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LNG NEWS WEEKLY DATE 19TH FEBRUARY 2021

MEIJI SHIPPING EMERGES AS BUYER OF SHELL'S SECONDHAND LNG CARRIER DUO

Japanese owner expands its move into sector with 11-year-old, tri-fuel diesel-electric ships. Japan's Meiji Shipping has bought two 11-year-old LNG carriers controlled by Shell. In a stock exchange announcement, Meiji said it had purchased two 170,000-cbm LNG carriers from UK company Methane Services, which is owned by the energy major. Tokyo-listed Meiji said the vessels were sold at "a fair market price" but declined to give details for contractual reasons. The 2010-built vessels are understood to be the tri-fuel diesel-electric (TFDE) 170,000-cbm pair Methane Patricia Camila and Methane Mickie Harper. They are due to join Meiji's fleet between April and August this year and will expand the shipowners LNG carrier interests to three vessels. The company already controls the 174,000-cbm Marvel Kite (built 2019), which is on charter to NYK Line. TradeWinds reported in September that offers had been submitted for the two Shell LNG carriers as a bid deadline closed. Secondhand LNG carrier sales, particularly for more modern vessels, are relatively rare and with a debate currently raging in the sector on asset values and ship lifespans, their sale price is of high interest to market players. Under the original sales

terms, Shell was offering five-year charterback deals on the two membrane-type vessels which brokers said will complicate price comparisons on the vessels. Brokers said at one time prices being discussed on the ships were in the region of $100m, against charter-back deals at about $60,000 per day. Both ships are fitted with on-board reliquefaction systems and had been due to undergo dry-dockings and special surveys in the fourth quarter of 2020. Shell had been keen to wrap up the sales before 2020 after having had a number of offers on the ships. source :www.tradewindsnews.com

JAPEX PARTIALLY RESUMES OPERATIONS AT SOMA LNG TERMINAL

Japan Petroleum Exploration Co., Ltd (JAPEX) has announced that the Soma LNG terminal (Shinchi-machi, Fukushima Prefecture) has resumed operations for the supply of regasified gas from LNG to the gas pipeline network, and LNG delivery by tank trucks. The terminal had been temporarily shut down following an earthquake off the coast of Fukushima Prefecture on 13 February 2021. The supply of LNG regasified gas used as fuel for power generation to the Fukushima Natural Gas Power Plant (owned by Fukushima Gas Power Ltd - FGP), located adjacent to the Soma LNG Terminal, is currently still suspended. Source :www.lngindustry.com

JAPAN'S LNG IMPORTS UP 7% IN JAN

Japan's LNG imports in January came in at 8.06mn metric tons, up 7.3% year/year, according to the provisional data released by the country's finance ministry on February 17. Month on month, imports were up 4.4%. During the 2020 calendar year, Japan imported 74.46mn mt of LNG, down 3.7% yr/yr. Despite the decline, Japan remains the world's biggest LNG importer. Source : www.naturalgasworld.com

SYCAR LNG PROJECT STAYS ON TRACK

The Ministry of Non-Renewable Natural Resources of Ecuador, through document No. MERNNR-VH-2021-0008-RM, dated 11 February 2021, has granted SYCAR approval to trade Natural Gas, LNG, and CNG for the industrial market in Ecuador. This milestone maintains SYCAR's LNG project on track with its original schedule, giving a positive sign to Ecuadorian industrial customers of the future ample availability of LNG volumes beyond the present domestic supply. The industrial sector of Ecuador has given positive feedback to this future availability of LNG as an opportunity to reduce manufacturing and maintenance costs, drive down its carbon footprint, and improve the efficiency and lifespan of major equipment. The resolution issued by the Ministry of Non-Renewable Natural Resources of Ecuador is good news for SYCAR's project and marks a step towards the construction of the first LNG import terminal in Ecuador. The project remains on schedule to start this year. Source : www.lngindustry.com

SHELL: FROM 'SUPERMAJOR' TO SUPER GREEN

In line with the Paris Agreement, Shell wants to transform itself into a net-zero emissions business by 2050 Shell has unveiled plans to transform itself into a net-zero emissions business by 2050. The challenging path to net-zero emissions involves gradually paring its oil production over the next decade, and investing in LNG, hydrogen, renewables and carbon capture and storage (CCS). Under its 'Powering Progress Strategy', Shell has committed to not only accounting for the emissions from its

operations, but also the emissions from its energy products. Additionally, it will incorporate emissions from the oil and gas that others produce, when Shell then sells those products to customers. This means that Shell will look to its partners to cut their emissions, too. Shell revealed its total carbon emissions peaked at 1.7 gigatonnes in 2018, and oil production peaked in 2019. Using its net carbon emissions from 2016 as its baseline, Shell set short-term goals for reducing net carbon intensity by 6 to 8% by 2023, 20% by 2030, 45% by 2035 and 100% by 2050. Tying into this strategy will be CCS technology. Shell is part of three such projects: Quest, operating in Canada; the sanctioned Northern Lights project in Norway; and the planned Porthos project in The Netherlands. These three projects have a total CCS capacity of 4.5 million tonnes (mt). Shell wants to have an additional 25 mt of CCS capacity by 2035. ***"Green hydrogen will play an important role in the energy system"*** The Anglo-Dutch energy producer will rebalance its near-term spending, with annual investments in its lubricants and electrical vehicle charging business of US$3Bn, US$2Bn to US$3Bn in renewables and energy solutions, US$4Bn in integrated gas, US$4Bn to US$5Bn in chemicals and products and US$8Bn in its upstream business.

Selective investments in LNG

LNG will remain a key component of Shell's business, with selective investment in competitive LNG assets expected to deliver an additional 7 mt of LNG by 2025. Shell owns a 40% interest in LNG Canada in Kitimat, British Columbia, Canada, which will initially have two trains producing a total of 13 mt annually (mta) of LNG. It could eventually expand to four trains with a total capacity of 26 mta. Additional plans call for Shell to deliver carbon-neutral LNG to customers. Expectations are that oil and gas will continue to provide material cash flow into the 2030s, with a gradual reduction in oil production of around 1 to 2% each year through divestments and natural decline, said Shell. Plans call for an increase in capacity of its biofuels business, doubling its electricity sales to 560 terawatt hours per year by 2030, and building hydrogen hubs to serve industry and heavy-duty transport. Shell is moving forward with the development of a hydrogen hub. It recently inked a letter of intent (LOI) with Mitsubishi Heavy Industries, Vattenfall and Wärme Hamburg to develop a project in Hamburg to produce green hydrogen from wind and solar power. In addition to constructing a scalable electrolyser with an initial output of 100 MW, in the longer term the partners plan to develop a 'Green Energy Hub' and explore the extent to which existing infrastructure at Hamburg-Moorburg power plant could be used to generate energy from renewables. Subject to FID, once the site has been cleared, production of green hydrogen could start in 2025.Shell Germany chief executive Fabian Ziegler said: "Green hydrogen will play an important role in the energy system." He highlighted the company's interest in developments along the green hydrogen value chain, from electricity produced by offshore windfarms to supplying green hydrogen for transport and other industrial uses. The project partners intend to apply for funding under the EU's 'Important Projects of Common European Interest' programme. The application is expected to take place in Q1 2021 with the submission of an initial project outline. Source : www.rivieramm.com

