LNG Unlimited

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Global majors push ahead on LNG despite challenges of new demands

ExxonMobil, Royal Dutch Shell and BP had plenty of often non-cash write-offs for year and fourth quarter

LNG News Editor

The leading oil and gas companies and major participants in the global liquefied natural gas business reported adverse fourth-quarter results, weighed down by the impacts of the challenges of the year 2020.

ExxonMobil, Royal Dutch Shell and BP all posted earnings reports with write-offs under various names, taking them into negative territory.

Explained

ExxonMobil Corp. posted a fourth-quarter loss of $20.1 billion because of write-offs for American gas assets compared with a $5.7Bln profit in the same three months of 2019 as the CEO said that income was boosted by LNG and liquids as well as Permian Basin shale activities.

"Improvements in upstream, natural gas, and LNG prices, as well as increased liquids production in Guyana, also benefited earnings," said the US major.

"As a result of the growing strength of our portfolio, we removed less strategic assets from our development plans, including certain dry gas resources," said the company.

These "less strategic assets" comprising certain dry gas resources in the United States, Western Canada and Argentina were removed from the company's Upstream development plan.

"This resulted in a non-cash after-tax impairment charge of about $19 billion," added ExxonMobil.

ExxonMobil, CEO Woods already has more than 20 new carbon-capture and sequestration projects advancing

Cash flow from operations was $17.3Bln in 2020 and amounted to $4.8Bln for the fourth quarter.

ExxonMobil's main LNG partner is Qatar Petroleum with their Ras Laffan joint venture Trains, while both are involved in developing the Golden Pass LNG export project on the Sabine-Neches Waterway in Jefferson County in Texas.

In a conference call hosted by Darren W. Woods, Chairman and Chief Executive, an overview of the current business was given, along with highlights.

"Despite challenging additions and a rapid change in activity, our progress in the Permian exceeded our plan and expectations," he explained.

Average realizations for crude oil were in line with the third quarter. Natural gas realizations, including LNG, rose by 39 percent in the quarter, reflecting market supply disruptions and seasonal demand.

On tackling climate change, ExxonMobil announced the creation of a new business, ExxonMobil Low Carbon Solutions, to commercialize its extensive low-carbon technology portfolio.

The organization will advance plans for more than 20 new carbon capture and sequestration (CCS) opportunities around the world to enable large-scale emission reductions.

UK major BP for its part reported a full-year loss of $20.3Bln, including significant impairments and exploration write-offs taken in the second quarter, compared with a profit of $4.0Bln 2019.

BP's 2021 outlook expects the US natural gas market to tighten as supply declines and demand for LNG exports recovers. "The current tightness on global LNG markets and higher US gas prices will lift other regional gas prices," said BP.

Royal Dutch Shell earnings were sunk by impairment charges as it posted a $21.68Bln annual lost compared with a profit of $15.84Bln in 2019, while LNG sales dropped 16 percent in the quarter and cash flow from LNG and gas sales plunged by 44 percent.

Shell added that its adjusted earnings resulted in a profit of $4.84Bln compared with $16.46Bln of profits in 2019, while fourth-quarter adjusted earnings were $393M.

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UNLIMITED AGENDA

Gas fields in Oman that put LNG exports back on track are subject of $2.6Bln stake sale by BP

LNG News Editor

UK major BP has sold a 20 percent stake for $2.6 billion to Thailand's national energy company in key tight natural gas fields onshore the Sultanate of Oman that enabled the Arabian Peninsula nation to stabilize then boost LNG exports over the past three years.

Under the deal with Thailand's PTT Exploration and Production Public Company (PTTEP), BP will remain operator of Block 61, with a 40 percent interest as it continues its selective divestment programme.

Sultanate of Oman in Arabian Peninsula still rich in reserves

Large area

Block 61, covering around 3,950 square kilometres in central Oman, contains the largest tight-gas development in the Middle East.

The block has already had two phases of development, the Khazzan field, which began production in 2017, followed by the Ghazeer field in October 2020.

"These two developments, targeted at a total of 10.5 trillion cubic feet of gas resources, have a combined daily production capacity of 1.5 billion cubic feet of gas and more than 65,000 barrels of condensate," explained BP.

"Gas from Block 61 is exported for domestic consumption into Oman's national gas grid, while also boosting availability of feedstock supply for Oman LNG," said the London-based major.

