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LNG JOURNAL PUBLICATION

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Global energy adapts to twin hit by the oil price slump and coronavirus

New oil and natural gas forecasts lead to corporate uncertainty on trading and hedging

LNG Journal editor

CME Group, the world's leading derivatives market, reported an all-time daily volume record for oil and natural gas futures and options after markets plunged under the weight of the economic effects of the coronavirus and an oil price war, with trading levels in energy futures rising in all markets.

CME said the record of 6.8 million contracts was set on March 9 and surpassed the previous record of 6.2M recorded on September 16, 2019 after the attacks from Yemen on Saudi oil installations.

Derivative surge

The futures and options surge came the day after North Sea Brent crude dropped by its biggest margin in 30 years in such a short time span from almost \$50 per barrel to \$33.56 as Organization of Petroleum Exporting Countries (OPEC) and Russia failed to agree production cuts.

However, oil and gas and stock markets staged shirt rebounds on March 10 and March 11 after the previous day's tumble on signs of co-ordinated action by the world's biggest economies to counter the economic impacts of the coronavirus epidemic.

The US itself has slashed price forecast for Brent crude and the Henry Hub natural gas price. (See Page 2).

Analysts said the oil price slump and the US forecast changes would prompt derivatives traders and company hedging programmes to alter their positions amid a certain chaos brought on by uncertainty in energy and other market.

CME, led by Chief Executive Terry Duffy, later reacted to the coronavirus by closing its Chicago trading floor as of the close of business on Friday March 13 as a precaution to reduce large gatherings that can contribute to the spread of coronavirus. CME said the move was in line with the advice of medical professionals.

All energy and equity, commodities and energy futures and options products will continue to trade on CME Globex as they do today.

The company's headquarters at 20 S Wacker Drive in Chicago has remained open.

The biggest CME traded volumes on March 9 were in Crude Oil futures, Henry Hub Natural Gas futures, New York Harbor Ultra Low Sulfur Diesel (ULSD), RBOB Gasoline Futures and Brent Last Day Financial Futures.

Eighth on the CME traded list was the Natural Gas European Option.

The CME's LNG futures are all relatively new and did not make the list as they were only launched within the past six months.

The CME, which is the former Chicago Mercantile Exchange, introduced its LNG freight futures on December 23, 2019.

The trading and settlement platform had previously launched a futures contract in October 2019 for LNG linked to physically delivered volumes from Cheniere's Sabine Pass plant.

CME noted that its West Texas Intermediate Light Sweet Crude Oil futures and options also reached a record 4.8M contracts on March 9, surpassing the previous record of 4.3M contracts traded on September 16, 2019.

"Amid global economic uncertainty, market participants around the world continue to turn to CME Group's energy futures and options for managing their risk," said Peter Keavey, CME Group Global Head of Energy.

"In particular, our benchmark energy products have experienced high volumes outside of US market hours, demonstrating deep liquidity and flexibility around the clock," added Keavey.

LNG prices under long-term supply contracts are expected to be lower during the next earnings reporting season by the oil and gas majors as Asian natural gas utilities benefit from lower prices.



Day of Crisis: the CME CEO addresses US investors

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US reduces oil and natural gas forecasts as well as expected storage and Permian and shale-gas output

LNG Journal editor

The US Government has issued its short-term energy outlook to take account of what it said was the second-largest daily oil price decline caused by the lack of an agreement between leading oil nations such as Saudi Arabia, Russia and other members of the Organization of Petroleum Exporting Countries.

The Energy Information Administration delayed its March short-term outlook by 24 hours to incorporate recent significant global oil market developments.

Declines

The report noted that on March 9, Brent North Sea crude oil front-month futures prices fell below \$35 a barrel, a 24 percent daily decline.

"As a result of the outcome of the March 6 OPEC meeting, EIA's forecast assumes that OPEC will target market share instead of a balanced global oil market," stated the EIA.

The report forecasts Brent crude oil prices will average \$43 a barrel in 2020, down from an average of \$64 a barrel in 2019.

The government body forecasts that Henry Hub natural gas spot prices will begin to rise in the second quarter of 2020 as US production declines and natural gas use for power generation increases the demand.

"EIA expects prices to average \$2.22 per million British thermal



US President Trump's address on crisis as seen in South Korea

units in the third quarter of 2020," said the report.

However, Henry Hub spot prices are seen averaging \$2.11 per MMBtu in 2020 and increasing in 2021, reaching an annual average of \$2.51 per MMBtu.

In February, the Henry Hub natural gas spot price averaged \$1.91 per MMBtu.

"Warmer-than-normal temperatures in February reduced demand for space heating and put downward pressure on prices," it said.

US dry natural gas production set a record in 2019, averaging 92.2 billion cubic feet per day (Bcf/d).

Although the EIA forecasts dry natural gas production will average 95.3 Bcf/d in 2020, a 3 percent increase from 2019, the report expects monthly production to generally decline through 2020, falling from an estimated 96.5 Bcf/d in February to 92.3 Bcf/d in December.

"The falling production mostly occurs in the Appalachian and Permian regions," stated the EIA.

"In the Appalachian region, low natural gas prices are discouraging producers from engaging in natural gas-directed drilling, and in the Permian region, low oil prices reduce associated gas output from oil-directed wells," explained the report.

