LNG Unlimited

LNG JOURNAL PUBLICATION 23 January 2018

Papua New Guinea lines up more low-cost natural gas for LNG plant

ExxonMobil confirms high-quality reservoir at new well located in Western Province

Our Asia-Pacific editor

ExxonMobil, operator of the Papua New Guinea LNG export plant, confirmed a high-quality discovery in an onshore well, located in the Western Province of the Oceania nation, adding to a rapidly growing inventory of low-cost natural gas to produce more LNG volumes.

The P'nyang South-2 well was drilled to 8,940 feet (2,725 metres), reaching high-quality, hydrocarbon-bearing reservoirs in the Toro and Digimu sandstones, consistent with pre-drilling expectations.

ExxonMobil said the well confirmed the southeast extension of the field.

Evaluation

"We are currently evaluating the well results and together with our co-venture partners will assess the P'nyang field resource potential and development pathway," said Liam Mallon, President of ExxonMobil Development Company.

The ExxonMobil-operated PNG LNG, located northwest of the capital Port Moresby, recently logged an annualized production rate of 8.6 million tonnes per annum.

PNG LNG, with two storage tanks each with 160,000 cubic metres of capacity, was built with nameplate production of 6.9MT and has benefited from various upgrades and de-bottlenecking since the start-up in 2014.

The facility receives feed-gas from the Hides Gas Conditioning Plant in the PNG Highlands through a 700-kilometre pipeline.

PNG project participants are building up gas reserves

Plans are currently being drawn up by the government and holders of the various Petroleum Retention Licences with the main proposal being the expansion of the existing two-Train plant with the building of two additional Trains and other infrastructure.

"When combined with our acquisition of InterOil Corporation, the increase in assessed reserves at Hides in the existing PNG LNG project and our recent Muruk discovery, this adds to our rapidly growing inventory of low-cost of supply natural gas in Papua New Guinea," said Mallon.

"We are continuing with our active onshore and offshore exploration program in an effort to provide additional resources to expand existing and planned development projects," he added.

The natural gas resources are concentrated in various development areas of the Elk-Antelope natural gas fields in Petroleum Retention License (PRL) 15 and the P'nyang field in PRL 3.

The Elk-Antelope natural gas fields, combined with the Hides, Angore, and Juha fields and newly discovered resources give PNG the largest onshore volumes in the region.

Engineering

The PNG LNG plant expansion project will enter the front-end engineering and design phase in 2018.

The list of shareholders along with ExxonMobil in PNG LNG and the expansion project include Australia-listed Santos and Oil Search as well as French energy company Total, Japan's JX Nippon Oil & Gas Exploration and PNG government holdings.

ExxonMobil partner Oil Search began drilling the P'nyang South-2 well in October 2017. The PRL 3 area where the well is located covers 105,000 acres, or 425 square kilometres.

ExxonMobil operates the licence with a 49 percent interest in the block. Oil Search, the drilling operator, has a 38.5 percent interest and JX Nippon has a 12.5 percent stake. ■

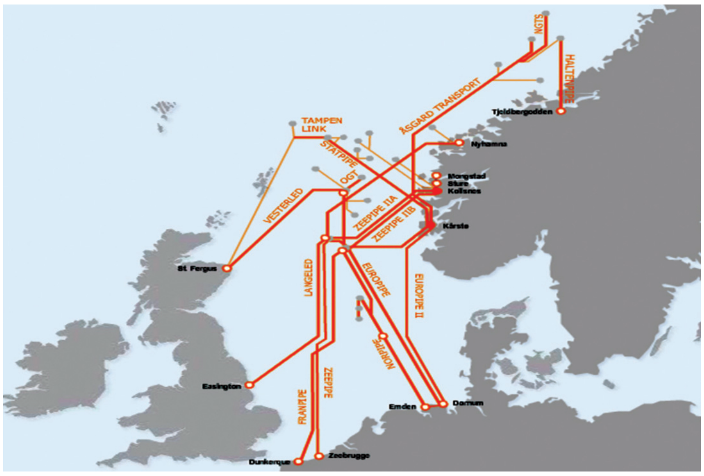
UNLIMITED AGENDA

LNG competitor Norway breaks pipeline natural gas supply record for mainland Europe and UK

Our Europe editor

Gassco, the Norwegian natural gas pipeline operator and one of the main competitors to LNG, boosted supplies by 8 percent last year, sending a record 117.4 billion cubic metres of gas through the pipeline system from the Norwegian Continental Shelf to mainland Europe and the UK.

