LNG Unlimited

LNG JOURNAL PUBLICATION 19 March 2019

Argentina gives estimates of LNG export potential from shale gas

Nation's energy officials explained at Houston conference they may be big players over time

LNG Journal editor

Argentina said it would take some time before the nation becomes a global player in the liquefied natural gas export market from shale-gas production because of available volumes and costs as well as finding customers.

Argentine Secretary of Energy Gustavo Lopetegui, who was appointed by President Mauricio Macri in December 2018, made his point at the CeraWeek energy conference in Houston, Texas.

Argentine minister Lopetegui sees possibilities

'Tango FLNG'

The first floating LNG production unit in South America arrived at the Argentine port of Bahia Blanca in February 2019.

Argentine oil and gas producer Yacimientos Petroleiferos Fiscales (YPF) has a 10-year agreement with Belgian shipping company Exmar to charter the former floating liquefaction unit, "Caribbean FLNG", constructed for a cancelled venture in the South American state of Colombia and now renamed "Tango FLNG".

The "Tango FLNG" project will make the Argentines the first FLNG producing nation on the continent using feed-gas sent by pipeline from the Vaca Muerta shale play in the onshore Neuquen Basin of northwest Argentina.

However, Energy Secretary Lopetegui said in Houston that it would take some time before Argentina becomes a globally competitive LNG market participant.

"Shale-gas production could be increased by 50 percent over the next four years if we had the markets to supply and we don't have them domestically," said Lopetegui.

"If Argentina wants to fully develop its shale resources, it has to find customers abroad to supply," he added. It would also require additional liquefaction infrastructure.

YPF has said that it expected that around eight LNG cargoes per annum would be produced and exported from "Tango FLNG".

Bahia Blanca port is where Argentina established its first floating LNG import facility with Exmar and US partner Excelerate Energy in 2008 before the shale-gas resources were discovered.

Energy Secretary Lopetegui explained that shale-gas production would be used firstly to reduce LNG import needs in the peak winter season and to supply neighbouring Chile by pipeline.

Lopetegui noted that Argentina began supplying pipeline gas to Chile only recently for the first time in many years, though he stated that the Vaca Muerta's shale-gas production was not yet high enough to supply the Chileans with a steady flow of gas, especially in the Southern Hemisphere peak season from May to August.

Price shifts

Analysts have said that Argentine shale-gas had been delivered to Chile at an average price of around US$6.00 per million British thermal units, including pipeline transportation costs. This is at least US$2.00 per MMBtu lower than the cost of winter gas in Europe.

Lopetegui said that domestic gas prices in Argentina had fallen to around US$4.50 per MMBtu, though he said that this was too high for a country to become a competitive LNG exporter.

"The prices are attractive enough to continue with project developments and it is a matter of time before Argentina cuts production costs in the shale basin," added Lopetegui.

"We recently achieved the milestone of operating 1,000 shale wells," he said.

"Once we reach 3,000 wells, we will see an inflection point in the increase in the productivity and efficiency," he added. ■

UNLIMITED AGENDA

Woodside makes advances with liquefaction services offer and LNG fuel for Asian shipping

LNG Journal editor

Woodside, the Western Australian liquefied natural gas producer, said its Burrup Hub for LNG is making progress with plans for third-party participation in liquefaction and pipelines, LNG maritime fuel availability for big ore carriers headed for Asia and truck-loading for remote users in the Outback.

The plans for the combined Scarborough gas field and Browse Basin gas resources offshore Western Australia were presented at a conference by Meg O'Neill, Chief Operations Officer of Woodside Energy.

Huge volumes

"We are proposing the development of some 20 to 25 trillion cubic feet of gross dry gas resources, more than the entire volume processed through the Karratha Gas Plant since its start-up in 1984," said O'Neill in outlining the scale of the project to the Australasian Oil and Gas Exhibition & Conference in Perth, Western Australia.

In the first phase of the development, Woodside is bringing the Scarborough resources to the existing Pluto LNG plant where a second Train will be built and has already started front-end engineering and design activities on the upstream portion.

Woodside COO Meg O'Neill speaking at Perth conference

"Work is already underway on the design of a second LNG train at Pluto," said O'Neill.

"We also propose to bring the Browse resources through 900km of subsea pipeline to the North West Shelf's Karratha Gas Plant," she added in reference to the existing North West Shelf LNG plant.

"This makes commercial sense because it optimises the emerging capacity in the Karratha Gas Plant and provides a cost-effective approach for LNG production from Browse," stated the COO.

The overall plan includes building a pipeline linking Pluto and the Karratha Gas plant for North West Shelf LNG, creating an integrated 7-Train LNG production centre on the Burrup Peninsula, using six existing Trains.

"And we are looking to open up those facilities to other players," explained the Woodside executive.

