

LNG Unlimited

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Texas LNG project's CEO pledges Asia supplies from Permian Basin

Shale-gas will fuel Gulf Coast export plant build-out and help supply China
LNG Journal editor

Developers of the Rio Grande liquefied natural gas project in Texas have told an audience in the Chinese capital Beijing they intend to produce abundant supplies for Asian markets from US resources in areas such as the Permian Basin.

The Permian Basin is located in West Texas and southeast New Mexico. Currently about half of active US drilling rigs are in the Basin, up from just 20 percent in 2014.

Targets

Matt Schatzman, Chief Executive of NextDecade Corp., a company started by former Royal Dutch Shell senior LNG executive Kathleen Eisbrenner, said the development of the Rio Grande liquefaction and export plant would provide fuel for Asian users like China at attractive prices.

Schatzman, himself a former executive of UK LNG portfolio player BG Group and acquired by Shell, said his company would be one of a new wave of LNG plants that would provide natural gas for increasing global needs.

"By our estimates, approximately one-third of this 150 million tonnes per annum shortfall could be supplied by planned LNG projects outside of North America," said Schatzman.

"This leaves approximately 100 MTPA of new liquefaction capacity that must be developed and built in North America. We believe most of this new capacity will be built on the Gulf Coast of the US,"



Matt Schatzman (centre) during a contract signing in March

stated Schatzman. "The US is rapidly emerging as an increasingly important player in the global LNG market. By the end of 2019, US-sourced LNG could represent approximately 19 percent of available supply," said Schatzman at a conference in Beijing.

"By 2025, this figure could grow to approximately 32 percent of available supply. We are in the early stages of a prolonged period of structural demand growth in LNG," he stated.

The US executive said the two most prolific component basins within the Permian are the Delaware and the Midland.

"They hold vast hydrocarbon resources that rival the largest reserve bases in the world, including Qatar and Saudi Arabia," said Schatzman.

"The production economics of the Midland and Delaware are driven by the production of oil not by natural gas," he explained.

"Like many oil plays, there is a significant amount of natural gas associated with the production of this oil.

"However, unlike some areas that allow the gas to be flared to reap the economic benefit of the oil, the States of Texas and New

Mexico prohibit long-term flaring of natural gas.

"So how will these producers continue to produce oil? Under these conditions, Permian producers must find a market for the associated natural gas to enable oil production," he said.

"This, in turn, drives down the breakeven economics of the natural gas to extremely low levels," he said.

"New and emerging markets have already begun to change the landscape. Lower LNG costs, coupled with the evolution of floating storage and regasification units, have expedited LNG market penetration," added the CEO.

"Last year, in China alone, LNG demand grew by nearly 50 percent. We project Chinese demand could exceed 80 MTPA by 2025, making it the largest LNG market in the world.

"Likewise, the United States will emerge as the world's largest supplier of LNG in the same time frame," he pointed out.

He said the Permian Basin is approximately 400 miles from the Texas Gulf Coast, requiring incremental pipeline capacity to bring the gas to market.

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Royal Dutch Shell posts rise in LNG sales volumes as higher prices offset rise in operational costs

LNG Journal editor

Royal Dutch Shell posted a 17 percent increase in first-quarter sales volumes of liquefied natural gas from its global production assets located in countries such as Australia, Qatar, Nigeria and Peru as higher prices offset a rise in operating costs.

Shell posted a 69 percent rise in overall earnings to \$5.70 billion compared with \$3.38Bln in the same three months of 2017.

The Anglo-Dutch company said earnings in its Integrated Gas division, including LNG, rose 31 percent to \$2.39Bln from \$1.82Bln in the same quarter last year.

Benefits

"Integrated Gas earnings, excluding identified items, benefited from increased contributions from trading, higher volumes and higher realised oil, gas and LNG prices," said Shell.

"This more than offset the impact of higher operating expenses," added the company.

First-quarter LNG sales amounted to 18.58 million tonnes



Shell's LNG buyers are large and small and include Japan and the UK overseas territory Gibraltar (above)

versus 15.85MT in the year-ago quarter.

Shell said total production in Integrated Gas increased by 31 percent (the same percentage rise as its gas earnings), mainly due to higher volumes from the Gorgon LNG export plant in Australia and from the Pearl gas-to-liquids project in Qatar, where it is also a stakeholder in one of the world's largest LNG processing Trains.