The Norwegian company said the 2017 pipeline volumes set a clear record for the four decades since Norwegian gas exports began.



Gassco pipeline links supplying European customers

Key role

The pipeline gas supplies from Norway is the equivalent of 87 million tonnes of LNG, which combines the most recent annual LNG output of Qatar and that of Algeria. Both nations supply large LNG volumes to Western Europe.

"This performance demonstrates the key role played in European energy supply by Norway's gas exports," said Gassco Chief Executive Frode Leversund.

"These currently cover about a quarter of Europe's gas consumption and will remain a secure energy source for consumers there in the years to come," he added.

Gassco is the operator for the Norwegian gas infrastructure, including pipelines, process plants in Norway, and terminals in Germany, Belgium, France and the UK.

The Norwegian deliveries compare favourably in terms of energy security with the more than 180 Bcm shipped by pipeline to Western Europe by Russia's Gazprom.

Norway is also an LNG exporter to Europe from a small single-Train plant at Hammerfest.

"We're proud of running this system with the highest possible regularity, and thereby ensuring secure and reliable deliveries to Europe," said Gassco's Leversund.

"We have an efficient and well-trained organisation, which is committed to delivering in accordance with the expectations people have of us," he added.

Deliveries of natural gas liquids and condensate from the process plants at Karsto and Kollsnes in western Norway amounted to 10.2 million tonnes in 2017, up from 10.0MT in 2016. ■

Norway awards record 75 licences with Statoil and future merged German firm among big winners

Norway has awarded a record number of 75 licences for natural gas and oil exploration in the North Sea, the Norwegian Sea and the Barents Sea with Norwegian company Statoil having the highest number of awards and one of the other biggest gainers being Germany's Deutsche Erdoel AG (DEA) and Wintershall who will merge soon into a single company.

The licenses comprised 45 in the North Sea, 22 in the Norwegian Sea and eight in the Barents Sea and were awarded in a so-called annual predefined areas (APA) licensing round, introduced by Norway in 2003 to encourage exploration and development of discoveries near existing infrastructure.

Licence blocks awarded by the Norwegian Ministry of Petroleum and Energy cover an overall surface area of 177,170 square kilometres and the 75 licenses were awarded to 34 companies, of which 19 won the right to lead projects.

"The number of licences is the highest ever awarded in a licensing round on the Norwegian continental shelf. Access to new, prospective exploration acreage is a central pillar in the government's petroleum policy," said Norwegian Energy Minister Terje Soeviknes.

Norwegian state-owned energy company Statoil, operator of Europe's only baseload LNG export plant at Hammerfest using Barents Sea feed-gas, was the biggest winner in the latest round with 31 licences, including 17 as lead operators, while Aker BP came in second with 23 licences, of which 14 were as lead operators.

ExxonMobil, Royal Dutch Shell, Total, ConocoPhillips and Lundin Petroleum were among others awarded acreage in addition to German operators Wintershall and DEA.

Wintershall, based in Kassel, Germany and DEA whose headquarters are in the port city of Hamburg, gained one as a shared licence and 10 other licence stakes separately.

Wintershall DEA will soon merge into one company to create one of Europe's largest independent operators.

They plan to list on the stock exchange as Wintershall DEA through an initial public offering, subject to further negotiations and a definitive agreement.

DEA said it won five new licences in this year's APA round, including two in the North Sea, two in the Norwegian sea and one in the Barents Sea.

"We got the areas that we ranked as most interesting. Although the areas are mature, we see great potential," said DEA's Exploration Manager Svend Erik Pettersson.

"Throughout our 40 years on the Norwegian Continental Shelf (NCS), we have built knowledge and expertise, and that, in combination with technology, gives us the capability to seek out new possibilities," added Pettersson.

DEA was one of eight partners who invested in the single-Train Hammerfest LNG plant using feed-gas from the Snohvit field and which started operations in 2007. At present, DEA has shares in 54 licences on the NCS.

Wintershall said it continued to gain more exploration acreage in Norway in its core areas. The company will be operator of three of these.