LNG CARRIERS: GET READY FOR EEXI BY 2023

Draft amendments to Marpol Annex VI, set for adoption at MEPC 76 in June 2021, will require 30% efficiency from baseline from existing LNG carriers. While the Covid pandemic continues to disrupt our lives, LNG vessels continue to trade, drydock and be delivered despite these most challenging of circumstances. Some crew members have been unavailable to be relived for long periods beyond their contract date, while newly joining crews remain unaware of when they will leave. The resilience of the industry is quite remarkable; all credit to the unsung heroes – the seafarers. IMO's Marine Environment Protection Committee met virtually for its 75th Session (MEPC 75) in November 2020. The cut-down agenda mainly focused on measures to reduce greenhouse gases (GHG). The measures concerned are those given in the Energy Efficiency Design Index (EEDI) and the newly established Energy Efficiency Existing Ship Index (EEXI) and Carbon Intensity Indicator (CII). EEDI regulations were introduced in 2011 for new ships to promote the use of more energy efficient vessel equipment and engines. The EEDI requires a minimum energy efficiency level per capacity mile for different ship types and size segments and, through periodic reassessment of targets and performance, encourages a process of continued innovation and technical development in the fuel efficiency of new ships. Pursuant to the initial IMO GHG Strategy, MEPC has recently been considering short-term measures for the reduction of GHG, with a view to agreement by 2023. MEPC 75 approved a package of new measures, including EEXI and an annual operational CII. ***"EEXI is the application of the EEDI to existing ships"*** The draft amendments to Marpol Annex VI will be considered for adoption at MEPC 76 in June 2021, with a view to entry into force on 1 January 2023. Further work on the supporting guidelines is underway in a correspondence group and will be further considered at an intersessional meeting in May, prior to deliberations at MEPC 76. An impact assessment is also being developed in association with UNCTAD. In essence, the EEXI is the application of the EEDI to existing ships, with additional guidance to aid application to the existing fleet. It will apply to the same ship types as the EEDI and will use the same EEDI baselines. The reduction factor for LNG carriers in the proposed Marpol Annex VI amendments is 30% from the baseline, while for other gas carriers it is between 0 and 30%, depending on ship size. Verification that the ship's attained EEXI is in accordance with the requirements is to take place at the first annual, intermediate, or renewal survey after entry into force which, as mentioned, is anticipated on 1 January 2023. The EEDI must be calculated for each ship and be accompanied by an EEXI technical file, which will form the basis for verification by the flag administration or recognised organisation on its behalf.A ship subject to the EEDI regulations may use the verified EEDI to demonstrate compliance, provided the attained EEDI is equal to or less than the required EEXI. Verification will be documented in the International Energy Efficiency (IEE) Certificate. SIGTTO remains the provider of best practice, guidance and recommendations to the gas shipping and terminal industry. We have continued to provide such guidance despite the pandemic and have remained open for business throughout. Two examples of this are the societies latest guidelines, which were both approved at the autumn board and AGM, namely *Guidance on Gas Carrier and Terminal Gangway Interface* and *Floating LNG Installations*. Further details of both of these new publications can be found on our web site. Source : www.rivieramm.com

WE'RE GOING BEYOND THE SEAS, TO POWER THE WORLD WITH CLEANER ENERGY.

While fossil fuels will remain core to the global energy mix, PETRONAS has continued to invest and promote the use of cleaner energy from low carbon sources. In the space of natural gas, PETRONAS has sustained its market position as one of the leading Liquefied Natural Gas (LNG) providers globally, having delivered over 11,000 cargoes since the establishment of its first LNG production complex in Bintulu, Sarawak, in 1983. PETRONAS' formation of the Gas and New Energy (GNE) clean energy business testifies to its commitment to provide cleaner energy solutions covering natural gas, renewables and hydrogen. As a progressive energy and solutions partner, the GNE business division strives to ensure long term value creation and profitable growth to its partners by providing innovative and 'end-to-end' customer centric solutions. Today, the GNE division functions as PETRONAS' one-stop centre for cleaner energy solutions through advocacy, market development and innovative solutions. As an integrated global LNG player with over 37 years' experience, PETRONAS continues to lead the industry through its focus on customer-centricity and innovation, to provide a reliable and sustainable source of cleaner energy for customers. Over the years, PETRONAS has invested heavily in developing modern technologies to maximise hydrocarbon resources while reducing its environmental footprint. Delivering energy needs in a responsible manner is now more important than ever. This is where PETRONAS' latest LNG solutions play an important role – to ensure its customers' cleaner energy needs are met in a sustainable manner. Out at sea and to promote the use of LNG as a cleaner marine fuel, the PETRONAS LNG Bunkering solution helps shipowners and vessel operators to power their vessels with LNG. Introduced in November 2020, the LNG Bunkering solution was realised with the arrival of PETRONAS first LNG Bunkering Vessel (LBV), the MV Avenir Advantage, which is South East Asia's first dedicated LBV. More importantly, the LNG Bunkering solution supports the implementation of International Maritime Organisation (IMO) 2020 regulations to limit carbon impact from the marine industry. The LNG Bunkering Vessel solution is a testament of how PETRONAS places customers at the heart of everything they do while continuing to prioritise sustainability as a core area for the organisation to play a role in creating a greener future. As a progressive energy and solutions partner to meet the call for cleaner energy and provide uninterrupted accessibility to its customers, PETRONAS remains committed to provide solutions that enrich lives. Meeting the challenge of becoming a net-zero Company by 2050 will not be easy, but PETRONAS will never stop pushing for progress to provide sustainable solutions for their customers, employees and for the world. Source : www.rivieramm.com

PETRONAS' PFLNG DUA MARKS COMMISSIONING WITH FIRST LNG PRODUCTION

PETRONAS has celebrated a significant milestone for its second FLNG facility, *PFLNG DUA*, which recently produced its first LNG. According to Petronas, this historic event signifies the ability of the *PFLNG DUA* topside facility to produce on spec LNG product, which further validates the technology concept of floating LNG solutions for deepwater gas fields. The company's first deep water FLNG facility is currently located at the Rotan gas field, 140 km off Kota Kinabalu, Sabah. In collaboration with its upstream Production Sharing Contract partner, PTT Exploration and Production, it has successfully completed the subsea commissioning phase and achieved its First Gas on 6 February 2021. PETRONAS Vice President of LNG Asset Zakaria Kasah

said: "This achievement showcases our focused execution and continuous effort in pushing boundaries to deliver innovative and customer-centric solutions to our customers. Despite operating in a challenging environment which is exacerbated by the COVID-19 pandemic, we managed to commission this megastructure and achieve first LNG production in 7 days upon the first gas in. This is a record achievement, and a great milestone for PETRONAS and the LNG industry." *PFLNG DUA* is expected to deliver its first LNG cargo to customers by the middle of March 2021. Upon commercialisation, PETRONAS will become the first global energy company to own and operate two floating LNG facilities. Together with *PFLNG SATU*, which first produced LNG from the Kanowit gas field offshore Sarawak in 2016 and was successfully relocated to Kebabangan field offshore Sabah in 2019, this solution allows for the processing of LNG to be performed offshore, hundreds of kilometres away from land. Its versatility enables PETRONAS to unlock remote and stranded gas fields that were previously uneconomical to explore. *PFLNG DUA* is capable of reaching gas fields in water depths up to 1500 m and can produce 1.5 million tpy of LNG. It is part of PETRONAS' portfolio of LNG facilities around the world, enabling the company to achieve its aspiration to power the world with cleaner energy, and at the same time, transform Sabah into a regional deep-water hub. Source : www.LNGINDUSTRY.com

ZIM AND SEASPAN SIGN CHARTERING AGREEMENT FOR LNG-FUELLED VESSELS

ZIM Integrated Shipping Services Ltd and Seaspan Corporation, a wholly owned subsidiary of Atlas Corp., have announced a strategic agreement for the long-term charter of 10 LNG dual-fuel container vessels (15 000 TEU capacity), to serve ZIM's Asia – US East Coast trade. Eli Glickman, ZIM President & CEO, stated: "This is a milestone agreement for ZIM, valued in excess of one billion dollar, that enables us to achieve two important strategic objectives. First, these top of the line advanced vessels will allow us to meet growing market demand on the Asia – US East Coast trade and provide top-level, reliable service to our customers on this important trade lane. Second, in line with our core sustainability values, investing in LNG-fuelled 'green' vessels demonstrates our continued commitment and leadership in addressing environmental issues related to our industry, meeting customer demand to reduce CO_2 emissions, helping to preserve clean air and reducing our carbon footprint. We are delighted to partner with industry leaders such as Seaspan and Samsung Heavy Industries on this transaction." Bing Chen, Chairman, President and CEO of Seaspan, added: "We are very pleased to partner with ZIM to facilitate our customer's industry leading environmental initiative. This transaction signifies both ZIM's and Seaspan's commitment to ESG principles, carbon reduction, and resolve to contribute to a greener business community in the future." Korea-based Samsung Heavy Industries, commissioned by Seaspan to build these vessels, is one of the world's largest shipyards and a leader in high-tech shipbuilding, with vast experience in LNG-fuelled vessels. Source : www.lngindustry.com