The company noted that it had sold its stake in the Australian LNG operator Woodside Petroleum as part of its divestment programme,

though still managed to post an increase of 9 percent in global LNG liquefaction volumes.

Shell said overall first-quarter natural gas production was 7.5 billion cubic feet per day, down 1 percent compared with the same quarter a year ago.

In other natural gas division highlights, Shell took a charge of \$244 million related to its gas assets in the Netherlands after the Dutch government's decision to reduce production from the Groningen field to zero by 2030.

It also explained that in the up-

stream division generally production was affected by the sale of a package of assets in the UK North Sea and onshore assets in Gabon, partly offset by new fields ramping-up.

"Shell's strong earnings this quarter were underpinned by higher oil and gas prices, the continued growth and very good performance of our Integrated Gas business, and improved profitability in our Upstream business," said Royal Dutch Shell Chief Executive Ben van Beurden.

"Less favourable refining market conditions and lower contributions from trading impacted the earnings of our Downstream business," added the CEO.

"We continue to upgrade our portfolio through performance improvement, new projects, divestments and the development of new businesses.

"Competitiveness and resilience - now and through the energy transition - are key features of our world-class investment case," he said.

French energy major Total announces record first-quarter output driven by Yamal LNG

French energy major Total posted record first-quarter production, driven by the ramp-up of LNG output at the Yamal liquefaction plant in Siberia as net income increased.

Total said adjusted first-quarter operating income was \$3.38 billion, up 22 percent from the \$3.01Bln posted in the same quarter of 2017, due to the strong performance from Exploration & Production, taking advantage of higher prices and growth in Gas Renewables & Power and Marketing & Services.

The company said adjusted net income for the three months was up 13 percent at \$2.9Bln.

The Group's share of LNG sales, excluding trading, amounted to 2.5 million tonnes, a fall of 16

percent from the 2017 quarter when data was restated to reflect volume estimates for Bontang LNG in Indonesia.

"First quarter production reached a record level of more than 2.7 million barrels of oil equivalent per day, an increase of more than 5 percent from a year ago, despite the expiration of the Mahakam permit in Indonesia," said Total.

"Notable drivers included the ramp-ups of new projects, like Yamal LNG in Russia and Moho Nord in Congo, as well as the contribution of new assets, in particular Maersk Oil and Al Shaheen in Qatar," it added.

"There were also two start-ups

in the first quarter, Fort Hills in Canada and Timimoun in Algeria," explained the company.

Natural gas production was down 3 percent to 6.66 billion cubic feet per day from 6.89 bcf/d.

The average gas price realized by the company was up 15 percent at \$4.73 per million British thermal units from \$4.10 per MMBtu in the year-ago quarter.

"Oil prices continued to rebound in the first quarter 2018," stated Chairman and Chief Executive Patrick Pouyane.

"Brent rose to an average of \$67 per barrel, supported by strong demand, OPEC-non-OPEC compliance and geopolitical tensions," he added.

"Conversely, as a result of this increase, refining margins were weaker (down 34 percent). In this context, the Group's adjusted net income continued to increase compared to a year ago," said Pouyane.

The Total CEO said the Group continued to prepare for the future.

"Major successes were achieved by successfully obtaining two new 40-year concessions in offshore Abu Dhabi, acquiring a 16 percent interest in the Waha onshore concession in Libya and growing its position in the deep-offshore Gulf of Mexico, following the giant discovery of Ballymore in January," said Pouyane.

Santos starts gas expansion to boost home and LNG supply

Australian LNG asset holder Santos, including the operatorship of the Gladstone coal-seam-gas-to-LNG export joint venture in the eastern state of Queensland, said it completed the commissioning and start-up of the Scotia natural gas expansion project.

The venture, situated in the Bowen Basin, 340 kilometres northwest of the Queensland capital Brisbane, will supply around 67 million cubic feet per day at peak production in late 2019.

"It significantly boosts feed-gas supply to the Santos GLNG project and benefiting both the east coast domestic gas and export LNG markets," said the company.

Santos operates the GLNG plant with partners including Malaysia's Petronas, Korea Gas Corp. and French energy major Total.

