

LNG Unlimited

LNG JOURNAL PUBLICATION

30 March 2021

BW Offshore wins \$4.6Bln lease and operate deal for Darwin LNG feed gas

International project finance banks have been lined up for Barossa FPSO project
LNG News Editor

BW Offshore, the Norway-listed floating production units provider for oil and gas, has been awarded an Australian contract worth US\$4.6Bln by LNG operator Santos for the Barossa gas field to provide feed-gas for the Darwin liquefaction plant.

BW Offshore will supply the Floating Production Storage and Offloading (FPSO) unit to be deployed at the Barossa gas field, located 300 kilometres offshore Darwin in Australia's Northern Territory.

Investment

The contract is subject to a Final Investment Decision (FID) by Santos and its partners, due in several weeks. The FPSO contract is on a lease and operate basis for a firm period of 15 years, with 10 years of options.

Santos Chief Executive Kevin Gallagher regards the contract with BW Offshore as a bargain for the Adelaide-based company to provide back-fill for Darwin LNG.

"The decision to proceed with an FPSO services contract maintains a low ongoing operating cost while engineering enhancements have significantly reduced the project's carbon footprint," said Gallagher.

"This reduction in capital expenditure makes Barossa one of the lowest cost of supply projects in the world for LNG and will provide new supply into a tightening LNG market," added the Santos CEO.

The FPSO will be built in South Korea and Singapore before being towed and permanently located



Barossa gas will be mostly heading for Japan's terminals

over the field where it will process natural gas prior to its transport via pipeline to Darwin LNG.

Condensate will be stored on the FPSO for periodic offloading.

Barossa will provide the next source of gas for the existing Santos-operated Darwin LNG plant once current reserves from the Santos-operated Bayu-Undan gas field in the Timor Sea have been depleted.

Gallagher said the awarding of this contract builds on the momentum of the Barossa project over the past six months ahead of the FID.

"At the end of last year, we announced that transport and processing agreements had been finalised for Barossa gas to be tolled through Darwin LNG and we signed a long-term LNG sales agreement with Diamond Gas International, a wholly-owned subsidiary of Japan's Mitsubishi Corp.," the Santos CEO explained.

Santos currently holds a 62.5 percent operated interest in the Barossa joint venture along with its partner, South Korea's SK E&S (37.5 percent).

BW Offshore said the final price tag over the 15 years was US\$4.6Bln and the company would be responsible for engineering, procurement, construction, installation and operation of the FPSO.

The topside weight will be around 35,000 tons and the FPSO will have processing capacity for up to 800 million standard cubic feet per day of gas and design capacity of 11,000 barrels per day of condensate.

BW Offshore said that the FPSO would be turret moored with a new-built hull based on BW Offshore's RapidFramework design and initial gas production from the FPSO was expected during the first half of 2025.

"This award confirms our ability to leverage extensive operational and development capabilities to win and execute offshore energy transition related projects," said Marco Beenen, CEO of BW Offshore.

"The Barossa FPSO represents a new type of infrastructure-like contract for BW Offshore with attractive long-term returns, supported by strong partnerships with equity co-investors and banks," explained Beenen.

"The project capital expenditure of around \$2Bln will be financed by banks and equity partners, in combination with BW Offshore, as well as approximately \$1Bln in total advance lease payments during the construction period," he added.

UNLIMITED AGENDA

PROJECTS

Annova project on Brownsville Ship Channel decides not to proceed

2

IMPORTS

Elengy starts subscriptions process for Fos Cavaou

3

AGREEMENTS



Qatar signs up Sinopec for supply and will seek shipping tenders

5

DERIVATIVES

Intercontinental Exchange pleased with LNG freight futures debut

6

DEVELOPMENT

French major Total resumes then halts work in Mozambique

7

EARNINGS

Chinese LNG operator ENN increases profits and revenues

9

Texas Annova LNG project on Brownsville Ship Channel cancelled but two projects will continue

LNG News Editor

Annova LNG, the medium-scale US project planned for the south bank of the Brownsville Ship Channel in Texas, will not now be proceeding following a decision by investors to cancel the venture.

The Annova project was expected to ship almost 7 million tonnes per annum from a proposed liquefaction plant as part of the second wave build-out for Gulf Coast exports.

Facilities

The joint venture proposed the construction of six small-scale liquefaction Trains as well as an interconnected pipeline and marine export facilities.