OZ LNG EXPORT REVENUE DOWN 40% IN JAN: ENERGYQUEST

Australian LNG export revenue in January was A$2.56bn (US$2bn), down 40% year/year owing to lower lagged oil price, energy consultancy Energy Quest said on February 16. Export revenue was down 4% month/month. "The decrease in revenue is a result of the decreased lagged oil price seen in January. The lagged oil price peaked in December and has since

fallen driving revenues down," Energy Quest said. Australia exported 6.7mn metric tons of LNG last month, compared with 6.5mn mt in December 2020. The monthly record for shipments was 7.1mn mt in December 2019. Australian projects delivered 36 cargoes to China in January, after delivering 38 in December and 40 in January 2020. Japan took in 43 cargoes last month, more than the 41 delivered in December but down on 45 delivered in January 2020.West coast shipments stood at 4.6mn mt in January, down from 5.1mn mt in January 2020 but up from 4.4mn mt in December 2020. East coast LNG shipments decreased to 2.1mn mt in January from 2.2mn mt in December 2020, but up from 1.9mn mt a year ago.EnergyQuest estimates Australia delivered a total of 78.7mn mt of LNG in 2020, up 2.2% yr/yr. Total revenue from LNG exports reached A$36.1bn, down from A$48.7bn in 2019. Source : www.naturalgasworld.com

BP STILL MAKES PROFIT ON LNG DEAL DESPITE $350,000 CHARTER RATE

Oil major's market knowledge enabled it to maximise profit on deal, says Bernstein analyst. BP was still able to make a tidy profit on a recent LNG supply deal, despite paying a record charter rate to transport the cargo, says a top analyst.The oil major reportedly paid $350,000 per day in early January for an LNG carrier as charterers juggled limited ships to cash in on rocketing Asian gas prices.Chartering sources said BP paid the eye-popping rate on Nigeria LNG's 174,900-cbm LNG Abalamabie (built 2016) for a round-trip voyage from the US to Europe."In the first quarter there was a shortage of tankers, but BP spotted an opportunity [in the Atlantic]," said Oswald Clint, senior European oil and gas analyst at Bernstein. "They hired the LNG carrier Abalamabie and they took it into Freeport LNG [in Texas] where they have an old off-take agreement from 2013."We think they purchased the gas at $2.8 per MMBtu and they paid Freeport the $2.4 per MMBtu tolling fee and then they set off to see if they could make a profit." Clint said the ship headed across the Atlantic to the Mediterranean and eventually to the Aliaga regasification terminal in western Turkey and sold the cargo at $7.7 per MMBtu."This trip took about 16 days, so it's a short distance to pay that sort of tanker charter fee," he said."We think the costs were $18.6m for the cargo and $5.6m for the transportation and they sold it for $27.2m, which leaves a nice profit of $3m. "This shows you the ability of these companies with their fleets and their knowledge to absolutely maximise profit through trading. "This was a very high return on capital employed, obviously this is about a 10% margin here, and there was no invested capital as the tanker was hired." source : www.tradewindsnews.com

TOTAL TIES UP MINERVA LNG CARRIER NEWBUILDING IN MULTI-YEAR DEAL

Energy company zones in on another vessel and has options to fix other tonnage. Total has tied up an LNG carrier contracted by Greece's Minerva Marine in a multi-year deal. Industry sources said the French energy major, which plans to rename itself Total Energies from May to reflect its decarbonisation moves, has hooked one of the ships ordered by Minerva. They indicated that it is fixed for at least five years, with options to extend the hire. Last month, Sovcomflot (SCF Group) signed a time charter with Total for up to seven years on a 174,000-cbm Hyundai Samho Heavy Industries-built vessel -fitted with an X-DF propulsion -system for delivery in the third -quarter of 2023.Brokers reported a rate in the low $60,000s per day for the firm

period.The Sovcomflot deal includes options on two additional vessels. The charters are believed to be the result of a tender for new or existing LNG vessels launched by Total last year. Minerva declined to comment. Total did not respond to requests for comment. Minerva broke into the LNG -sector in 2018, ordering two ME-GI 173,400-cbm vessels at Daewoo Shipbuilding & Marine Engineering for just under $183m each, before shifting to Samsung Heavy Industries, where it built up a three-unit order of X-DF ships.Last May, it emerged that -Minerva had fixed two of the five -vessels to Shell. Brokers said the first of these, the 173,400-cbm Minerva Psara (built 2021), is already trading for Shell. Minerva is due to take delivery of three more newbuildings this year: the DSME-built, 173,400-cbm Minerva Limnos; and the 174,000-cbm -sister-ships Minerva Kalymnos and Minerva Chios from SHI. A fifth, the 174,000-cbm Minerva Amorgos, is scheduled for hand-over from SHI in 2022. It is not immediately clear which ship Total is taking.But brokers are now listing Minerva with just two open vessels. Total and Shell have been scooping up tonnage to cover their growing LNG portfolios.Total has stated its ambition to become a net-zero business by 2050.Chairman and chief executive Patrick Pouyanne said in a results presentation last week: "In the context of achieving our climate ambitions, while creating value, our strategy for profitable growth is focused on these two pillars, LNG and renewable generation."Clean low-carbon energy is in the future," he added, highlighting that oil demand fell 9% last year while demand for LNG and renewable power increased by 3% and 13%, respectively.In a video timed to coincide with the results briefing, senior vice president for LNG Thomas Maurisse said the company expects to have 50 million tonnes per annum of LNG sales by 2025, which it said makes it the world number two. Maurisse said Total controls 20 LNG carriers and has the largest regasification capacity in Europe. source : www.tradewindsnews.com

SNAM INVITES INTEREST ON SARDINIAN PROJECT FSRU

Italian energy infrastructure company SNAM has invited expressions of interest from shipowners on providing an LNG carrier for use as a floating storage and regasification unit for a new project in Sardinia. Those following the initiative said SNAM, which has been appointed by the Italian government to develop the project, is seeking a full-sized FSRU rather than a small-scale unit to serve what appears to be a relatively limited initial demand requirement. They said the company is looking at importing partial cargoes via a conventionally sized FSRU to kick off operations, as smaller units are limited and would likely need to be custom-built, which would delay the project timeline. Under the requirements, SNAM will own the floating regas unit but the providers of the FSRU will need to undertake any necessary conversion work and present it ready to start operations. Two Scandinavian LNG shipowners are understood to have been approached about the unit, with other FSRU providers lining up to bid for the business. A full tender for the FSRU is expected to be launched in March. The planned Portovesme import terminal to the south-west of the island would provide gas to restart Eurallumina's existing aluminum works and convert an Enel-controlled power plant from coal to gas. But SNAM's planned Portovesme facility would be the second LNG import terminal on the small Mediterranean island of Sardinia. In the coming weeks, Avenir LNG is expected to ship in a first cargo that will be used to commission its new Higas LNG terminal near Oristano, on the island's mid-west coastline to the north of Portovesme. The company reached mechanical and electrical completion of its 10,600-cbm Higas facility on 30

December 2020 and it is due to be in service at the start of the second quarter of this year.Avenir will position its 7,500-cbm newbuilding — the Avenir Aspiration — in the Mediterranean to serve the new import terminal. Sardinia has no natural gas and is still using coal-fired power production, which the authorities want to switch over to cleaner-burning fuels.Market observers looking at the two LNG projects said there is more than sufficient demand on the island for both import facilities. source : www.tradewindsnews.com

GTT SEES DEMAND FOR OVER 300 LNG CARRIERS FROM NOW TO 2030

French technology company plans to internationalise and grow its green hydrogen acquisition Elogen. LNG cargo containment system designer GTT estimates that up to 320 LNG carriers will need to be ordered between now and 2030 to meet demand. Chairman and chief executive Philippe Berterottiere said LNG demand is estimated to double by 2040 to 717 million tonnes per annum with around 75% of this growth expected to come from Asia. Speaking in fourth quarter results briefing, he said GTT has upped its expectations in the number of LNG carriers that will be ordered in the period to 2030 to between 290 and 320. The company also sees a growth in the number of VLECs contracted to between 25 to 40 ships. But it is holding its numbers for floating storage and regasification units at 10 to 20 vessels. GTT anticipates orders for five floating LNG production units and 25 to 30 onshore tanks during the period. Deputy chief executive Eric Dehouck said GTT sees a market of 260 LNG-fuelled newbuildings per year developing.

