

LNG Unlimited

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Texas Brownsville LNG export project moves on to next marketing stage

Company founders Chandra and Meyer have signed up some Asian customers
Our North America editor in New York

Texas LNG, the midscale liquefaction and export projects planned for the port of Brownsville, has entered into its second phase of marketing after signing up some customers from Southeast Asia and China.

The US venture, led by co-founders and industry veterans Vivek Chandra and Langtry Meyer, is already well into the permitting process of the Federal Energy Regulatory Commission as well as front-end engineering and design.

Capacity

The Texas project is for an export plant with initial capacity of 4 million tonnes per annum using the Air Products propane pre-cooled mixed refrigerant LNG processing system.

The plant will be constructed on a 625-acre site on the north shore of the Brownsville Port's deepwater ship channel.

The Department of Energy has granted an export permit for the venture that will be developed as a tolling facility.

Under this system, tolling contract holders will secure liquefaction capacity and provide their own feed-gas resources.

Texas LNG said its four 20-year preliminary accords had been signed with unnamed "state-owned and private LNG buyers in Southeast Asia and China" for a volume of 3.1 MTPA.

"Negotiations for definitive liquefaction tolling agreements and



Ship channel from the Port leads to Gulf of Mexico

sale purchase agreements are ongoing," the company said.

"Phase 1 capacity was oversubscribed and Texas LNG is now marketing Phase 2 volumes," it added.

The project owners said a final investment decision was expected in 2018 and first LNG shipments in 2021-2022, in line with projected global market requirements.

The Texas project headed by Chandra and Meyer is one of several proposed export projects located along the Brownsville Ship Channel. Of the current ventures, two others are also in the FERC process.

They are Annova LNG with plans to produce 6 MTPA and the much larger Rio Grande project of former Shell executive Kathleen Eisbrenner targeting 27 MTPA of output.

The Texas LNG venture is planning to build in two phases, each with production of 2 MTPA.

It will include a single containment storage tank of 210,000 cubic metres and the LNG will be offloaded to conventional LNG tankers berthed at the site.

Texas LNG submitted its request to initiate the FERC pre-fil-

ing process in March 2015. During the past 20 months, Texas LNG and its team of technical, environmental and legal advisers have completed some engineering work and submitted draft resource reports covering a wide range of areas.

They have also engaged in extensive consultations with FERC and other federal and state agencies, including the US Fish and Wildlife Service, US Army Corps of Engineers, US Coast Guard and the Texas Commission on Environmental Quality.

Texas LNG said it continued to believe that "smaller independent projects that promise low cost, low technical risks, and offer transparent, flexible tolling terms" will be best placed for development.

The project was formerly wholly owned by Chandra and Meyer, who still hold the respective positions of Chief Executive and Chief Operating Officer.

The shareholders now also include minority interests held by South Korean engineering group Samsung and several others, including an equity fund.

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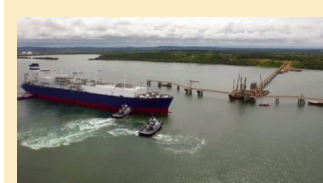
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LNG to dominate US natural gas exports after 2020 amid pipeline surge of shale gas to Canadians

Our North America editor in New York

The US government says the nation's increased natural gas trade will be dominated by LNG as early as 2020 as four more liquefaction facilities are scheduled to be completed, adding to current shipments from the Sabine Pass plant in Louisiana.

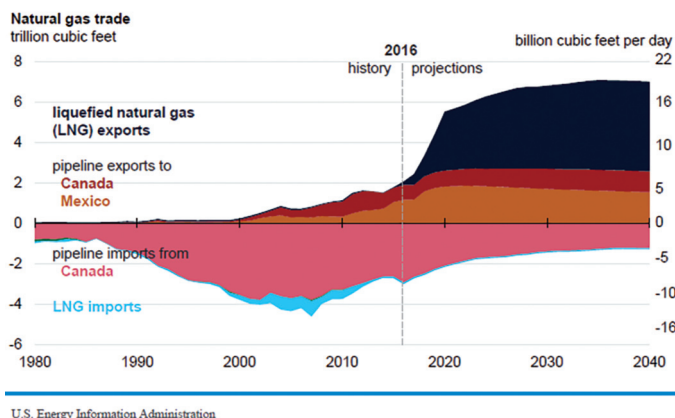
US exports of LNG will continue to grow, though at a more modest rate, while the market will expand and supply contracts are expected to change, weakening their ties to oil prices, according to the 2017 US Outlook from the Energy Information Administration.

