LNG Unlimited

LNG JOURNAL PUBLICATION 14 January 2020

Qatar signs LNG deal with Gulf state of Kuwait for new terminal

Gulf nations arrange cargo deal for region's largest import facility to be built to far

LNG Journal editor

Qatar Petroleum has signed a long-term supply agreement with Arab Gulf neighbour Kuwait for the supply of liquefied natural gas cargoes for a period of 15 years at a new larger Kuwaiti onshore regasification terminal currently under construction.

Qatar signed the Sale and Purchase Agreement with Kuwait Petroleum Corp. for the supply of up to 3 million tonnes per annum.

Ministers

The deal was signed in Kuwait City by Khaled A. Al-Fadhel, the Kuwaiti Minister of Oil and Electricity and Water and Qatari Minister of State for Energy Affairs Saad Sherida Al-Kaabi, whose is also President and Chief Executive of Qatar Petroleum.

Kuwait's domestic natural gas demand is increasing in line with other Middle East nations and it is already receiving additional deliveries from new suppliers such as the US.

Cargoes of LNG are shipped at present to the dockside facility at Mina Al-Ahmadi in Kuwait which has been in operation since 2009.

However, the Gulf nation is building a second and larger onshore terminal close to a new refinery complex at Al-Zour, about 90 kilometres south of Kuwait City.

The new Kuwaiti terminal is being constructed by a consortium led by Hyundai Engineering Co. of South Korea.

"Under the 15-year agreement, LNG deliveries to Kuwait's new world-class LNG receiving terminal at Al-Zour Port will commence in 2022 to support Kuwait's growing energy needs, particularly in the power generation sector," said the joint statement.

Qatari Minister of State for Energy Saad Sherida Al-Kaabi at signing in Kuwait with Minister Al-Khaled A. Fadhel

The Kuwait project includes the construction of a regasification facility, eight LNG storage tanks with a capacity of 225,000 cubic metres, and marine facilities, including two jetties for loading.

The facilities will also include other components, such as 14 HP pumps, boil-off gas (BOG) and flare facilities.

KNPC awarded the contract to the Hyundai-led consortium also including Hyundai E&C and Korea Gas Corp. The contracts were worth around $1.5 billion.

Once fully operational, the facility is expected to handle around 15 million tonnes per annum of LNG and with storage for 22MT of natural gas a year.

The expansion in infrastructure comes as Kuwait and its neighbour, the United Arab Emirates, are already among the top 20 destinations for shipments from US exporters such as Cheniere's Energy's Sabine Pass export plant in Louisiana.

"We are pleased and proud to join hands with Kuwait Petroleum and we look forward to providing reliable LNG supplies to our brothers in the State of Kuwait for decades to come," said Qatar Petroleum CEO Al-Kaabi.

"This agreement extends Qatar's long-standing LNG supply relationship with Kuwait well into the 2030s and highlights our commitment to meeting Kuwait's LNG requirements," added Al-Kaabi.

"We are confident that the exceptional reliability of our LNG supplies will provide KPC with the required flexibility and supply security to fuel the State of Kuwait's impressive growth," he stated.

Kuwait Oil Minister Al-Fadhel said he was delighted with the Qatar Petroleum LNG deal.

"The state of Kuwait is embarking on an ambitious path of economic growth, which requires cleaner energy sources such as natural gas that will contribute to reducing emissions and improving local air quality," added Al-Fadhel. ■

UNLIMITED AGENDA

US utility Sempra Energy firms up first Saudi LNG investment in Texas joint venture at Port Arthur

LNG Journal editor

Sempra Energy, the California-based utility and liquefied natural export plant developer, said it signed an accord for Saudi Aramco, the oil company of Saudi Arabia, to take a stake in the proposed Port Arthur LNG project in Texas.

The Sempra LNG unit said the agreement with Aramco Services Company was an Interim Project Participation Agreement (IPPA) for the Port Arthur joint venture in Jefferson County.