BP Trading and Shipping purchases cargoes from Oman LNG under a seven- year deal that started in 2018.

Oman is also planning to become a major LNG bunkering nation from its port at Sohar in cooperation with French major Total.

The main Omani LNG export facilities are at the port of Sur and send cargoes to nations such as Japan, South Korea and into the spot market.

The plant comprises the three amalgamated liquefaction Trains of Oman LNG and Qalhat LNG, now producing more than 10 million tonnes per annum.

A de-bottlenecking project, whereby better output can be achieved by fixing inefficiencies, both technical and operational, is increasing Oman's LNG output to 11.5 MTPA or more.

BP Chief Executive Bernard Looney said he was pleased to welcome Thailand's PTTEP to the successful Block 61 partnership.

"Block 61 is a pioneering development that has applied leading techniques and technologies to maximise efficiency and minimise emissions," added Looney.

"We are committed to BP's business in Oman and this agreement allows us to remain at the heart of this world-class development while also making important progress in our global divestment programme," stated the CEO.

The other shareholders in Block 61 are Oman Oil with 30 percent and Malaysia's Petronas with 10 percent.

BP said it was targeting divestment proceeds of $25Bln by 2025 and most recently completed the sale for $5 billion of the petrochemicals business to INEOS. ■

Sharjah in UAE makes progress with natural gas and hosts talks with CEO of LNG player Eni

The ruler of Sharjah, the third-largest emirate in the United Arab Emirates, has met with Claudio Descalzi, Chief Executive of the leading oil and gas exploration and production and LNG project company Eni, to take stock of progress after Eni's acquisition of the exploration rights on three onshore blocks.

Sharjah's ruler, Dr. Sultan bin Muhammad Al Qasimi who is a member of the Supreme Council of the UAE, and Descalzi discussed gas as well as other future opportunities relating to the energy transition.

Eni and Sharjah National Oil Corp. (SNOC), the state company of the emirate, recently started production from the Mahani gas and condensate field, located in Sharjah's onshore Concession Area B.

This was achieved in less than two years from the signing of the oil contract and in less than a year from the declaration of the discovery.

Eni, a shareholder in projects such as the Damietta LNG plant in Egypt set to soon come back on stream and in two Mozambique LNG projects, is also carrying out exploration activities in areas A and C of the emirate, of which Area C is largely under-explored.

"The milestones we have achieved so far with an incredible time-to-market is the result of the support of Dr. Sultan III bin Muhammad al-Qasimi and the harmonious partnership between SNOC and Eni," said Descalzi.

"These are great achievements, particularly considering the exceptional challenges incurred during the year due to the Covid-19 pandemic," added the Eni CEO.

The UAE is aiming to increase its natural gas resources by investing more in exploration and production in the next few years.

In the Sharjah gas field, Eni holds a 50 percent stake in the Concession Area B along with partner SNOC with the Sharjah firm acting as operator. Eni acquired Area B in a competitive bid round in January 2019.

Production from the Mahani field is sent through a new multiphase trunk line to SNOC's Sajaa Gas Plant where it is processed utilizing the existing facilities and infrastructure.

Eni said that field production is expected to increase progressively with the connection of further wells planned to be drilled during 2021-2022.

In addition to Sharjah, Eni is also present in two other emirates, Abu Dhabi and Ras Al Khaimah, the fourth-largest of the seven emirates that make up the UAE.

Abu Dhabi is the capital of the UAE and the second-most populous city after Dubai.

Abu Dhabi holds the most oil and gas resources of all the emirates and currently produces around 5.8 million tonnes per annum of LNG at the Das Island liquefaction plant off Abu Dhabi.

The UAE also imports diminishing quantities of LNG as its domestic gas position improves. ■

Auction move by Adriatic facility for Italian gas

Adriatic LNG, the offshore import terminal owned by Qatar Petroleum and ExxonMobil, has launched a consultation for the auctioning of a potential 153 billion cubic metres of regasification capacity over the next 25 years.

Interested parties have 45 days to submit observations on products and allocation rules.

Adriatic LNG has been operating since it was deployed in 2009 on a gravity-based structure off the coast of the Veneto region.

The operating company said the subjects of the two-fold consultations are, on the one hand, the products to be allocated and, on the other hand, the amendments to the Regasification Code needed to carry out the open season.