It also has stakes in the Papua New Guinea LNG plant operated by ExxonMobil Corp and in its expansion project, as well as being a shareholder in ConocoPhillips export facility in Darwin in Australia's Northern Territory.

The feed-gas start-up comes following a recent takeover bid for Santos by Harbour Energy, a subsidiary of US equity firm EIG Global Energy Partners.

Santos said its Scotia gas project employed more than 400 people to expand the Scotia compression plant and field from 23 to more than 100 wells, while building 85 kilometres of pipeline infrastructure, communications towers and an irrigation system for water treatment.

"The project was estimated to cost A\$493 million (US\$373M), but the team has delivered it for A\$416 million, 16 percent under budget," said Santos Chief Executive Kevin Gallagher.

Malaysia starts LNG deliveries to oil refiner in South Korea

LNG Journal editor

Malaysian energy company Petronas said it delivered its first LNG cargo to South Korean oil refining company S-Oil Corp. to start a 15-year supply agreement.

Under the agreement, Petronas will deliver up to 700,000 tonnes per annum to S-Oil at the Korean import terminal at Gwangyang.

S-Oil is the third-largest oil refiner in South Korea and S-Oil is controlled by Saudi Aramco, the world's largest crude oil exporter.

Sourced

The first shipment came from the Petronas onshore plant at Bintulu and was unloaded from the 137,100 cubic metres capacity LNG carrier "Puteri Zamrud Satu" at Gwangyang, an import facility built for the previously sole use of Korean steelmaker POSCO.

The LNG carrier is chartered to Petronas by Malaysia International Shipping Corp., which has around 30 LNG vessels in its fleet.



Gwangyang terminal received a shipment from Bintulu

"As an integrated global oil and gas player, Petronas remains committed to becoming the most reliable LNG supplier, through innovative and flexible solutions to accommodate the different needs of our buyers," said Ahmad Adly, Petronas Vice President for LNG Marketing & Trading.

S-Oil is using the LNG for the operation of expanded production facilities and as a feedstock for petrochemical products.

Petronas has said the cargoes will be regularly shipped from the Bintulu plant in Sarawak, where

nine processing Trains are in operation.

It plans to use LNG as fuel to run refining plants and as a feedstock for petrochemical products.

Petronas is also producing LNG from the world's first floating LNG hull deployed offshore Sarawak over the Kanowit gas field.

It additionally has a stake in the Australia Gladstone coal-seam-gas-to-LNG plant in the eastern state of Queensland and operated by Adelaide-based company Santos.

Indian imports rise as US cargoes add to Qatar and African volumes

Imports of liquefied natural gas by India for the month of March jumped 16.8 percent compared with the year-ago period and were more than 7 percent up on the previous fiscal year as shipments were received from traditional supplying nations such as Qatar and Nigeria and newest supplier the United States.

Cargo deliveries to India's three main import terminals at Dahej, Hazira and Dabhol near the West Coast port of Mumbai amounted to 1.86 million tonnes of LNG (2.51 billion cubic metres) compared with 1.59MT brought in during March 2017.

The cumulative imports for fiscal 2017-2018 amounted to 19.55MT (26.427 Bcm), a rise of around 7.3 percent versus the

18.24MT of shipments received in the previous fiscal year, according to the figures from the Indian Ministry of Petroleum and Natural Gas.

"LNG import for the financial year 2017-18 was the highest ever import figure for the fuel," stated the Ministry.

For March the cost of the imports soared by 50 percent to around \$900 million versus \$600M in March 2017.

The Ministry's figures showed that LNG purchases from April 2017 to March 2018 amounted to \$7.8 billion compared with costs of \$6.1 billion in the 2016-2017 fiscal year.

Shipments to India had amounted to 1.56MT in February (2.11 Bcm) 2018, which was 1 percent lower than in February 2017

when 1.57MT of LNG was brought in. Gross domestic production of natural gas for the month of March was 2.78 Bcm versus 2.75 Bcm in the same month of 2017, a rise of 1.18 percent.

The cumulative domestic natural gas output for fiscal 2017-2018 was 2.35 percent higher at 32.64 Bcm versus 31.89 Bcm in the previous fiscal year.

Cheniere Energy's first shipment of LNG for Gas Authority of India from the US Sabine Pass plant was unloaded at the Dabhol import terminal on March 30 from the 165,500 cubic metres capacity "Meridian Spirit".