Advancing

"The IPPA represents another milestone for both companies after having signed a heads of agreement in May last year for the purchase of 5 million tonnes per annum (MTPA) of LNG and a 25 percent equity investment in the Port Arthur project," said Sempra.

The initial phase of the Port Arthur LNG project is fully permitted and it is expected to include two liquefaction Trains, up to three LNG storage tanks and associated facilities to enable the export of around 11 MTPA of LNG on a long-term basis and with a possible expansion.

First drawings of planned Texan Port Arthur export plant

"The announcement is a reflection of the growing alignment between our companies' interest in the overall success of the Port Arthur LNG project," said Jeffrey W. Martin, Chairman and Chief Executive of Sempra Energy.

The company already operates the Cameron LNG export plant at Hackberry in Louisiana with two Trains already on stream.

"We have a tremendous amount of respect for Saudi Aramco and its leadership team and we are pleased we can support their success in the global natural gas markets," added Martin.

Saudi Aramco's President and CEO Amin H. Nasser said that global demand growth for LNG is expected to continue in the coming years and the company saw significant opportunities in this market.

"This agreement with Sempra Energy is another step forward for Saudi Aramco's long-term gas strategy, and towards becoming the global leading integrated energy and chemicals company," added Nasser.

Shares in Saudi Aramco made their debut in December 2019 on the Saudi Tadawul stock exchange after an initial public offering.

Aramco shares most recently changed hands at 35.20 Saudi riyals ($9.40), after debuting at 32 riyals in the sale of 1.5 percent of the company's shares.

The first day share price of 35.20 Saudi riyals ($9.40) brought Saudi Aramco's value up to $1.88 trillion.

In securing its deal with Saudi Aramco, Sempra noted that it had also initiated the Federal Energy Regulatory Commission pre-filing review for a subsequent potential expansion of the proposed project that would add two additional liquefaction Trains for a total export capacity of around 22 MTPA of LNG.

"Port Arthur LNG is expected to play a critical role in helping shape the future of global energy trade," added Martin.

"This multibillion-dollar initiative is among the largest LNG projects in development anywhere in the world and is expected to deliver a cleaner energy supply to foreign markets, while creating important, high-skilled jobs right here at home," stated the Sempra CEO. ■

Sempra to open Houston 'centre of excellence' to attract LNG and utility personnel and to showcase technology

Sempra Energy, the operator of the Cameron liquefied natural gas export plant in Louisiana and the developer of two other facilities in Texas and Mexico, said it was opening a new "Center of Excellence" in Houston to attract more LNG and utility sector personnel.

Sempra said the office was scheduled to open later in 2020.

"We are committed to building the premier energy infrastructure company in North America, and creating a regional headquarters in Houston advances our business strategy," said Jeffrey W. Martin, Chairman and Chief Executive of Sempra Energy.

"Texas is a remarkable market, and our Houston Center of Excellence will allow us to add hundreds of new engineering and construction positions to support our growing LNG business in the Gulf region, while also allowing us to showcase our company's commitment to innovation, technology and leadership within the energy industry," explained Martin.

"Sempra is also the majority owner of Oncor Electric Delivery Company LLC (Oncor), the largest electric transmission and distribution utility in Texas, serving more than 10 million consumers," said the California-based utility.

Most recently, in May 2019, the company acquired a 50 percent limited-partnership interest in Sharyland Utilities.

The new Sempra regional headquarters will be located in Uptown Houston and will include the relocation of existing employees in the greater Houston area to the new site.

"Sempra Energy has already made a strong commitment to Texas with big investments in Oncor, Sharyland and natural gas infrastructure," said Texas Governor Greg Abbott of the San Diego, California-based utility.

"Their new Houston office is a symbol of confidence in Texas' energy leadership, workforce and regulatory climate," added Abbott.

"Houston is the world's premier energy community and I welcome Sempra's expansion in Texas," he added.

In addition to expanded office space for regional business operations, the Houston Center of Excellence will showcase innovative technologies developed by Sempra companies to support evolving energy market.