"With the public consultation we take a further step to create one of the most important events for the entire energy market of the Mediterranean area," said Sebastien Bumbolo, Adriatic LNG Law & Market manager.

"The latest developments in the regulatory framework implemented in Italy have new rules on the allocation of LNG regasification capacity which have already been successful in other European Countries," added Sebastien Bumbolo.

"Adriatic LNG is able to offer to the market large volumes through long-term allocations," he stated.

The joint venture operating company is controlled by ExxonMobil Italiana Gas and Qatar Terminal Ltd and a third shareholder is the Italian natural gas grid operator, SNAM, with a 7.3 percent stake. ■

Hiranandani of India and Höegh confirm FLNG Maharashtra deal

LNG News Editor

The Hiranandani Group of India and Höegh LNG of Norway have confirmed they are on track to deploy a floating import terminal in March 2021 to supply liquefied natural gas to the West Coast Indian state of Maharashtra and become to become nation's seventh terminal.

Höegh LNG and Hiranandani Group subsidiary H-Energy have just completed and signed all documentation for the 10-year charter of the floating storage and regasification unit (FSRU), the "Höegh Giant".

The 'Höegh Giant' to be deployed at Jaigarh port

Charter

The agreement is for a period of 10 years with annual termination options after year five.

"The 'FSRU 'Höegh Giant' is currently completing its LNGC charter with Spanish utility Naturgy, and will then proceed directly to Keppel Shipyard (Singapore) for minor modifications, in addition to pre-completion of the vessel's five-year periodic class survey, originally scheduled for 2022 as this will improve efficiency and reduce costs.," explained Höegh.

"The vessel is expected to be off hire for approximately 40 days in the first quarter of 2021 before the start-up under the H-Energy contract in March 2021," added the Norwegian firm.

The Indian company is aiming to develop LNG regasification terminals and cross-country pipelines on the West and East coasts of India and is making a start with the FSRU at Jaigarh port.

H-Energy's first vessel, the "Höegh Giant", was built in 2017 and has a storage capacity of 170,000 cubic metres and peak regasification capability of 750 million standard cubic feet per day to handle up to 6 million tonnes per annum of LNG. "The FSRU will deliver regasified LNG to the 56-kilometres Jaigarh-Dabhol pipeline connecting to the Indian National Gas grid and will also deliver LNG onshore for LNG truck-loading facilities," the companies explained.

The FSRU will also deliver LNG for onshore distribution through LNG truck loading facilities, as well as reloading LNG onto small-scale LNG vessels for downstream distribution or LNG bunker services.

Höegh President and Chief Executive Sveinung J.S. Støhle said he was delighted to have completed the agreements with H-Energy for the first FSRU LNG import terminal in India. ■

Avenir LNG takes delivery of large bunkering ship from Chinese yard

Avenir LNG, a company owned by Norwegian shipping and infrastructure operators, said its newest 20,000 cubic metres capacity LNG bunkering vessel has been launched in China and it would be delivered later in 2021.

The "Avenir Allegiance" entered the water at the Zhoushan Changlong Sino pacific Shipyard Co. in China's eastern Zhejiang province.

"The vessel is scheduled to be delivered from the yard in the third quarter of this year and she will join the Avenir LNG fleet as the world's largest LNG bunkering vessel," said Avenir.

Avenir is a joint venture owned by London-based Norwegian shipping and storage company Stolt-Nielsen and its peer fleet owners and project companies, Hough LNG and Gular LNG.

The company said that the "Avenir Allegiance" would be Cayman Island-flagged and is the fourth of six newbuilds delivered to Avenir.

Avenir's first newbuild delivery, the "Avenir Advantage", took place in October 2020 and will be followed by the "Avenir Accolade", the "Avenir Aspiration", the "Avenir Allegiance", the "Avenir Ascension" and the "Avenir Achievement" during 2021.

"We are delighted to see the latest, and largest, vessel in the Avenir LNG fleet being successfully launched by our partners CIMC SOE," said Peter Mackey, Chief Executive of Avenir LNG Limited.

"We look forward to taking delivery of the 'Avenir Allegiance' later this year," he added.

Avenir CEO Mackey stated that as the largest LNG bunkering vessel in the world, the "Avenir Allegiance" was a clear demonstration of Avenir's commitment to developing new LNG supply chains.