Four of the Wintershall licences are in the Norwegian North Sea, one is located in the Norwegian Sea in the extended Aasta Hansteen area, and one is located in the Barents Sea.

"We are grateful to the Norwegian authorities for recognizing the strength of our application and our willingness to continue expanding our operations," said Hugo Dijkgraaf, Managing Director of Wintershall Norge. ■

Sri Lanka mulls schedule for LNG project backed by Japan and India

Sri Lanka is drawing up a schedule for an LNG import project at the port of Kerawalapitiya on the west coast of the island nation comprising a floating storage and regasification unit (FSRU) and associated infrastructure.

Preliminary accords have already been signed with Japan and India to cooperate in helping to finance and complete the LNG venture that will be linked to associated power plants.

Sri Lankan Prime Minister Ranil Wickremesinghe recently discussed the project in Colombo with the visiting Japanese Foreign Minister.

Kerawalapitiya is the site of a 300-megawatt gas-fired power plant project, adjoining an existing oil-fueled power station.

The LNG import terminal in Sri Lanka has attracted the support of Indian energy company, Petronet LNG, which will combine with several Japanese companies to develop the venture.

"The project to build the FSRU and LNG terminal will be a joint venture by Sri Lanka Ports Authority (SLPA) with both Japan and India," said a statement from Prime Minister's office.

The Sri Lankan government added that a new company would be formed representing all parties, including the Japanese and Indian companies, the SLPA and with a shareholding held by the state.

Sri Lanka expected the FSRU and the associated infrastructure to supply the power plants in Kerawalapitiya to be completed around 2021.

During his visit on January 5, Japanese Foreign Minister Tharo Kono toured the Port of Colombo, which is currently being expanded.

Gas Authority of India and Gazprom agree renegotiate terms and pricing

Our North America editor in New York

The trading subsidiary of Russian natural gas company Gazprom said it had renegotiated the terms and pricing for its liquefied natural gas supply agreement signed more than five years ago with Gas Authority of India.

Gazprom Marketing & Trading said the Sale and Purchase Agreement (SPA) originally signed in 2012 had been amended after talks in Delhi between Gajendra Singh, Director of Marketing at GAIL and Vitaly Vasiliev, Chief Executive of the Gazprom subsidiary.

Gazprom uses LNG carriers such as the 'Yensei River'

First accord

The original SPA building up to 2.5 million tonnes per annum of LNG on a delivered basis was executed by GAIL with Gazprom Marketing & Trading's Singapore unit, with supplies scheduled to start in the second quarter of 2018.

The renegotiation of the Russian deal comes as GAIL is set to receive volumes in 2018 from the newest US LNG export plant at Cove Point in Maryland where the Indian gas network owner has a 20-year tolling contract.

GAIL was also one of the first companies to buy US LNG from Cheniere Energy's Sabine Pass plant in Louisiana. GAIL's volumes come from the Cheniere plant's Train 4 that came on stream in the fourth quarter of 2017.

LNG booked by GAIL under a long-term deal with Cheniere will cost 115 percent of the prevailing Henry Hub benchmark price plus a fixed cost of around $3 per million British thermal units.

Gazprom and GAIL stated that both parties had agreed to an adjustment to the price and volume of LNG supply, helping the Indian company to develop incremental gas markets and to mitigate volume risk, without releasing specific details.

"I am excited to announce that we agreed to deliver on our original promise and begin LNG supplies in 2018," said Gazprom M&T's Vasiliev.

The Russian executive added that he looked forward to strengthening a mutually beneficial partnership with GAIL.

"This agreement is a key partnership between GAIL and Gazprom in developing LNG markets under the Indo-Russia trade relationship," said GAIL Chairman and Managing Director B. C. Tripathi.

Japanese average spot LNG contract prices rise by more than 27 percent

Japanese government figures show that average spot liquefied natural gas cargo prices for Northeast Asia in December rose by $2.20 per million British thermal units to $10.20 per MMBtu compared with the same month a year ago.

The latest average contracted price is more than 27.5 percent higher than the $8.00 per MMBtu average cargo price registered in December 2016.

The price of LNG cargoes that actually arrived in December were priced at $8.10 per MMBtu, compared with $6.80 per MMBtu in the year-ago period. The November 2017 price had been $7.10 per MMBtu versus $6.10 per MMBtu in the previous month and $5.90 per MMBtu in November 2016.