"By bringing the Scarborough and Browse resources through these facilities as anchor tenants, we will be in a position to facilitate the potential development of smaller gas reserves that would otherwise be stranded," she said.

"Such arrangements are common overseas. In the North Sea and in the Gulf of Mexico, operators, contractors and service firms are developing new business models as a way to lower costs and keep the local industry moving forward," added O'Neill.

"But it's the first time in Australia that gas processing facilities have been opened up to other resources," she said.

LNG maritime fuel and truck-loading services are also being developed at the Burrup Hub and Woodside said these were growing sectors of the industry.

"The International Maritime Organisation's 2020 deadline for low-sulphur marine fuel approaches," said O'Neill.

"Woodside has been talking to the big miners about using LNG to fuel the busy marine trade routes from Western Australia to Asia and we are tendering for a bunkering vessel to ensure the ships can be readily refuelled in Western Australia, using Western Australian LNG," she said.

The company also said that in addition to its new natural gas pipeline, Woodside would soon open its LNG truck-loading facility at the Pluto plant. ■

CEO Coleman welcomes greenhouse-gas rules reversal by state agency that caused instability

Woodside, the Australian LNG producer, has welcomed a decision by the Western Australian state government to withdraw its greenhouse-gas guidelines that caused consternation in the energy industry as Australian activists seek reduction levels almost double those agreed at the 2015 Paris climate-change conference.

The Labor party state government's Environmental Protection Authority (EPA) gave guidelines which energy companies said would provide a roadmap for those wishing to mount legal challenges to any industrial projects on the grounds of their emissions.

The state's intervention was seen as being out of step with Australia's national emissions reduction targets and added confusion in the national climate policy debate.

There are two policy positions in Australia. The current federal policy is to reduce emissions by between 26 percent and 28 percent by 2030.

The federal opposition Labor party's policy is for a 45 percent reduction by 2030 and net zero emissions by 2050.

Western Australia has six LNG plants, five onshore and one offshore. Woodside operates the North West Shelf plant and the Pluto facility and it is also set to spend billions of dollars in expansion projects and introducing clean natural gas fuel for sea and road transport.

Woodside Chief Executive Peter Coleman said it was the right decision for Western Australia and it Labor Premier Mark McGowan to withdraw its new rules just issued in early March.

"We welcome the EPA's decision to withdraw its guidelines and to consult, but regret the instability of the past week," said Coleman.

The EPA had revealed it would recommend that all projects it assessed that emit more than 100,000 tonnes a year of carbon-dioxide should be made to offset all those emissions.

"The McGowan Government deserves credit for acting quickly but Australia can't afford to keep shooting itself in the foot," stated the Woodside CEO.

"Governments need to act to give us confidence to invest," he explained.

"Climate Change is an important and complex issue that requires stable, clear, national policies that allow business to invest in playing its part in emissions reduction," added Coleman.

"Targets and policies should be set by elected governments, not regulators. All the States should take note of this episode in Western Australia," he said. ■

IGas makes progress on shale basin in England

IGas Energy, the largest UK onshore oil and gas exploration and production company, said it had made more progress with well developments in its shale-gas activities in central England targeting the Bowland Shale that could lessen the nation's needs for some of its LNG and pipeline imports.

"I am delighted to report that we have recovered high quality hydrocarbon bearing cores at our Springs Road site," said Stephen Bowler, Chief Executive of IGas.

"The data gathered to date shows that there are significant prospective resources in our East Midlands acreage and is another important step for the UK onshore industry," stated the CEO.

"There is the potential for the gas beneath our feet to contribute materially to the UK energy needs. Gas is important for our energy requirements, not least because over 80 percent of the homes across the country are heated by gas," explained Bowler.

"These results come at a time when we are importing more and more gas from overseas and could stimulate investment in the East Midlands basin as well as improving the country's balance of payments," added Bowler in reference to the UK's imports of LNG and pipeline gas from Norway.

IGas said that the current exploration well forms part of an integrated appraisal programme to better define the Basin consisting of a margin sited well at Tinker Lane in North Nottinghamshire and a Basin centred-well at nearby Springs Road.

IGas's update covers the SR-01 well at Springs Road in North Nottinghamshire.

Spanish grid and LNG operator Enagas takes US pipeline stake

LNG Journal editor

Enagas, the Spanish natural gas network and LNG terminal owner, has entered the US energy infrastructure market by investing in Tallgrass Energy, whose assets include 11,000 kilometres of transmission pipelines.

The Spanish company said the transaction is part of its strategy to invest in core business assets in growth markets on an international basis alongside strategic partners.

Tallgrass Energy has the Rockies Express in portfolio

Investments

Enagas, which already has investments in LNG import terminals on the American continent, at Altamira in Mexico and Quintero in Chile, has entered into an agreement with the equity funds, Blackstone of the US and GIC of Singapore, to invest $590 million for a 10.93 percent indirect ownership interest in Tallgrass Energy.

