LNG Unlimited

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China and ExxonMobil signs accord on chemical plant and LNG facility

Guangdong Province and US major will support plant with Huizhou regas terminal and ExxonMobil shipments

LNG Journal editor

ExxonMobil Corp. has signed a co-operation framework agreement with the Guangdong provincial government of southeast China to advance discussions concerning the proposed construction of a chemicals complex with an LNG import project as part of the package.

The new facility is aimed at helping to meet demand growth for chemical products in China.

Framework

The multibillion-dollar project, which remains subject to a final investment decision, would include a 1.2 million-tons-per-year ethylene flexible feed steam cracker, two performance polyethylene lines and two differentiated performance polypropylene lines.

ExxonMobil's decision to proceed with the project will be based on a number of factors, including receipt of permits and project competitiveness. Start-up is planned for 2023.

"The framework agreement also confirms Guangdong Province's support in progressing the Huizhou LNG receiving terminal, in which ExxonMobil intends to participate, including supply of LNG," said the US major.

ExxonMobil is one of the world's largest LNG industry participants with interests in production plants in nations such as Australia, Qatar and elsewhere.

Natural gas is the fuel that powers most chemical and refining processes at advanced plants and is also a feedstock.

China's first terminal at Dapeng on the Pearl River delta was backed by BP when it opened for operations in 2006

John Verity, president of the ExxonMobil Chemical Company said the agreement with the Guangdong government demonstrated ExxonMobil's interest in advancing this project from concept to completion.

"We value the government's support and its experience in moving such a large-scale project forward," said Verity.

China currently has 19 LNG import terminals along its coastline from north to south and UK major BP backed the very first LNG terminal at Dapeng Bay in Guangdong that started operations in 2006.

The new Guangdong complex - backed by more LNG supplies from ExxonMobil - would rely on advanced proprietary technologies in direct crude steam cracking and performance polymers manufacturing.

"It would support progress toward China's national petrochemical development priorities, which include self-sufficiency, diversified feedstock sources, rebalancing fuels versus chemicals and advancing new competitive technology," said the US company.

ExxonMobil said it was also evaluating other chemicals manufacturing projects in Asia to help meet expected demand growth in the region.

Forefront

The US company is already at the forefront of supplying China with LNG from the Papua New Guinea plant in Oceania and from Gorgon LNG on Barrow island in Western Australia and there are various options available for volumes to be regasified at the Huizhou LNG import terminal.

Four LNG carriers were built especially for ExxonMobil's China trade from the PNG and Gorgon plants. The vessels are used by ExxonMobil, though are owned by Mitsui OSK Lines of Japan and China Shipping Group after being constricted at Hudong-Zhonghua Shipbuilding.

ExxonMobil may also have US volumes from the eventual transformation of the Golden Pass LNG terminal Texas into an export plant.

Golden Pass is a joint venture between Qatar Petroleum, ExxonMobil and ConocoPhillips and docking facilities, five full-containment LNG storage tanks and pipelines to transport natural gas to existing interstate natural gas pipeline systems.

■

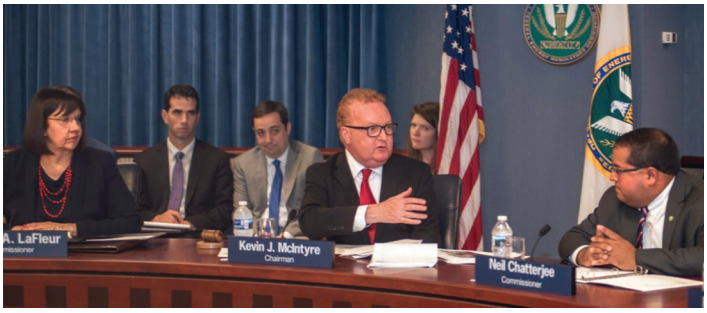
UNLIMITED AGENDA

US federal regulator shortens waiting time for 12 LNG projects on Gulf Coast and elsewhere

LNG Journal editor

The US Federal Energy Regulatory Commission has issued environmental schedules for 12 liquefied natural gas export plant applications currently pending, shortening the waiting time by between up to nine months and a year.

FERC said the schedules reflect the regulator's efforts in recent months to streamline its review process for LNG project applications.