In 2021, the EIA forecasts dry natural gas production will rise from December 2020 levels in response to higher prices. Forecast dry natural gas production for 2021 averages 92.6 Bcf/d.

The agency estimated that total US working natural gas in storage ended February at 2.1 trillion cubic feet (Tcf), 9 percent more than the five-year (2015-2019) average.

It forecasts that total working inventories will end March at 1.9 Tcf, 12 percent more than the five-year average.

In the forecast, inventories rise by almost 2.1 Tcf during the April through October injection season to reach almost 4.0 Tcf on October 31.

The EIA forecasts OPEC crude oil production will average 29.2

million barrels per day (b/d) from April through December 2020, up from an average of 28.7 million b/d in the first quarter of 2020.

The EIA forecasts also forecasts that OPEC production will rise to an average of 29.4 b/d in 2021.

The OPEC production data in the US March outlook includes Ecuador, which finalized its withdrawal from OPEC at the March 6 meeting.

Beginning with the April 2020 the outlook will include Ecuador's production volumes in non-OPEC data.

EIA expects global petroleum and liquid fuels consumption will average 99.1 million b/d in the first quarter of 2020, a decline of 0.9 million b/d from the same period in 2019.

The report also expects global petroleum and liquid fuels demand will rise by less than 0.4 million b/d in 2020 and by 1.7 million b/d in 2021.

"Lower global oil demand growth for 2020 in the March outlook reflects a reduced assumption for global economic growth along with reduced expected travel globally because of the 2019 novel coronavirus disease (COVID-19)," said the EIA.

For 2020, EIA expects prices will average \$37/b during the second quarter and then rise to \$42/b during the second half of the year.

The EIA expects that average Brent prices will rise to an average of \$55/b in 2021, as declining global oil inventories put upward pressure on prices. ■

Saudi Aramco's new shares appear bulletproof amid plunges in stocks of global oil and LNG companies

Saudi Aramco, the company with LNG plans and behind the global energy turmoil because of the Saudi government pledge to increase crude oil production, still has its shares trading at a high level of 30.90 riyals (\$8.24) on the Saudi Tadawul stock exchange.

The shares of Saudi Aramco have dropped just 8.2 percent since March 5 when they were at 33.15 riyals, while energy majors around the world

have suffered double-digit drops.

The Saudi Aramco shares have also lost just 12 percent of their value since they traded at 35.20 Saudi riyals (\$9.40) on the first day after an initial public offering of 1.5 percent of the company's shares.

That first day's share trading after the IPO brought Saudi Aramco's value up to \$1.88 trillion, but it has only briefly gone over the \$2

trillion market value in 2020. The value of Aramco is more than the top five energy majors who are also prominent LNG producers, ExxonMobil, Royal Dutch Shell, Chevron, Total and BP.

ExxonMobil shares dropped from \$50 per share on March 5 after the Saudis announced a price war with plans to sell much more oil. ExxonMobil shares alter edged higher to

\$43.41 per share, valuing the largest US energy major at \$183 billion.

BP of the UK saw its shares also recover on March 11 to 333.60 pence from 420 pence on March 5 before the global plunge. Anglo-Dutch company Royal Dutch Shell has UK and European shares and the Euronext value was 15.71 euros, still well down on the March 5 price of 19.67 euros. ■

Chart goes ahead with share buyback programme

Chart Industries, the US liquefied natural gas and industrial gases equipment supplier with a widening international presence in Europe and Asia, has authorized the repurchase of up to \$75 million of its common stock over the next 12 months.

Under the stock repurchase program, Chart may purchase shares of its common stock through various means, including open market transactions, block purchases and privately negotiated transactions in accordance with federal securities laws.

"This stock buyback program reflects our confidence in our business going forward, and we believe our shares are an attractive investment opportunity," said Chart's Chief Executive Jill Evanko.

"Our strong cash flow simultaneously enables us to return value to shareholders, pay down debt, and deploy capital for productivity and growth opportunities," explained the CEO.

Analysts say that companies usually buy back their shares because management considers them undervalued.

The company buys shares directly from the market or can offer its shareholders the option of tendering their shares.

A share buyback reduces the number of outstanding shares, which can increase both the demand for the shares and the price.

Chart said that the timing and amount of any repurchases under this program will be determined by Chart's management at its discretion based on a variety of factors, including, but not limited to, trading volume and market price.

The company, whose headquarters are in the suburbs of Atlanta in Georgia, was been building its business in North America during the LNG plant buildout as well as in Europe with trucking fuel equipment and in Asia with proposed joint ventures. ■

Japanese spot LNG cargoes show effects of virus and over-supply

LNG Journal editor

Japanese spot liquefied natural gas cargoes contracted in February for imminent delivery reflected the combination of an over-supplied market and the first commercial effects of the coronavirus as contracted spot LNG prices dropped by \$2.50 per million British thermal units in a week or two from an already low base.

Shipments for Japan contracted in February 2020 cost \$3.40 per MMBtu compared with \$5.90 per MMBtu in the previous month and \$7.50 per MMBtu in February 2019.

DES values

Spot cargoes delivered to Japan in February 2020 cost at total of \$5.50 per MMBtu compared with \$6.00 per MMBtu in January 2020.