"She will play a critical role in helping the shipping industry to transition to LNG as a more environmentally sustainable fuel," stated Mackey. ■

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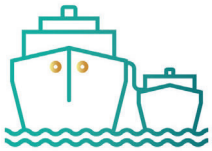
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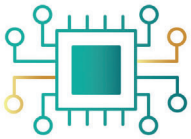
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NEWS NUDGES

Storage for LNG

LA Storage, a subsidiary of Sempra Energy and its Cameron LNG export plant near Hackberry in Louisiana, has filed with the US Federal Energy Regulatory Commission for permission to build new salt-dome storage facilities capable of providing about 20 billion cubic feet of working gas capacity to meet the needs of Cameron and other Gulf Coast energy plants. The application for the Hackberry Storage Project requests a certificate of convenience and necessity from FERC no later than the end of 2021, with plans to begin the storage service by around the first-quarter of 2024.

Charter rates tumble

Shipping charter rates for LNG carriers in the spot market have plunged for a third week by up to $24,500 dollars per day. Rates were quoted at an average of between $87,000 per day and $83,000 per day for vessels of between 155,000-165,000 cubic capacity in the West of Suez market. In the East of Suez charter market, rates were offered for ships at between $82,000 per day and $78,000 per day, according to various brokers.

Arctic LNG efforts

Novatek, the Russian natural gas company and developer of Yamal and Arctic II LNG, has signed a cooperation agreement with Italy-based Nuovo Pignone SpA, a subsidiary of the US Baker Hughes Company, aimed at reducing carbon-dioxide emissions. “The parties intend to cooperate in developing electrical and gas turbine solutions for natural gas and LNG production, as well as solutions for reducing CO2 emissions,” they said.

Chevron outlines Australia LNG plans and discloses impact on Permian of future US oil and gas restrictions

LNG News Editor

Chevron Corp., one of the leading global liquefied natural gas operators, will have continued lower output at the Gorgon and Wheatstone LNG plants in early 2021 and explained plans for the Permian Basin in Texas in the light of the new US regime for curtailment of the oil and gas industry by means of executive orders.

Chevron made its comments through Chief Financial Officer Pierre Breber and Chief Executive Mike Wirth in a conference call with analysts after the San Ramon, California-based major issued its fourth-quarter earnings with a net loss for the three months of $665M and full-year 2020 losses of $5.5Bln.

Out of service

“Gorgon Train 1 repairs are nearing completion, and we expect the facility to be back online in March,” said CFO Breber.

“After Train 1 is back online, Train 3 will be taken out of service for the propane vessel inspections, any repairs and the planned turnaround,” he explained.

“At Wheatstone, production is modestly below capacity while we repair an inlet separator,” stated Breber.

Chevron reported that included in the 2020 full-year earnings were net charges for special items of $4.5Bln, compared with net charges of $8.7Bln for special items in 2019.

CEO Mike Wirth also commented on the Gorgon and Wheatstone outlooks for the first couple of quarters of 2021.

“Wheatstone, for the rest of the year, should be back up to full capacity until a turnaround that begins late third quarter and runs into fourth, which we'd already planned and announced,” explained Wirth.

“And then, of course, at Gorgon, as Pierre mentioned, Train 3 will have inspection of these propane exchangers and a planned turnaround here in the second quarter of this year,” added the CEO.

Chevron is a big jobs provider in Texas operations

“So we will be lighter on Australia production, but a big part of that is planned turnaround activity and then there's an increment related to these repairs,” said Wirth.

“We've been able to satisfy all of our term needs, and we're in the market now with our commercial organization, buying a cargo here, selling a cargo there in and out of the spot market,” explained Wirth.

“But we haven't been out of position and hurt because we had to buy high and sell low to any meaningful degree through this whole cycle,” the CEO stated.

Wirth noted that in the Permian Basin, Chevron was thinking about several issues.

The CEO explained that as he looked at some of the announcements and developments that seem to be unfolding here in the US, it's “early days to understand exactly how these will play out” in reality.

“The executive order (on permits on Federal lands) was sweeping and broad, but it also lacks some specificity,’ said the CEO.

“And I think, certainly, as you listen to some of the members of the new Administration comment, as they introduce this and answered some questions, I think they're looking to flesh out the details in the coming weeks and months,” added Wirth.