FERC Chairman Kevin J. McIntyre (centre) with other Commissioners meeting in Washington DC

Varied locations

The projects involved include many on the Gulf coast including Driftwood LNG in Louisiana and Plaquemines on the banks of the Mississippi, Freeport LNG Train 4 and Port Arthur LNG in Texas, Jordan Cove LNG in the northwest state of Oregon and Alaska LNG.

The regulator said these efforts have helped to ensure it will be equipped to process applications in a timely and expedient manner without compromising its statutory obligation to ensure safety and environmental protection.

"Thanks to the tremendous work of our Office of Energy Projects and Office of the General Counsel, the Commission has made significant strides in streamlining our regulatory processes to adapt to the increasing number, and greater complexity, of the LNG applications we have received," said the FERC Chairman Kevin J. McIntyre.

"These process improvements have shortened projected environmental schedules in some cases by nine to 12 months," added McIntyre.

"There is widespread acknowledgement that the United States is poised to play an important role in serving worldwide LNG demand, and its ability to serve that demand quickly will serve the nation's national security and economic interests," stated the Chairman.

He explained that because sufficient LNG export capacity was a necessary gateway to the global gas markets, the FERC's efficient processing of LNG facility applications will put the US in a more competitive position.

"As FERC is the lead siting agency for LNG projects, our responsibility over LNG applications is to assess the environmental effects, safety, and engineering of LNG facilities in a timely manner in accordance with our statutory obligations," said McIntyre.

"Our recent streamlining efforts will provide all LNG stakeholders additional regulatory certainty and help minimize undue administrative burdens," he added.

Among staff's improvements, the agency has added several LNG staff. In addition, the FERC has taken several steps to save staff time to allow them to focus on reviewing LNG applications, including three key points:

1. The recently signed agreement with the Pipeline and Hazardous Materials Safety Administration (PHMSA) to better leverage each agency's expertise in the LNG authorization process and issues related to LNG safety.
2. Hiring of an outside contractor to assist Commission staff in construction inspections; and
3. Working with project applicants to hire third-party contractors to conduct analyses that involve non-proprietary information.

"These LNG environmental schedules also benefit from a new Commission practice of moving to electronic issuances of environmental documents for FERC's natural gas and hydropower programs," it said.

"This new practice will save valuable resources, align FERC with the digital age, and continue to ensure that information is accessible to stakeholders," added the regulator. ■

Texas LNG project welcomes FERC action to give more clarity to shareholders and cargo buyers

Texas LNG, one of several LNG export projects being developed on the Gulf Coast near the port of Brownsville, said it was one of the ventures provided with anticipated dates for issuance of an environmental impact statement and a final regulatory deadline under the new speeded-up process.

The Texan venture has proposed to the Federal Energy Regulatory Commission an export plant with two liquefaction Trains and output of around 4 million tonnes per annum.

The environmental impact report dates and the FERC deadline are the final major steps in the process before issuance of an order to proceed.

"Based on the date and timelines of other approved LNG export projects, Texas LNG expects to receive its final FERC order authorizing construction and operation of its facility in the second half of 2019," said the Texas project.

As per FERC's expected timeline, Texas LNG said it would receive its Draft Environmental Impact Statement (DEIS) in October 2018, and final environmental impact statement by March 15, 2019.

Other agencies issuing federal authorizations have 90 days to complete all necessary reviews and to reach a final decision on the request for a federal authorization.

The Federal Authorization Decision Deadline for Texas LNG is June 13, 2019.

Vivek Chandra, founder and Chief Executive of Texas LNG, said he was very pleased to receive this important notice and thanked the FERC and all the nine other supporting agencies.

They were the US Department of Energy, US Coast Guard, US Department of Transportation, US Army Corps of Engineers, US Environmental Protection Agency, the US Fish and Wildlife Service, the National Park Service, the National Marine Fisheries Service and Federal Aviation Administration, that have been involved in the process.

"We are confident the Texas LNG project will provide benefits for all our stakeholders, especially the Brownsville community, and look forward to progressing toward the final investment decision for the first 2 MTPA Train in 2019, and construction beginning soon thereafter," stated Chandra. ■

Dominion backed by 20 banks for Cove Point term loan

Dominion Energy, the owner of the Cove Point liquefied natural gas export plant on Chesapeake Bay in Maryland, has secured $3 billion in lending commitments from over 20 banks for a three-year term loan that underscored that bankability of LNG.