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.

Preliminary overall Japanese LNG imports figures for December will be released on January 22, though in November they had dropped for a fourth month and by a total of 15 percent compared with a year ago.

LNG imports for November amounted to 6.41 million tonnes compared with 7.54MT in November 2016.

Building the Energy Future through LNG

Chart LNG solutions are facilitating the use of natural gas as a safe, economical, clean-burning fuel alternative to diesel and other distillates for energy, transportation and industry.

www.ChartLNG.com
LNG@ChartIndustries.com

CHART®

Innovation. Experience. Performance.®

NEWS NUDGES

BHP Billiton natural gas

BHP Billiton, the Australian commodities and energy company, said it was contributing US$314 million to maintain LNG plant throughput at the North West Shelf project, operated by Woodside, at Karratha in Western Australia as part of a life-extension project. BHP said its second-half natural gas production was down 6 percent at 325 billion cubic feet because of hurricane shutdowns in the US. The Australian company noted that its average second-half LNG price was up 18 percent at US$7.75 per million British thermal units versus $6.58 per MMBtu in the second half of 2016.

Novatek issues gas report

Novatek, operator of the Yamal LNG plant in Arctic Russia that came on stream in the fourth-quarter of 2017, said its annual production of natural gas rose 0.5 percent to just over 65 billion cubic metres. Novatek, whose stakeholders include French energy company Total, said all of its hydrocarbon production amounted to 513.3 million barrels of oil equivalent. Novatek processed 6.96 million tonnes of stable gas condensate at the Ust-Luga Complex, located 110 kilometres west of St. Petersburg, representing a 0.9 percent increase in daily average volumes processed at the facility in 2017.

US LNG shipments

Five LNG carriers with carrying capacity of 17.2 billion cubic feet combined departed the Cheniere Energy-owned Sabine Pass export plant in Louisiana in the week through January 17 and one other tanker with 3.8 Bcf of capacity was loading at the terminal.

Shanghai shipyard holds naming event for latest ship for Australia-China route

Our Asia-Pacific editor

The Chinese Hudong-Zhonghua shipyard in Shanghai has held a naming ceremony for the second of four LNG vessels scheduled to ship volumes from the Royal Dutch Shell-owned Queensland Curtis coal-seam-gas-to-LNG plant in eastern Australia to terminals in China.

The 174,000 cubic metres capacity carrier was named "Pan Americas" in the ceremony attended by executives from the joint venture owners.

These include China LNG Shipping, a joint venture consisting of Cosco Shipping and China Merchants, Teekay LNG and China National Offshore Oil Corp.

'Pan Americas' makes China debut for joint venture owners

Tri-fuel

The Tri-Fuel Diesel Electric (TFDE) vessel is 290 metres in length and was to be delivered to its charter Shell by February 2018. The first vessel of four being constructed in China for QCLNG is named the "Pan Asia" and was delivered in October 2017.

The other two carriers, the "Pan Europe" and "Pan Africa", are currently under construction at Hudong-Zhonghua's Shanghai yard and are scheduled for delivery by 2019.

CNOOC owns a 50 percent stake in QCLNG's Train 1 and has a sales agreement for 3.6 million tonnes per annum for 20 years negotiated when the plant was being built by BG Group before its acquisition by Shell.

All four of the Chinese-built carriers will operate under 20-year time-charters with Methane Services Ltd, a subsidiary of Shell.

Chinese import terminals handled record volumes in December as cold weather and a winter heating policy in northern China favoured natural gas use over coal as a way of reducing pollution.

China has been taking more shipments from Australia because of volume agreements and shareholdings held in projects by CNOOC at QCLNG and in Western Australia.

Another Chinese major, China Petroleum & Chemicals Corp. and known as Sinopec, is a shareholder and volume buyer in the Australia Pacific LNG project in Queensland.

LNG shipments to China during 2017 totaled at least 35 million tonnes, meaning it could take the place of South Korea as the world's second-largest importer once final annual tallies are confirmed.

Baltic Exchange in London advances LNG shipping index for several routes

The Baltic Exchange in London, one of UK's oldest financial institutions and now part of the Singapore Exchange (SGX) group, has formed a panel to help develop a new liquefied natural gas index comprising several routes for the evolving LNG shipping market.