Infrastructure

Natural gas exports to Mexico also continue to rise in the short term as pipeline infrastructure currently under development allows for rising exports to meet increased demand for natural gas to fuel electric power generation south of the border.

"However, imports of natural gas from Canada, primarily from the West where most of Canada's

Increased natural gas trade is dominated by liquefied natural gas



Natural gas exports will be dominated by LNG after 2020

natural gas is produced, continue to decline, while US exports to Canada, primarily to the East, continue to increase because of Eastern Canada's proximity to abundant natural gas resources in the Marcellus shale basin," said the EIA report.

US shale-gas output that will lead the LNG export surge from the Gulf Coast states will account for nearly two-thirds of national production by 2040, while the range of projected benchmark Henry Hub natural gas prices de-

pends on assumptions about resources and drilling technology.

US natural gas production growth is the result of continued development of shale gas and tight oil plays.

"Natural gas production over the 2016-20 period is projected to grow at about the same rapid rate (nearly 4 percent annual average) as it has since 2005," the EIA said.

"Continued development of the Marcellus and Utica plays in the East is the main driver of growth in total US shale-gas production,"

stated the EIA. "Demand for LNG generally increases as consumers move away from petroleum products, and LNG produced in the United States has the advantage of domestic spot prices that are less sensitive to global oil prices than supplies from other sources," the EIA report explained.

The US projections through to 2020 come with the caveat that resource production remains high and is aided by advances in technology which make US LNG exports competitive relative to other suppliers.

"Conversely, higher US natural gas prices in the low oil and gas resource and technology case result in lower US LNG exports," it added.

Production from the Eagle Ford and Haynesville shale-gas plays along the Gulf Coast is a secondary contributor to domestic natural gas production, with output largely levelling off in the 2030s.

"Continued technological advancement and improvement in industry practices is expected to lower costs and to increase the expected ultimate recovery per well," said the EIA report.

Upstream energy spending to double amid another rise in investment for exploration and production

Upstream energy projects are expected to double in 2017 while exploration and production spending will increase for the first time since 2014, according to a report from Wood Mackenzie, the global energy consulting firm.

The firm forecasts that the number of final investment decisions around the world for upstream energy, which would likely include several natural gas and LNG ventures, will rise to more than 20 in 2017, compared with just nine in 2016.

While this number is still short of the 2010-14 average of 40 per annum, the new projects are generally smaller and more efficient,

with capital expenditure per barrel of oil equivalent averaging just \$7.00 per barrel, down from \$17.00 per barrel for the 2014 projects.

The research and consulting firm sees confidence beginning to return to the industry, with E&P spending up 3% to \$450 billion—though still 40% below the 2014 level—and costs are expected to decline marginally.

Wood Mackenzie notes that capital expenditure deflation has averaged 20 percent over the past two years.

"With service sector margins thin, the firm believes there's now only room for small reductions and capital costs are expected to fall

by an average of 3-7 percent," the firm said.

Spending in the US outside of Alaska is set to rise 23 percent to \$61Bln. There could be more investment if the oil price rises markedly and US independents are emboldened by a Trump presidency.

"Tight oil and the Permian basin in particular is expected to lead the way, distinguished by low break-evens, scale, and flexibility," the report noted.

"Companies will get more bang for their buck as development incremental internal rates of return (IRR) will jump from 9 percent to 16 percent comparing 2014 to 2017," said Malcolm Dickson, a

principal analyst for upstream oil and gas for Wood Mackenzie.

"This is in part a result of a shift in capital allocation away from complex megaprojects towards smaller, incremental projects in the Canadian oil sands and deep water," added Dickson.