The cost of a delivered cargo a year ago, in February 2019, was \$8.30 per MMBtu, which was \$2.80 per MMBtu more than last month.

The monthly spot cargo numbers come from the commerce division

of the Japanese Ministry of Economy, Trade and Industry and are only issued if a minimum number of two trades are recorded.

Overall Japanese LNG imports edged lower in January and thermal coal shipments also declined as power demand dropped because of milder weather, though LNG imports still increased from Asia nations and Australia.

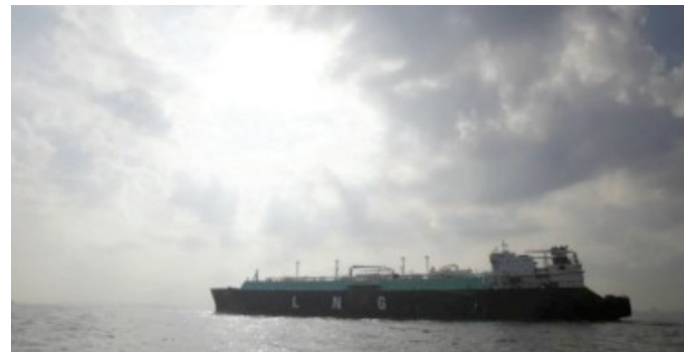
Japan imported 7.51 million tonnes of LNG in January 2020, down 0.5 percent from the 7.54MT received in January 2019.

The shipments cost the nation

394.84 billion yen (\$3.58Bln) in January, 17.7 percent lower than the import bill for January 2019, which came to 479.82Bln yen (\$4.36Bln), according to the figures from the Japanese Finance Ministry.

The country's imports of LNG fell for the whole of last year to 77.32MT, which was 6.7 percent lower than the 82.85MT of shipments that arrived in 2018.

The costs of cargoes sent to Japan amounted to 4,354 billion yen (\$39.72Bln) in 2019, down 8.1 percent from the previous year. ■



Storm clouds over LNG and energy are seen as temporary

Baltic Exchange Escrow Service boosted by base and ownership

The Baltic Exchange Escrow Service continues to gain traction, with new transactions completed in the fourth quarter of 2019 and the first three months of 2020.

The Baltic Exchange, owned by the Singapore Exchange, follows a robust due diligence process and complies with the Monetary Authority of Singapore requirements without compromising on flexibility and service speed to ensure the transactions are handled seamlessly.

This is reinforced by the strict internal control of fund movements from the dedicated escrow account held with AA-rated Singapore banks Overseas-Chinese Banking Corp (OCBC) and United Overseas Bank (UOB).

The escrow service, operated

from Singapore, facilitates both shipping and non-shipping transactions around the world.

Escrow services give certainty to all sides in a transaction that payments will be made on completion as they are held by a trusted third party.

In LNG, the London-based Exchange collects data from shipping brokers to provide assessment of three routes on the CME Group trading platform.

These form the basis for a suite of assessments for gas shipping and freight contracts, the first LNG derivative swap took place in July 2019, with cleared trades following since then as company built open-interest positions.

The LNG swaps based on shipments from Australia's Gladstone

port in Queensland to Tokyo, from the US Sabine Pass LNG plant in Louisiana, owned by Cheniere Energy, to the UK. A third freight contract is from Sabine Pass to Tokyo.

So far the Baltic Exchange's transactions supported by escrow have included asset sales and disputes. However, the service is available for any transaction requiring an escrow agent.

The Baltic Exchange is an independent organisation whose international membership is mainly made up of shipowners, shipbrokers and charterers.

It is the provider of trusted benchmarks and settlement data in the shipping industry. Its escrow service builds on this independence and trust. ■

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NEWS NUDGES

Nor-Shipping hires Algaard

Nor-Shipping, the annual trade fair held in Norway since 1965, said it hired Karen Algaard in the newly created position of Director of Nor-Shipping Operations and Strategy. Algaard, who moves from the shipping company Høegh LNG where she was Head of Contract Management and Controlling, will now work alongside Per Martin Tanggaard, who assumes the title of Director Nor-Shipping External Relations. "The move allows Tanggaard to focus on building Nor-Shipping's standing and influence within the marketplace, while Algaard takes on both long-term strategic planning and day-to-day business management," said the trade fair company. Nor-Shipping will take place in 2020 on June 1-4.

Santos-Korea assets deal

Australian LNG operator and shareholder in Darwin LNG and Papua New Guinea LNG plans to sell 25 percent in Darwin LNG and in the BayuUndan gas field in the Timor Sea to South Korean energy company and utility, SK E&S for US\$390 million. The deal is conditional on the Australian oil and gas producer's US\$1.39 billion purchase of ConocoPhillip's northern Australia business.

LNG ship rates steady

Shipping charter rates for LNG carriers in the spot market have levelled off and are little changed from a week ago. Rates were again quoted at an average of between \$39,000 per day and \$34,000 per day West of Suez and \$38,000 per day and \$33,000 per day East of Suez for vessels of between 155,000-165,000 cubic metres capacity, according to various brokers. One-year time charters have dropped for vessels of between 155,000-160,000 cubic metres capacity and are now seen at around \$55,000 per day. ■

Rio Grande project given notice to proceed on preparing site

LNG Journal editor

The Rio Grande LNG export plant proposed for a 984-acre site in the Port of Brownsville in Texas has been issued with a notice to proceed by regulators with the implementation plan and site preparation as well as equipment mobilization.