Initial interest for the term loan is set at the London Inter-Bank Rate (Libor) plus 1.375 percentage points.

"Dominion Energy intends to use the proceeds from the financing to reduce debt," said the US company.

Dominion spent about $4 billion to add export and liquefaction facilities at Cove Point to the existing import terminal and storage tanks.

Cove Point began commercial operations in April 2018 and the facility has a nameplate capacity of 5.25 million tonnes per annum of LNG from a single Train.

The plant is owned by Dominion Energy and had previously operated as an import terminal before the US shale-gas boom.

The Cove Point plant is relatively small in comparison to Cheniere Energy's Sabine Pass plant where 18 MTPA of LNG is being produced from four Trains and where two more Trains are being constructed.

"We have been very pleased with the strong interest among lenders to participate in this important financing which has resulted in very attractive terms," said Mark F. McGettrick, Chief Financial Officer.

"The announcement represents another milestone toward successfully completing the previously announced credit improvement initiatives which demonstrates our commitment to a strong credit profile," added McGettrick. ■

Galveston Bay project starts process to export feed-gas from Texas hubs

LNG Journal editor

Galveston Bay LNG, a project planned on the Gulf Coast by Houston-based company NextDecade, has requested the start-up of its authorization process by the Federal Energy Regulatory Commission to produce an initial 16.5 million tonnes of LNG from a proposed liquefaction facility near Texas City.

The Galveston Bay venture has already received a Department of energy permit to ship cargoes for 20 years to nations with a Free Trade Agreement with the US and a non-FTA permit was pending.

Plant to be on a part of Gulf Coast known as Shoal Point

Connections

NextDecade is additionally developing the Rio Grande liquefaction and export plant to be located on the northern shore of the Brownsville Ship Channel in Texas.

The Nasdaq-listed company has a portfolio of projects that also includes the Rio Bravo Pipeline that would have 4.5 billion cubic feet of capacity to supply the Rio Grande liquefaction plant with feed-gas from the Agua Dulce area hub.

NextDecade told the FERC that the Galveston Bay facilities will be designed to include three liquefaction Trains, each with capacity to produce 5.5 MTPA, and four LNG storage tanks, each with a capacity of around 200,000 cubic metres.

The Galveston Bay plant would receive its feed-gas through a proposed 97-mile pipeline to be developed by a company affiliate.

NextDecade said that the pipeline would run from the Katy Gas Market Hub and its capacity is expected to be about 3 Bcf per day, providing "a modest amount of firm service to third parties".

The export plant will be sited on a part of Galveston Bay known as Shoal Point, with the northern and western perimeters of the site located adjacent to the Texas City Ship Channel.

The Galveston Bay plant will occupy almost 1,000 acres of land and NextDecade has entered into an initial three-year lease for the site from two landholders who are the Texas General Land Office and the municipal authorities of Texas City.

The developers expect to begin construction in the fourth quarter of 2022 for an initial in-service date of the second quarter of 2027. ■

Sumitomo of Japan plans Freeport tolling accord like Cove Point deal

Freeport LNG, the project at Quintana Island in Texas led by US energy entrepreneur Michael Smith, has signed a preparatory accord for a future tolling services agreement with Japanese trading house Sumitomo Corp.

Freeport and Sumitomo have entered into a binding heads of agreement for 2.2 million tonnes per annum of LNG.

Under the deal, Sumitomo has agreed to negotiate for a 20-year liquefaction tolling agreement (LTA) expected to start in 2023 upon the commencement of commercial operations of the fourth Train at the Texas facility

Sumitomo and Japanese utility Tokyo Gas hold a similar 20-year tolling agreement with Dominion Energy at its Cove Point LNG export plant in Maryland, which started commercial operations in April 2018.

"We are pleased to announce the start of a long-term relationship with Sumitomo as our first Train 4 foundation customer," said Smith, Chairman and Chief Executive of Freeport.

"Sumitomo's significant US gas trading and LNG operations makes it an especially great addition to our outstanding group of existing customers," added Smith.

"Sumitomo's 2.2 MTPA of capacity under this HOA is a major step towards Freeport contracting the approximately 3.5 MTPA needed for financing and commencing construction of Train 4," stated Smith.