"Nowhere is the mantra 'doing more with less' more evident than onshore US," Dickson added.

The report said there had been a "dramatic increase" in efficiency in the shale and tight-oil sectors with some wells being completed up to 30 percent quicker. Increasing costs may be offset by further efficiency gains.

Shell carrier from Spain brings Malta LNG cargo

Malta, the Mediterranean island nation and the smallest member of the European Union, has received a liquefied natural gas cargo from Spain at its floating storage unit in Marsaxlokk Bay to help complete its transformation into an LNG importer.

A shipment was delivered by the 136,425 cubic metres capacity vessel *Galea*, operated by Shell Shipping, to the floating storage FSU “*Armada LNG Mediterrana*”, set up to supply regasified LNG to the nearby Delimara power station.

The “*Armada LNG Mediterrana*” arrived in Malta in October last year. It was built under a \$300 million contract which the Malaysian offshore energy services company, Bumi Armada, won from Malta’s ElectroGas.

The FSU is a conversion of the Japanese Mitsui Osk Lines Moss-type LNG carrier “*Wakabu Maru*”.

It was turned into an FSU at the Keppel Shipyard in Singapore over a 17-month period.

The floating LNG import facility can now be used on a continuous basis, without dry-docking interruption, during a period of up to 20 years.

It is designed to feed LNG for regasification and use by the 400-megawatt onshore Delimara power plant.

“The people of Malta will now be able to breathe cleaner air and break away from the old, inefficient and heavy fuel oil dependant plants, to a new energy mix, based on gas,” the government said.

The arrival of the Shell cargo from the Sagunto re-loading and import terminal in southeast Spain on the vessel “*Galea*” was part of the final commissioning process of the “*Armada LNG Mediterrana*” and the new gas-fired power station built by ElectroGas.

Dutch LNG carrier starts loading services at new Zeebrugge jetty

Our Europe editor

Zeebrugge LNG terminal in Belgium has recorded the first lifting of a cargo from its new second jetty by the small-scale Dutch-owned LNG carrier, the “*Coral Energy*” with 15,000 cubic metres capacity as the facility also prepares for providing bunkering services.

The jetty was commissioned last month and is designed to receive the smallest LNG carriers with a capacity of 2,000 cubic metres up to some of the largest LNG vessels, the 217,000 cubic metres capacity Qatari Q-Flex ships.

Load list

“Some 200 loadings have already been booked at the second jetty for small LNG carriers under long-term contracts,” said Zeebrugge operator Fluxys Belgium.

“The second jetty also enables the terminal to respond flexibly to demand for simultaneous or quickly successive berthings as using both jetties allows two LNG carriers to be unloaded or loaded at the same time, said Fluxys.

The “*Coral Energy*”, owned by shipping line Anthony Veder, sup-



‘*Coral Energy*’ initiated Belgian port’s new LNG era

plies mainly small terminals in northwest Europe in countries such as Finland Norway and Sweden.

“With the second jetty able to accommodate the smallest ships, LNG bunkering vessels can now also berth at the terminal,” said Fluxys.

“Until now, this could only be done using LNG trailers which come to load at the terminal but are not ideal for supplying seagoing vessels due to their limited capacity,” added the company.

LNG is becoming increasingly important as a marine fuel because of cleaner combustion compared with heavy fuel oil and amid stringent sulphur emission regulations brought into force in the En-

glish Channel, the North Sea and the Baltic Sea, as well as other regions of the world.

Shipping company United European Car Carriers, a leading provider of short sea roll-on-roll-off transportation, recently began operating its first LNG-powered car carrier in Zeebrugge, with a second to follow soon.

The UECC ships will be refuelled with LNG by a purpose-built LNG bunkering vessel which will have Zeebrugge as its home port and in which parent company Fluxys is a partner along with French energy company Engie, Japan’s Mitsubishi Corp. and Japanese shipping company NYK Line.

Norway’s pipelines again deliver more gas than Qatar’s LNG output

Norwegian pipeline natural gas, the main competition to LNG in the UK and four other European markets as well as to Russian gas, has set a new record for exports in 2016 when 108.56 billion cubic metres were delivered.