Going green

GTT's executives were keen to reference the company's three acquisitions during 2020 which will shift the company into smart shipping and green hydrogen. Dehouck said that for Elogen, which designs and assembles electrolysers for the production of green hydrogen, in the next decade GTT plans to expand the company into the international arena, shift its production towards heavy industry and the energy sector and move to high capacity electrolysers. He said we have the ambition to produce 400MW pa of elcectoryser by end of the decade. Berterottiere said that by moving into green hydrogen GTT, which has set itself an ambition to be carbon neutral by not later than 2025, is proposing a fully green solution for the future. "For us LNG is a key part of the energy transition," he said. "Beyond LNG it our responsibility to continue exploring ways to improve energy efficiency."

Order surge

Euronext Paris-listed GTT's net income for 2020 jumped almost 39% to €198.9m ($241.3m). Revenue climbed nearly 38% year-on-year to €396.4m. GTT netted 51 orders for its containment system designs in 2020. These comprised 41 LNG carriers which will be delivered in the period between 2022 and 2025, four VLECs, one Q-Max sized floating storage and regasification unit, two 361,000-cbm floating storage units and three onshore LNG storage tanks for China.As of 31 December 2020, GTT said its orderbook stood at 147 units. In addition it had 10 orders relating to LNG-fuelled vessels on its books.

Strong conviction

Berterottiere said the company's strong orderbook gives it higher visibility through 2025. But GTT did not receive any orders relating to LNG-fuelled ships in 2020 which it said was mainly due to the low numbers of newbuildings contracted.The CEO said this does not change the company's "strong conviction" that its technology is better adapted for large ships.The company guided that its revenue for 2021 should be in the range of €285m to €315m.The Korea Fair Trade Commission is pursuing a corrective order against GTT for anti-competition practices. Court action relating to this effort is under review by the Korean Supreme Court. source : www.tradewindnews.com

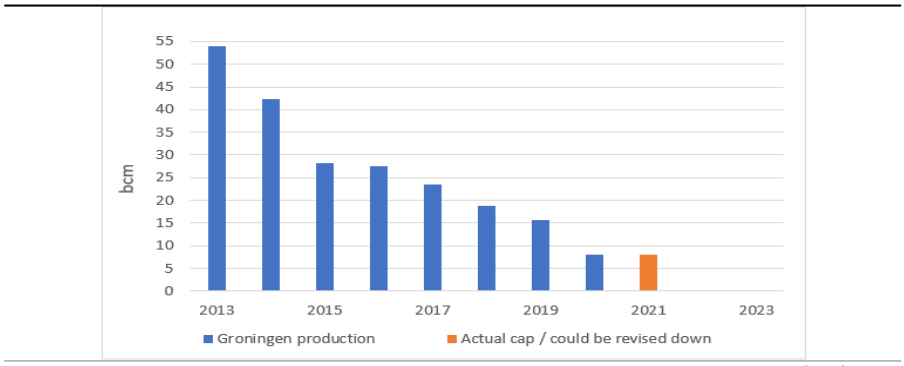
OZ WOODSIDE, RWE SIGN LNG PACT

Australia's Woodside has entered into a new sale and purchase agreement (SPA) with Germany's RWE for the supply of 0.84mn metric tons/year of LNG for a term of seven years starting in 2025, it said on February 19. The Australian company said the new SPA builds on a "strong relationship developed through existing mid-term and spot business in Asia-Pacific and the Atlantic basin". The companies had inked an LNG deal in December 2018 which came into effect in the fourth quarter of 2020 and runs till December 2022. Woodside and RWE had signed a deal in October 2017 as well. Woodside executive vice president development and marketing Meg O'Neill said the signing of the SPA with RWE was further evidence of the strong market demand for LNG in the second half of this decade. "Customers are increasingly seeking to secure new energy supplies in a timeframe which supports the development of our Scarborough offshore gas resource and the expansion of the Pluto facility with the addition of a second LNG production train." The SPA also provides the opportunity for Woodside and RWE to explore the potential for carbon-neutral LNG production and trading, she said. Chief commercial officer origination and gas supply at RWE Supply & Trading Andree Stracke said the transaction demonstrated RWE's ongoing commitment to expanding its global LNG portfolio. "The volumes will continue to enable us to deliver effective LNG solutions to our customers and will provide a platform to further advance our existing business in Asia," he said. Woodside and RWE signed a memorandum of understanding in October last year to discuss hydrogen-related opportunities. Source :www.naturalgasworld.com

EU 2020 GAS SUPPLY, DEMAND COLLAPSE

Statistics from the Joint Organisations' Data Initiative (Jodi) have just been released. As Bulgaria, Croatia, Malta and Romania have not yet provided all data for 2020 they are absent. We are therefore looking only at EU-22 before extrapolating to EU-27. Post Brexit, we are excluding the UK from past EU data to make the analysis more relevant.EU-22 gas production was down by a massive 23% last year, owing to a 27% drop in the Netherlands. With a massive 49% cut, Groningen production was, in 2020, even below the target set for 2021. It won't be long before this field is shut down.

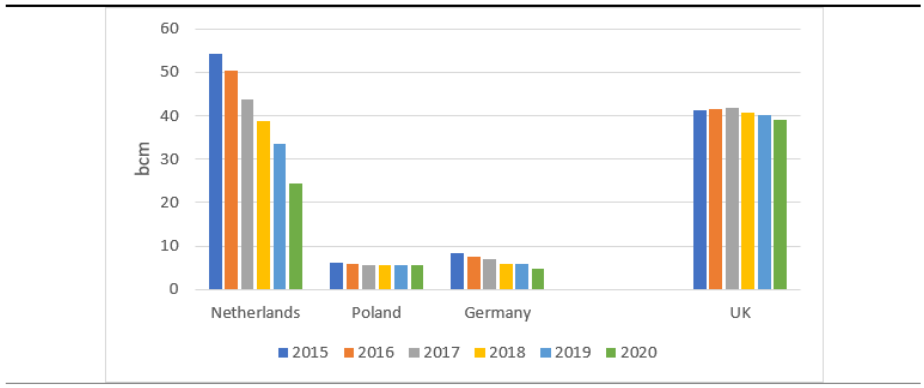
Groningen yearly production



Source: NAM, thierrybros.com

In percentage terms however the worst decline was witnessed in Denmark with -54%, with the Tyra field being rehabilitated. Germany production is declining (-15%) and has been overtaken by Poland (-1%). If we take into account a Romanian production of around 10 bcm (between the Netherlands and Poland), we can estimate EU-27 production to be down by 20% in 2020.

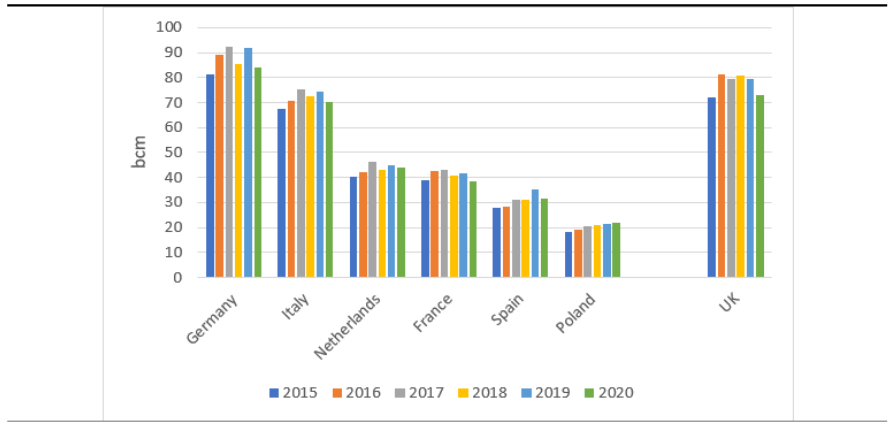
Gas production in EU biggest markets (No data for Romania)



Source: JODI, thierrybros.com

Overall EU-22 demand was down by 5% due to Coronavirus with contrasting evolution between Poland (+ 3%) and Spain (- 10%). This -5% is a good proxy for EU-27 demand evolution.