Annova had been backed by Chicago-based utility Exelon Corp. and included midstream operator Enbridge, engineering firm Black & Veatch and US construction con-



Graphic shows where three plants were sited on waterway

tractor Kiewit Corp. The Annova LNG company said the decision was the result of changes in the global LNG market.

One of three liquefaction projects proposed to be built along the Brownsville Ship Channel, Annova had yet to announce any firm long-term contracts tied to supply from the plant and was delaying a final investment decision.

"The entire Annova team is very grateful to the greater Brownsville community for having supported this project for several years," said a statement from Annova LNG.

There are also two other Brownsville Ship Channel projects, NextDecade's Rio Grande venture with 27 MPTA of planned output and Glenfarne Group's Texas LNG with 2 MPTA of proposed produc-

tion and they have yet to declare their FIDs.

Annova LNG had received its final permits to begin construction. Annova's strategy was to offer volumes to mid-scale customers who were seeking to buy increments of 1.0 MTPA but there were no contracts signed.

Annova had received key federal authorizations, including its FERC certificate and Department of Energy approval to export its full capacity to both Free Trade Agreement and non-Free Trade Agreement nations.

Annova also signed an accord in January 2020 to arrange feed-gas deliveries from the Agua Dulce hub in Texas.

Its agreement with Enbridge Inc. affiliate, the Valley Crossing Pipeline, would have provided transportation for its total feed-gas requirements.

India LNG imports decline for third month as more pipelines and better regas awaited

India's liquefied natural gas imports fell for a third month and by over 20 percent amid a slow economic recovery because of the ongoing effects of Covid-19, while the nation was still working on a better geographic spread of regasification facilities.

LNG imports for the month of February 2021 came to 2.08 million tonnes, or around 30 cargoes, versus 2.60MT in February 2020, a drop of 20.2 percent.

Deliveries of LNG for the month of January 2021 had amounted to 1.78MT versus 2.07MT, a fall of 14.3 percent on the January 2020 receipts.

The cumulative LNG imports for the first 11 months of the current fiscal year from April 2020 through February 2021 came to 22.11MT compared with 22.87MT in the previous year, a fall of 3.3 percent, according to

the latest data from the Indian Ministry of Petroleum and Natural Gas.

The December total was also down but still took India's calendar-year imports for 2020 over the 25MT mark to 25.29MT, or more than 350 cargoes.

That was 5.5 percent higher than in 2019 when the shipments amounted to 23.98MT, after rising 7.1 percent from the 22.42MT received in 2018.

The last Indian monthly year-on-year increase in LNG imports was in November 2020 when 2.14MT was received.

India remains the fourth-largest LNG importer after Japan, China and South Korea, though the Indians would have to add an additional 15 MTPA of LNG to their 2020 receipts to overtake the Koreans into third spot.

LNG deliveries to India come

mainly from Qatar, which provides over one-third of volumes, as well as West Africa, the US, Asian nations, Australia and the spot market.

Ministry data also showed that the costs of importing cargoes in February 2021 came to around \$800 million compared with \$900M in February 2020.

Costs of shipments for the fiscal year to date came to \$6.6Bln versus \$8.8Bln in the previous year.

India's domestic production of natural gas for February 2021 as well as for the fiscal year also lagged.

Output of natural gas for the month was 2.30 billion cubic metres compared with 2.34 Bcm, a year-on-year fall of 1.4 percent.

Domestic output for the 11 months came to 25.98 Bcm, a drop of 9.7 percent from the 28.76 Bcm

recorded in the same period of the previous year.

India's seventh import facility is scheduled to start up by the second quarter in the West Coast state of Maharashtra.

The floating storage and regasification unit (FSRU) will be deployed at Jaigarh Port, south of Mumbai, though the nation still lacks a geographic spread of terminals with only one currently located on the East Coast.

This follows the 2020 opening of the sixth facility at Mundra in the West Coast state of Gujarat, co-owned by Gujarat State Petroleum Corp. and the Adani Group.

The main operating terminals on India's West Coast are at Dahej, Hazira and Dabhol, near Mumbai, and at Mundra, north of Mumbai.

Snam and Mubadala have green gas plans

Italian natural gas network and LNG terminal operator Snam, Europe's first company to test the injection of a blend of hydrogen and natural gas into its grid, has signed a cooperation accord with LNG producer Abu Dhabi on studying the potential of green gases.

Snam said it signed a memorandum of understanding to collaborate on joint investment and development initiatives on future uses of hydrogen.