"The exhibit space will display interactive technologies that improve the delivery of more secure and resilient energy supplies to customers, such as the expansion of natural gas into the electricity mix," said Sempra.

"This is to support grid stability and integration of digital and meteorological technologies to improve power reliability, as well as virtual reality experiences connected to the Cameron LNG liquefaction-export facility," it added. ■

Singapore pushes ahead with second regas terminal

Singapore, through the Energy Market Authority, is advancing with plans for a second regasification and storage terminal in the city state as it aims to confirm its position as an Asian LNG hub with a high representation of global trading firms and LNG bunkering availability.

Singapore's plan was explained in the government's published expression of interest in building the country's second terminal, which would a floating facility.

The terminal would be used for break-bulk cargoes whereby shipments would be broken up into smaller parcels in delivered to southeast Asian customers such as Thailand, Vietnam and the Philippines.

Analysts said that Asian emerging economies would become more reliant on LNG, with China and India already major buyers and other southeast Asian nations becoming importers.

The Singapore EMA awaits expressions of interest from third-parties to take part in the development of the second terminal with the closing date for submissions set for 28th February 2020.

Singapore LNG Corp. owns and operates the current single terminal on Jurong Island with peak regasification capacity of 11 million tonnes per annum.

The terminal was built in 2013 and then expanded capacity. In 2018, the country introduced a spot LNG import policy that allowed buyers to respond to changing market demand.

As far as being a centre of LNG trading, the government has confirmed that this has already been achieved with almost 50 LNG trading and shipping firms having offices in Singapore.

Myanmar makes progress on plan for LNG supply for power plant

LNG Journal editor

The Southeast Asian nation of Myanmar is making progress in constructing a liquefied natural gas import terminal to support a regional power plant project backed by a Chinese company.

The LNG facility will be built for the power generation project at Mee Laung Gyaing in the Ayeyarwady Region.

LNG-to-Power plan has moved on from previous accord

Investment

Zhefu Holding Group of China and the Myanmar company, Supreme Trading Co., plan to invest US$2.57 billion to build the power plants and the terminal.

The project will include berths for LNG carriers to dock in the Mee Laung Gyaing area, which is 40 miles to the north of Chaung Tha beach resort.

Supreme Trading said the LNG-to-power project would be transferred back to the government under a 30-year build, operate and transfer system.

The project will guarantee maximum power supplies for regional industrial zones, hotels and the city of Yangon, formerly known as Rangoon.

The Mee Laung Gyaing project is one of three LNG import projects being studied by the Government. It has pledged to make Myanmar a key regional LNG importer to help meet the growing energy demands.

The other two projects will be located at Kanbauk in the Tanintharyi region of southwest Myanmar and at Ahlone near Yangon.

Supreme Trading said its project was expected to take four years to complete.

It will be start with a 500-megawatt plant by the end of 2022 and 900MW od capacity a year or two later.

A power purchasing agreement is also being finalized by Supreme Trading and is expected to be concluded in the first quarter of 2020.

Israel joins Greece and Cyprus on East Med gas pipeline to EU

Greece, Cyprus and Israel have signed an agreement to build a 1,900-kilometre subsea pipeline to transport natural gas from the East Mediterranean to West European markets in competition to LNG.

The three countries said they intended to reach a final investment decision in 2022 and the pipeline is scheduled for completion by 2025.

European governments and Israel already have a preliminary accord on developing the EastMed project at an estimated cost 6 billion euros ($6.7Bln).

It will carry an initial 10 billion cubic metres of gas per annum from Israeli and Cypriot waters to the Greek island of Crete and then on to the Greek mainland and into Europe's gas network via Italy.

The energy ministers of Greece, Israel and Cyprus, Kostis Hatzidakis, Yuval Steinitz and Yiorgos Lakkotrypis, signed the agreement at a ceremony in Athens.

Greece has said the agreement will be concluded after Italy also becomes a signatory.