"Rio Grande LNG is authorized to mobilize equipment, trailers, and personnel to the Rio Grande LNG Terminal and commence full site preparation including site clearing and balancing, placement of imported material and rough grading of the terminal," said the notice from the Federal Energy Regulatory Commission.

Lining up

Full construction of the Rio Grande facility by NextDecade Corp. is expected to commence shortly after the final investment decision and with commercial operations scheduled by 2024.

Rio Grande LNG will comprise liquefaction Trains to produce 27 million tonnes per annum of LNG in the Port of Brownsville with four storage tanks, each with of 180,000 cubic metres of capacity.

Marine infrastructure includes deepwater port access with supporting facilities such as two jetties, a berth pocket and a turning basin.

Houston-based NextDecade, listed on the Nasdaq global exchange, can also proceed with



Agua Dulce natural gas hub will supply

the implementation of the projects Test Pile Program in Cameron County in Texas to lay out building methods and identify potential impacts that may occur when full construction begins.

The US Department of Energy has also authorized NextDecade to export LNG equivalents of natural gas to both Free Trade Agreement and non-FTA countries.

The plant at Brownsville is one of three plants planned for the area. The two others, Annova LNG and Texas LNG, are much smaller.

The FERC order also acknowledged the US Fish and Wildlife

Service's December 18, 2019 Endangered Species Act concurrence letter regarding the use of the Miradores Mitigation Site and the Loma Ecological Preserve as mitigation sites for Rio Grande LNG to support.

Rio Grande's permit is confined for now to purely site preparation activities rather than full construction of the liquefaction plant and the associated Rio Bravo Pipeline.

The Rio Bravo Pipeline will transport 4.5 billion cubic feet per day of feed-gas from the Agua Dulce natural gas hub to the liquefaction plant. ■

US regulators moves to make Alaska LNG decision in June

Alaska Gasline Development Corp., the lead developers of the Alaska liquefied natural gas export project, said regulators had published the final environmental impact statement for the venture to monetize North Slope gas and ship it to Asia as LNG.

The Federal Energy Regulatory Commission EIS report outlines mitigation measures and is a mandatory step towards gaining the principal federal approval.

FERC is scheduled to issue the final order for Alaska LNG in June 2020.

The AGDC proposes producing 20 million tonnes per annum of LNG with feed-gas brought to the southern Alaska coast on an 800-mile pipeline from the North Slope production areas.

The project was launched almost 10 years ago and there are still hopes that LNG would be produced and exported by 2025 after engineering, construction and production

costs were estimated at around \$43 billion.

The AGDC filed responses in October 2019 to some questions raised by the mitigation measures, numbering about 80 issues.

Other facilities at Cook Inlet on the Kenai Peninsula include eight compressor stations and power and service buildings.

The main pipeline would deliver peak capacity of 3.9 billion standard cubic feet per day of natural gas. ■

French LNG technology firm GTT signs technical services agreement with Excelerate Energy of US

LNG Journal editor

Gaztransport and Technigaz (GTT), the French technology firm for designs of systems for the maritime transportation and storage of liquefied natural gas, with Excelerate Energy of the US, a leading floating LNG terminal project company.

GTT said the accord was signed by its subsidiary GTT North America for a period of five years with the vessel and floating storage and regasification unit (FSRU) owner Excelerate.

Support

Under the agreement, GTT will support Excelerate Technical Management (ETM) with the maintenance and operation of nine FSRUs equipped with GTT's No. 96 storage tank system.

It includes GTT on-site technical assistance for inspection, maintenance, repairs, operations and engineering, as well as access to the HEARS®2 emergency hot-line, which enables ship-owners and their crews to contact GTT's experts 24/7 to respond to operational issues.

"We are pleased to have the opportunity to support a long term partner like Excelerate Energy in the efficient operations of their FSRUs,"

said Philippe Berterroitière, Chairman and Chief Executive of GTT.

"This agreement is pivotal to develop customised services, ensuring the performance and safety of each FSRU in operation," added Berterroitière.

Paris-based GTT notes that it has gradually been enlarging its range of services to support the operations of LNG carriers, floating LNG production hulls, FSRUs and other LNG-related structures to shorten dry-dock time, assist crews and ensure operational efficiency.

"Excelerate Energy looks forward to continuing a nearly two decades long relationship with GTT in direct support of our mission of providing safe and reliable world-class LNG services to our global customer base," stated Edward Scott, Chief Operating Officer of Excelerate.

Excelerate's operations have included setting up FLNG import terminals offshore the US, Argentina, Brazil and other nations in Asia and elsewhere such as the Middle East.

GTT also recently acquired a smart-shipping unit with the agreed takeover of Iceland-based Marorka.

The company also continues to supply its tank technology for newbuilds with the latest being for the Chinese Hudong-Zhonghua Shipbuilding Group.



Excelerate Energy's Mima Al-Ahmadi Gasport in Kuwait

The tanks are for two mid-scale LNG carrier ordered by Japanese shipowner Kawasaki Kisen Kaisha (K Line).

Each of these newbuilds would offer a capacity of 79,960 cubic metres and be fitted with the No. 96 L03-plus membrane containment system.