About 13.4 MTPA of LNG cargoes have already been contracted for the first three Trains under use-or-pay tolling agreements with a group of customers, including BP of the UK, Japanese utility Osaka Gas, Jera Energy of Japan, Toshiba Corp. of Japan and South Korean energy company SK E&S LNG.

Freeport LNG Marketing announced an additional sales deal in June 2018 with the Singapore-based LNG trading arm of global commodities company Trafigura for 500,000 tonnes per annum of cargoes. ■

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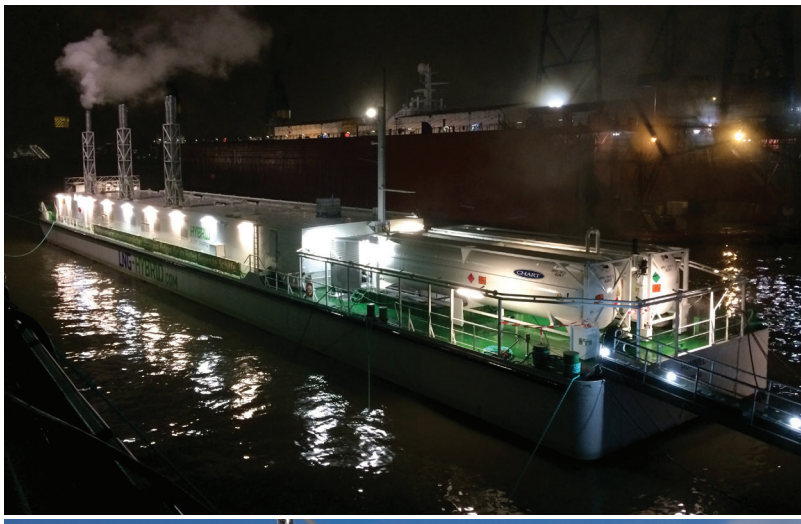

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NEWS NUDGES

Rolls-Royce LNG boost

Rolls-Royce has launched its latest in a series of liquefied natural gas-fuelled marine engines at the international maritime exhibition in the German port city of Hamburg. The company said power output of the LNG-fuelled B36:45 engine is identical to that of the liquid-fuelled B33:45 at 600kW per cylinder at 750 revs per minute.

Naturgy in FSRU charter

Hoegh LNG has entered into a time charter contract with Naturgy Energy Group of Spain, formerly Gas Natural Fenosa, for its ninth floating storage and regasification unit. The 15-month time charter commences in December 2018, immediately after the delivery of the unit and a positioning voyage from Hyundai Heavy Industries in South Korea. "We are pleased to further develop our strong relationship with Naturgy, a highly reputable and ambitious LNG portfolio player and a long-time business partner of Hoegh LNG," said Sveinung J.S. Stohle, President and Chief Executive of Hoegh."

Equinor sells $1Bln of notes

Equinor of Norway, the state-controlled energy company whose assets include the main natural gas pipeline supplies to Europe from the Norwegian Continental Shelf, has carried out a capital markets transaction for US$1 billion. The company, also the owner of the Hammerfest LNG export plant in northern Norway, sold the 10-year Notes at 3.625 percent and the offering was fully subscribed. "The net proceeds from the issue of the Notes will be used for general corporate purposes which may include repayment or purchase of existing debt or other purposes.

Peru LNG supplies Spain and China after latest maintenance shutdown

LNG Journal editor

Peru LNG has shipped two cargoes so far to two pricing areas after its maintenance shutdown through most of August to two separate pricing areas of the Atlantic and Pacific Basins from its liquefaction facility at Pampa Melchorita, the only LNG export plant in South America.

National energy company Peru-Petro said one cargo left the plant for Spain on the 134,425 cubic metres capacity carrier "Gallina" with a value based on the UK National Balancing Price of around $8.47 per million British thermal units.

Asia price

The second cargo of the month was shipped to China on the 173.400 cubic metres of capacity vessel "Magdala" with the value based on the Japan-Korea marker price zone with a prevailing value of $11.45 per MMBtu for North Asia.

The vessel "Magdala" is the newest to call at the Pampa Melchorita plant, having been delivered to Teekay LNG in 2018 and chartered to Royal Dutch Shell for up to eight years.