Tallgrass, based in Leawood in the Midwest state of Kansas, has assets including the Rockies Express Pipeline, one of the largest US pipelines that is being transformed into the nation's northern-most bi-directional natural gas gathering system.

Enagas explained that its investment is in the holding company that owns 100 percent of TGE's general partner, as well as 43.91 percent of the economic interests in TGE .

The investment is structured so that Blackstone retains a majority stake, GIC has a minority shareholding, as does Enagas with 24.90 percent of the holding company.

Following the closing of the transaction, Enagas has agreed to acquire an additional 3.52 percent of the holding company for around $83M, subject to completion of certain conditions. The Spanish company has also agreed to future investments of up to $300M in TGE.

"As an industrial partner, Enagas will have a seat on the company's Board of Directors, contributing its know-how in operating and developing energy infrastructure," said Enagas.

Enagas has four domestic LNG import terminals around Spain at Barcelona in the northeast, Cartagena in the southeast, Huelva in the southwest and Gijon in the northwest.

It also owns a 50 percent stake in the facility serving the northwest city of Bilbao.

Atlas Copco secures compressors order for Danish LNG ships

Atlas Copco, the Swedish turbomachinery manufacturer, said its Gas and Process division secured a breakthrough compressors order for the LNG carrier market.

The order from Samsung Heavy Industries in South Korea is for a total of eight HD centrifugal gas compressors and eight oil-free gas screw compressors, along with the necessary heaters and vaporizers.

The equipment will be installed on four 180,000 cubic metres capacity LNG vessels ordered from Samsung by Danish shipping line Celsius Tankers.

Celsius, based in Copenhagen, currently operates a fleet of around 40 vessels in the chemicals, dry bulk and container shipping sectors. The new LNG vessels will use Atlas Copco's new oil-free gas screw compressors to feed their XDF engines, a first in the LNG carrier sector.

The company said the new compressor technology was specifically designed to meet modern carrier needs, including the XDF pressure requirements and the reduced flow of boil-off gas from improved insulation measures.

"The oil-free design also allows for significantly longer maintenance intervals compared to oil-flooded compressors and can be used with a reliquefaction system without any risk of oil contamination in heat exchangers or LNG cargoes," explained Atlas Copco.

The first units will be delivered from Atlas Copco Gas at the start of October 2019, with the remainder of the machinery being delivered in the second quarter of 2020.

"This order is a milestone in our marine LNG product development," said Robert Radimeczky, President of the Gas and Process division whose base is in Cologne, Germany.

"To be able to provide the first ever oil-free gas screw compression technology for LNG vessels is a significant step in the evolution of our products," added Radimeczky.

Powering the Energy Future through LNG

Where no natural gas pipeline exists Chart offers complete solutions for LNG as a primary fuel for power generation, or as a secondary fuel where natural gas pipeline capacity is constrained.

- Diesel, propane, LPG and oil displacement
- Remote locations and islands
- Peak shaving
- Emergency back-up and curtailment
- Temporary power generation

Email: LNG@ChartIndustries.com

www.ChartLNG.com

CHART®

Innovation. Experience. Performance.®

NEWS NUDGES

Mitsubishi LNG move

Mitsubishi Heavy Industries said its efforts to compete for world-scale LNG liquefaction Train construction projects continues to move forward with the completion of successive technical qualifications conducted by oil majors and engineering companies. “To date, major LNG players, including ExxonMobil, Shell, Total, along with key engineering contractors such as Bechtel of the US, have all completed extensive qualification studies on the Mitsubishi Hitachi Power Systems 120MW H-100 Gas Turbine for use as the mechanical driver in conjunction with well-proven compressors of Mitsubishi Heavy Industries Compressor Corp.,” the Japanese company explained.

Karatha gas deal

UGL, an engineering subsidiary of Australia’s CIMIC Group, has secured a A$190 million (US$135M) contract extension for support work at Woodside Petroleum’s Karratha Gas Plant. The facility, located 1,260 kilometres north of Perth in Western Australia, comprises five LNG processing trains, two domestic gas trains, six condensate stabilisation units, three liquefied petroleum gas fractionation units as well as storage and loading facilities for LNG, LPG and condensate.