Gassco, the Norway-based operator of the pipelines said that gas flows to the UK, Germany, Belgium and France just managed to surpass the previous record of 108.44 Bcm from the Norwegian continental shelf set in 2015.

The total was the equivalent of 80 million tonnes of LNG, more than the output of the largest LNG producer Qatar, currently at around 77 million tonnes per annum.

“Deliveries show that European demand for Norwegian gas is higher than ever,” said Frode Leversund, Chief Executive of Gassco.

“It’s also gratifying that we’ve been able to set a new record in a year characterized by extensive maintenance work,” added Leversund.

He said that one of Gassco’s objectives as the operator for Norway’s integrated gas transport system is to run the network with the highest possible regularity.

“This ensures that customers in Europe and the UK have secure and reliable gas deliveries,” Gassco explained.

The Norwegian deliveries compare favourably in terms of energy

security with the 179.3 Bcm shipped by pipeline to Western Europe in 2016 by Russia’s Gazprom.

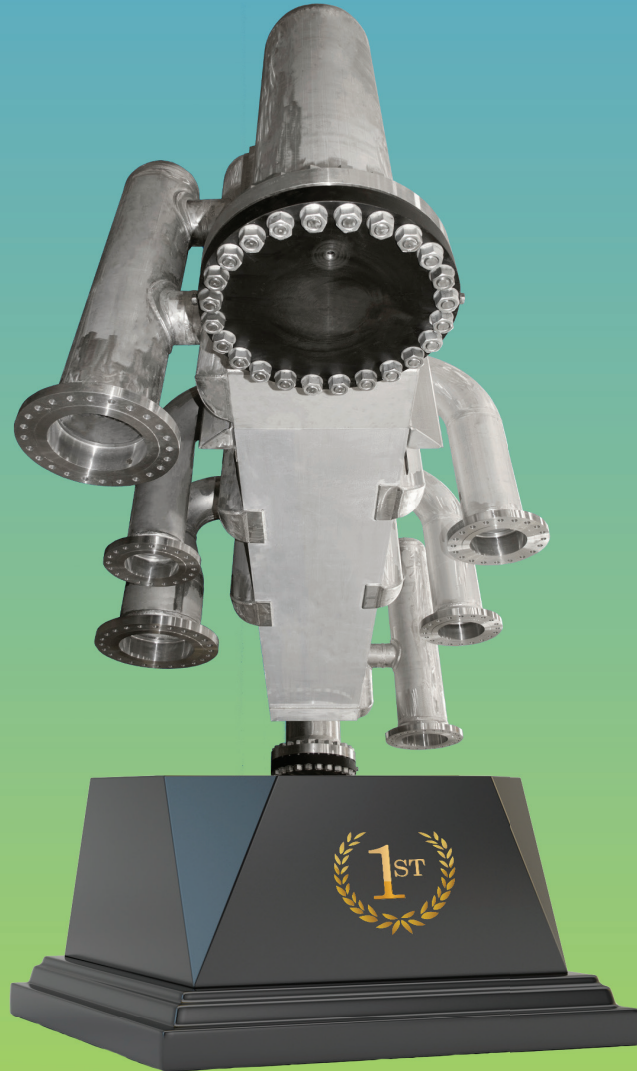
The average regularity for the transport system during 2016 was 99.71 percent compared with 99.38 percent the year before.

Deliveries of natural gas liquids (NGL) and condensate from the Gassco-operated process plants at Karsto and Kollsnes near Bergen in western Norway also rose in 2016.

They reached a total of 10 million tonnes, compared with 9.6MT the year before.

Norway exported about 95 percent of its natural gas production mostly by pipeline.

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NEWS NUDGES

**Henry Hub at
\$3.55 in 2017**

The Henry Hub benchmark natural gas spot price averaged \$2.51 per million British thermal units in 2016 and is expected to increase to an average of \$3.55 per MMBtu in 2017 and \$3.73 MMBtu in 2018, according to the last US government forecasts in the short-term energy outlook. "Higher average prices in 2017 reflect price increases in the second half of 2016 because of a hot summer and declining production, which reduced the inventory excess compared with the previous five-year average," the report said. The power generation shares of coal and natural gas are expected to be roughly equal in 2017, as each fuel is projected to generate about 32 percent of US electricity.