South America plant ships LNG from Camisea gas fields

The "Magdala" was constructed at the Daewoo Shipbuilding and Marine Engineering yard at Okpo in South Korea.

It is likely to be a regular on the Peru-Europe route and has the latest electronically-controlled, gas-injection (MEGI) engines installed to give better fuel savings.

The renewed Peruvian shipments came after the suspension of operations on July 27 for three weeks for the scheduled maintenance operations.

The single-Train facility, which came on stream in 2010 and is located about 170 kilometres south of the capital Lima, is operated by Hunt Oil of the US. It produces about 4.5 million tonnes per annum of LNG from gas provided from the Camisea gas fields.

The plant receives its gas via a 408-kilometre pipeline owned by Transportadora de Gas de Peru SA. and built across the inland Cusco region to the Pacific Coast facility.

The other shareholders in addition to Hunt Oil are Japanese trading house Marubeni Corp., SK Group of South Korea and Royal Dutch Shell, which purchased the stake previously held by Spain's Repsol in 2013.

Kogas to invest in LNG bunkering and backs Daewoo Tata gas truck

Korea Gas Corp., the Asian nation's main utility and liquefied natural importer, said it would invest 1 trillion won (US$895 million) through 2025 to establish infrastructure for LNG-powered vessels and trucks.

Kogas has stakes in global LNG production projects such as Gladstone LNG in Queensland, Australia, and the Royal Dutch Shell-led LNG Canada.

Kogas is consulting with the Korean government to expand the use of LNG for ship fuel and for increased subsidies for LNG-powered ships to prepare for a stricter global sulfur cap being brought in by 2020 under International Maritime Organization rules.

The company's domestic LNG assets include four of Korea's import terminals at Incheon, Pyeong-Taek, Samcheok and Tong-Yeong.

The Korean company is one of the leading participants in the LNG terminal sector with contracts to help with the setting up of facilities in nations such as in China, Mexico, Thailand and Kuwait.

The Korean company said it will build a new bunkering facility in the southeast region in 2022 to deal with a growing number of LNG-powered ships, and expand LNG fuel stations in major ports and cargo terminals by 2020.

"The new investment plan was set to meet the rising demand for LNG bunkering, which is expected to increase from 310,000 tonnes in 2022 to 1.36 million tonnes in 2030 under the tougher environmental regulations," said Kogas.

Kogas said it was also backing proposals for the introduction of more LNG-fueled trucks in the North Asian nation as alternatives to diesel-powered vehicles to reduce carbon emissions.

Kogas is negotiating with Daewoo Tata, the nation's second-largest commercial vehicle manufacturer, to develop a 400 horsepower truck using LNG fuel.

The Kogas-Daewoo Tata plans are aimed at having a commercial version of the vehicle in production by 2021.

Egypt is obliged to pay Spanish joint venture US$2Bln for 2014 closure of Damietta LNG plant

LNG Journal editor

Egypt is being obliged to pay over US$2 billion plus interest and legal costs after losing an international tribunal dispute to Union Fenosa Gas for the unilateral interruption of gas supply to UFG's liquefaction plant in Damietta, near the Mediterranean port of Alexandria.

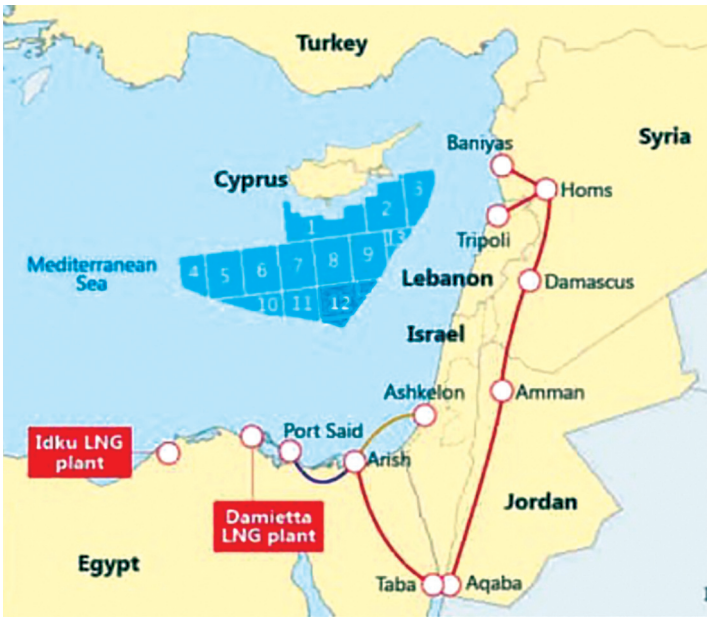
Egypt cut the supplies during the "Arab Spring" social upheavals in North Africa and the Middle East in 2014 when it diverted natural gas supplies to meet growing domestic demand and to avoid power cuts.