The East Med pipeline project is owned by IGI Poseidon, a joint venture between Greek gas network company DEPA and Italian energy group Edison.

"With Italy taking part, the project will take its final shape as the most dynamic option to guarantee the European Union's energy security from gas reserves in the South-eastern Mediterranean," said Greek Energy Minister Hatzidakis.

A number of large gas fields have been discovered in the East Med since 2009 by Egypt, Israel and Cyprus.

At the end of December 2019 the Israeli Leviathan gas field with resources of around 21.4 trillion cubic feet came on stream to supply Egypt and Jordan. Israeli waters also contain the Tamar gas field with reserves of 11.2 Tcf.

> "European governments and Israel already have a preliminary accord on developing the EastMed project"

Powering the Future Through LNG

Chart has a proven track record of maximizing return on investment by delivering safe, robust and reliable LNG solutions across the natural gas value chain that integrate seamlessly with existing infrastructure. Contact Chart to learn how our team can reduce total lifecycle cost, schedule and risk in your LNG project.

- Liquefaction
- IPSMR® process technology
- Modular mid-scale LNG
- Small-scale LNG
- Receiving terminals
- Power generation
- LNG virtual pipeline
- Cryogenic storage and distribution
- Bunkering
- Vehicle fueling stations
- On-board vehicle fuel tanks and fueling systems for road, maritime & rail

www.ChartLNG.com
LNG@ChartIndustries.com

CHART®
Cooler By Design.™

NEWS NUDGES

Elba Island advances

The US Elba Island LNG export plant near Savannah in Georgia developed by pipeline company Kinder Morgan has had its request granted by the US Federal Energy Regulatory Commission to introduce feed-gas into the fifth liquefaction Train at the 10-Train facility. “This approval is based on FERC staff inspections of the applicable facilities and review of the information filed through December 23, 2019, and subsequent discussions,” said the FERC.

Turkstream for EU

The Bulgarian natural gas network firm, Bulgartransgaz, said Russian company Gazprom had started European gas deliveries via the new TurkStream pipeline to Turkey, providing more competition for LNG. The capacity flows are about 3 billion cubic metres of gas to Bulgaria via TurkStream, replacing a route that formerly passed through Ukraine and Romania. “Russian gas deliveries not only for us but also for Greece and North Macedonia are being carried through the new entry point,” said Bulgartransgaz Chief Executive Vladimir Malinov.

Shell FLNG tie-back

Royal Dutch Shell has confirmed a significant natural gas and condensate discovery within the Shell-owned title AC-P64 in the Browse Basin off the northwest coast of Western Australia with feed-gas potential for the Prelude floating LNG hull deployed in the basin. “This discovery is located 160 kilometres north-east of the Shell operated Prelude FLNG facility and presents an opportunity for a future tie-back to Prelude,” said Shell.

Three natural gas futures and options are in CME Top 10

LNG Journal editor

Global energy and commodities platform expands products

CME Group, the world's leading derivatives marketplace, reported its December and full-year 2019 market statistics, showing it reached average daily volumes in energy of 2.1 million contracts per day for products such as crude oil, natural gas and LNG, and now including a new LNG freight future.

CME’s overall contracts, including metals and other commodities, reached an average daily volume of 19.2 million contracts during the year and 15.5M contracts during the month of December

Open interest

“Open interest at the end of December was 113 million contracts,” said CME, referring to the total of options or futures that have not yet been settled for an asset.

CME’s name comes from the Chicago Mercantile Exchange, which was part of a major US commodities sector amalgamation in 2007.

The CME statement listed the Top 10 Energy products and these included three natural gas futures and options in the US and Europe.