The Baltic Exchange is already a European leader in the multi-billion-dollar freight derivatives market.

It made its move following an approach by leading Baltic Exchange LNG shipbroking companies.

A panel has been formed made of a number of broking companies, including Affinity, Braemar ACM and Clarksons.

The Exchange said the LNG panellists are currently assessing a range of LNG routes before moving to a trial phase.

"The growth in LNG transported by sea has led to the formation of a spot market," said Baltic Exchange Chief Executive Mark Jackson.

"However, any spot market needs to be underpinned by standard contractual terms - as already happens in the tanker and dry bulk freight markets," added Jackson.

"The Baltic Exchange is looking to support the LNG freight market as it matures and we hope to deliver greater transparency through an index," explained the CEO.

"We are delighted that four of the most important independent LNG shipbroking companies have joined our panel and we look forward to developing a set of standardised assessments for use across the fast-growing LNG industry," he said.

The Baltic Exchange approved a takeover by the Singapore Exchange in September 2016 with the deal giving SGX access to the freight derivatives market.

Jackson was named as the new CEO after the takeover of the Exchange, founded in 1744 as a forum for chartering vessels and now mainly producing benchmark indexes for global shipping rates while operating its trading platform for the freight derivatives market.

LNG exporter Abu Dhabi awards huge sour gas project contracts to Bechtel and TechnipFMC

Our Middle East editor

Abu Dhabi, a long-standing LNG producer and exporter, has awarded the two front-end engineering and design contracts for its planned offshore sour gas mega-project, consisting of the Hail, Ghasha and Dalma fields.

US energy engineering company Bechtel was awarded the Hail and Ghasha FEED contract and the US-French group TechnipFMC was granted the Dalma field FEED contract by the Abu Dhabi National Oil Company (Adnoc).

Adnoc said the two contracts, collectively, are among the largest awarded by a state-owned oil and gas company, underpinning the importance of the venture. The value of the contracts was not disclosed.

Abu Dhabi has operated LNG export plant since 1977

Island-based

The project, in the northwest offshore area of the United Arab Emirates, could meet 20 percent of the UAE's gas demand by the second half of the next decade.

Sour gas is natural gas that contains measurable amounts of hydrogen sulphide. Specialised purification systems are, therefore, used during the sour gas production that remove carbon-dioxide and hydrogen sulphide from the recovered gas.

"The growth in energy demand in Abu Dhabi, and the wider UAE, has prompted Adnoc to further harness its gas resources, as part of its 2030 smart growth strategy," said Ahmed Al Jaber, UAE Minister of State and the Adnoc Group Chief Executive.

"This FEED award provides Adnoc with the potential to unlock additional undeveloped sour gas reserves and will allow us to deliver against our strategic objective to ensure a sustainable and economic supply of gas," stated Al Jaber.

The UAE is one of the oldest LNG producers from the Das Island offshore Abu Dhabi which consists of three Trains that process an average of 8 million tonnes of associated and non-associated gases per year.

The Das Island LNG plant, commissioned in 1977, is run by ADGAS, a subsidiary of Adnoc and mainly supplies Japan.

The UAE is also an LNG importer at facilities in Dubai and Ruwais to help meet its own domestic gas needs.

The Hail-Ghasha-Dalma project is forecast to produce about 1 billion cubic feet of sour gas per day when completed.

The infrastructure requirements for the venture include a minimum of 11 offshore artificial islands to be designed and constructed.

In addition to awarding the FEED contracts, Adnoc said it was close to awarding five technology licensor contracts, covering a gas treatment licensor; a sulphur recovery unit (SRU) licensor; a natural gas liquids (NGL) licensor; a condensates recovery (hydro treaters) licensor and a hydrogen generation licensor.

"These technologies are critical to the successful execution of the FEED phase," Adnoc explained.

"The decision to award both FEED contracts came after a rigorous and extremely competitive tendering process, ensuring we will strictly manage costs by working with contractors that can deploy effective engineering and robust value-add technologies," said Abdulmunim Saif Al Kindy, Director of Adnoc's upstream business.

"In progressing with these projects, we create the potential to capitalize on our success and experience in ultra-sour gas production, gained from the development of the Shah field, the largest project of its kind in the world," added Al Kindy.