The delivery of the vessels is planned for the second quarter of 2022.

GTT's services also extend to the maintenance of fuel tanks for LNG-powered vessels.

GTT said in February that it had been chosen by Marseille-based shipping group CMA CGM to provide services for its LNG-fueled powered container ships.

The company will provide assistance for the commissioning, operation and maintenance of CMA CGM's

future 23,000 TFE (twenty-foot equivalent) LNG-powered container ships equipped with GTT tanks.

GTT noted that with 18,600 cubic metres capacity LNG tanks, these ships would be the largest container ships in the world to use LNG as fuel.

Bunkering vessels owned by French energy major Total and Mitsui Osk Lines of Japan will supply 300,000 tonnes per annum of LNG fuel to CMA CGM and its nine ultra-large newbuild containerships set to operate on the Europe-Asia trade route.

The GTT service package includes the training of crews of the CMA CGM fleet through the provision of the G-Sim training simulator, specially adapted to replicate the LNG operations of CMA CGM vessels. ■

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Freeport plant puts feed gas into third Train before start-up

The Freeport LNG export plant on Quintana Island in Texas was reached the final commissioning stage for the third Train with feed-gas now being introduced.

Freeport already has two Trains in operation and when the third ships its first cargo the combined nameplate output will be 15 million tonnes per annum.

The first production unit sent out its first shipment in December 2019 while the second was placed into service in January 2020.

The schedule for the start of commercial operations on Train 3 is around the start of May 2020.

Freeport project engineers McDermott International, with its joint venture partners, Chiyoda Corp. of Japan and Zachry Group of the US, announced the Train 3 progress.

"This marks a significant accomplishment for the project as the team works to complete the final train," said McDermott.

"The Freeport facility incorporates the largest electric motor-driven refrigeration compressors within the US and, once fully completed and commercially operational, will significantly improve North America's energy export capabilities," added the Houston-based engineering firm.

Mark Coscio, McDermott's Senior Vice President for North, Central and South America, praised the engineering, procurement and construction team for upholding the high safety and quality standards.

"We have achieved substantial completion for Trains 1 and 2, and now focus on delivering Train 3 as it transitions from construction phase to start up," added Coscio. ■

Santos advances Narrabri Gas project as alternative to LNG

LNG Journal editor

Australian liquefied natural gas plant operator Santos reports progress on a coal-seam gas project in northwest New South Wales with up to 850 wells and which the Adelaide-based company said would be less expensive than LNG imports to meet gas shortages.

Santos said the Narrabri Gas Project (NGP) has been referred by the NSW Minister for Planning to the Independent Planning Commission (IPC) for determination.

Gladstone operator

The operator of the Gladstone LNG export plant in Queensland said that this was a landmark in the Australian independent approvals process.

The next step is for the NSW Department of Planning to complete its assessment report and provide the report to the IPC for its consideration.

The Minister has requested that the IPC hold public hearings and make a determination regarding

the Narrabri Gas Project within 12 weeks of receiving the Department's assessment report.

While coal seam gas has been extracted from wells in Queensland for more 20 years, the industry has stalled in New South Wales, whose state capital is Sydney.

The adjoining eastern Australian states are separated by a border near the Tweed River.

Santos Chief Executive Kevin Gallagher welcomed the referral, noting that a decision on whether or not Narrabri can proceed is vital for Santos to determine where it will invest in new natural gas developments to supply the East

Coast gas market over the coming decade.

"If we can develop Narrabri gas, it will be the most competitively-priced gas for NSW customers, and it will always be cheaper than LNG imports, especially when gas prices are high in Asia," said Gallagher.

NSW imports more than 95 percent of its gas from other states and as a result, NSW businesses are at a cost disadvantage compared to their peers elsewhere.

"Ours is a cyclical business and we must not lose sight of the fact that the current low price and market conditions are not permanent," stated Gallagher. ■



New South Wales venture will need hundreds of CSG wells

US LNG developer Tellurian makes executive team changes

Tellurian Inc., the developer of the Driftwood LNG plant in Louisiana, has made executive team changes after earlier imposing spending reductions to traverse the headwinds of the current financial environment.

Kian Granmayeh, formerly Director of Investor Relations, is now Tellurian's Chief Financial Officer, responsible for financial strategy and liquidity.

Granmayeh, replaces Antoine Lafargue who will join the marketing group as Senior Vice President of LNG Marketing to advance commercialization of the Driftwood project.

Before joining Tellurian in January 2019, Granmayeh worked at Apache Corp. for four years in various roles in project execution, strategic plan-

ning and investor relations.

Previous to joining Apache he was a Vice President at investment bank Lazard Freres & Co.

Amos Hochstein, formerly Senior Vice President of LNG Marketing, is now Tellurian's Executive Vice President of LNG Marketing, leading the marketing of volumes and partnership interests from the Driftwood plant.

Before joining Tellurian in 2017, Hochstein served as the US Special Envoy for International Energy Affairs.

Tellurian said he led the US Department of State's Bureau of Energy Resources, where he oversaw global energy foreign policy engagement and advised the US Secretary of State and the Vice President on global energy markets.

Other in-place executives, Keith Teague EVP and Chief Operating Officer, Daniel Belhumeur EVP and General Counsel, Tarek Souki EVP and President of Tellurian Trading UK, and John Howie EVP of Upstream and President of Tellurian Production Co. continue as members of the executive leadership team.