1. Crude Oil Futures Crude Oil NYMEX - sub group Crude Oil - Exchange NYMEX (volume 1,823,096) and (open Interest 2,204,559)
2. Henry Hub Natural Gas Futures - Natural Gas NYMEX (volume 332,639) and (open Interest 1,328,646)

The others are: 3.NY Harbor ULSD Futures Refined Products NYMEX 304,851, 448,751; 4.Crude Oil Option Crude Oil NYM EX 271,204, 1,832,621; 5.RBOB Gasoline Futures Refined Products NYMEX 193,629, 390,165; 6.Brent Last Day Financial Futures Crude Oil NYMEX 190,857, 219,846; 7.Natural Gas Option (European) Natural Gas NYMEX 73,469, 1,832,904; 8.E-mini Crude Oil Futures Crude Oil NYMEX 33,116 4,127; 9.Brent Crude Oil Futures-Style Margin Option Crude Oil NYMEX 13,260, 94,947; 10.Natural Gas (Henry Hub) Last-day Financial 1 Month Spread Option Natural Gas NYMEX 10,200, 270,209.

CME launched LNG freight futures on December 23 and it is the latest in a growing availability of LNG-related hedging products likely to gain in popularity.

UK ship broking firm confirms first LNG freight futures trade

Clarksons, the London-based ship brokers and shipping and financial services company, said it had completed the world’s first LNG freight futures trade at year-end involving two of the leading global commodities traders.

The brokers said the trade was competed in late December on the CME Group trading platform by their Clarkson Platou Futures Ltd unit.

The trade was between the international commodities firms Vitol and Trafigura.

The London-based Baltic Exchange collects data from shipping brokers to provide assessment of three routes on the CME.

These are from Australia’s Gladstone port in Queensland to Tokyo, from the US Sabine Pass LNG plant in Louisiana, owned by Cheniere Energy, to the UK. A third freight contract is from Sabine Pass to Tokyo.

There have been several over-the-counter (OTC) deals via brokers based on the Baltic Exchange’s assessments, including between French major Total and commodities firm Glencore in July 2019 and Japan's JERA Global Markets and commodities firm Vitol in September.

However, the Vitol-Trafigura trade was a first and involved a first-quarter 2020 spread between BLNG1 Gladstone (Australia) to Tokyo RV and BLNG2 Sabine (US Gulf) to Isle of Grain RV (UK) taking place just hours after the product’s launched by CME on December 23.

“We have seen an increase in demand from market participants wishing to manage freight exposure within LNG,” said Christian Greenop, who led the transaction from the Clarksons FFA team.

“In 2019, 160,000 cubic metres capacity TFDE tonnage traded in the single voyage market in the low \$10,000/day RV basis during April and broke the \$170,000/day RV basis mark in October, so a risk management tool is particularly useful given this level of volatility,” stated Greenop.

Delta LNG project was filing regulatory permits application after slight delay for comments

LNG Journal editor

Delta export plant will be near outlet to the Gulf of Mexico

The US Delta LNG project, the third of three export plants being development in Louisiana by the company Venture Global, slightly delayed filing for its regulatory permits from December 2019 to January 2020 to allow more time to address some issues raised.

Under current plans, the Delta liquefaction plant and export terminal will be located on about 525 acres on the Mississippi River, south of New Orleans.

Affiliate

The affiliated Delta Express Pipeline will connect the terminal with natural gas pipeline interconnections near Alto in Louisiana.

The Arlington, Virginia-based company is also developing the Plaquemines venture sited near river mile-marker 55 on the west side of the Mississippi River, 30 miles south of New Orleans.

That project will include multiple small-scale liquefaction Trains, four LNG storage tanks and three marine loading berths along with 20 MTPA of output.

The company's most advanced plant in terms of construction is at Calcasieu Pass in Louisiana with current nameplate export volumes of 12 MTPA.

As regards Delta LNG and the Express pipeline, Venture Global was expected to have filed its application with the Federal Energy Regulatory Commission on January 10, 2020, after delaying the filing since December 13, 2019.

The Delta LNG liquefaction facility will include 36 small-scale liquefaction Trains, each with 0.626 MTPA of capacity configured in 18 blocks, for a total of just over 22.5 MTPA of output.