Taiwan’s third terminal

Taiwan, the world’s fifth-largest LNG importer, plans to build a third regasification terminal at Tao-Yuan in northwest Taiwan while also expanding its facilities at Tai-Chung and Yung-An in the south of the Island. Taiwanese energy company CPC said building was expected to start by the end of 2019. ■

Nordic firm Gasum posts slight rise in profit as oil boosts LNG and Finnish gas market overhaul nears

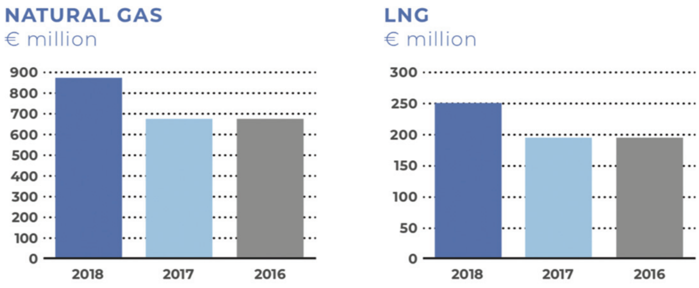
LNG Journal editor

Gasum, the natural gas company of Finland, posted annual pre-tax profits little changed from the previous year even as the value of liquefied natural gas sales increased by 29 percent because of higher oil prices.

The company’s pre-tax profits were 100.55 million euros ($113M) compared with 99.88M euros in the previous year.

Gasum said its operating profits were 8.8 percent higher at 124.16M euros versus 114.17M euros in 2017.

Development of revenue by business unit



Finnish company’s income from gas has been rising

Revenue growth

Gasum said that its overall annual revenues rose 27 percent to 1.177 billion euros compared with 925 million euros in 2017.

Sales in the LNG business, covering Finland, Norway and Sweden jumped 29 percent and came to 252.0M euros compared with 195.2M euros in the previous year, though sales volumes increased by just 4 percent.

“LNG revenue growth was driven by the price development,” explained Gasum. The figures were helped by an increase in LNG maritime fuel sales in the Nordic region.

“The introduction of the bunkering vessel ‘Coralius’ increased the number of ship-to-ship bunkerings in 2018,” said Gasum.

“The vessel was taken into service in late 2017 and has strengthened Gasum’s position as the leading small-scale player in the LNG market,” said the company.

“Supply certainty was strengthened by the introduction of the world’s first LNG carrier holding the Ice-Class 1A Super, the ‘Coral EnergICE’. The vessel enables disruption-free deliveries in all weather conditions,” noted Gasum.

The completion of the Tornio Manga LNG import terminal joint venture in Finland at Roytta Harbor in the Port of Tornio gave the nation its second regasification facility.

The company was additionally making progress with its offering of LNG as a clean alternative for the truck transportation market.

“Last year we announced our plan to construct a network of 50 filling stations in Finland, Sweden and Norway to serve heavy-duty vehicles,” said Chief Executive Johanna Lamminen.

“The investment will multiply the size of the Nordic heavy-duty vehicle filling station network, enabling considerable transport emission cuts,” she added.

“We took another important step to develop the Nordic gas market by acquiring the energy market services business of Enegia. The acquisition improves our opportunities to provide well-functioning energy solutions to an even broader spectrum of customers,” explained the CEO.

“Thirdly, we increased our shareholding in our subsidiary Skangas from 70 percent to 100 percent in October 2018,” she said.

“This was part of the Gasum strategy with the development of the Nordic gas market and LNG infrastructure at its core. This also enables us to operate under a single strong brand throughout the Nordics,” stated Lamminen.

“We also made preparations for the opening up of the Finnish gas market effective from the beginning of 2020. We will continue this work and anticipate another strong year for Gasum in 2019,” she added.

Gasum’s overall sales in the natural gas business came to 874.9M euros versus 678.7M euros in 2017.

Gasum explained that its transmission business would be unbundled by January 2020 in the manner required by the Natural Gas Market Act.

As part of the preparations, Gasum has founded a new subsidiary, Suomen Kaasunsiirtopalvelut Oy, which is tasked with planning transmission network business development processes for the period after the unbundling.

“At the end of 2018, Baltic Connector Oy, which is building a gas interconnector between Finland and Estonia, was transferred from the State of Finland to the Gasum Group,” it added.

The company’s sales of biogas made from waste increased only slightly to 48.7M euros compared with 47.9M in the previous year. ■

Gate terminal in Rotterdam launches open season amid planned expansion with trans-shipments and bunkering

LNG Journal editor

The Dutch Gate LNG import terminal in Rotterdam, now the focus of more trans-shipment activity from Russia, has requested interested parties to book capacity in an open season process.

The invitation has been made to customers as the Rotterdam terminal, jointly owned by Dutch natural gas company Gasunie and international storage firm Royal Vopak, has been boosting its business over the past year.

Rotterdam has been increasing ship and truck activities

Send-out capacity

The terminal has a send-out capacity of 12 billion cubic metres per annum and intends to increase the capacity by up to 2 Bcm per annum by installing additional send-out equipment.

During this open season, parties can book this additional capacity as well as the currently available capacity of 1 Bcm per annum of the existing terminal for the period from 1 September 2021 to 31 of August 2031.