Gas consumption in EU biggest markets



Source: JODI, thierrybros.com

EU-27 foreign dependency factor set, in 2020, a record at 86%. We should expect this percentage to continue to grow in the coming years (at least due to the decline of domestic production), but thanks to supply diversification and low prices, this is not an issue any longer in Brussels… Until prices move back up and policymakers start to worry! Source : www.naturalgasworld.com

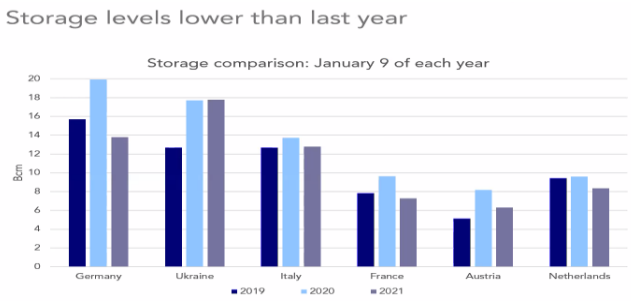
STORAGE DRAWDOWN WILL SHAPE EUROPE'S LNG DEMAND

Strong drawdowns from European storage could make room for about 120 LNG cargoes during the summer months. European LNG demand could grow to 100M tonnes in 2021, with imports rising in the UK, France, Spain, Italy, Belgium, the Netherlands, Poland, Greece, Lithuania and Turkey, according to analyst projections. Much of this demand will be shaped by available storage during the 2021 European summer season.A new entrant to the market, Croatia, began importing LNG at the beginning

of the year when it took delivery of its first chilled cargo at its newly commissioned floating storage and regasification unit (FSRU) *LNG Croatia*. Additionally, Turkey will add its third FSRU this year, the 170,000-m^3 *Ertuğrul Gazi*. The country's other FSRUs operate in Hatay and İzmir. Owned by BOTAS, the newbuild FSRU strengthens Turkey's energy security, providing it with flexibility to import LNG from various countries or the spot market, without being constrained by pipelines. "2021 has started off with a bang," said Poten & Partners short-term forecast manager, LNG Kristin Holmquist. Speaking at a Poten & Partners webinar in January, Ms Holmquist said the global LNG export market has seen "a big resurgence," after a relatively flat October, November and December. The big beneficiaries of this uptick have been US LNG producers. However, unlike 2020, when Europe absorbed large volumes of US LNG, more recently those volumes have been flowing to northeast Asia, Japan, South Korea, Taiwan and China. Cold snaps in Asia have been driving demand, Ms Holmqvist noted, saying a "huge amount of volume" went to China in December. The stronger appetite for LNG in the Asian market has been reflected by higher prices, which hit levels of US$30/MMbtu in January. ***The LNG market is becoming a much more commoditised market, where supply and demand dictate price"*** "The LNG market is becoming a much more commoditised market, where supply and demand dictate price signals," she noted. A tight LNG shipping spot market, combined with increased demand from Asia during a bitter winter season, pushed LNG carrier charter day rates to record levels. BP chartered Nigeria LNG's 175,000-m^3 *LNG Abalamabie* for a Bonny Island loading in early February at around US$350,000/day, according to a report in Argus. "Shipping rates have been extremely high because US LNG production is heading to Asia, driving tonne mile demand dramatically," said Ms Holmquist. "This is a change from last year when ships were going to Europe instead of Asia." India, China, Taiwan and Japan, and South Korea will represent the "engines of growth" for demand in the LNG market, she said, with these markets accounting for about an 8M tonne demand increase in 2021. Despite being exporters of LNG, both Indonesia and Malaysia will increase their imports as domestic sources of natural gas decline and domestic demand increases. Observed Ms Holmquist: "The growth in these countries is extremely important to keeping the LNG market balanced and to keep the LNG market growing." Storage levels will shape demand, However, Ms Holmquist said she expects demand for LNG in Europe to decrease in 2021 and 2022, but the demand will be determined by the seasonal storage build of LNG during Europe's summer months. Ms Holmquist noted: "[For] a typical storage build during the summer months, we'll actually end up on the low side as a five-year range. What that means is there is about 12 bcm (billion cubic metres) of room in European storage for additional volume, which is more than 120 cargoes of LNG. So that's going to allow Europe to absorb more volume, which can help the rest of the pie increase in the rest of the world." She continued: "European storage level draws are painting a more optimistic picture in the summer months of 2021. The drawdowns in storage in Europe have been higher than expected, and less volume has been available to go to Europe because of the recovery in the Asian market. In the base case, there is room for a lot more LNG."

LNG supply

Much of that LNG supply could once again come from the US. Overall, the volume of LNG exports from the US is expected to be stronger and while there will be some growth in LNG production volumes in Malaysia and Australia – with *Prelude FLNG* now shipping cargoes – US LNG production will expand by about 8M tonnes. Other exporters, such as Indonesia and Algeria, will see declines in LNG volumes and Norway will have a "strong negative on the market", given the issues it is having with Hammerfest LNG, which probably will not be wrapped up until October. In summarising, Ms Holmquist said: "What we're seeing is that the European market is receiving less (LNG), leading to storage draws. China's growth will be slower due to increased pipeline imports and supply growth will be dominated by the US, but will be dependent on how much volume Europe can take yet again." Of course, 2019 was a record year for European LNG demand, with imports reaching 85.9 million tonnes (mt) – an increase of 37.0 mt over 2018. According to GIIGNL data, all of the LNG importing countries in Europe increased their LNG imports. The three leading countries were Spain, with15.7 mt, France, with 15.6 mt and the United Kingdom at 13.6 mt. At 9.77 mt, Italy was Europe's fourth largest importer of LNG. Operating off the Veneto coast, the Adriatic LNG regasification terminal provides about 10% of Italy's national gas consumption. Adriatic LNG has regasified and delivered to the national pipeline network more than 69Bn cubic metres (bcm) of gas supplied by ships carrying LNG from Qatar, Egypt, Trinidad and Tobago, Equatorial Guinea, Norway, Nigeria, the United States and Angola. The Adriatic LNG terminal can accommodate LNG carriers with capacities from 65,000 m^3 to 217,000 m^3 of LNG. Adriatic LNG is operated by ExxonMobil Italiana Gas and Qatar Terminal Limited, a subsidiary of Qatar Petroleum, and SNAM.