**Hydro in Brazil
LNG changeover**

Norway-based aluminium company Hydro has signed accords with the northern Brazilian state of Para and the Brazil unit of Royal Dutch Shell for imported LNG to replace fuel oil consumption at the Alunorte alumina plant, the largest in the world. The agreements were signed in the city of Belem by Hydro Chief Executive Svein Richard Brandtzaeg and the other parties. Hydro said the accord with Shell outlines terms for delivery of LNG and the establishment of necessary infrastructure close to the Alunorte plant. "Hydro aims to be carbon neutral from a life cycle perspective in 2020," said Hydro CEO Brandtzaeg. Alumina is used as a refined compound for the smelting of aluminium metal.

**UK shale-gas
work begins**

Caudrilla Resources, the UK shale-gas company, has begun work at its first hydraulic fracturing site located just east of the coastal city of Blackpool.

LNG equipment maker Air Products makes bid for Chinese gas company

Our Asia-Pacific editor

Air Products, the leading US and global LNG equipment maker, has made a takeover approach to Yingde Gases of China to gain a prominent role in the expanding Chinese natural gas and equipment market after completing its own restructuring.

Yingde Gases is a leading supplier of industrial gases and has established manufacturing sites in many regions of China and with main offices in Hong Kong and Shanghai.

Liquefaction

Air Products has been the main supplier of liquefaction equipment to plants around the world during the industry expansion and is the technology provider for US plants such as the Cameron project in Louisiana being developed by Sempra Energy.

"Air Products has submitted a letter to Yingde Gases setting forth a preliminary, non-binding indication of interest to acquire all of the outstanding shares of Yingde, subject to the satisfaction of certain conditions," the US company said.

"No agreement between Air Products and Yingde has



Yingde Gases has established plant sites all over China

been reached," added Air Products, based in Lehigh Valley, Pennsylvania.

"There cannot be any assurance that such an agreement will be reached or, if such an agreement is reached, that a transaction will be completed," it said.

"Air Products does not intend to comment further at this time," the company added.

Air Products specialises in providing LNG heat exchangers, on-site gas generation and other key equipment.

The company has offloaded its Versum Materials unit and its Performance Materials Division as

part of a major restructuring. The US company is concentrating more on its LNG business and in September 2016 marked the roll-out of the first completed LNG heat exchanger manufactured at its new production facility in Manatee County, Florida.

Air Products had sales for all of fiscal 2016 of \$9.5 billion, down 4 percent from the \$9.9Bln for fiscal 2015.

The Chinese takeover target Yingde has a business based on air separation units and processes and makes and supplies a range of gases.

French energy group Engie names two Executive Committee members

French energy group Engie has named Didier Holleaux as the new executive head of its LNG import terminals subsidiary as well as France's main natural gas distribution, transmission and storage companies.

Holleaux will additionally oversee Engie's operations in China and the Asia-Pacific region.

His executive portfolio now includes the Elengy unit and its three regasification terminals located at Fos Cavaou and Fos Tonkin near Marseilles and at Montoir-de-Bretagne in Western France.

Holleaux's other responsibilities

include gas distribution company Gaz Réseau Distribution de France (GRDF), pipeline company GRTgaz and the storage division Storengy, as well as its growing Asian interests.

He is succeeding Sandra Lagumina who will leave the Engie Group on January 31, 2017. Holleaux will work from both Paris and Singapore.

Engie, the former GDF-Suez, has worldwide LNG and energy assets divided into 29 separate units.

With 23 years of experience within Engie, Holleaux began his

career in the French Civil Service before joining Engie predecessor company Gaz de France in 1993, where he held various positions focused on management of gas transport and storage and energy distribution activities, as well as international development.

Engie also appointed Shankar Krishnamoorthy as Executive Vice President in charge of five units as well as the Belgium-based Tractebel engineering subsidiary. He will also oversee the Engie Solar power division.