Gate noted that the 1 Bcm per annum of available capacity included berthing slots, storage entitlements and send-out rights.

The 2 Bcm per annum of additional capacity includes send-out rights but no additional storage entitlements or berthing slots.

Gate noted that interested parties have until 19 April 2019 to sign binding deals.

The terminal performed more than 100 shipping operations in 2018 and unloaded 8.3 million cubic metres of LNG from 54 vessels, of which 17 were trans-shipments. It also loaded 3.9 million cubic metres onto 23 large vessels (17 trans-shipments) and 27 small-scale carriers.

The Gate facility also loaded a record 2,808 trucks with LNG for small-scale distribution all over Europe.

"The maximum additional capacity that a party can acquire is twice its annual contracted quantity, irrespective of whether such annual contracted quantity is allocated through this open season and/or is the result of previous allocations," said Gate.

"Parties are reminded that securing entry capacity into the Dutch grid from Gasunie Transport services is the party's own responsibility," it added.

The terminal issued all details of the procedure to be followed for entering the open season bidding.

"After requesting and signing the confidentiality agreement, for which Gate will provide the draft, and after Gate receives a 'bona fide' expression of intent (before 5 April 2019, 12.00 local Dutch time, in English, signed by a member of the board of directors), an interested party will have until Friday 19 April at 12.00 noon (local Dutch time) to sign a binding contract, for which Gate will provide the draft," it stated.

Gate said it would notify the parties involved in the process by Friday 26 April 2019 12.00 (local Dutch time) by e-mail.

The terminal company also stated that the additional capacity available was dependent on a final investment decision being taken not later than September 2019 on expanding the Rotterdam facility.

The whole LNG Market at your fingertips

- Increased market visibility through a quick "lowdown of the market" on Monday morning and detailed "bird's eye" view of the past month
- Break-down and illustration of complex LNG trade relations backed by real data to increase feel for the market
- Access to pre-digested primary market data
- Consistent & systematic market perspectives
- Market and fleet overview in one convenient package

LNG Unlimited Data

CNOOC and the Shanghai exchange offer third-party deals

China National Offshore Oil Corp., the largest liquefied natural gas terminal owner, is planning to open up several of its facilities to third-party access (TPA) and expressions of interest are required by the end of March in the proposal backed by the Shanghai Petroleum and Natural Gas Exchange.

The initiative by CNOOC and the Shanghai Exchange are part of a series of natural gas market reforms to back increasing demand for imports to support both economic development and the government's clean air policies.

The Shanghai Petroleum and Natural Gas Exchange was inaugurated in November 2016 after a year-long trial operation as part of energy reforms in China.

CNOOC, owner of nine of China's 19 onshore import terminals, sold imported LNG for the first time on the exchange in April 2018 for forward delivery.

Under the Chinese TPA plans, each third-party user must take in a minimum of four cargoes, equivalent to 260,000 tonnes per annum, over 10 years.

A statement by the Shanghai exchange said that this requirement may be increased in multiples of four cargoes.

Expressions of interest have to be submitted by March 31. The exchange said subsequent negotiations would then take place in April and May on pricing and delivery details.

The Chinese proposal is a move towards the policies of the European Union requiring member states to provide open access.

Qatar Petroleum buys stake in Mozambique exploration block

LNG Journal editor

Italian Energy company Eni has sold a stake to Qatar Petroleum in an exploratory block offshore Mozambique, where several LNG projects are being developed from other blocks in the Rovuma Basin.

Qatar Petroleum has acquired a 25.5 percent participating interest in Block A5-A located in the deep waters of the Northern Zambezi Basin, about 1,500 kilometres northeast of the capital Maputo.

Italy's Eni will be the operator in Northern Zambezi Basin

Licence round

Eni was awarded the block in the fifth competitive Licensing Round launched by the government of Mozambique and an exploration and production concession contract was signed in October 2018.

It extends over an area of 5,133 square kilometres in a water depth between 300 metres and 1,800 metres, in a completely unexplored zone in front of the town of Angoche.

Eni is the operator of the Block A5-A consortium with a 59.5 shareholding, which would be reduced to 34 percent after the farm out is approved. Other partners are South Africa's Sasol with 25.5 percent and the state energy company of Mozambique ENH with 15 percent.

"The transaction represents another milestone in the strategic path that Eni and QP undertook to further strengthen their partnership worldwide," said Eni Chief Executive Claudio Descalzi.

Eni has been present in Mozambique since 2006 when it acquired the Area 4 licence in the offshore Rovuma basin where total gas in place is estimated to be more than 85 trillion cubic feet after discoveries in the Coral, Mamba and Agulha fields.

The Coral field is subject to a floating LNG development with production capacity of 3.4 million tonnes per annum.