Cove Point export project side-tracked by merger battle

Dominion Energy, owner of the US Cove Point LNG export plant in Maryland, told South Carolina state senators that the state could either accept Dominion's proposed $14.6 billion takeover offer to buy the local Scana Corp., or they could watch the troubled public utility potentially fall into bankruptcy.

Dominion is involved in the takeover as it also strives to export its first LNG cargoes from the completed Cove Point liquefaction and export plant on Chesapeake Bay in Maryland.

Dominion Chief Executive Thomas Farrell addressed the South Carolina State Senate on January 16 to explain the takeover.

Farrell told the state's legislators there was no perfect solution to the financial crisis afflicting electricity utility Scana and which was caused by the cancellation of a nuclear plant project.

The Dominion CEO gave a grim financial overview of the utility and said that only Dominion could save it from bankruptcy.

"This is like a political election. You have to vote for somebody," said Dominion CEO Farrell.

"You may not really like either candidate, but when you go in the booth, there are only two alternatives," he added.

Other US utilities, including Florida-based NextEra Energy, are said to be considering a counter-offer for Scana, whose headquarters are in the town of Cayce in South Carolina.

However, its share price suggested no other offer would be forthcoming. Scana's shares closed on January 16 down almost $2 per share at $42.31 per share, and well below Dominion's buyout offer of $50.35 per share.

Tellurian chooses Goldman Sachs and French bank for Driftwood LNG

Our North America editor in New York

Tellurian Inc., the developer of the Driftwood LNG export project in Louisiana, has hired US investment bank Goldman Sachs and the US unit of French bank Societe Generale as financial advisors to help organize future funding requirements.

Goldman Sachs and SG North America will work with Driftwood Holdings LLC, a wholly owned subsidiary of Tellurian formed to own and operate Tellurian's gas producing assets, pipeline assets and the LNG export facility.

US investment bank will be advisor to Tellurian

Pipelines

In addition to building the Driftwood plant, the Houston, Texas-based company said in December 2017 it expected to develop its own pipeline network, including the previously announced Driftwood Pipeline (DWPL) and two additional pipelines to expand supply alternatives for liquefaction and domestic distribution in southwest Louisiana.

Tellurian, founded by former Cheniere Energy Chief Executive Charif Souki and by Martin Houston, who ran the operations of the LNG portfolio company, BG of the UK, has also purchased shale-gas assets while its project is going through the regulatory process.

Tellurian said its Tellurian Pipeline Network represents about $7 billion of investment in infrastructure and 15,000 jobs in the states of Texas and Louisiana.

The three pipelines would supply feed-gas to Tellurian's own Driftwood LNG plant with its proposed six Trains and 27 million tonnes per annum of production starting in 2022 and with costs of up to $20Bln.

DWPL is anticipated to be in-service mid-2021 and the additional two pipelines are anticipated to be in operation by the end of 2022, subject to commercial agreements.

The newly proposed Permian Global Access Pipeline (PGAP) would be an approximately 625-mile, 42-inch diameter pipeline transporting 2 billion cubic feet of natural gas per day (Bcf/d).

China surges into third place as buyer of LNG cargoes from Sabine Pass plant

US LNG export data showed China and South Korea each received six shipments from the Sabine Pass export plant in Louisiana as the Chinese surged up the top 10 of American cargo recipients with 29 delivered overall, according to the latest monthly data from the Department of Energy.

A total of 23 cargoes were shipped during November from the Gulf Coast facility, equal to the amount delivered in October.

While China and South Korea shared a dozen cargoes, Mexico received three shipments and India two, along with Turkey. Taiwan also received a Sabine Pass shipment.

Single cargoes were also delivered to three other nations, the Dominican Republic, Portugal and Spain.

The DoE data also showed that the cargoes were delivered by contract holders such as Royal Dutch Shell, Gas Natural Fenosa and the Cheniere marketing unit.

LNG shipping companies that lifted cargoes from the Louisiana plant included GasLog, Golar and Hoegh.

Prices edged higher from the summer to between $3.17 and $6.17 per million British thermal units.

There were 16 long-term contract shipments and seven short-term or spot deliveries at lifted prices of $4.58, $5.40, $4.92 and up to $6.17 per MMBtu.

Since Sabine Pass began its shipments in February 2016, the largest recipient of US LNG has been Mexico with 49 cargoes.