The venture will also include four 200,000 cubic metres capacity storage tanks, three marine loading berths and 1,240 megawatts of combined-cycle power generation.

Delta LNG will utilize the same modular, small-scale configuration being successfully implemented by its Calcasieu Pass project in Cameron Parish, Louisiana.

"The additional time will allow Delta LNG-Express to address comments on the second set of draft Resource Reports issued by the FERC and United States Army Corps of Engineers (USACE) Vicksburg District on November 22, 2019 and to further evaluate pipeline route alternatives raised by the National Marine Fisheries Service, to reduce impacts in tidal marsh environments," explained Venture Global.

"About 85 percent and 69 percent of the accessible areas have been surveyed for wetlands and cultural resources, respectively," it told the FERC.

"The results of these surveys will be included in the FERC application and other applicable federal permit applications," it added.

"Survey crews will re-enter the field in early 2020 after sugar cane has been harvested to further survey open areas, additional workspaces, and access roads, and will prepare supplemental survey reports for submittal," stated Venture Global.

The Delta LNG and Express pipeline project have conducted five public open houses in the project area during the week of November 11, 2019, to inform the public of proposed reroutes of the pipeline and the relocation of one of the compressor stations.

"Approximately 100 people attended the open houses. Most of the attendees were affected landowners who expressed general concern with the project or had questions regarding compensation and restoration," the company explained.

"Several landowners suggested minor reroutes to reduce impacts on their properties. Delta LNG-Express is evaluating these requests and remains in communication with the landowners," stated Venture Global.

The Delta LNG terminal site is near Mile 54 of the Mississippi River and has approximately 3,100 feet of river frontage with easy access to the Gulf of Mexico.

Venture Global said it had carried out marine simulations with local river pilot organizations and found that the Mississippi River was sufficiently wide at this location to allow LNG carriers to safely manoeuver and turn as they call at the terminal.

Furthermore, the company said that it found there was a substantial water depth at the terminal location, meaning that no dredging would be required.

The company's Calcasieu Pass plant is expected to come on stream in 2022, along with associated facilities, including the TransCameron Pipeline.

Venture Global is owned by former investment banker Michael Sabel and lawyer Robert Pender, who act as joint chief executives. ■

BHP will award a contract for LNG bulker

The Anglo-Australian global commodities, mining and energy company BHP, whose assets include Australian LNG and gas stakes, said it would award a contract in the first quarter of 2020 after receiving 17 bids for the provision of LNG-powered bulk carriers for transporting iron ore to Asia.

BHP, a shareholder in North West Shelf LNG plant and the Scarborough gas field, said it was reviewing bids from natural gas producers, shipbuilders and financial institutions.

"Through this tender, we are seeking potential partners who share our ambition of lowering emissions to the maritime supply chain," said BHP.

The company had opened the tender to what it described as a select group of industry leaders, from ship owners, banks and LNG fuel network providers.

The aim of the tender was to find a partner for an LNG-powered newbuild iron-ore carrier, or a shipping company willing to order one or several with pre-booked charters from BHP.

BHP, the largest charterer of bulk carriers in the world, launched its tender in August 2019 for the design and supply of LNG-fueled ships to transport up to 27 million tonnes of its iron ore exports to Asia.

"We sent requests for tender to 19 organisations, including banks, entrepreneurs, vessel owners and shipyards and 17 of them came back with very detailed offers two months ago," said BHP Maritime Vice-President Rashpal Bhatti.

BHP said it was evaluating the detailed submissions before progressing to a clarification stage with the companies in January and subsequent negotiations in February before a contract award in March or April. ■

Concern over growing pirate activity around West African LNG route

LNG Journal editor

UK maritime security consultants, Dryad Global, reported an attack by a single speedboat with 10 armed men on-board on the liquefied natural gas carrier, "LNG Lokoja", while the vessel was heading for the Bonny Island export plant in Nigeria.

"The pirates are understood to have opened fire on the vessel," said the Dryad report.