Construction of the Coral FLNG joint venture began in June 2017 the start-up is scheduled for 2022.

The development programme also includes the construction of an onshore plant composed by two liquefaction Trains for gas treatment and liquefaction capacity of 15.2 MTPA in the first phase of the Rovuma LNG project.

Spot LNG cargo costs for Japan drop by around $2.20 in month

Spot liquefied natural gas cargoes arrived in Japan last month costing an average of $8.30 per million British thermal units, a drop of $2.20 per MMBtu compared with the previous month.

The delivered cargoes in January 2019 had cost an average of $10.50 per MMBtu versus $10.90 per MMBtu in February 2018.

The shipments were contracted in February 2019 at $7.40 per MMBtu for delivery at a later date compared with $8.20 per MMBtu the previous month and a contracted price of $10.60 per MMBtu in February 2018.

The North Sea Brent crude oil price that influences Japanese long-term contract prices also impacts spot LNG and other energy markets and the price was holding up at around $65 per barrel or more in the first quarter of 2019.

The spot cargo numbers come from the commerce division of the Japanese Ministry of Economy, Trade and Industry and are only issued if a minimum number of two trades are recorded.

The Ministry emphasizes that "spot LNG" refers to fuel traded on a cargo-to-cargo basis and does not mean shipments under contracts on a short-term, medium-term or long-term basis.

The statistical accounting of the spot prices started in March 2014.

Overall Japanese LNG imports had dropped by 8.7 percent in January as more coal and nuclear power generation offset the need for LNG cargoes, though the cost of the LNG rose by more than 15 percent compared with a year ago.

Shipments to Japan in January amounted to 7.54 million tonnes compared with 8.26MT in January 2018.

Nine of Japan's nuclear power plants, which numbered 54 on line before the Fukushima disaster in 2011, have re-started to reduce LNG needs.

THE PREMIER MEETING PLACE FOR LNG BUYERS AND SELLERS IN ASIA PACIFIC

PRODUCED BY: CWC

OFFICIAL SUPPORTERS: Enterprise Singapore | MPA SINGAPORE

FROM THE PRODUCERS OF: WGC 2021 28th WORLD GAS CONFERENCE DAEGU, KOREA 21-25 JUNE | LNG2019 SHANGHAI

CWC

WORLD LNG & GAS SERIES
11TH ASIA PACIFIC SUMMIT

24 - 28 JUNE 2019 | GRAND HYATT, SINGAPORE

Andrew Walker
VP Strategy
Cheniere Marketing Ltd

Ye Yishu
President
GCL Petroleum Trading Singapore

Darshan Hiranandani
CEO
H Energy

Rajnish Goswami
General Manager
LNG Marketing
Anadarko Petroleum Corporation

Tom Earl
Chief Commercial Officer
Venture Global LNG

Keita Enjoji
Head of LNG
General Manager
Tokyo Gas Asia Pte. Ltd

Christophe Malet
Senior Vice President
Upstream LNG
Hanas

Ryosuke Tsugaru
CEO
Diamond Gas International

GOLD SPONSORS

PAVILION ENERGY | VENTURE GLOBAL LNG

SILVER SPONSORS

MOZAMBIQUE LNG | CHENIERE | hanas 哈纳斯

DIAMOND GAS INTERNATIONAL | Mitsubishi Corporation

BRONZE SPONSORS

KING & SPALDING | GTT Expert in LNG | POTEN & PARTNERS | COMET Custom Transactions on Demand | H-ENERGY power to the people | SLNG Singapore LNG Corporation

For more information, please contact **Elliott McGinn** or **Tyler Forbes** on: **+44 20 7978 0000** or email: **LNGAsia@thecwcgroup.com**

CWCLNG.COM/ASIAPACIFIC

#LNGASIA

Alaska LNG project signs deals with BP and ExxonMobil to progress venture and lower costs

LNG Journal editor

Alaska Gasline Development Corp., the state agency overseeing the Alaska LNG project, said it signed an agreement with ExxonMobil Corp. and BP to cooperate on ways to advance the venture by working together to improve the project's competitiveness and its progress to gain regulatory permits.

"Our respective organizations share an interest in the successful commercialization of Alaska's stranded North Slope natural gas," said AGDC Interim President Joe Dubler.

Expertise

"BP and ExxonMobil possess world-class LNG expertise which may help AGDC responsibly advance this project with maximum efficiency for the benefit of Alaskans, and I welcome their collaboration," he added.

The Alaska LNG project is designed to liquefy 3.5 billion cubic feet per day of gas for sale to customers in the Asia-Pacific region from a facility to be built in Nikiski on the Kenai Peninsula south of Anchorage at a total cost of more than $43 billion.

ExxonMobil facilities at Point Thomson in Northern Alaska

It includes a 1,300 kilometres pipeline from the North Slope to southcentral Alaska.