“Onshore in the Permian, we're weighted toward Texas more so than New Mexico,” he said.

“We're weighted toward private land more so than Federal land. So we've got a fair degree of flexibility there, and that remains a highly attractive place for us to step capital up as we have the capacity to do so and the market conditions support it,” said Wirth.

“So I think the Permian equation looks pretty similar to what it did at the time we made those statements. Deepwater Gulf of Mexico, I think we just have to see how this unfolds. And certainly, we like the projects that we're advancing here. And there's been, I think, general signalling that existing leases are secure,” he added.

“Overall, Permian production will be up because we've added production from Noble. I think we've previously guided to kind of a 6 percent to 7 percent decline on the Chevron legacy production,” he explained.

“That actually, today, looks like it will be a little less steep, maybe more like a 5 percent decline on Chevron legacy production in 2021 versus 2020. And that's with flat activity levels, running five rigs and one or two completion crews over the course of the year,” the CEO said.

“Our projected growth is driven by a full year of production from the Noble Energy assets and lower expected curtailments,” said Wirth.

LNG engineer Chiyoda and LNG exporter Brunei succeed with first hydrogen supply-chain tests

LNG News Editor

Four long-standing LNG sector participants from Japan, along with the Sultanate of Brunei in South East Asia, have successfully completed the world's first global hydrogen supply chain demonstration and are progressing towards semi-commercialization.

Japanese engineering firm Chiyoda Corp. and shipping-to-project companies Mitsubishi Corp., Mitsui & Co and Nippon Yusen Kabushiki Kaisha (NYK Line) transported cargoes from a hydrogenation facility, the supplier, in the Sultanate of Brunei on the island of Borneo back to the demand centre, a dehydrogenation plant in Kawasaki, Japan, over 10 months.

Hydrogenation Plant

Dehydrogenation Plant

Hydrogen supply shipped from Brunei to Kawasaki in Japan

Building expertise

Chiyoda, Mitsubishi, Mitsui and NYK Line established their "Advanced Hydrogen Energy Chain Association for Technology Development (AHEAD)" project in cooperation with the Brunei government, Brunei LNG and the expertise surrounding its liquefaction plant. The hydrogen was transported from Brunei in ISO containers mounted on trailers in container ships.

On arrival in Japan in the future, it would be used as fuel in gas-fired power stations.

Hydrogen can be stored and transported as a chemically stable and safe liquid called methylcyclohexane (MCH) at ambient temperature and pressure.

Hydrogen was combined with toluene at the hydrogen supply site in Brunei and was then generated from MCH at the hydrogen demand site in Kawasaki in Japan.

Existing tanks, tankers and tanker trucks can be utilized for storage and transportation.

"The members of AHEAD are pleased to announce the successful completion of the world's first global hydrogen supply chain system," said a statement.

"The demonstration project, launched in 2015, was conducted by AHEAD and subsidized by the New Energy and Industrial Technology Development Organization (NEDO)," it added. NEDO is Japan's largest management organization for research and development.

The demonstration was part of the project's second phase (2017-2020) that included the design, procurement, construction and operation of facilities to validate the feasibility of the global hydrogen supply chain.

The hydrogen supply chain, which maximizes the use of existing infrastructure and meets international safety standards, commenced with the procurement of hydrogen in the source country, in this case Brunei.

It is then transported to a consuming country in the form of methylcyclohexane (MCH), as explained above, and distributed using Chiyoda's SPERA Hydrogen technology.

"By transporting and storing over 100 tons of hydrogen over 10 months, the demonstration verified that the system, an example of Japanese environmental technology, is technically ready for commercial use and confirmed SPERA Hydrogen's potential contribution to global carbon neutrality in 2050," the companies explained.

Chiyoda said it would now expand the system towards semi-commercialization by the mid-2020s, reducing costs through economies of scale in line with increased hydrogen demand. ■

ICE reports soaring trade in Dutch TFF JKM LNG

The Intercontinental Exchange, the US-based operator of global trading platforms and clearing houses, reported record activity across its markets for European Dutch Title Transfer Facility (TTF) futures and Japan-Korea Marker futures for North Asia spot cargoes.

"Market participants are utilizing the TTF and JKM LNG (Platts) contracts to manage their risk in record quantities," said the Atlanta, Georgia-based ICE.