Of the top 10 nations, the other nine are South Korea with 35, China 29, Chile 17, Japan 14, Jordan 12, Argentina 11, India 10, Spain 10 and Turkey 9.

The Sabine Pass plant now has four liquefaction Trains on stream, each with nameplate capacity of 4.5 million tonnes per annum, giving a total of 18 MTPA.

After the first quarter of 2018, the DoE data will include commercial shipments from the second US export plant owned by Dominion Energy and now on stream at Cove Point in Maryland.

Woodside outlines LNG positives in Wheatstone and Pluto ventures amid plans for Senegal development

Our Asia-Pacific editor

Woodside Petroleum, the leading Australian LNG plant operator, posted a decline in revenue even as its stake in the Chevron-led Wheatstone LNG plant came to fruition and results from its owns two operated plants in Western Australia were mixed in terms of volumes and sales.

Woodside said the start-up of the second processing Train at Wheatstone was scheduled for the second quarter of 2018 while Train 1 was operating normally after a brief December shutdown to fix a technical problem.

That's as Woodside reported a fall in total operating revenue for the fourth quarter, down 3.7 percent to US$1.03 billion compared with US$1.07Bln in the same three months of 2016.

Cash flow

Full-year revenues were down 4 percent at US$3.90Bln versus US$4.07Bln in the previous year.

Woodside, operator of the North West Shelf (NWS) plant and Pluto LNG, said in its fourth-quarter 2017 earnings that its Pluto export terminal would be constructing truck-loading infrastructure to start fuel distribution of LNG in Western Australia.

The company's one-sixth share of LNG volumes from the NWS LNG plant was 683,710 tonnes, less than the 717,431 tonnes marketed in the same three months the previous year.

However, its revenue from NWS LNG sales was US$248.1 million compared with US$232.7M in the 2016 quarter, reflecting higher oil-linked prices.

CEO Coleman forecast stronger oil prices will flow through to LNG and give more revenue

"Production was higher following the execution of scheduled maintenance activities in the prior quarter," said Woodside.

Pluto LNG volumes were higher at 1.16 million tonnes in the three months compared with 1.12MT in the fourth quarter of 2016. Revenues amounted to US$442.8M versus US$502.6M the year before.

"Production at Pluto was higher due to excellent facility performance and higher rates following process improvements," explained Woodside.

"Reliability was 100 percent and the annualised loadable LNG production rate for the quarter was 5.1 MTPA," it stated.

In its overseas operations, Woodside said it had decided on a field development concept for its stake offshore the West African country of Senegal. Woodside bought a 35 percent stake in the Rufisque, Sangomar, and Sangomar Deep joint ventures from ConocoPhillips for US$350M in 2016, including the SNE-1 field.

The blocks cover 7,490 square kilometres in the new hydrocarbon basin of the Atlantic Margin

"The SNE joint venture achieved a concept select decision for the SNE Field Development Phase 1," said Woodside.

"The development concept for the first phase of SNE is a stand-alone FPSO facility with subsea wells and infrastructure.

"The project will provide flexibility to allow subsequent SNE development phases, including options for potential gas export to shore and future subsea tie-backs from other reservoir intervals and fields," it added.

Woodside's Senegal oil and gas assets are in the same area where BP of the UK and Kosmos Energy of Dallas, Texas, are developing two floating LNG projects.

Pilbara plant

In Australia, Woodside said work was proceeding on Wheatstone LNG's Train 2 and the processing facility was now more than 90 percent complete.

"The key priorities for Train 2 are completion of the final mechanical fit-out and instrumentation and controls pre-commissioning for refrigeration compressors," said Woodside.

It said first LNG from Wheatstone Train 2 is expected in the second quarter of 2018 followed by a domestic gas production start-up.

Woodside Chief Executive Peter Coleman said the fourth quarter was underscored by a strong operational performance at Pluto LNG and the start of operations at Wheatstone.

He noted that Woodside's overall revenue for the period was up quarter-on-quarter at $939 million, reflecting stronger realised prices.

"We anticipate that the stronger oil prices experienced in the fourth quarter will flow through to higher realised LNG prices in the first quarter of 2018," stated Coleman

"Looking ahead to 2018, we can expect a significant increase in annual LNG production and we anticipate we will be cash flow neutral at $35 a barrel," he added.