The US Federal Energy Regulatory Commission recently delayed the date scheduled for final decision on allowing the project to June 2020 from February 2020.

AGDC added that it was continuing talks with potential buyers and investors, including companies such as China Petroleum & Chemical Corp., known as Sinopec, and Chinese banks.

AGDC took control of Alaska LNG from ExxonMobil Corp., BP and ConocoPhillips in 2017, after the producers determined it was no longer economic when compared to other LNG projects around the world.

AGDC in early March received a major regulatory permit for its $10-billion stand-alone North Slope pipeline.

The permit was jointly issued by the US Army Corps of Engineers and the US Bureau of Land Management.

The pipeline design includes a 36-inch diameter mainline and a 30-mile, 12-inch diameter lateral connecting the mainline to Fairbanks, as well as a gas conditioning facility at its starting point at Prudhoe Bay on the North Slope.

The AGDC interim President Dubler replaced Keith Meyer in January as part of a board overhaul.

AGDC is governed by a seven-member board of directors, five public members and two principal department heads of the State of Alaska.

Board members are appointed by the governor and subject to confirmation by the legislature.

Republican Governor Mike Dunleavy named four new members to AGDC in January.

Global LNG maritime fuel group signs up first North American port authority as member

Sea-LNG, a global coalition of energy and shipping companies backing the increased use of liquefied natural gas as a maritime fuel, has signed up its first North American port as a member.

The latest member is the Vancouver Fraser Port Authority, the federal agency of the Port of Vancouver in the Pacific Coast province of British Columbia, Canada's largest port and the fourth port member to join the coalition.

The other port company members are the Port of Rotterdam, Yokohama-Kawasaki International Port Corp. of Japan and most recently the Maritime and Port Authority of Singapore.

"Together, the ports remain committed to supporting the coalition's vision of a competitive global LNG value chain for cleaner maritime shipping," said Sea-LNG.

The Sea-LNG group, founded in 2016 to help provide strategic development of the emerging LNG marine fuel market and encourage the building of bunkering infrastructure, now has around 40 company and port authority members.

Peter Keller, the Sea-LNG Chairman is also Executive Vice President of US shipping line TOTE Maritime Inc.

"We are pleased to welcome the Vancouver Fraser Port Authority to our growing coalition and look forward to leveraging their expertise to realise our vision of developing LNG infrastructure in ports around the globe to enable quick, safe and cost-effective bunkering," said Keller.

Sea-LNG said that the Pore of Vancouver was working closely with the regional gas supplier, Fortis BC and with industry and governments to advance LNG bunkering.

"As part of our vision to be the world's most sustainable port, we engage in a number of emissions management initiatives that help support a healthy environment," said Duncan Wilson, Vice President of Environment, Community and Government Affairs for the Canadian port.

"This partnership with Sea-LNG represents an opportunity for us to be part of a multi-sector group that is reducing marine shipping emissions and improving air quality," added Wilson.

Sea-LNG said it was undertaking studies and developing tools with partners for the industry to better understand the true benefits of LNG from both an air quality and greenhouse-gas mitigation perspective.

"The coalition continues to encourage meaningful debate using accurate, independent data which has been academically verified through sound analysis," said Sea-LNG.

Solutions for ALL your Natural Gas needs.

On-site/Factory Built Storage Tanks for LNG, Ethane, etc., Intermodal ISO Tank-Containers, & more.

Corban Energy Group (CEG) has been creating highly engineered products required by the natural gas supply chain, from upstream to downstream. CEG has established natural gas terminals throughout the world, provided quality LNG/CNG equipment for the American market, and built storage tanks as large as 200,000 CM in capacity, with its worldwide network of engineering & manufacturing partners.

Call or e-mail us to find out how your company can benefit from our comprehensive natural gas products and services today.

www.CorbanEnergyGroup.com

CORBAN ENERGY GROUP

Your Solution for LNG/LPG

T. **201.509.8555** info@corbanenergygroup.com
418 Falmouth Avenue, Elmwood Park, NJ 07407, USA

McDermott and Baker Hughes-GE win subsea contracts for Mauritania and Senegal FLNG

LNG Journal editor

McDermott International and Baker Hughes-GE, the US energy services companies, have been awarded substantial subsea contracts by BP to develop the Greater Tortue-Ahmeyim natural gas fields that will underpin several floating LNG projects offshore Mauritania and Senegal.

The initial subsea infrastructure supplied will connect the first four of 12 wells consolidated through production pipelines leading to a floating production, storage, and offloading (FPSO) vessel.


Keppel of Singapore is converting carrier for LNG production

Set-up

From here liquids are removed and the export gas is transported via a pipeline to the FLNG production hulls where the gas is liquefied.