Trading activity records included the highest ever Dutch TTF futures open Interest (OI) tally of approximately 1.9 million contracts on January 27, 2021. Open Interest is the total number of outstanding derivative contracts, such as options or futures that have not been settled for an asset.

TTF futures and options also hit record daily volumes of more than 347,500 contracts on January 12.

The Dutch futures, which guide pipeline natural gas and LNG values and activities, posted an average daily volumes increase on ICE of 67 percent year-on-year, with open interest up by 40 percent.

ICE owns 12 regulated exchanges and platforms. Its global natural gas complex spans trading hubs from the US and Canada to Europe and Asia, underpinned by an offering of more than 600 financially and physically-delivered contracts.

"TTF Futures and Options hit record monthly volume of approximately 4 million contracts in January, beating the previous record set in January 2020," explained the ICE report.

"JKM LNG (Platts) hit a combined futures and options OI record of approximately 125,000 contracts on January 14," ICE added.

■

Edge sets up in Midland in Texas to offer Permian Basin liquefaction

LNG News Editor

Edge LNG, a US company involved in delivering LNG to market by converting stranded and flared natural gas, has unveiled its new facility in Midland in Texas to meet growing demand for its services.

The new premises will hold operating equipment of both Edge LNG and Galileo Technologies, it's exclusive technology partner, and will additionally be home to the first training center for both companies.

New premises holds equipment and will also offer LNG training for Edge LNG and Galileo Technologies

Central

Located in the heart of the Permian Basin, the 10,000 square feet premises allows Edge LNG access to all major transport links which are vital in the transportation of LNG.

The new site will act as a focal point for Edge LNG's Permian operations, bringing the company closer to its customers.

It will allow customers to see equipment first-hand and offer the opportunity to attend training sessions to better understand the company's business model and operations. "This is an exciting time for the LNG market and after a challenging year we are seeing growth in the Permian," said Jonathan Brignac, Vice President of Business Development at Edge LNG.

"Not only does the opening of our facility underline our commitment to our customers, it highlights our commitment to the Permian, where we see so much opportunity and potential to expand our business," added Brignac.

"Our investment here allows us to provide a cleaner alternative to diesel for operators, replace the need for flaring or venting and unlock the potential of stranded wells," he explained.

Edge LNG has marketed the trade-marked Cryobox-Trailer, designed and manufactured by Galileo Technologies.

Each unit can produce around 10,000 gallons (15 metric tons) of LNG per day, directly from the well or flare.

Galileo Technologies is both an investor and exclusive technology partner of Edge LNG.

■

Air Products lines up technology for first Mexican export plant

US company Air Products, the world's leader in liquefied natural gas technology and equipment, has signed an agreement to provide propriety equipment and a related process license to the Sempra Energy Mexican LNG export plant at Costa Azul on the Pacific Coast.

"The Air Products manufacturing facility in Port Manatee, Florida will manufacture the coil wound heat exchangers (CWHE) for its LNG process technology, which will then be shipped to the project export terminal site in Ensenada in Mexico," said Air Products, based in LeHigh Valley in Pennsylvania.

The Mexican plant development is a joint venture involving Sempra, its Mexican subsidiary IEnova and European energy company Total.

TechnipFMC, the Franco-US company, received a notice to proceed for its Costa Azul LNG engineering, procurement and construction contract in. November 2020.

"ECA LNG is a new customer for Air Products' LNG business, and we are pleased our AP-DMR process technology was selected to assist them in meeting their LNG business goals for the first phase of this strategic west coast North America LNG project," said Samir J. Serhan, Chief Operating Officer at Air Products.

"This project will showcase the innovative benefits of our technology, as it will utilize our highly efficient and cost effective dual mixed refrigerant (DMR) process for this unique, compact site location," explained Serhan.

"Our recently expanded manufacturing facility can serve all customer needs in terms of LNG production capacity and reinforces our commitment and presence to serve all the LNG markets worldwide, from baseload mega-Trains to mid-scale bunkering facilities to small-scale facilities," stated the COO.

The LNG equipment from Air Products is aimed at enabling around 3 million tonnes per annum of LNG at the Ensenada location, which is an existing import terminal.

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UK calls in the French to construct new LNG storage tank for Europe's largest regas terminal

LNG News Editor

France's Entrepose Contracting, a unit of Vinci Construction Grands Projets and the UK's Taylor Woodrow, has been awarded an engineering, procurement and construction contract by the UK's National Grid to build a liquefied natural gas storage tank to serve the import terminal for London.