Thailand plans Japanese-German project with possibilities for floating terminal in Samut Prakan

Marubeni Corp. of Japan has proposed the supply of liquefied natural gas and a floating storage and regasification unit as part of a new power project in Thailand.

The Thai FSRU project is part of a plan for building a new 1.2 million kilowatts gas-fired power plant southeast of Bangkok in Samut Prakan Province and to be completed by 2019.

Consideration

Thailand's power generation agency is expected to award contracts during 2017 to Marubeni and Germany's Siemens for the LNG and power project to replace a plant that currently runs on heavy fuel oil.

Executives said the new plant would be built by Siemens at a cost of over \$500 million and the construction contract awarded to a mid-tier Thai general contractor.

Marubeni is expecting to be chosen to supply the FSRU for the Samut Prakan project as well as LNG cargoes.

The Thailand LNG plans are to be developed in parallel with the



LNG terminal at Map Ta Phut in Rayong province

expansion of power generation and electricity transmission.

Thailand is aiming to prolong domestic production of natural gas by reducing the depletion rate of its reserves in the Gulf of Thailand by 40 percent per annum.

This involves increasing the role of imported LNG and developing the necessary regasification and distribution infrastructure.

Thailand has just one LNG import terminal at present. The facility at Map Ta Phut in Rayong province came on line in 2011.

The Thai terminal, comprising two 160,000 cubic metres capacity storage tanks, was constructed to help supplement the country's own domestic natural gas production.

However, the capacity is now being doubled to meet rising demand, with two more storage tanks being built and additional regasification facilities to bring the capacity up to 10 million tonnes per annum.

The Thais are also looking at building a joint venture LNG import facility across the border in

neighbouring Myanmar. Other Japanese companies are planning similar gas-to-power projects in other Southeast Asian countries.

In Vietnam, another Japanese company Tokyo Gas has set up a joint venture with PetroVietnam to start LNG shipments to at least one import terminal from 2019.

The new company, LNG Vietnam, is a \$4.4 million joint venture involving three investors.

They are PetroVietnam Gas with a 51 percent stake, Vietnamese private sector group Bitexco with 39 percent and Tokyo Gas with 10 percent.

LNG Vietnam will organize the construction of one or possibly two import facilities. It will also manage both facilities when completed and be responsible for importing and distributing the gas.

According to the Vietnamese plans, the first facility to be built will be the Thi Vai import terminal in Ba Ria-Vung Tau province. That facility aims to supply LNG to industrial customers and independent power plants.

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Japan LNG developer also builds up its domestic base

Inpex Corp., the Japanese liquefied natural gas developer and terminal owner, is boosting its domestic natural gas portfolio amid deregulation of the utility industries in Japan, ending the monopolies of city-gas and power companies.

Inpex said it had started supplying regasified LNG from its Naoetsu import terminal in Joetsu City through a new pipeline to a factory owned by conglomerate Asahi.

Natural gas was being received by the Hokuriku Factory of Asahi Soft Drinks Co. through the Toyama Line extension of its natural gas trunk pipeline network that travels from Itoigawa City in Niigata Prefecture to Toyama City.

Deliveries to its latest domestic customer come as Inpex is building its LNG assets overseas as the main developer and future operator of the Ichthys LNG export plant in the Northern Territory of Australia in a joint venture involving France's Total.

The Inpex Australian plant will deliver cargoes on a long-term basis to Japanese utilities Tokyo Gas, Osaka Gas, Kansai Electric Power, Toho Gas and Jera Co. Inc., the joint procurement venture between Tokyo Electric Power and Chubu Electric.

Inpex is additionally involved in the Prelude floating LNG project being pursued in Australia by Royal Dutch Shell.

"The Hokuriku Factory of Asahi Soft Drinks is the third customer along the Toyama Line to which Inpex supplies natural gas," the company said.

The Hokuriku Factory is located 400 metres from the Nyuzen Valve Station on the Toyama Line, which Inpex made fully operational in October 2016.