This shipment marked the start of the 20-year LNG supply contract between Cheniere and GAIL.

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Zhang Jia-Hua

Operations Team Leader

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NEWS NUDGES

Solid Statoil earnings

Norwegian energy company Statoil, operator of Europe's only baseload LNG production plant at Hammerfest in northern Norway, reported increased first-quarter earnings of \$4.4 billion and \$1.5Bln after tax. Net operating income was \$4.96Bln compared with \$4.25Bln in the first quarter of 2017. "The increase was primarily due to higher liquids and gas prices and increased volumes of liquids sold, partially offset by the reduced value of derivatives and higher operational costs," said Statoil. First-quarter gas sales volumes amounted to 15.5 billion cubic metres, little changed from the 2017 quarter.

Enagas profits steady

Enagas, the Spanish natural gas network and LNG import terminal operator, posted a first-quarter net profit of 103.9 million euros (\$126.7M), a rise of 1 percent compared with the same three months of 2017. The company said its performance was mainly due to two factors, control of operating and financial expenses and positive performances by affiliates. "Demand for natural gas in Spain grew by 5.2 percent in the first quarter," said Enagas. "Total demand for the year to date was more than 7 percent," added the company.

BP Chair for Lund

US energy major BP named former Statoil and BG Group Chief Executive Helge Lund to succeed Carl-Henric Svanberg as its new Chairman. "Lund will join the BP Board as chairman designate and a non-executive director on 1 September 2018. BP said he would take over as Chairman in January 2019 and be based in London.

Bangladesh joins LNG importer nations with commissioning cargo

LNG Journal editor

Bangladesh is now a liquefied natural gas importer after a floating storage and regasification unit (FSRU) provided by Excelerate Energy of the US arrived at the Asian nation's Moheshkhali Island on the Bay of Bengal and unloaded a commissioning cargo supplied by Qatar.

The arrival of the FSRU, the "Excellence", sets in motion the Bangladesh import project co-developed by national energy company PetroBangla, Excelerate and the International Finance Corporation, part of World Bank Group.

Charter

The "Excellence" will enable Bangladesh to import around 3.5 million tonnes per annum of LNG.

Excelerate has agreed to operate the terminal at Moheshkhali for 15 years for a fee of around \$90 million per annum.

After this period, ownership of the terminal will be transferred to PetroBangla.

An onshore gas pipeline connects the FSRU to Chittagong, located on the Bay of Bengal and



The FSRU 'Excellence' is deployed in Bay of Bengal

the country's second-largest city after the capital Dhaka.

Regular supplies will come from Qatar under a 15-year supply agreement with Bangladesh for volumes of 2.5 million tonnes per annum.

The Qatari agreement marked the first ever long-term supply accord signed by the Gulf nation for regular deliveries destined for an FSRU.

The Moheshkhali terminal FSRU has 138,000 cubic metres of LNG storage capacity and the infrastructure includes a subsea buoy system anchored offshore.

The Bangladesh project was made possible because of World

Bank funding and will enable PetroBangla to increase natural gas supply by up to 20 percent, sufficient to support 3,000 megawatts of gas-fired power generation capacity.

Indian companies are also studying LNG import projects in Bangladesh and Mitsubishi Corp of Japan has plans for the construction of additional power plants.

In January 2018, Bangladesh Power Development Board also signed an accord with Indonesia to develop new gas-fired power capacity, together with the deployment of an FSRU and related LNG supplies.

US and Japan to help Asian LNG with support for Philippines and Vietnam

The US and Japanese governments said they planned to offer financing and technical assistance to countries within the Indian subcontinent and southeast Asia as part of the promotion of US liquefied natural gas exports to the region.

The US State Department in Washington hosted a roundtable with the Japanese Ministry of Foreign Affairs attended by more than 150 government officials and company executives.

"They identified specific activities in the areas of commercial cooperation, joint financing and risk mitigation, policy advocacy and capacity building in the energy sector," said a statement.

The US gathering, led by Vice President Mike Pence and Japanese Deputy Prime Minister Taro Aso, was the second Public-Private Sector Roundtable event under the US-Japan programme for Cooperation on Third Country Infrastructure.