"We are reducing our costs and reorganizing the company to make Tellurian resilient in the face of current challenges in financial and energy markets," said Tellurian President and Chief Executive Meg Gentle.

"We are redirecting resources to complete the marketing of the Driftwood LNG project, which is fully permitted and ready to begin construction," added Gentle. ■

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Finnish state-run firm Gasum leads year of gas and LNG evolution in Finland and Sweden

LNG Journal editor

Gasum, the Nordic LNG distributor owned by the state of Finland, said it continued to develop as a company over the past year marked by parliamentary elections in Finland and the European Union where climate change and the energy sector were at the centre of debate.

"The importance of biogas and the circular economy as part of solutions to the acute challenges relating to climate was emphasized after the elections, and the role played by gas is now increasing in Finland as well as other countries such as Sweden," said Johanna Lamminen, Chief Executive of Gasum in her annual review.

Targeted

Gasum said that LNG and biogas were being targeted at those sectors where emission rates were highest, namely road and maritime transport and industry.

"Last year was a year of huge leaps of change for Gasum," said Lamminen.

"For several years, we have been building Gasum into an energy company making it possible for our customers to access cleaner energy



LNG regas terminal at Roytta harbour at Tornio in Finland

on land and at sea," she stated.

Fully owned by the state of Finland, Gasum has LNG import assets in Finland and Sweden and LNG liquefaction as well as marine bunkering services through its former Skangas business, now integrated and operating under the Gasum banner.

The company's strategy includes an expansion to provide 50 LNG fuel stations by the early 2020s for Nordic transportation companies in Finland, Sweden and Norway.

"Our strategy of focusing on the development of the Nordic gas market and energy infrastructure is being implemented at a great pace," added the CEO.

She reiterated that the Group's revenue totaled €1.12 billion (\$1.28Bln), down 4.2 percent compared with 2018.

"The decline in revenue was caused primarily by the development in the sales price of gas. Our operating profit was €141.4 million, up 13.9 percent year on year," she added.

Gasum also concluded the acquisition of the energy industry expert company Enegia to be better positioned among energy market service providers.

"We also announced our acquisition of AGA's Clean Energy business and Nauticor's Marine Bunkering business from Linde AG last year," said Lamminen.

"Once completed, the transaction will create a platform for an even broader offering of low-emission energy solutions in response to growing demand among industrial, maritime and road transport customers," she added.

In other restructuring, Gasum

sold its subsidiary Gasum Tekniikka Oy to the industrial maintenance partner Viafin Service Oyj, which has continued the active development of gas-sector maintenance services.

Gasum continues to build its LNG bunkering business and carried out its 200 ship-to-ship operation in January 2020 as maritime use of the fuel gathers pace in northwest Europe.

The board of directors of Gasum has also been slightly changed with two new members appointed and two others stepping down.

The current members of the Board are Stein Dale, Elina Engman, Päivi Pesola, Elisabet Salander Björklund and Torbjörn Holmström. They were re-elected at the annual meeting.

"Minna Pajumaa and Ari Vanhanen were elected as new members of the Gasum Board and Elina Engman was elected as the Chair," said Gasum.

Juha Rantanen had previously served as the Chairman of the Gasum Supervisory Board during 2014-2016 and as the Chairman of the Gasum Board of Directors from 2016-2020.

Another member of the board and supervisory board since 2010, Jarmo Väisänen was no longer available when Board members were elected this time. ■

MAN Energy Solutions to supply LNG engines for shuttle ferry newbuild for Tallinn-Helsinki route

MAN Energy Solutions, the Denmark-based subsidiary of the German engine-maker, has won the order to supply engines for a shuttle ferry newbuild for Tallink Grupp, the Estonian shipping company, and the vessel will have liquefied natural gas as a primary fuel.

A diesel-electric plant comprising five MAN 51/60DF dual-fuel main engines, with main LNG capability, will power the "MyStar" ferry being built by Rauma Marine Constructions (RMC) at its shipyard in Finland. Delivery to the customer is scheduled for early 2022.

Upon entering service, the vessel will serve the important route from Tallinn in Estonia to Helsinki in Finland.

The MAN head office is in Augsburg, Germany as part of the Volkswagen Group.

It is best known in the LNG sector for its speciality power package in the electronically-controlled, gas-injection (MEGI) engine for LNG carriers and other vessels.

"Finland is always such an innovative market and it's very pleasing to land this order," said Lex Nijssen, Head of Four-Stroke Marine Sales

at MAN Energy Solutions.

"This agreement marks the second car and passenger ferry for RMC this year and we are very pleased that they have chosen to go with our 51/60DF units this time," added Nijssen.

"The engines performed strongly on the test bed, showcasing such characteristic advantages as load behavior and pure gas start, which ultimately led Tallink to choose MAN," he explained.

MAN Energy said the Finland-built ferry will utilise the newest technology with the aim of building the most environmentally-friendly and

energy-efficient vessel possible.

"Compared to Tallink's newest shuttle ferry, 'Megastar', which also operates between Helsinki and Tallinn, the 'MyStar' design, featuring the MAN main drivers, will reduce the ferry's emissions even further," said Jyrki Heinimaa, Chief Executive of Rauma Marine Constructions.