World Bank

"UFG has received a favourable arbitral award by the International Center for Settlement of International Disputes (ICSID) which forms part of the World Bank," said UFG.

"It has decided on the claim initiated in 2014 and has ruled against the Arab Republic of Egypt for the unilateral interruption of gas supply to UFG's liquefaction facilities in Damietta," it added.

UFG was set up as a joint venture between Spain's Gas Natural, now known as Naturgy Energy Group, and Italian energy company Eni. UFG, through its 80 percent holding in its subsidiary Segas (Spanish Egyptian Gas Company), was responsible for the construction and operation of the Damietta plant.



Damietta is one of two Egyptian export facilities

The remaining 20 percent belongs to the Egyptian state companies Egyptian General Petroleum Co. and Egyptian Natural Gas Holding.

The tribunal upheld the arguments of the claim filed by UFG and ruled that it considered Egypt responsible for the breach of the bilateral investment protection treaty between Spain and Egypt since the company "was not granted the fair and equitable treatment" required.

The arbitral tribunal stated that Egypt must compensate UFG for the damages caused in cash with interest and covering legal costs.

The capacity of the Damietta plant at peak production was 7.56 billion cubic metres per annum, the equivalent of 5.5 million tonnes per annum of LNG. It also has two storage tanks of 150,000 cubic metres capacity.

"The objective of UFG has always been to reach an agreement with the Egyptian Government based on the payment of compensation for the damages caused, the restoration of supply and the offer of guarantees of contractual compliance in the future," said UFG.

At the same time a second LNG plant, the Idku facility where one of the shareholders was BG Group of the UK, was also deprived of feed-gas.

Over the next several years Egypt became a substantial LNG importer from two floating Storage and Regasification Units deployed at the Gulf of Suez port of Ain Sokhna.

Idku LNG has since re-started minimal exports under the operatorship of Royal Dutch Shell, which acquired BG.

Egypt itself is set to stop imports this year after the coming onstream of various new natural gas fields, including the Zhor field discovered in August 2015 in the East Mediterranean by Eni. ■

LR approves Jiangnan yard's dual-fuel bulk carrier design

Lloyd's Register, the UK maritime classification society, has given more details of its joint development of a dual-fuel bulk carrier, including liquefied natural gas-powered capability, with Jiangnan Shipyard Group of China.

At the leading international maritime trade fair in the German port of Hamburg, the UK class society said it had agreed to jointly develop an LNG dual-fuelled Newcastlemax 210,000 DWT bulk carrier from an updated conventional design to incorporate LNG propulsion.

LR said the Jiangnan shipyards had become a very experienced designer and builder of Newcastlemax bulk carriers in recent years and the dual-fuel vessel design has now received LR's approval in principle.

The Newcastlemax will feature dual-fuel main engines (MAN B&W ME-GI or WinGD X-DF), dual-fuel auxiliary engines, fuel gas system (high pressure or lower pressure), cylindrical IMO Type C LNG tanks and an LNG-related safety system.

"All LNG related components are located stern part, with no impact to the cargo handling operation," said LR.

It explained that the stern-hull form and the strength of the hull girder are well optimised for providing compensation due to supplemental weight of LNG equipment.

The full-width stern deck makes full endurance of an LNG dual-fuel propulsion system possible, while maintaining comfort level as equivalent to a conventional Newcastlemax.