According to the participants, the US and Japan plan to enhance their support for LNG infrastructure projects across the Indo-Pacific region.

The move comes as the US now has two LNG export plants on stream, one at Sabine Pass in Louisiana since 2016 and another at Cove Point in Maryland that started commercial operations in 2018.

However, a surge of US exports

is expected in the early 2020s when about half a dozen industrial-scale plants will come on stream with economically-priced volumes that would benefit the nations of South Asia.

Under one area of collaboration, the US Trade and Development Agency and the Japanese Ministry of Economy, Trade, and Industry (METI) would offer help to Vietnam and the Philippines with personnel training and other capacity-building assistance.

The US and Japan also plan to cooperate on commercial LNG projects for power generation in Bangladesh and Indonesia.

McDermott and CB&I agree name and brands and reject late rival bid as merger proceeds

LNG Journal editor

US energy and LNG engineering companies McDermott International and CB&I announced their global name and brands as a last-minute alternative bid for McDermott by a Norwegian rival, the Subsea 7 company, was rejected.

McDermott and CB&I agreed to their merger in December 2017 in an all-stock transaction valued at \$6 billion, creating a larger on-shore-offshore operator to target large engineering, procurement and construction contracts.

Portfolio

CB&I has built LNG facilities around the world, including the Peru LNG production plant at Pampa Melchorita, the only export facility in South America, and currently has two contracts on the US Gulf Coast, Cameron LNG in Hackberry, Louisiana, and the Freeport facility in Texas.

McDermott has worked on off-shore portions of LNG production projects, most recently in countries such as Australia and Trinidad in the Caribbean.

The merger is now moving towards its finalization in the second quarter.

"Following the closing of the combination, the combined company intends to retain the name



CEO of merged company David Dickson seeks results

McDermott," said the Houston, Texas-based company.

"The name McDermott provides a strong foundation for the combined company and a platform on which we can build our future together," said McDermott President and Chief Executive David Dickson, who will continue to lead the combined company.

"We are known today as a company that delivers excellence in project execution in a cost-efficient delivery structure for the global energy industry.

"Together, McDermott and CB&I will have the integrated technology, engineering expertise, unmatched experience and global reach to design and build the energy infrastructure of the future," stated Dickson.

McDermott also revealed that its Board rejected an unsolicited, non-binding proposal received from Subsea 7, listed on the Oslo stock exchange, to acquire all of the outstanding shares of McDermott for \$7.00 per share, amounting to about \$2Bln, payable entirely in cash or with up to 50 percent in Subsea 7 stock and the balance in cash.

"McDermott's Board carefully reviewed and considered the proposal in consultation with its outside financial advisors and legal counsel," it said.

"The Board concluded that the proposal was not in the best interests of the company or its stockholders as it significantly undervalued McDermott and was not an attractive alternative to

the proposed combination with CB&I," added McDermott.

McDermott and CB&I have received all necessary regulatory approvals and have completed key financing milestones.

"The combination transaction is expected to close in May 2018. It remains subject to customary conditions, including approval by McDermott's and CB&I's stockholders," said McDermott.

As part of the McDermott-CB&I merger agreement, CB&I's industry-leading business that provides proprietary process technology licences, associated engineering services, catalysts and engineered products will use the Lummus brand name.

"Lummus also offers process planning, project development services and a comprehensive program of aftermarket support primarily for the petrochemical and refining industries," said McDermott.

CB&I's world-renowned storage tank business will also keep its current branding.

"CB&I has the most extensive global experience of any storage tank construction company in the industry, having built in excess of 46,000 storage structures in more than 100 countries," stated McDermott.

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European LNG terminal and network firms win Greek bid

European liquefied natural gas terminal stakeholders and network operators in Spain, Italy and Belgium have won majority control of the Greek gas grid operator sold in a tender by the government privatization agency.

Greece had received two binding bids for a 66 percent stake in the Greek operating company DESFA being offered by the privatization agency as one of the conditions for the European Union nation's international financial bail-out.

The government said the winning bid was submitted by the group including three companies, Spanish gas transmission network owner and LNG terminal operator Enagas, Belgium's Fluxys and Italy's natural gas operator Snam.