McDermott defines a substantial contract as between $500 million and $750M. The contract award will be reflected in McDermott's first-quarter 2019 backlog.

McDermott and BH-GE said the contract follows an initial front-end engineering and design (FEED) phase awarded in March 2018 when both companies worked together to define the technology and equipment scope for a four-well development phase.

Project management and engineering teams from BP, BHGE and McDermott will remain co-located at McDermott's London offices for this next phase.

McDermott and BH-GE will supply subsea umbilicals, risers and flowlines (SURF) and subsea production systems (SPS) equipment.

McDermott said it planned to use its upgraded “Amazon” vessel, “DLV 2000”, “North Ocean 101” and third-party vessels to support the installation scheduled to begin in late 2020.

“The ‘Amazon’ modifications are scheduled to be completed before the installation campaign begins and will include a multi-joint (hex) J-Lay system to handle the most challenging ultra-deepwater projects as well as the addition of a multi-joint facility, dual pipe loading cranes and additional power generation,” explained McDermott.

McDermott-designed pipeline and riser structures will be fabricated at its yard in Batam, Indonesia.

BH-GE will provide five large-bore deepwater horizonal xmas trees (DHXTs), a 6-slot dual bore manifold, a pipeline end manifold, subsea distribution units (SDUs), three subsea isolation valves (SSIVs), diverless connections and subsea production control systems, specifically designed to enable the future integration of additional wells for the first phase of the development.

“This contract marks a number of firsts. Our first significant subsea EPCI project in West Africa, the first project using our state of the art pipelay vessel ‘Amazon’ and our support of BP's first entry into Senegal and Mauritania,” said Tareq Kawash, McDermott's Senior Vice President in the region.

“Our collaboration with BH-GE allows us to offer BP an integrated approach that builds on our proven solutions. We look forward, along with BHGE, to delivering this landmark project to BP with the highest levels of safety and quality,” stated Kawash.

Graham Gillies, BH-GE's Vice President for Subsea Production Systems, said the company aimed to deliver the best-in-class solution to BP with cost-efficiency and industry-leading safety.

“This major deepwater gas development is strategically important for Mauritania and Senegal's domestic and global gas supply, and supports the industry's drive for a more sustainable, lower carbon future,” added Gilles.

BH-GE has also signed an agreement to become a “Country Partner” of “Invest in Africa's (IIA) Senegal chapter”, of which BP is a founding member.

West African LNG firm Kosmos completes its purchase of Atlantic Margin Gulf of Mexico assets

Kosmos Energy, the US partner of BP in the Mauritania-Senegal floating LNG projects, has completed its acquisition for more than $1.22 billion of Deep Gulf Energy as it keeps faith in the deepwater Gulf of Mexico as other operators retreat to the US onshore shale basins.

Kosmos, based in Dallas, said it purchased Deep Gulf Energy to expand its assets in the Atlantic Margin exploration area of the most distant parts of the Gulf that can have similar deepwater challenges to offshore West Africa.

“By acquiring DGE, Kosmos adds to its deepwater Atlantic Margin portfolio an established business with attractive assets and a strong record of growing production and reserves through infrastructure-led exploration,” said Kosmos.

“This immediately accretive acquisition enhances the scale of the company and is expected to generate significant free cash flow,” added Kosmos.

Houston, Texas-based DGE was founded in 2005. The company has drilled 20 wells, 16 of which have been completed. The company achieved its first production in 2007 and the acquisition would add around 25,000 barrels of oil equivalent per day of production for Kosmos.

Kosmos notes that while many competitors have been leaving the Gulf of Mexico to pursue onshore shale plays, their departures have created an opportunity to further open up the Gulf.

“The best deepwater assets can compete with the best of shale, and now is a good time to enter the Gulf of Mexico,” said Kosmos.

The completion of the DGE deal comes as Kosmos and BP are moving forward with contract awards for the Tortue-Ahmeyim natural gas project in the Atlantic Margin of Mauritania and Senegal that will underpin several FLNG ventures.

The Tortue-Ahmeyim project will produce gas from a deepwater subsea system and transfer it to an FLNG production facility at a nearshore hub located on the Mauritania and Senegal maritime border.


Atlas Copco
"Energy is a major cost driver in running an LNG plant. But with efficient Atlas Copco mixed-refrigerant compressors, we're using less energy and saving more money."
Zhang Jia-Hua, Operations Team Leader
Baotou Lu Ding Natural Gas Co. Ltd.
Inner Mongolia, China
Handle the Pressure
Although balancing the mechanics of your LNG plant can put a lot of stress on your budget, Atlas Copco Gas and Process can help you handle the pressure with highly efficient, integrally geared centrifugal compressor solutions that help keep costs under control.
Learn more about Atlas Copco Gas and Process at
www.atlascopco-gap.com