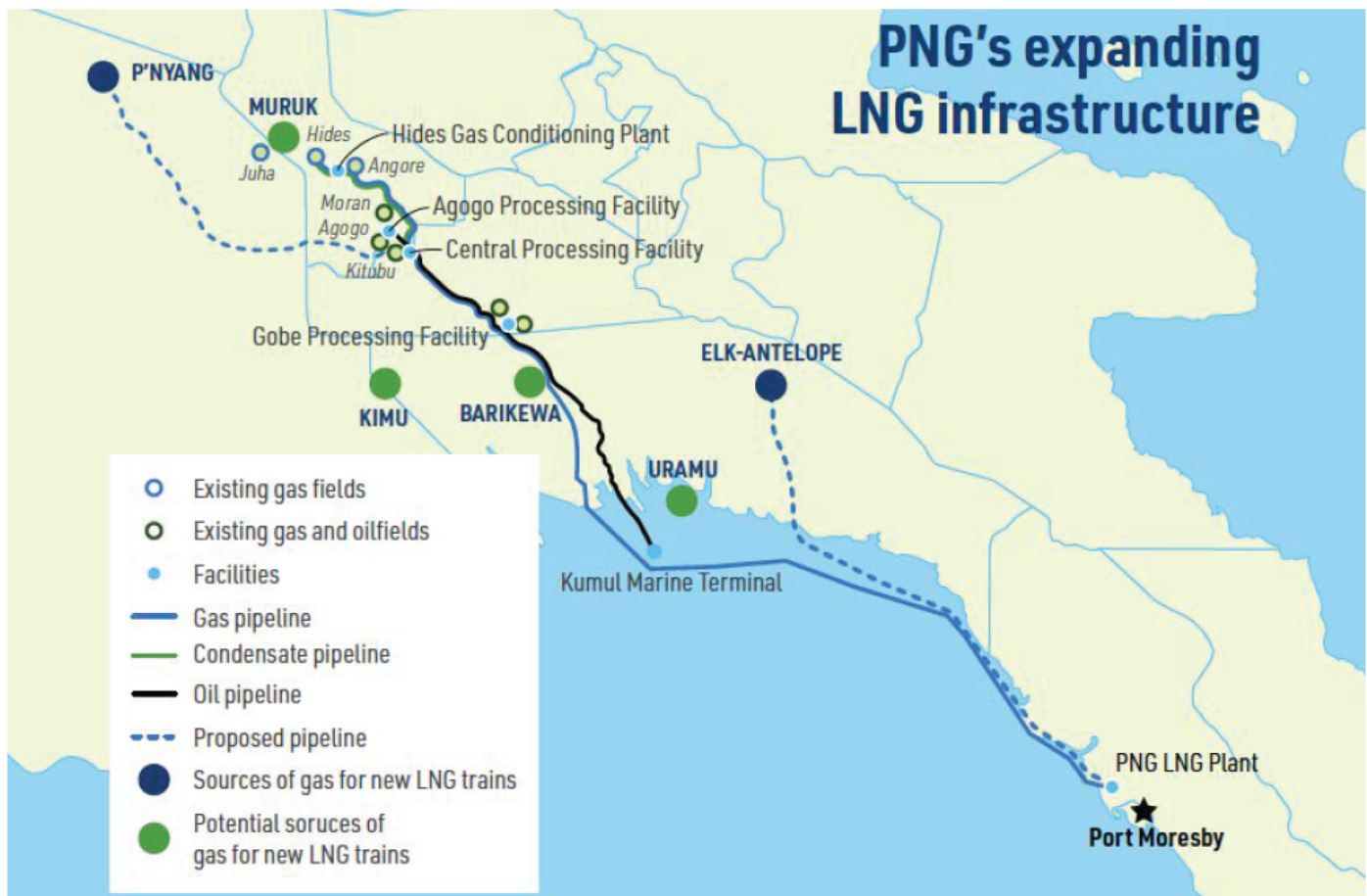
“Although negotiations between oil and gas companies and the government have often been prolonged, existing investors seem interested in further gas development.”

As required under the Papuan Oil and Gas Act, Santos CEO Kevin Gallagher said: *“The P’nyang project will provide landowner benefits under a benefit sharing agreement to be negotiated in the future. Development of P’nyang will create local and regional jobs and business opportunities, provide training and skills development opportunities and help build stronger communities.”* Although negotiations between oil and gas companies and the government have often been prolonged, existing investors seem interested in further gas development. ExxonMobil has said that it believes there is

“significant remaining potential for the discovery of new resources” to allow the construction of more LNG production capacity. Japan seems a likely destination for much of the new LNG. The country faces a shortfall in generation capacity as it closes coal-fired plants over the coming decade. PNG Prime Minister James Marape visited Tokyo in September to hold talks over potential increased involvement in the Papuan LNG sector by Japanese companies, whether as customers, or direct investors in further LNG projects. There have been unconfirmed reports that Japanese companies have been offered first options on new gas projects.

Greater transparency needed

The government of PNG has been criticised for how little the country’s population has benefited from its LNG industry, which already accounts for almost 6% of GDP. PNG LNG said that the PNG government received PGK2.2bn (\$608mn) from the project in 2021, taking the total to more than PGK14bn in the form of royalties, development levies, taxes and the state’s equity share.



It is perhaps notable that ExxonMobil PNG Managing Director Peter Larden said this gave the government “the opportunity to promote sustainable, long-term economic development”, rather than saying that it had actually benefited the wider population. However, the government appears to be listening to criticism over the lack of connection between LNG



investment and the rest of the economy. It insisted on local procurement in the original Papua LNG deal it signed with TotalEnergies in 2019 and again in the more recent P'nyang agreement. Given the central place of LNG in the country's economic strategy, it seems reasonable for the government to insist that future gas investment should benefit the wider national economy. The oil and gas companies say that hundreds of local businesses now act as contractors in the industry. However, Extractive Industry Transparency Initiative (EITI), a natural resources NGO, called for more transparency in how revenues from PNG LNG are used in its second PNG validation report, which was published in November. EITI international secretariat director Mark Robinson commented: "More public information about how the rest of those revenues are allocated across government to benefit citizens will be extremely beneficial...We also think there is room to improve the transparency of contracts — future contracts entered into by the government with foreign companies in oil, gas and mining." Source : www.naturalgasworld.com

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