Enagas controls six LNG terminals in Spain and the gas network. Fluxys, through various units operates the Belgian gas network and owns the Zeebrugge LNG terminal in Belgium and a stake in Dunkirk LNG in France. Snam is also a network operator and owns the Italian Panigaglia terminal near Genoa.

The Greeks accepted a bid of 535 million euros (\$660M) for the majority stake in DEFSA.

"Discussions have started with a pool of Greek and international banks to secure a non-recourse financing package for the acquisition," said the tender winners.

The losing bid group had comprised of the Spanish owner of the Mugardos terminal in northwest Spain, Regasificadora del Noroeste (Reganosa), Romanian gas network owner Transgaz and the European Bank for Reconstruction and Development (EBRD).

LNG equipment-maker Chart swings to profit after overhaul

LNG Journal editor

Chart Industries, the US LNG and energy equipment maker, swung to a first-quarter profit from a loss in the year-ago period as orders continued to build.

Net income for the first quarter was \$5.8 million or \$0.18 per diluted share compared with a net loss for the first quarter of 2017 of \$2.9M, or (\$0.09) per diluted share.

Strong

Chart said order activity continues to be strong across all segments and this was the fifth consecutive quarter of sequential order growth, with a 13 percent rise compared with the fourth quarter of 2017.

First-quarter orders amounted to \$321.1M and were a third higher than the same three months of last year.

"Orders increased 53 percent, or \$111.4 million (\$74.4 million excluding Hudson Products) above the first quarter of 2017," said Chart in reference to its acquisition sector rival Hudson.

"The first quarter of 2018 continued to reflect the strong demand seen in 2017 for natural gas projects in both petrochemical and LNG export, with equipment



Bill Johnson leading Chart forward as CEO and President

orders received primarily for the West Texas Permian Basin," added Chart.

The company said its Energy & Chemicals division had a sequential increase in orders over the fourth quarter of 2017 of 24.6 percent and included four orders greater than \$2M each.

"Distribution & Storage had sequential order growth of 11.2 percent over the fourth quarter of 2017 and was driven by continued strength in packaged gas and LNG vehicle tanks," explained Chart.

Gross margin as a percent of

sales of 27.6 percent increased from the fourth quarter of 2017, reflecting the benefits of completed restructuring.

The company noted that a strategic review was underway in its oxygen-related product lines within its Biomedical division.

"We are pleased with the start to 2018, both from a market and order perspective as well as the productivity results reflected in the margin in each of the segments," stated Bill Johnson, Chart's Chief Executive and President.

Baker Hughes-GE posts solid earnings with optimism on LNG

Baker Hughes-GE, the energy services company and maker of turbomachinery for LNG production plants, posted solid first-quarter earnings and said the natural gas market continued to show strong LNG demand support.

BH-GE said orders amounted to \$5.23 billion for the quarter, down 8 percent from the \$5.70Bln logged on the fourth quarter of 2017, though they were up 9 percent on the \$4.81Bln attained in the year-ago quarter.

"Market fundamentals remain supportive, as crude oil prices are

relatively rangebound, providing stability to customers as they evaluate projects," said Lorenzo Simonelli BH-GE Chief Executive and Chairman.

"The gas market continues to grow, and strong LNG demand supports the view that new capacity will be required in the early to mid-part of the next decade," he added.

"BHGE is uniquely positioned across the oil and gas value chain, and well placed to benefit from the long-term industry trends," stated Simonelli.

First-quarter 2018 net income

amounted to \$70 million compared with \$30M in the fourth quarter of 2017.

Quarterly revenues amounted to \$5.39 billion versus \$5.32Bln in the same three months of 2017 and were down 7 percent compared with the fourth quarter of 2017 when they were \$5.79Bln.

The latest earnings come as Boston-based parent General Electric considers whether to continue with its merger partner Baker Hughes under a transaction only finalized in late 2017.

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Cheniere Energy settles Sabine Pass LNG plant storage tanks safety issue with US regulator

LNG Journal editor

Cheniere Energy has settled with US energy infrastructure regulators the terms and conditions under which it is allowed to bring back into service two LNG storage tanks temporarily shut at the Sabine Pass export plant in Louisiana.

The agreement with the US Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) calls for repairs and continued investigation of the root cause of the mishap that occurred in January 2018.

Concentrating

Cheniere said it was now concentrating on bringing Tank 1 safely back into service and pursuing a repair plan to bring Tank 3 back into service.