Höegh LNG names operations chief as more new FSRUs are placed

Our Europe editor

Höegh LNG, the Norwegian fleet owner and floating storage and re-gasification unit charterer, is changing its corporate structure to improve efficiency as its business moves forward with the recent placing of new FSRUs and with other projects planned.

The Latin American state of Colombia recently became an importer using the FSRU "Höegh Grace", another vessel has been placed with a gas-to-power venture in Ghana, West Africa, and Chilean and Pakistani projects are preparing to take other ships.

Division

Höegh said the new organizational structure could come into effect from 15 January, 2017.

"In order to further improve the Group's excellent operating performance, Höegh LNG will set up a new division, the Operations Division, which will be headed by the Chief Operating Officer who will have responsibility for the technical and commercial man-



Colombia became an importer using FSRU 'Höegh Grace'

agement of all Höegh LNG assets in operation," said the company.

It added that Vegard Hellekleiv, previously Chief Technical Officer, had been nominated to the position of COO.

Höegh said that another executive Oivind Iversen, who until 2016 headed Höegh's floating LNG activities, would replace Hellekleiv as Chief Technical Officer.

"We have been very successful in growing our FSRU business, with currently six FSRUs and two LNGCs in operation, and we have another three FSRU projects coming on stream in the next 18 months in Ghana, Pakistan and Chile," said Höegh President and Chief Executive, Sveinung J.S. Stohle.

"Höegh LNG is the leading company in the FSRU segment, and we have a clear objective to further strengthen our position in this market," added Stohle.

"In order to optimize the way we work we are therefore adapting our organization to further improve our performance and competitive position," said the CEO.

The Norwegian company is currently negotiating several long-term FSRU charters and said a project called Penco LNG in the South American nation of Chile was one of the ventures making progress.

It said the level of business development activity in the FLNG sector was currently high.

South Korean firm plays key role in helping debut US LNG bunker barge

Gas Entec, the South Korean engineering company that provides equipment for small-scale LNG vessels and floating and onshore projects, said it delivered its gas-handling package for the first US LNG bunkering barge being constructed at a shipyard in Texas.

Gas Entec, based in the Korean port of Busan, also provided engineering services for the 2,200 cubic metres capacity vessel being built by Conrad Shipyards.

Conrad said America's first LNG re-fuelling barge would be completed and delivered in early 2017.

The vessel's delivery will signal the start of more LNG use in the North American maritime sector as shipowners respond to Emission

Control Areas being gradually set up worldwide.

It will serve as the bunker ship for two LNG-fueled container vessels built at the California shipyard in San Diego owned by General Dynamics NASSCO.

The "Isla Bella" and its sister ship, the "Perla Del Caribe", were constructed for the US TOTE shipping line to operate in US trading between Jacksonville in Florida and the US territory of Puerto Rico.

Gas Entec said the main cargo containment system for the US bunkering barge is the GTT Mark III Flex storage tank licensed by French technology company GTT.

The Korean company said its part in the project included taking

charge of engineering and design of the LNG cargo and bunkering handling system and it also supplied the related main equipment as well as commissioning services.

Gas Entec said its additional equipment included automation and emergency shut-down systems and communications and fire and gas leak detection systems to meet American Bureau of Shipping and the US Coast Guard requirements.

"This was remarkable for a small Korean engineering firm to supply the main engineering services and equipment for the world's first small-scale LNG bunkering vessel project in the USA," said Gas Entec Chief Executive Chong-Ho Kwak.

US developer with BP of Senegal and Mauritania LNG sees New York funds cash in on shares

Our Europe editor

Kosmos Energy, the US LNG project developer with assets offshore Senegal and Mauritania in West Africa and now with BP of the UK as a partner, will see New York equity funds cash in on its success by selling their shareholdings to the public after a 58 per cent price surge.

Kosmos has issued a statement saying 30 million shares will be sold in an underwritten public offering.

The shares are held by funds affiliated with Warburg Pincus and The Blackstone Group and amount to 7.7 percent of the company.

Kosmos has 368.7 million shares outstanding and the entire company is currently valued at \$2.7 billion.

The sell-off to investors of some of a block of the Kosmos shares listed on the New York Stock Exchange comes as they have soared to \$7.06 per share on 12 January 2017 from \$4.47 per share in February 2016.