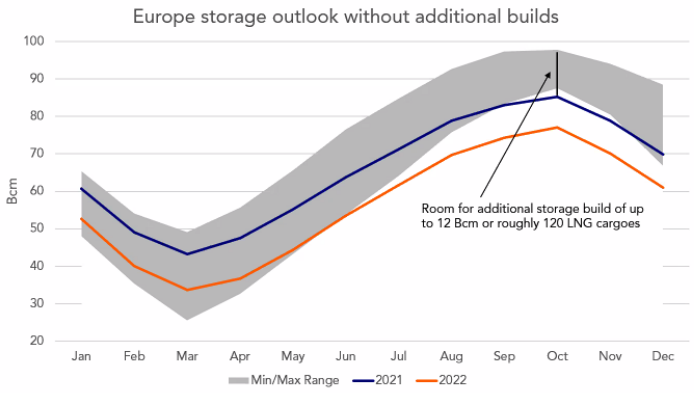


LNG storage levels in Europe (source: Poten & Partners)

"In Italy, we are the only real international hub of the liquefied natural gas market," said Adriatic LNG law and market manager Sebastien Bumbolo. Securing access to supplies of clean-burning natural gas is important for Italy and European countries for the energy transition. Adriatic LNG external relations manager Alfredo Balena said: "LNG is a strategic source for the achievement of climate goals and for the diversification of sources through sea-transported competitive, flexible supplies." To ensure that supply, Adriatic LNG is seeking public comment regarding one of the largest long-term LNG regasification capacity auctions in the Mediterranean and amendments to Italy's regasification code. ***"The open season is one of the most important events for the entire energy market"*** As much as 153 bcm per year (bcm/y) of LNG regasification capacity could be considered for the next 25 years during Adriatic LNG's open season this summer. All gas and LNG market players – both at national and international levels – have until 22 March 2021 to send comments. The action by Adriatic LNG complies with new rules put in place by the Italian Ministry of Economic Development and the Italian Regulatory Authority for Energy, Networks and Environment. As a result, Adriatic LNG will be able to offer products with a duration up to 25 years, with the start of open

season during Europe's summer 2021. Calling the open season "one of the most important events for the entire energy market" in the Mediterranean, Mr Bumbolo, said: "This is one of the largest regasification volumes ever auctioned, equivalent to over two years of natural gas consumption in Italy, if we consider the average annual consumption of recent years."

European storage to determine shape of summer market



European storage to determine shape of summer market **(source: Poten & Partners)**

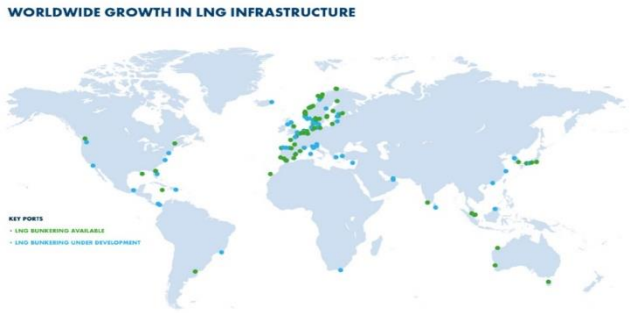
Adriatic LNG said the capacity offered through the open season could reach 153 bcm/y, considering existing capacity (1.6 bcm/y and, from end-2034, 8 bcm/y), already technically available additional capacity (1 bcm/y) – as provided for in the project for additional terminal capacity submitted to the Ministry of Economic Development – and new capacity to be developed (0.5 bcm/y). Mr Bumbolo concluded: "Our offer represents an extraordinary opportunity for national and international gas market players to diversify their portfolios by leveraging on the great potential offered by the global LNG market. In this way, Italy will have a new instrument to increase the natural gas internal market's competitiveness by attracting the intrinsic value of an energy source, the gas in the form of LNG, produced in many parts of the world and sold on a competitive market."

Source : www.rivieramm.com

NORTH AMERICAN LNG BUNKERING READIES TO MEET THE SURGE OF NEW LNG-POWERED SHIPS

Riviera conference explores the challenges and opportunities of growing the LNG bunkering infrastructure in the Americas to meet the expanding fleet of LNG-fuelled ships. Many of the key players in the North American LNG bunkering and refuelling market will be on hand to discuss the technical, operational and regulatory challenges facing the industry at LNG Bunkering and Refuelling, Americas conference, 18-19 February 2021. High on the agenda will be the region's growing LNG bunker vessel fleet. Shipowners operating dual-fuel, LNG-powered ships will find more options for bunkering their vessels when they call at ports in North America, following the delivery of the LNG supply and bunker articulated tug barge (ATB) *Q-LNG 4000* to owner Q-LNG Transport. Under long-term charter to Shell North America LNG, *Q-LNG 4000* performed its first ship-to-ship transfer in Jacksonville, Florida, refueling the Liberian-flagged dual-fuel, pure car truck carrier (PCTC) *SIEM Aristotle* in January. The PCTC was on its maiden voyage from Emsden, Germany to North America. At 4,000 m^3 capacity, *Q-4000* is significantly larger than *Clean Jacksonville*, the 2,200-m^3 LNG bunker barge based in Jacksonville. Both are unique vessels and significant components of the growing LNG bunkering infrastructure in the Sunshine State, the US and Canada to support domestic and international shipowners that use LNG as fuel. "Most of the shipowners we have spoken to who are looking at newbuilds are considering LNG-fuelled vessels as their preferred option to support their business case and environmental

credentials," a Shell spokesperson told *LNG Shipping & Terminals*. As of November 2020, there were 230 LNG vessels on order and 198 in service according to Clarksons data. "We are witnessing an increase in the number of dual-fuel tankers being ordered and considered," said Shell. "For tankers, the start-up of LNG bunkering in the Gulf of Mexico, alongside Singapore and Rotterdam, means almost all of the long-haul tanker demand can be met. LNG infrastructure is growing at a rapid pace to support the expected demand growth for LNG as a fuel and to support shipowners with a greater level of flexibility for their routes. LNG bunker vessel capacity grew threefold between 2019 and 2020," said the source. ***"Shell wants to double its LNG bunkering network by the mid-2020s"*** LNG figures strongly into Shell's plans in the years ahead, as it reshapes its energy portfolio to support the global transition to clean energy. "Shell has a strategic plan to develop a global LNG bunkering network complementing other developments in Asia, Northern Europe and the western Mediterranean," said the Shell spokesperson. "It is aiming to double its LNG bunkering network by the mid-2020s, to around 15 major ports on the key international trading routes. We expect to further grow the network in the key locations needed to provide the key market segments flexibility in their fueling options." Shell expects to take delivery of 16 dual-fuel LNG carriers, 10 LNG dual-fuel Aframax crude oil tankers, and four new LNG dual-fuel oil products tankers from 2021. In the container sector, Seaspan has just ordered 10 dual-fuel, LNG-powered containerships, which will be chartered to Zim International for US east coast to Asia service. The 15,000-TEU box ships will start delivering in H1 2023. This will underpin further development of LNG bunkering on the US east coast. Work is progressing on *Clean Canaveral* – which will be the largest LNG bunker supply vessel by capacity in the US – at Fincantieri Bay Shipbuilding in Sturgeon Bay, Wisconsin. The 5,400-m^3 capacity LNG ATB will join Polaris New Energy's fleet in Q4 2021. Polaris New Energy is the marine logistics arm of NorthStar Midstream, which – along with Pivotal LNG – is expanding JAX LNG, the small-scale LNG facility that will provide the chilled cargo to *Clean Canaveral*.Crowley's two dual-fuel LNG-powered conro vessels have been supported since they went into service between Jacksonville and San Juan by Eagle LNG's Talleyrand Bunkering Station. It marked its 100th LNG bunkering operation for the two vessels in August 2020, and the first LNG bunkering of an international-flagged vessel, *Fure Ven*, in the US in September. A pioneer in small-scale LNG and bunkering in the US, Eagle LNG has its sights set on further expansion with the Jacksonville LNG Export facility. Florida is not the only area where LNG is readily available as a fuel in the US. Harvey Gulf International Marine's LNG bunkering facility in Port Fourchon, Louisiana, has been supporting the OSV owner's dual-fuel, LNG-powered platform supply vessels for years. A recent report by SEA/LNG detailed the growing global LNG supply infrastructure. The accompanying graphic shows LNG bunkering facilities in operation and in development, with a heavy concentration in Europe.