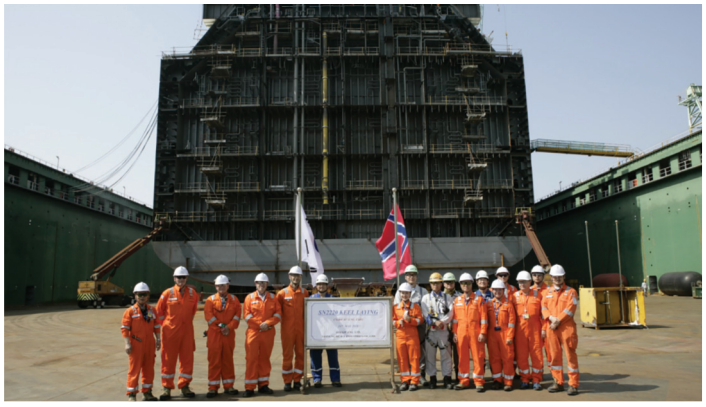
"Jiangnan has rich experience and strong capability in providing LNG options for either new building or retrofitting on bulk carriers as turn-key projects," said Lin Ou, Chairman of Jiangnan. ■

Hoegh secures Chinese funding for FSRU lease-back transaction

LNG Journal editor

Hoegh LNG, one of the main LNG project companies with a growing fleet of floating storage and re-gasification units has found a Chinese financing deal for a sale and lease-bank transaction for one of its FSRU newbuilds.

The Norwegian company said it had received a commitment letter for the financing of its FSRU No. 10 for a sum of around US$206 million.



Keel-laying ceremony for Hoegh FSRU at Samsung yard

Newbuild

The newbuild is currently under construction at Samsung Heavy Industries in South Korea, and is scheduled for delivery in the second quarter of 2019.

Hoegh said the facility was being provided by CCB Financial Leasing Co., a wholly owned subsidiary of China Construction Bank (CCB), one of the four biggest Chinese banks.

The fleet owner explained that the funding is available for 70 percent of the delivered cost of the FSRU, increasing to 80 percent once long-term employment for the unit has been secured.

The facility bears a 20-year amortisation profile and Hoegh can fix the interest rate, and based on the current swap rate environment, the fixed interest rate is expected to be around 6 percent. The loan is subject to final documentation.

"With this sale and leaseback facility, Hoegh LNG's current newbuilding programme is now fully equity and debt funded," said Sveinung J.S. Stohle, Hoegh's Chief Executive and President.

"Combined with the recent three newbuilding debt facilities, Hoegh LNG continues to demonstrate support from a wide group of leading international banks and credit institutions, now also including CCB," he added.

"We are pleased to welcome CCBFL to our lending group and appreciate its support in the financing of the last FSRU in our current newbuilding programme," he added.

"This agreement is also fully in line with HLNG's strategy of expanding our activities in China, where we currently have the FSRU 'Hoegh Esperanza' on charter to China National Offshore Oil Corp. and are actively pursuing new projects," explained Stohle. ■

Sembcorp Marine completes purchase of Norway's Sevan firm and HiLoad LNG

Sembcorp Marine of Singapore has completed the acquisition of the intellectual property rights of Oslo-listed Sevan Marine for US$39 million, including the Sevan subsidiary HiLoad LNG and in an additional purchase has bought the outstanding 5 percent of HiLoad held by a minority shareholder.

Sembcorp Marine said its subsidiary Sembcorp Marine Integrated Yard now holds the titles to all of Sevan Marine's intellectual property.

The main transaction includes a 95 percent equity interest in HiLoad LNG.

Sevan Marine has designed and been developing offshore solutions based on its unique cylindrical hull design and the HiLoad LNG offloading and regasification technologies.

Sembcorp's transaction involves the takeover of all operating and associated costs, including unexpired leases, in maintaining Sevan Marine's three office locations and the transfer of 26 Sevan employees, subject to their acceptance, at a consideration of US$39M.

The Singapore company has additionally acquired the balance of 5 percent equity interest in HiLoad LNG from a minority shareholder for a cash sum of 625,000 Norwegian crowns (US$74,570).

Sembcorp had previously raised its purchase price for the acquisition of the intellectual property rights to US$39M from US$28M

The price increase had been decided after further negotiations with several of Sevan Marine shareholders.

Sevan Marine is a specialized engineering and design house and its cylindrical hull is a proven alternative to traditional offshore, floating designs.

Sembcorp has said that through the acquisition it would be better placed to design and engineer solutions for the global offshore and marine sectors. ■

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Trelleborg of Sweden and Synertec of Australia form partnership for LNG custody transfer business

LNG Journal editor

Trelleborg of Sweden has announced a partnership with leading Australian engineering consultancy Synertec to meet growing demand for more accurate and efficient LNG custody transfer measurements.