Snam, whose name comes from Società Nazionale Metanodotti (National Pipeline Company), operates two LNG import terminals, the "FSRU Toscana" moored offshore the West Coast of Italy and the onshore Panigaglia facility near the port of Genoa.

Abu Dhabi, one of the seven emirates in the United Arab Emirates, is the longest-standing LNG exporter in the Middle East from its Das Island liquefaction plant in the Gulf.

Snam's accord is with the Abu Dhabi sovereign investment company Mubadala Investment Co. and both will pursue a number of joint assessment activities, including technical and economic feasibility studies to explore potential projects and solutions to foster and promote hydrogen development in the UAE and globally.

The accord was signed by Musabbe Al-Kaabi, Chief Executive of UAE Investments at Mubadala and Marco Alverà, CEO of Snam.

"This agreement shows Snam's commitment to accelerate the energy transition and the development of green gases, more specifically, at global level by applying our skills and technologies to enhance the competitiveness of this key solution for the climate challenge," said Alverà.

Elengy starts subscription process for Fos Cavaou near Marseilles

LNG News Editor

Elengy, the French LNG terminal operator and its subsidiary Fosmax LNG, are launching an open season for capacity subscriptions at the Fos Cavaou facility, located in the Mediterranean west of the Port of Marseilles.

Three of France's LNG terminals, Fos Tonkin, Fos Cavaou in the Mediterranean and Montoir-de-Bretagne on the Atlantic Coast, are operated by Elengy within the Engie Group and as subsidiaries of GRTgaz, France's gas network operator.

Capacity

Fosmax LNG is calling for capacity subscriptions at the Fos Cavaou terminal during 2021.

The Fos Cavaou facility has been operating since 2010 and has three storage tanks with combined capacity of 330,000 cubic metres.

France has a total of four terminals and the most modern facility opened in 2016 at Dunkirk on the Channel Coast and has capacity of 570,000 cubic metres in



The 'Open Season Fos Cavaou 2021' has sparked interest

three tanks. Elengy explained that Fos Cavaou's operations are currently guaranteed through to March 2030 by ongoing subscriptions and contracts totaling 87 terawatt hours per year of capacity.

"Fos Cavaou, at the crossroads of maritime routes and major gas infrastructures, offers a privileged access to all European gas markets and the small-scale potential in a key Mediterranean location," said Elengy.

"The 'Open Season Fos Cavaou 2021' is initiated in response to a high level of market interest expressed over the past few months, and aims to make available addi-

tional primary capacity achieved through technical and regulatory de-bottlenecking, as well as capacity extensions beyond 2030," explained Elengy.

The windows of interest offered include 1.0 billion cubic metres per annum from January 2022, 2.5 Bcm per annum from January 2024 and 4.5 Bcm per annum from April 2030 until 2045 or longer.

The open season will have two phases. Firstly, there will be a non-binding call for interest, which is expected to last for three months to precisely assess market needs.

GTT and Chinese designer gain approval for LNG-fueled bulker

Gaztransport and Technigaz (GTT), the French LNG storage technology company, and the Shanghai Merchant Ship Design and Research Institute (SDARI) have received approval from the European classification society DNV for their LNG-powered bulk carriers.

GTT designed the tank up to the supporting steel wall while the tank's integration into the vessel was studied by SDARI, a subsidiary of China State Shipbuilding Corp.

This Approval in Principle (AiP) confirms that the membrane fuel tank complies with safety regulations and is technically feasible onboard LNG-fueled bulk carriers (Newcastlemax)," said GTT.

"This design improvement offers increased autonomy and dras-

tically reduces sulphur and greenhouse-gas emissions compared to a standard Newcastlemax design," it added.

"Furthermore, it offers great flexibility as the vessel can sail a Brazil-China round trip with one LNG bunkering," explained GTT.

"This reliable solution, with optimal LNG storage, does not affect the available cargo space nor the vessel's accommodation," stated the French company.

GTT said that SDARI, along with class society DNV, studied the structural arrangement of the LNG tank above of the engine room, the dimensioning of the LNG injection system from the tank to the engines, as well as the interface of the LNG bunker station.

Aspects relating to naval architecture, such as damaged stability, were also reviewed by DNV.

"SDARI is delighted to receive this Approval in Principle from DNV," said Wang Gangyi, the Chief Engineer of the Chinese firm.

"This type of vessel is another R&D achievement that combines the latest technology in the market enabling future shipping in line with carbon peak and carbon neutral targets," added Wang.