The Tallink vessel "MyStar" is the biggest vessel to date that RMC has agreed to build.

It will be approximately 212 metres in length with a gross tonnage of some 50,000 deadweight tons and will be able to accommodate 2,800 passengers. ■



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Germany's Uniper puts case through CEO for pipeline gas and LNG terminals in clean energy transition

LNG Journal editor

Germany utility and energy company Uniper outlined its strategy of focusing more on pipeline natural gas, LNG and gas-fired power while exiting coal as it swung to an annual profit from a loss the previous year.

Uniper, which is majority controlled by Finnish energy and power company Fortum, reported annual net income of 644 million euros (\$733M) compared with a loss of 422M euros in the previous year.

Sales still huge

The Duesseldorf-based utility posted annual sales in the power and gas markets of \$64.8Bln euros, a 30 percent drop from the 91.81Bln euros logged in 2018.

“With the decision to phase out coal having been made and the last nuclear power plant to be taken off the grid in 2022, gas will play an even more important role,” said Andreas Schierenbeck, Uniper’s Chief Executive.

Uniper currently manages a portfolio of power plants located across Europe and Russia, as well as focusing on its commodity trading business, such as power, emission certificates, natural gas and LNG.

“Efficient gas-fired power plants are indispensable to compensate for the fluctuating electricity generation from renewables,” said the CEO.

“The secure supply of gas is of great importance for the success of German industry, to ensure that the German economy runs smoothly and to provide heat to

millions of households in winter,” stated Andreas Schierenbeck.

“This makes the diversification of gas supply sources very important, especially given declining gas production in Europe. That is why Uniper is involved in both pipelines and the LNG business,” he explained.

He said the Russian-led Nord Stream 2 gas pipeline was an important project to ensure the security of gas supply in Europe.

“We assume that Nord Stream 2 will come online despite the delays and will transport up to 55 billion cubic meters of gas per year to us,” he added.

Schierenbeck also forecast a gas supply gap and that was one of the reasons Uniper was pushing ahead with “an important import terminal” in the German North Sea port of Wilhelmshaven.

Uniper said recently that the Wilhelmshaven FLNG terminal was expected to start up by 2023, just after another LNG

project, the rival Brunsbüttel venture proposed for the Elbe River near the port of Hamburg.

Uniper already trades LNG like most European utilities and describes itself as the facilitator of the Wilhelmshaven regasification project.

The Wilhelmshaven venture will have capacity of around 7.5 MTPA and Uniper has said various possible partners are interested in booking capacity as well as buying shares in the German import project.

The German utility has already lined up LNG supplies from Pieridae Energy, the developer of the Goldboro project in the Canadian Atlantic province of Nova Scotia.

Uniper added that its gross operating earnings were little changed compared to the previous year at 863M euros.

“They were positively impacted by the fact that the hydroelectric and nuclear power plants earned more due to higher electricity prices and production volumes,” said the company.

“Another positive contribution came from the Russian business and the reintroduction of the British capacity market. However, the non-recurrence of positive one-time effects from the previous year and lower production volumes at individual power plants had a negative impact,” added the Uniper statement.

Uniper noted that ending the generation of electricity from coal was an important piece of the energy puzzle in Europe.

“In the United Kingdom and the Netherlands, the last coal-fired power plants are scheduled to go off the grid by 2025 and 2030, respectively. The course is also set in Germany,” explained Schierenbeck.

“At the beginning of 2019, the Commission on Growth, Structural Change and Employment presented its final report, in which it outlined measures for implementing the phase-out of coal in Germany, which the German government then transposed into draft legislation at the end of January 2020,” he added.

“Uniper has always clearly stated its desire to make a constructive contribution to the phase-out of coal-fired power generation and to play an active role in shaping this transition,” said the CEO.

Uniper also said that in the second half of the reporting year, the Supervisory Board dealt in particular with Fortum’s planned increase in its stake in Uniper to more than 70 percent, and the current and future rating situation of the company. ■



Andreas Schierenbeck, Uniper’s Chief Executive, outlines strategy

Singapore makes more progress on plans for LNG Hub

Pavilion Energy, a unit of Singaporean wealth fund Temasek, and Singapore LNG Corp. have further strengthened their cooperation through the signing of a five-year agreement for liquefied natural gas storage and reload services at the terminal on Jurong Island as regional Hub plans progress.

Pavilion said this was the first such agreement signed for a term longer than two years, following a competitive bid process.

Under the agreement, Pavilion

will have access to tank capacity of 180,000 cubic metres on a segregated basis at the SLNG-owned terminal over the next five years.

Pavilion said that such capacity would support a higher volume of LNG trading activities, including LNG breakbulk and vessel cool-down services.

The contract’s longer tenure allows Pavilion greater flexibility in managing its LNG portfolio, market fluctuations and demand dynamics.

“Pavilion Energy is pleased to renew the partnership with SLNG. Tank capacity in Singapore presents greater opportunities for LNG optimisation and trading in the Asia-Pacific Basin,” said Frédéric H. Barnaud, Group Chief Executive of Pavilion.

“It complements well our LNG-gas trading activities in the Atlantic Basin,” added Barnaud.