Source: SEA/LNG

Bunkering north of the border

North of the border in Canada, LNG for bunkering is available by truck in the Port of Montreal, and – for the first time last year – at Port Hamilton in Ontario on the Great Lakes. On the west coast in Vancouver, FortisBC supplies LNG by truck from its Tilbury LNG facility for LNG-fuelled ferries owned by BC Ferries and Seaspan. "FortisBC is actively looking for opportunities to provide LNG from our Tilbury facility as a low-cost, lower-carbon fuel for the marine sector, and for overseas customers looking to displace coal, oil or wood for fuel," says FortisBC spokesperson Scott Neufeld. "Tilbury is powered by renewable hydroelectricity which lowers the carbon intensity of our LNG compared to other facilities. Tilbury also plays an important role in storing a backup supply of energy for our gas utility customers." Adds Mr Neufeld: "There are also a number of other customers interested in our LNG as a marine fuel and we are working with partners like Seaspan and Vancouver Fraser Port Authority to establish Vancouver as an LNG refuelling hub. A key component of our expansion plans is a marine jetty proposed to be built next to our facility to enable ship-to-ship LNG refuelling. The jetty is being proposed by a partnership to be owned by affiliates of Fortis and Seaspan. If the environmental assessment is approved, construction of the jetty could begin later this year." FortisBC is in a phased expansion of the small-scale Tilbury LNG that will significantly increase its storage and production capacity to meet the rising demand for LNG as a fuel. FortisBC is investing US$14.6M on an expansion of Tilbury LNG's truck loading capacity "to better serve marine, truck transport and overseas customers," says Mr Neufeld. Among those overseas customers is China, which has been importing LNG via ISO container from Tilbury LNG since 2017.Plans are moving forward for Canada's first LNG ATB. Cryopeak LNG anticipates moving towards FID on the LNG bunker barge by the end of 2021, with the start of operations in 2023, delivering LNG as a fuel to shipping companies calling at ports on the west coast. South of Vancouver in the Port of Tacoma, the first LNG bunkering facility on the US west coast will be ready to open in Q2 2021. Tacoma LNG will be a multi-use facility, providing LNG for Puget LNG's commercial customers, and the necessary natural gas reserves for PSE's utility customers. Its main maritime consumers will be TOTE Maritime Alaska's dual-fuel, LNG-fuelled Orca-class roro vessels, which operate weekly between Tacoma and Alaska. Source : www.rivieramm.com

DECARBONISATION DRIVES UPTAKE OF TWO-STROKE, DUAL-FUEL ENGINES

As the LNG carrier fleet grows, more shipowners are opting for two-stroke, dual-fuel engines to lower fuel consumption, comply with EEDI and reduce carbon emissions . Two-stroke, dual-fuel engines from MAN Energy Solutions and WinGD have taken the LNG shipping market by storm. Over the next three years, the percentage of the LNG carrier fleet operating with two-stroke, dual-fuel propulsion – either high-pressure, Diesel-cycle MAN ME-GI or low-pressure, Otto-cycle WinGD engines – will more than double, according to data from Poten & Partners. Based on data shared during a Poten & Partners' webinar, some 12% of the existing fleet has either ME-GI or X-DF engines, with the market share forecast to reach 30% by 2023 based on the current shipbuilding order book. Besides ME-GI and X-DF propulsion, other technology being employed in the LNG carrier fleet includes steam, slow-speed diesel (SSD), dual or tri-fuel diesel-electric (D/TFDE) and ultra-steam turbine – dual-fuel diesel-electric hybrid (UST-DFDE hybrid) and reheat steam, ultra-steam turbine (RHST/UST). It is shipping's

decarbonisation drive that has spurred the uptake of two-stroke, dual-fuel ME-GI and X-DF technology. To comply with tighter NOx emissions limits and the Energy Efficiency Design Index (EEDI) the propulsion plant requires improved fuel efficiency and emissions performance. In August, Shell agreed long-term charters for six X-DF propulsion 174,000-m^3 newbuild LNG carrriers. The energy major signed separate agreements for two LNG ships each with affiliates of Knutsen LNG, Korea Line Corporation, and ICBC Financial Leasing and institutional investors advised by J.P. Morgan Asset Management. At the time of the signing of the charters, Shell Shipping & Maritime head Grahaeme Henderson, said: "These ships will deliver a 60% reduction in carbon emissions compared to 2004 steam turbine LNG carriers. Shell's ambition is to be a net-zero emissions energy business by 2050 or sooner and highly efficient ships like these are one of the ways that we are reducing emissions in our operations." The newbuild LNG carriers will be integrated into Shell's time-chartered trading fleet and staggered delivery is expected to take place from mid-2023. Shell announced the long-term charter of eight ships of the same class in December 2019. One of the X-DF propulsion LNG carriers that was recently delivered to a long-term charter with Shell, *SCF Timmerman*, features a boil-off gas (BOG) partial re-liquefaction system, which significantly reduces cargo losses while on long voyages or awaiting cargo operations. These fuel-efficient, lower carbon intensity ships will underpin's Shell's recently announced 'Powering Progress Strategy' to become a net-zero emissions business by 2050. Using its net carbon emissions from 2016 as its baseline, Shell has set short-term goals for reducing net carbon intensity by 6 to 8% by 2023, 20% by 2030, 45% by 2035 and 100% by 2050. Meanwhile, Oslo-listed Flex LNG operates both ME-GI and X-DF propelled ships in its 13-vessel fleet. In its Q3 2020 presentation to investors, Flex LNG highlighted that LNG carriers propelled by ME-GI or X-DF propulsion were receiving in excess of US$100,000 spot headline freight rates per day. ***"These ships will deliver a 60% reduction in carbon emissions compared to 2004 steam turbine LNG carriers"*** As of early November, ME-GI propulsion vessels were outperforming tri-fuel, diesel-electric (TFDE) tonnage. Average spot rates for TFDE LNG carriers were US$112,500 per day, while ME-GI vessels were US$125,000 per day. While not nearly as lusty as spot rates secured during the same period over the previous two years, ME-GI and X-DF propulsion still outperformed TFDE, with charters averaging US$145,000 versus U$130,000 during the same period a year earlier. At the same time, steam-propelled vessels were securing average day rates of US$90,000. Major four-stroke order, Of course, not all shipowners are opting for two-stroke, dual-fuel propulsion. At the end of January, Wärtsilä reported it would supply 36 Wärtsilä 46DF dual-fuel engines, plus gas valve units and auxiliaries for a series of LNG carriers being built for the Yamal LNG project. Deliveries of the equipment will commence in August 2021, according to Wärtsilä. The order, which is valued at more than €100M (US$121M), was placed in December 2020 by DSME and includes the option for a further four ships.

Fleet growth ahead

There are 176 LNG carriers, including floating storage and regasification units (FSRUs) on order, according to recent BRL data. Not including small-scale vessels, FSRUs or laid-up vessels, the conventional LNG carrier fleet grew 6% year-on-year (y-o-y), from 503 in 2019 to 529 in 2020. Based on the delivery schedule, the fleet will grow another 10% y-o-y, to 581 vessels,

according to Poten & Partners. LNG exports edged up in 2020 0.3% y-o-y to 362M tonnes and are forecast to grow another 3% in 2021, to 371M tonnes. In Q4 2020 and Q1 2021, most of the shipping demand has been driven by a rise in US LNG exports, with increasing demand from Asia driving up tonne-mile demand and requirements for efficient vessels. Overall, global LNG export cargoes rose from 415 in September to 444 in October to 460 in November, with the US accounting for 44, 64 and 83 cargoes, respectively, tightening the market for spot tonnage. Poten & Partners reports as of December 2020 there were 41 LNG carriers uncommitted on term charters out of a fleet of 529 vessels, or 7.7%. Over the next two years, however, vessels available on the spot market could grow. By December 2021, this will more than double to 95 vessels out of a fleet of 581 LNG carriers, or 16.4%. By December 2022, this will grow to 140 vessels out of 611, or 22.9% of the fleet. Source : www.rivieramm.com