Portuguese Navy vessel 'Zaire' provided escort for LNG carrier after it managed to evade pirate speedboat

Evaded

"The vessel conducted evasive manoeuvres causing the attack to fail," explained the intelligence brief.

The incident on December 28 took place some 70 nautical miles northwest of Sao Tomé and Príncipe, the former Portuguese colony. The crew was reported to be safe.

The 148,300 cubic metres capacity "LNG Lokoja", which is under the management of BW Gas of Singapore, was then met by the Nigerian Patrol vessel "Defender VI" and the Portuguese Navy vessel "Zaire" and continued to port.

The Bermuda-flagged "LNG Lokoja" had been returning to Nigeria to lift another cargo after delivering to the French Channel port terminal at Dunkirk on December 12, according to shipping data.

"This is the 8th MARSEC incident occurring beyond the eastern fringe of the Nigerian Exclusive Economic Zone EEZ within 2019," explained Dryad.

"Whilst this area has witnessed maritime crime in previous years, only two incidents were recorded in 2017 and two in 2018 respectively," it added.

This latest incident occurred 13 nautical miles northwest of a previous incident that occurred on the 7th November 2019, during which a vessel was fired upon.

"This is further confirmation of a developing trend of incidents that are assessed to be perpetuated by a well-resourced pirate action group, most likely operating from one or more mother-ship vessels," added the firm. ■

Air Liquide markets new technology that is for gas boil-off on LNG ships

Air Liquide, the French industrial gases company, said it was marketing an exclusive, patented technology that is perfectly suited to the needs of liquefied natural gas carriers and LNG bunkering vessels.

"Its benefits, such as helping LNG carriers save cargo while lowering greenhouse gas emissions, are widely acknowledged on the natural gas transportation market," stated the French company.

Air Liquide's cryogenic equipment is based on the Turbo-Brayton technology, and it reliquefies natural gas boil-off thanks to the principle of sub-cooling, maintaining it in liquid form in vessel storage tanks.

"Quick and easy to install, this patented system is a reliable and economical solution suited to all types of storage, on new and existing vessels," said the company.

Air Liquide said the system was oil-free and required zero maintenance for five years and in addition has proven efficiency.

"Air Liquide sold more than 30 of the Turbo-Brayton cryogenic equipment sets intended for LNG carriers and bunker vessels in 2019," it said.

"This commercial success is helping to meet the challenge of climate change, as part of the Group's climate objectives, and illustrates Air Liquide's capacity to develop innovative technological solutions," stated the company.

The Turbo-Brayton technology for boil-off gas reliquefaction has been specifically developed for marine applications for shipyards, charterers or ship-owners.

"It is a fast and easy-to-install skid-mounted product, that is suited to both atmospheric and pressurized storage," explained Air Liquide.

"With cooling power available instantaneously from stand-by mode to full capacity and low electrical consumption, Turbo-Brayton technology is extremely reliable," it added. ■

Zeebrugge LNG fifth storage tank formally starts contract for Yamal Trade trans-shipments

LNG Journal editor

Fluxys Belgium said that the Zeebrugge import terminal had formally started its long-term trans-shipment contract with the Russian Yamal export plant in Russia with the loading of the 155,000 cubic metres capacity carrier "Yenisei River" from the newly commissioned fifth storage tank.

"The loading operation (in late December) marked the start of the long-term contract for trans-shipments concluded in 2015 with Yamal Trade," said Fluxys.

Traffic

Pascal De Buck, Chief Executive of Fluxys Belgium, said the start of the service was a boost for the Belgian facility.

"Our LNG services at the Zeebrugge terminal accommodate the need for low-emission energy," explained De Buck.

'Yenisei River' started Yamal trans-shipments at Tank Five

"With the start of the long-term contract for trans-shipments we are taking yet another step in the continuous development of our LNG services offer," he added.

"The terminal is now also a fully-fledged link in the logistics chain for the worldwide delivery of LNG from the Yamal production terminal in Siberia," stated the CEO.