The Swedish company said its marine solutions subsidiary that supplies port docking and mooring equipment and systems for oil and LNG transfers would now distribute Synertec's LNG custody transfer product.

Wheatstone plant in Pilbara area of Western Australia

Ownership

"LNG custody transfer, the transfer of the ownership of LNG from one organization to another, has long involved fiscal risk given significant uncertainties in traditional tank measurement," explained Trelleborg.

"Quantities are invoiced in units of transferred LNG based on a calculation of volume, density, and gross caloric value," it added.

"However, measurement inaccuracies have a significant financial impact for both exporters and importers. For instance, just a one percent error in LNG transferred can result in a significant loss of revenue due to misallocation during transfer," stated Trelleborg.

Synertec's automated custody transfer system is recognized by the International Standardization Organization and the Paris-based Group of International LNG Importers.

"Used to great success across many high-profile LNG projects across Australasia, the transfer system is a skid-mounted module suitable for all LNG applications," said Trelleborg.

Richard Hepworth, President of Trelleborg's marine systems, said that with more LNG capacity coming on stream there is increasing demand for custody transfer accuracy for cargo shipments, floating storage and regasification unit applications and for LNG as a maritime fuel.

"All of these applications have one key requirement in common, the safe, efficient and timely transfer of LNG from one tank system to another," added Hepworth.

"There are clear synergies between the two companies, from our combined technical expertise to our shared commitment to optimizing the interface, which is critical to supporting the business model of every transfer operation," stated Hepworth.

Michael Carroll, Managing Director of Synertec, said: "We've built a strong reputation across Australasia and now, boosted by the global reach of Trelleborg, we look forward to meeting the global demand for more accurate and efficient LNG custody transfer."

Australian LNG operator Woodside says Senegal fields may form basis for African oil and gas hub

Leading Australian oil and gas company and LNG producer, Woodside Petroleum, is aiming to commercialise a huge field offshore Senegal by 2022 and said it could form the basis of a West African oil and natural gas hub.

The plans were outlined at a conference in Perth, Western Australia, by Jamie Stewart, Woodside's Business Integration Manager for the Senegal field development.

Stewart said a number of important items have already been ticked off in the lead-up to a final investment decision in 2019 for the world-scale project known as the Rufisque, Sangamor and Sangamor Deep (RSSD) joint venture.

Woodside, operator of the North West Shelf and Pluto LNG plants in Western Australia, acquired a stake in the RSSD venture in the highly prospective Atlantic Margin region from US major ConocoPhillips in 2016.

The RSSD blocks, located southwest of the Senegalese capital Dakar, include the SNE discovery which offers near-term oil production from 2022 and a foundation for creating the energy hub.

The Phase 1 development will include up to 26 oil production and gas and water injection wells.

The expected Floating Production, Storage and Offloading facility's oil production capacity is about 100,000 barrels per day. Incremental natural gas export opportunities are also being explored.

Woodside owns 35 percent of the Senegal venture, UK-based Cairn Energy has 40 percent, a further 15 percent is owned by the small Australia exploration and production company Far Ltd and 10 percent is held by Senegal's Petrosen.

Woodside's Stewart said the joint venture partners were currently evaluating tender responses for key contracts, and a number of cost reductions approaching 10 percent are expected.

He said one of the looming decisions was the selection of the winning contractor for the front-end engineering and design (FEED) for the proposed use of the FPSO.

During the rest of 2018 activities will include submission of the final environmental and social impact assessment and the field exploitation plan in the lead-up to the start of the FEED process.

The deepwater SNE Field will be Senegal's first oil field and is expected to provide significant social and financial benefits with Phase 1 amounting to total recoverable oil of more than 240 million barrels.

"The development is projected to generate billions of dollars in direct revenue for the government of Senegal over the first phase of the development," said Stewart.

"This includes fees and corporate income tax to be paid by the joint venture and revenues attributable to the government under the Production Sharing Contract (PSC)," he added.

"In addition, the government will receive revenue through state-owned petroleum company Petrosen's equity participation in the development," he stated.

Stewart explained that a major focus of local development would be the port of Dakar, which will be a critical piece of infrastructure for the first Phase 1 development.