Three other storage tanks at the Louisiana plant are still in operation and are sufficient to meet the current needs of the facility.

The Sabine Pass exports have continued to flow safely during 2018 as they have grown to 18 million tonnes per annum with four liquefaction Trains now on stream.



The Cheniere-PHMSA accord is called a Consent Agreement and Order that sets forth the corrective measures to be implemented before the company may return to service the two storage tanks among five in background

According to the PHMSA, Cheniere employees discovered that LNG had leaked into the annular space between the inner and outer walls of one tank.

The leak eventually caused a crack in the outer tank wall, allowing LNG to pool in a secondary containment area around the tank numbered S-103.

A subsequent investigation by the PHMSA found that LNG had also leaked from a second tank, numbered S-101.

Cheniere was then ordered by the PHMSA to investigate and analyse the causes of the incident and

to develop plans to repair or modify the tanks.

The company was additionally asked to provide records of any other leaks or events in which the tank systems were operated "outside design specifications".

The Cheniere-PHMSA accord is called a Consent Agreement and Order that sets forth the corrective measures to be implemented before the company may return to service the two storage tanks.

"Sabine must evaluate Tank S-101 to determine if Tank S-101 is subject to similar causal factors identified for Tank S-103 and what

factors have already been addressed for Tank S-101 in the Temporary Operations Plan," said the PHMSA accord.

"Sabine must document this evaluation, describe what actions it intends to take to address the results of the evaluation, and submit to the Director for approval a proposed Tank S-101 Work Plan," it added.

"The Tank S-101 Work Plan may include temporary mitigation measures confirmed by a qualified independent third-party expert," said the PHMSA.

"Sabine may not return Tank S-103 to operation until authorized to do so by the Director. Prior to returning Tank S-103 to operation, Sabine must develop a fitness-for-service plan that meets the requirements," said the agreement.

"Sabine must continue to engage the services of qualified independent third-parties to assist in the development and performance of the Tank S-103 Work Plan and the Tank S-101 Work Plan, except as otherwise specifically noted in this Agreement and Order," it stated.

Cheniere hires 25 banks in financing exercise for Corpus Christi LNG export project in Texas

Corpus Christi LNG, the project being developed in South Texas by Cheniere Energy, has hired a group of more than 25 banks from the US, Europe and Asia to restructure \$6.4 billion of credit facilities as part of the financing of the third processing Train, demonstrating the viability of the emerging US export industry.

"Corpus Christi Holdings will amend and upsize its existing approximately \$4.6Bln of credit facilities to increase the available commitments," said Houston, Texas-based Cheniere.

"The amended credit facilities will be used to fund a portion of the costs of developing, constructing, and placing into service three liquefaction Trains and related facilities

of the Corpus Christi liquefaction project and the related pipeline," said Houston, Texas-based Cheniere.

The Texas liquefaction plant is being built on the shore of Corpus Christi Bay, at the north end of the La Quinta Channel.

The company added that the credit facilities would be arranged by a syndicate of more than 25 banks.

Analysts said Cheniere's wide range of participating financing institutes in its loan exercise demonstrates the credit-worthiness of the US liquefaction and export businesses, led by the company's Sabine Pass plant in Louisiana and the re-

cent addition of Dominion Energy's Cove Point terminal in Maryland.

As part of the amended credit facilities, Cheniere expects to proceed with a final investment decision for Train 3 of the Corpus Christi plant.

This would enable engineering US company Bechtel Inc. to receive a notice to proceed for Train 3 in the first half of 2018.

Cheniere has told regulators that the first liquefaction Train would achieve substantial completion at Corpus Christi in March 2019 and the second processing Train would be finished by September 2019.

Cheniere has already brought four Trains on stream at its Sabine Pass plant in Louisiana with 18

million tonnes per annum of output and two more to complete.

The Phase 1 engineering procurement and construction contract for Corpus Christi includes building two LNG Trains, each with 4.5 million tonnes per annum of capacity, two storage tanks, one complete berth and a second partial berth.

The contract for Phase 2 includes one LNG Train, one additional tank, and completion of the second berth. The total capacity will be 13.5 MTPA.

The Texas plant's current cargo sales agreements amount to more than 9 MTPA, or two whole Trains of production.

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