"The trans-shipment activity is an important new business line and the port of Zeebrugge will see a significant increase in ship movements," said De Buck.

The fifth LNG storage tank has a capacity of 180 000 cubic metres and its associated process facilities were built at the Zeebrugge terminal with a view to fulfilling the needs of the long-term contract with Yamal Trade.

"The additional capacity allows trans-shipments between ice-breaker LNG vessels coming from the Yamal production plant and conventional LNG carriers without the two having to be docked simultaneously," said Fluxys.

Construction of the new storage tank and facilities started in mid-2015 and in early December 2019 they were ready for test operations, which were concluded successfully.

"With loading rates exceeding 12,500 cubic metres of LNG per hour from one storage tank, the newly commissioned facilities proved to deliver world-class performance," added the Belgian company.

The Yamal contract could mean additional ship traffic of up to 214 LNG carriers per year.

Under the 20-year contract with Yamal Trade up to 8 million tonnes of LNG can be trans-shipped at the Zeebrugge terminal annually. ■

European OTC natural gas trading through London soars over 25 percent amid price drops

European natural gas trading in the day-ahead and month-ahead over-the-counter markets in London covering the eight major gas hubs in Europe soared more than 25 percent as prices plunged, according to the latest year-to-date figures.

Total European natural gas contracts traded in all the European instruments, including the eight largest markets, amounted to 28,047,100,446 megawatt hours for the 2019 year-to-date in October versus 22,379,555,826 MWh in the first 10 months of 2018.

Over-the-counter transactions mean that the natural gas contracts are traded via a broker-dealer network as opposed to a centralized exchange.

The OTC trading in the UK was led by the continental European Dutch Title Transfer Facility price followed by the UK National Balancing Point benchmark.

Only the Zeebrugge Hub and the UK NBP lost ground year-on-year through October 2019, while the French PEG and the Austrian hub both advanced, according to the data from the London Energy Brokers' Association.

The London body is the industry association representing the UK Financial Conduct Authority-regulated wholesale market brokers in the OTC and exchange-traded European energy markets.

Trading in the Dutch TTF, both day-ahead and month-ahead, rose by 25.94 percent in the year to October 22,370,261,842 MWh compared with 17,763,170,069 through October 2018.

The UK NBP contract lost ground by almost the same amount as the Dutch TTF rose.

The October year-to-date figure for the NBP was 4,598,971,383 MWh versus 6,211,616,974 MWh through October 2018, a drop of 25.96 percent.

The London brokerage figures also showed that the average day-ahead Dutch TTF price for the year through October 2019 was 10.34 euros per megawatt hour ($3.37 per million British thermal units) in October 2019 versus 25.66 euros per megawatt hour ($8.39 per MMBtu) in October 2018, down 59.70 percent.

The average day-ahead NBP price for the year through October 2019 was 26.21 pence per therm ($3.43 per MMBtu) versus 66.97 pence per therm ($8.78 per MMBtu) in October 2018, down 60.86 percent.

The Dutch TTF and UK NBP prices are also the main indicators used when pricing Atlantic Basin LNG cargo trades.

However, NBP trading is being reduced because of a decline in UK physical gas assets along with the nation's storage capacity.

Continental Europe also leads the UK on LNG imports, also due to the better geographical spread of storage.

For the month of October 2019 alone, the NBP was down 35.57 percent versus October 2018 to 427,098,093 MWh.

The Dutch TTF was 6.07 percent lower in October 2019 at 2,026,306,624 MWh versus 2,157,362,826 MWh in October 2018.

Germany's two day-ahead trading hubs, the Net Connect Germany and the Germany Gaspool, were the next in volume OTC trading terms through London in October 2019.

They were followed in fifth place by the French PEG hub, now formally known as Trading Region France (TRF), the Italian Punto di Scambio Virtuale (PSV) in sixth, the Austrian Virtual Trading Point in seventh and the Belgian Zeebrugge Hub in eighth. ■