Morten Lovstad, Vice President and Global Business Director for Bulk Carriers at DNV, said this new design was more proof of the many innovations taking place to facilitate decarbonisation within the transportation of dry bulk cargo.

Produced By:

dmgevents



7TH CHINA LNG & GAS INTERNATIONAL EXHIBITION & SUMMIT

23 - 25 JUNE 2021
NECC, SHANGHAI, CHINA

Distinguished Speakers Include:



Jin Shuping
Vice President
CNOOC
Gas & Power Group



Martin Houston
Vice Chairman
Tellurian



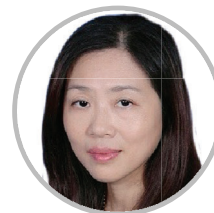
Thomas Maurisse
Senior Vice
President LNG
Total



Andrew Walker
VP Strategy
Cheniere



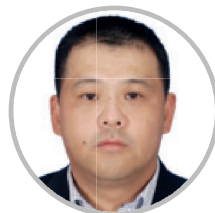
Zhang Chunjun
President
**Shanghai Petroleum
& Natural Gas
Exchange
(SHPGX)**



Wen Feng
Managing Director
**Shell Energy
(China)**



Zhu Xingshan
Senior Director,
Planning Department
CNPC



Liu Jingbo
President
**Guangzhou
Gas Group**

Gold Sponsors

VENTURE GLOBAL LNG

TELLURIAN

CHENIERE

Silver Sponsor



Bronze Sponsors



NEWS NUDGES

Total deal on bunkering

Total and Swiss-based MSC Cruises have signed an agreement for the French energy company to supply around 45,000 tonnes per annum of LNG for cruise ships calling at the Port of Marseilles. Total said it already had worldwide bunkering ties with MSC Cruises. "As we prepare to launch our first of three upcoming LNG-powered cruise ships in 2022, through this key agreement Marseilles will become our hub in the Mediterranean for the refuelling of our latest-generation and most environmentally advanced ships," declared Pierfrancesco Vago, Executive Chairman of MSC Cruises.

Charter rates edge higher

Shipping charter rates for LNG carriers in the spot market increased for West Of Suez by \$2,000 per day to average between \$34,000 per day and \$30,000 per day for vessels of 155,000-165,000 cubic metres capacity. One-year charter rates for the most modern vessels also increased to around \$54,000 per day from last week's \$49,000 per day.

Tokyo Gas spin-off plan

Tokyo Gas, one of the main Japanese LNG importers, said it would spin off a "preparatory company" to facilitate and ensure preparations for the legal separation of the Tokyo Gas pipeline division required by April 2022 under the Japanese Gas Business Act covering market liberalization. "The spin-off of the gas pipeline business is subject to approval by a resolution of the annual general meeting of shareholders scheduled to be held in June 2021 and the acquisition of licenses and approvals by the competent government agencies," said Tokyo Gas.

Qatar signs up Sinopec on long supply deal while asking global shipping to tender for chartered fleet expansion

LNG News Editor

The Arab Gulf state of Qatar has expanded its LNG horizon to return to the World No. 1 spot with a 10-year firm sales agreement with Chinese major Sinopec and an invitation to the leading global shipping companies to tender for the chartering of LNG carriers to carry future increased Qatari volumes.

Qatar Petroleum has just signed a Sale and Purchase Agreement (SPA) with Sinopec, whose official title is China Petroleum & Chemical Corp., for the supply of 2 million tonnes per annum to Chinese terminals.

Signatories

The SPA was signed by Saad Sherida Al-Kaabi, Qatar's Minister of State for Energy Affairs, as well as President and Chief Executive of Qatar Petroleum, and Zhang Yuzhuo, the Chairman of the Sinopec Group, during a virtual ceremony.

Under the agreement, LNG deliveries will commence in January 2022 and will be delivered to Sinopec's terminals network in China.

"This SPA further demonstrates the State of Qatar's continued commitment to meeting the growing energy demand of its customers globally in the form of reliable long term LNG supplies," said the Qataris.

This follows an Invitation to Tender (ITT) for the chartering of LNG carriers for its future LNG shipping requirements, including its ongoing expansion projects in the offshore North Field of Arab Gulf waters.

Al-Kaabi said that, firstly, the Sinopec supply deal would further solidify the excellent bilateral relations between China and the State of Qatar.