Kosmos CEO Andy Inglis (front centre) on Senegal visit

The price to the public is \$6.65 per share and the offering is expected to close on January 18.

Dallas, Texas-based Kosmos will not receive any of the proceeds from the sale of the common shares. UK-based investment bank Barclays Capital is acting as the underwriter of the offering and a prospectus has been filed with the US Securities and Exchange Commission.

Kosmos recently told a gathering of analysts that natural gas resources for LNG production in the Mauritania-Senegal Basin can

potentially surpass those offshore the southeast African nation of Mozambique, where onshore and floating LNG ventures are planned.

Kosmos said the “transformative transaction with BP effectively funds 100 percent of Kosmos’s portion of the Mauritania and Senegal expenditures for the next several years.”

BP agreed to buy stakes in the West African licenses for \$916 million as the UK energy producer builds its natural gas business following an earlier acquisition in Egypt of a stake in the world-class

Zohr field. Under the new schedule controlled by BP there will be two floating LNG production and export projects.

First gas from FLNG Train 1 is scheduled for 2021 and the start of FLNG Train 2 is set for 2023.

According to the US company, the Mauritania-Senegal FLNG projects are aiming to produce free-on-board LNG cargoes at a break-even price of less than \$5 per million British thermal units.

Kosmos said the farm-out transaction with BP, first announced on December 19, 2016, demonstrated that frontier exploration can deliver competitive returns when executed correctly.

Kosmos Chief Executive Andy Inglis is a former head of BP’s upstream division.

While Kosmos will retain exploration operatorship, BP will be the development operator “bringing deepwater experience and LNG development and marketing expertise.”

Fortuna floating LNG project offshore Equatorial Guinea is firmly on track for investment decision

UK company Ophir Energy said the Fortuna floating LNG project offshore Equatorial Guinea in West Africa remained firmly on schedule for a final investment decision in the first half of 2017.

The company has a joint venture agreement to develop the Fortuna FLNG project with Norwegian shipping company Golar and oil services firm Schlumberger to produce free-on-board cargoes priced at around \$6 per million British thermal units.

Ophir signed an accord in November 2016 with a joint subsidiary of Golar and Schlumberger called OneLNG.

The shareholders agreement established a joint operating company to develop the Fortuna FLNG project from feed-gas resources in Block R offshore Equatorial

Guinea using Golar’s production hull technology.

OneLNG and Ophir have 66.2 percent and 33.8 percent ownership respectively of the joint venture entity.

The Fortuna FLNG company is now working on facilitating the financing, construction, development and operation of the project, which will own Ophir’s share of the Block R licence and the “Gandria” FLNG vessel.

With the FID still on track for the first half of 2017, the venture is expected to come on stream in 2020.

Ophir said its own operating group expected to finish 2017 with a net cash position of \$75-\$100 million, and with the refinancing of its debt facilities in 2017, a

gross cash position of \$350-\$400M.

Ophir made its statement on Fortuna FLNG in a trading update that also included the latest report on the Kerendan natural gas field offshore Indonesia, on stream since September 2016.

The gas field is being connected to a 290-kilometres pipeline linking Kerendan to the regional grid and will enable gas production from Kerendan to ramp up to the full daily contract quantity of 20 million standard cubic feet per day.

However, Ophir said it continued to accrue a take-or-pay receivable due from Indonesian state-owned power company Perusahaan Listrik Negara for 80 percent of the contract volume.

Separately, Indonesian regulators have recently approved the

West Kerendan-1 production plan.

“This is a critical step to enabling Ophir to monetise an additional 50 billion cubic feet of gas in the Kerendan area which is expected to add around 7 MMscf/d to the production profile from 2019,” explained Ophir.

It added that investment decisions would also be made during 2017 regarding options to commence further wildcat exploration activity in Myanmar, Indonesia, Malaysia and Equatorial Guinea in the six to 18 months.

The UK company also revealed that preparations for recommencing operated deepwater oil exploration with the Ayame-1 well in the Ivory Coast in West Africa are at an advanced stage.

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