CHINA'S GAS PRICES FROM RUSSIA FALL AS MARKET RISKS RISE

In October and November, the prices charged by Russian monopoly Gazprom dropped to U.S. $126 (810 yuan) per thousand cubic meters from $144 per thousand cubic meters (tcm) in the third quarter, Interfax reported, citing Chinese customs data.The decrease marked the first time that China's costs dropped below those for Europe since the 3,000-kilometer (1,864-mile) pipeline began deliveries in December 2019.Gazprom was charging China more than twice as much as its prices for Europe in January and February 2020, according to earlier Interfax reports and rates cited by Belarus President Alexander Lukashenko last April when demand slumped due to the COVID-19 crisis. At the time, Russia was selling gas in Europe for "no more than $90 per thousand cubic meters," Lukashenko told the BelTA state news agency. But by October, Russia's spot market prices in Europe had risen to $168 per tcm, while China's prices from the Power of Siberia line fell by some 38 percent, Interfax said. The unexpected price break for China was the result of contract provisions that were negotiated over a decade and which Gazprom still regards as a "commercial secret." The provisions of the 30-year deal include quarterly adjustments based on price changes for petroleum products with a nine-month delay, according to Interfax. The starting price for the changes has remained undisclosed. In its first year of operation, the $55-billion pipeline and gas development project delivered about 4 billion cubic meters (bcm) of gas to China, exceeding daily contractual supply obligations in December to meet China's cold weather demand. The extra deliveries appear to have made up for China's attempt to suspend gas imports last February during the COVID lockdown by declaring force majeure, a legal exemption from contract commitments due to circumstances beyond a party's control. The rocky start to the project's first year of operation has been followed by huge swings in gas prices that are likely to affect costs and benefits on both sides as Russia presses ahead with its plans for expansion. Last year's supplies from the project accounted for less than 3 percent of China's combined imports of pipeline and liquefied natural gas (LNG). But plans call for volumes to reach 10 bcm in 2021, rising to 38 bcm per year with a possible increase to 44 bcm by 2025, Gazprom has said.

Pricy pipeline

As Russia's first gas pipeline to China, the Power of Siberia project has proved to be a costly investment with uncertain returns. This year, Gazprom will more than triple its financing for the project from 55 billion rubles (U.S. $722 million) to 192 billion rubles this year with spending on pipeline connections between its Chayanda and Kovykta gas fields in Siberia. Last year, China started construction of a 1,509-kilometer pipeline section from Yongqing in northern Hebei province to Shanghai as part of its 5,111-kilometer route from the Russian border to be completed in 2025, Reuters reported. China has not disclosed its costs for the project, but Gazprom officials have said that the supply contract includes a "take-or-pay" provision covering 85 percent of the scheduled deliveries. The complexities of the contract and the price changes make it hard to tell whether state-owned China National Petroleum Corp. (CNPC) or Gazprom is getting the better of the Power of Siberia deal.The outcome is particularly uncertain in an unsettled energy market where Asian spot prices for LNG have swung from record lows to record highs in a matter of weeks. In a commentary on Sino-Russian energy relations for the Carnegie Moscow Center, energy expert Edward Chow said the profitability and relative benefits of the Power of Siberia project have yet to be determined. "It is too early to judge the commercial attractiveness of this 30-year gas deal. However, the Power of Siberia story does reveal the inherent risks in such deals," said Chow, a senior associate for energy and climate change at the Center for Strategic and International Studies in Washington. "They take a long time to negotiate, finance and complete; project costs and financial risks are high, market conditions will change in a notoriously cyclical industry; and political guidance may make deals easier to conclude, but does not guarantee commercial success," Chow said. The Power of Siberia project followed the relative success of Russia's first oil pipeline to China -- the Eastern Siberia-Pacific Ocean (ESPO) project, which opened direct deliveries in 2011, paving the way for massive investments. But unlike the investment in ESPO, Russia failed to secure any Chinese financing for the Power of Siberia project, leaving Gazprom to bear the risks on its own. Moscow has been partially drawn to the opportunity of China's growing gas demand by the need to develop Eastern Siberia and the Russian Far East. But political pressures from the West have also played a part."The need for diversification became more urgent for Moscow in 2014, when Western economic sanctions were imposed over the conflict in Ukraine," Chow said in his commentary. In an analysis last July, Interfax noted the timing of Russia's investment decision after years of trying to persuade China to accept a "western" pipeline route through Xinjiang instead."Russia needed a breakthrough in the East, and exactly two months passed from the signing of the decree on Crimea becoming part of Russia on March 21, 2014 and the signing of the contract to supply gas along the 'eastern route' on May 21," the news agency said.

Strange bedfellows

In his commentary, Chow compared Russia's energy relations with China to a less-than-perfect marriage. "Sino-Russian relations may be a marriage of convenience arranged by oil and gas, but arranged marriages have a way of lasting," Chow said. "Over time, the spouses get used to each other's annoying habits and understand the other person better," said Chow. "It is particularly helpful if there is a common enemy, such as an overbearing West," he said. Moscow now seems determined to double-down on its policy of increasing gas exports to China with a "Power of Siberia 2" pipeline crossing Mongolia to

deliver another 50 bcm per year. The plans appear to be forging ahead despite the risk that the pipeline could become a "stranded asset," unable to generate a return on investment, if China makes good on President Xi Jinping's pledge to peak carbon emissions before 2030 and achieve "net zero" emissions before 2060. In a meeting with President Vladimir Putin on Jan. 19, Gazprom CEO Alexei Miller said the company would submit a feasibility study for the Power of Siberia 2 project before the end of the first quarter. "But already, according to the pre-feasibility study, it can be said for sure that this is a technically feasible and a cost-effective project," Miller said. Miller seems to have made up his mind before determining whether the first Power of Siberia project will be cost- effective or not. In an email message, Chow said it is difficult to draw conclusions by comparing the delivered gas prices for China and Europe because of the higher pipeline tariff costs of using new infrastructure over a longer distance through Siberia. The Interfax comparisons do not use "netback" figures that take transportation costs into account. Even so, Russia has shown a predilection for mega-projects that would be more difficult to approve in a modern market economy with commercial considerations. "National champion companies can make different choices for strategic considerations," Chow said. "Nevertheless, even national champion companies have financial limits on how many strategic projects they can pre- invest in while anticipating improvement in market conditions," he said. Source : www.naturalgasworld.com

NUMBER OF UNCOMMITTED LNG CARRIER NEWBUILDS SHRINKING FAST

Shipbroker's are optimistic about the sector's prospects for shipping in the mid-term. Fewer on-order LNG carriers are showing as open for business as vessels are secured by charterers on term business prior to delivery. There are now just over 20 newbuildings available that have yet to be fixed on charters for periods of up to one year. Of those, the broker is showing 13 open vessels scheduled for delivery in 2021, a drop from the 17 logged earlier this year. A further 11 ships without term business are listed for handover in 2022, with one to follow in 2023.In mid-2020, TradeWinds reported that about one-third of the 132 vessels on order — some 45 ships — appeared to have no firm charter commitments. Some of the speculatively-ordered vessels delivering now might not be getting the rates that newbuildings contracted against seven-year-plus charters achieved. But there is some creativity going on with periods and options. It does not mean that these vessels will not re-emerge as sublets in the market later. Open newbuilding tonnage is a consequence of the strong winter seen for LNG carriers, where fleet utilisation shot up to 100%. Before winter, market players were "a little bit spooked" about 2021 but sentiment had lifted after strong action in December and January. "Winter risk is back on everyone's mind, something we haven't had in the previous two winters," he said. Supply disruption in Asia from producers such as Shell's Prelude FLNG unit and the Gorgon LNG project in Australia, the cold weather and higher gas prices pulled US cargoes to Asia over winter. As some Asian supply comes back online, Europe restocks and the market rebalances, this might slow some of the growth in sailing distance for vessels in 2021. But, from 2022 onwards, despite the slim volumes of new liquefaction due online, Brokers sees US trade slowly shifting back towards Asia and the broker remains optimistic for the LNG shipping market in the period into 2024. Bottlenecks in the Panama Canal are likely to remain a problem in periods of peak demand. While the Panama Canal Authority

is doing its best to accommodate vessels with a record number of transits logged this winter, these still proved insufficient to meet demand as waiting times increased and more ships opted to take a longer route from the US to Asia via the Cape of Good Hope. The analyst added that the LNG market is also “not done with floating storage”. This started to rise in 2018 and was a factor in the past two years.“It will continue to be historically relatively high in 2021,” he said. We believe there will be fresh LNG carrier orders in the next 18 to 24 months on the back of projects with uncovered requirements and for fleet renewals. A tendency for orders to skip the 2023 delivery window for 2024, indicating that slots for the earlier year could prove a headache for yards. The brokerage sees LNG carrier demolition rising throughout this decade. source : www.tradewindsnews.com

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