The companies will construct a 190,000 cubic metres capacity LNG tank at the Isle of Grain import terminal southeast of London, located on the Thames-Medway river estuary.

All the companies involved in the LNG tank project are all Vinci Construction subsidiaries.

"This project is part of the programme to expand the capacity of the largest LNG terminal in Europe, located on the Isle of Grain, on the East Coast of England, 60km from London," said Vinci.

Company has built 20 LNG tanks worldwide in recent years

Vinci said that the full containment tank will have a 9 percent nickel steel inner tank with a prestressed concrete outer shell, poured in-situ using slip-forming.

The works, for a budget of €200 million ($243M), are set to continue until June 2025.

Analysts note that LNG supplies to the Isle of Grain terminal are key to London's energy security as one shipment of LNG from a nation like Qatar can maintain the capital's power capabilities for at least five days. Vinci has already built about 20 LNG storage tanks worldwide over the past 15 years, including three which are still under construction, two in Russia with 160,000 cubic metres capacity each and one in Canada with 225,000 cubic metres capacity.

"The Group is recognised for its capacity to meet the expectations of major players in the sector and confirms its leading position in the design-build of large-scale cryogenic storage tanks in any type of environment," said Vinci.

The UK regasification facility currently has 1 million cubic metres of LNG storage spread across eight tanks and an annual throughput capacity of 20 billion cubic metres of natural gas.

With the terminal expanding its facilities with an additional tank and associated vaporizer capacity, its future annual throughput will increase to 25 Bcm of natural gas, or 18.5 million tonnes per annum of LNG.

Qatar Petroleum announced in October 2020 that it had arranged storage and redelivery capacity for 25 years at Grain LNG.

The deal was signed between the UK gas network operator National Grid and Qatar Petroleum's Qatar Terminal Limited (QTL) unit after the conclusion of an open season process.

GTT receives approval for fuel tanks to equip LNG-powered ultra-large container vessels

Gaztransport and Technigaz (GTT), the French designer of liquefied natural gas maritime and onshore storage, has received approval for the No. 96 containment system application as an LNG fuel tank for Ultra-Large Container Vessels from the European classification society DNV GL as the number of LNG-powered ships increases.

GTT and DNV GL reviewed the compatibility of the No. 96 technology within a container vessel hull to ensure that the integration of such a containment system would be fit for purpose.

Under the Approval in Principle (AiP) procedure, a sloshing assessment of the containment system was also performed.

"This approval by DNV GL now allows us to offer to the ship-owners two membrane technologies," said Philippe Berterottière, Chairman and Chief Executive of GTT.

"GTT's Mark III technology has already been certified and now the No. 96 tanks, already used in over 200 LNG carriers, represent a reliable and competitive solution which is particularly well adapted to Ultra Large Container Vessel fuel tanks," explained Berterottière.

> **"The availability of technology alternatives is important for our customers to accelerate the transition to more environmentally-friendly fuels"**
>
> *- Ivar Håberg, Director of Approval of DNV GL*

Ivar Håberg, Director of Approval of DNV GL, worked with GTT in the adaption of the tanks for fuel applications.

"The availability of technology alternatives is important for our customers to accelerate the transition to more environmentally-friendly fuels," added DNV's Håberg.

Among recent orders, GTT will equip ARC-7 ice-breaking LNG carriers for the Korean shipyard Daewoo Shipbuilding and Marine Engineering.

That order came in December 2020 after receiving previous orders in October from a Russian shipyard.

Three of the LNG vessels will be built on behalf of the Japanese ship-owner Mitsui OSK Lines and the other three on behalf of the Russian ship-owner Sovcomflot.

GTT said each vessel will have a capacity of 172,500 cubic metres and be fitted with the No. 96 GW membrane containment system.

They will be delivered throughout 2023 and will operate as part of the Russian LNG producer Novatek's Arctic LNG II project.

GTT's other orders for Russian-built vessels are from the Zvezda Shipyard in the Russian Far East, located at Bolshoi Kamen on the coast of the Sea of Japan and about 12 miles northeast of the city of Vladivostok.

GTT said each Russian-built vessel would offer a capacity of 172,600 cubic metres capacity and be fitted with the Mark III membrane containment system.