“Pavilion Energy has held true to our commitment to facilitate

wide access to the SLNG Terminal, contributing to the vibrancy of Singapore’s LNG market,” he explained.

Tan Soo Koong, CEO of terminal owner SLNG, said the company was happy to extend its cooperation with Pavilion through this longer term storage and services agreement.

“SLNG has taken bold steps to develop infrastructure and create new service offerings to meet the needs of the industry and we will continue to do so,” added Tan. ■

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Dutch survey firm Fugro awarded contract for Japanese company Inpex's Abadi LNG project in Indonesia

LNG Journal editor

Inpex Corp., the developer of the Abadi onshore liquefaction and export plant in Indonesia, has awarded the Netherlands-based geo-data company Fugro a large marine survey contract to conduct geophysical and geotechnical surveys for the project.

Inpex is building the plant on Yamdena Island in a joint venture with Royal Dutch Shell using feed-gas from the Abadi gas field in the Masela Block of the Arafura Sea.

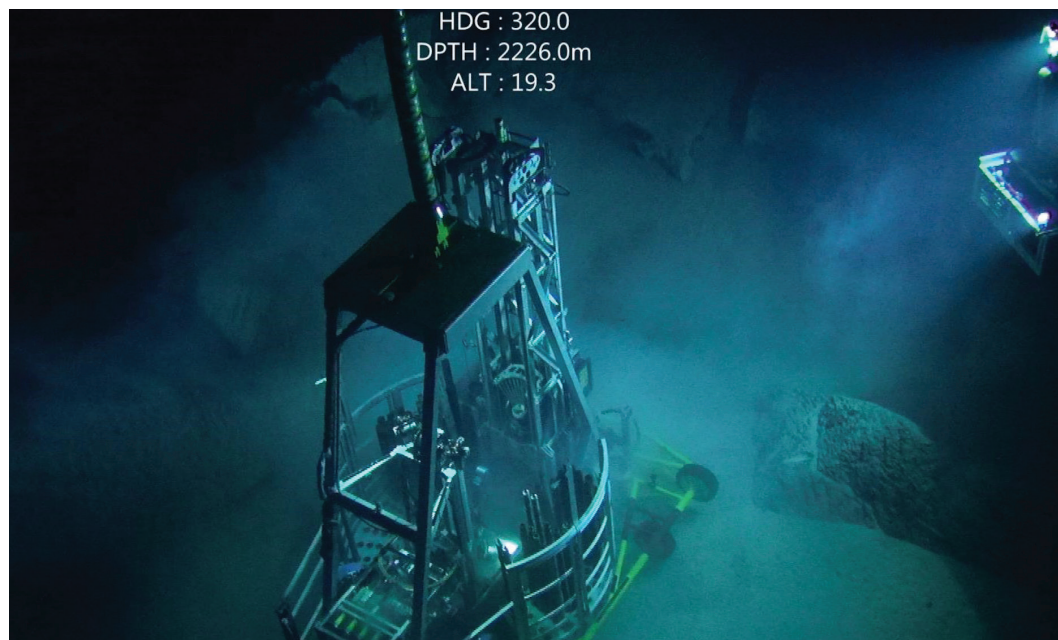
The liquefaction and export plant is expected to be operational by around 2027.

Inpex has already completed preliminary front-end engineering and design (FEED) for a facility with an annual initial capacity of 10.5 million tonnes.

Dutch firm Fugro will surveys and associated studies needed to support the FEED process for offshore production facilities and the pipeline to the onshore liquefaction plant.

Fugro said the geo-data would be acquired using Fugro's deepwater autonomous underwater vehicle (AUV) "Echo Surveyor" and their robotic seafloor drill, "Seafloor Drill 2", deployed from Indonesian support vessel.

"We are pleased to once again support Inpex, a company that understands the value provided by our geo-data expertise," said



Fugro's deepwater autonomous underwater vehicle

Jerry Paisley, Fugro's Business Line Director for the Asia Pacific Region.

"This is particularly valid for the development of the Abadi LNG project, where overcoming engineering challenges including slope stability, regional seismicity, subsea faulting and carbonate sediments will require a collaborative and informed approach at each stage of the Geo-data acquisition, analysis and advice," added Paisley.

Indonesia's state oil and gas regulator, the Upstream Oil and Gas Regulatory Special Task Force (SKK Migas), said it had sent a formal recommendation letter to the

Maluku provincial administration formally asking to have the liquefaction plant on Yamdena Island.

The Indonesians had earlier proposed that a 370-mile pipeline should be built to connect the Abadi gas field resources to a liquefaction plant on Indonesia's Aru Island, while Inpex had preferred a location in the southeast Asian nation's Tanimbar Islands.

Analysts said that Inpex seemed to have had its way as Yamdena Island is the largest of the Tanimbar Islands chain.

The original Inpex plan for the Abadi project with partner Shell

was to produce LNG from a floating production hull, similar to the Prelude FLNG project offshore northwest Australia that shipped its first LNG cargo in June 2019.

The Indonesians have also approved a 20-year extension to the Production Sharing Contract (PSC) for the Masela Block, extending the term of the PSC until 2055.

Inpex and Shell will be finalizing a marketing plan in 2020 and will also be considering supply accord for the Indonesian state-run domestic natural and electricity companies, Perusahaan Gas Negara and Perusahaan Listrik Negara. ■

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