"We are also proud of the fact that this agreement will be Sinopec's first long-term LNG SPA from Qatar, and we are hopeful that it will mark the start of a long and fruitful partnership with



Virtual long-term contract signing with Chinese major Sinopec is boost for main North Field expansions

Sinopec," added Al-Kaabi. "Our LNG relationship with China dates back to 2009, when we started supplying LNG through a host of LNG SPAs with a number of our valued Chinese partners," explained the QP CEO.

"This SPA will further supplement Qatar's contribution in meeting China's growing energy needs and we look forward to commencing deliveries under the agreement," stated al-Kaabi.

Sinopec's Zhang said the LNG supply deal would help the Chinese major in its push for cleaner fuel for China.

"The signing of the long-term LNG SPA with Qatar Petroleum is a further step by Sinopec to deliver its commitment to sustainability while meeting the growing needs of the Chinese market," explained Zhang.

"We are proud to team up with Qatar Petroleum, one of the premier suppliers in the industry, to supply cleaner energy to China. We are also excited to begin a new journey of more comprehensive cooperation with Qatar Petroleum in the years to come," declared the Sinopec Chairman.

Khalid bin Khalifa Al Thani, CEO of Qatargas, noted that as the world's premier LNG company, Qatargas, was committed to meeting the clean energy needs of customers around the globe.

Al-Thani noted that since the first LNG delivery to China in September 2009, Qatar had sup-

plied the Chinese with more than 62 million tonnes of LNG.

"China is a key and strategic energy partner for the State of Qatar throughout the entire energy value chain," he added.

Qatar is also in the midst of developing its LNG production capacity from 77 MTPA to 126 MTPA by 2027 and has taken measures to acquire more shipping, in addition to newbuilds.

The shipping tender package, which was issued to a large group of LNG ship owners, aims to select world-class ships for long-term time charters.

In addition to the North Field Expansion Project, the charter tender package also covers the requirements for the volumes that will be produced from the Golden Pass LNG export project in the US state of Texas being developed by Qatar Petroleum with partner ExxonMobil Corp.

Qatar's Al-Kaabi said the invitation to shipping companies reflected the progress Qatar Petroleum is making on the expansion of its LNG production.

"Upon receiving the responses, Qatar Petroleum will review bidders' technical and commercial capabilities with the objective of assigning selected ship owners to the shipyards' construction slots, which were previously reserved at a number of Chinese and Korean shipyards," explained Al-Kaabi.

Intercontinental Exchange hosts lively start to LNG freight futures trading with initial 30 lots

LNG News Editor

Intercontinental Exchange, the leading US operator of global exchange platforms and clearing houses, said the LNG freight futures contracts based on Spark Commodities price assessments had a successful launch with 30 lots traded on the first day.

First day trading included 15 lots of Spark30S Atlantic and 15 lots of Spark25S Pacific LNG freight futures contracts for the June 2021 contract expiry.

Parties

ICE said these trades involved some of the LNG industry's leading market participants including Total, Gunvor, Vitol, and Glencore, and were brokered by Clarksons, showing strong support for the new contracts.

ICE is introducing the new LNG freight futures based on price assessments from Spark Commodities, a provider of technology-based solutions for promoting market liquidity.

Singapore-based Spark is backed by French data firm Kpler



Contracts indicate number of days for carrier round trips

and EEX, part of the Deutsche Börse Group.

"These new contracts - called the Spark30S Atlantic and the Spark25S Pacific LNG Freight Future contracts - are traded and settled in US dollars per day," explained ICE.

The numbers in the contract names indicate the number of days it takes an LNG carrier to complete a return voyage on the respective routes.

The settlement price of the contracts are based on the Spark30S (Atlantic) and Spark25S (Pacific) LNG freight spot price assessments.

"The unprecedented price

volatility observed on the chartering market this year has underpinned the need for a derivative product allowing us to hedge the shipping capacity of our LNG portfolio and to position ourselves to benefit from arbitrage opportunities arising in the market," said Patrick Dugas, Vice President of LNG Trading at Total Gas & Power

"The LNG Freight Future contracts on ICE provides us with the ability to more proactively manage our shipping exposure," added Dugas.

Christian Greenop at brokers Clarksons said there was great demand to hedge LNG freight exposure.

"We were happy to complete the first Spark30S Atlantic and Spark25S Pacific LNG Freight Futures trades on ICE and continue to work very hard in developing the LNG forward freight agreements (FFA) market," declared Greenop.

Gordon Bennett, Managing Director of Utility Markets at Atlanta, Georgia-based ICE, said the firm had received positive and supportive responses from the market.

"The trades on the first day demonstrate the key role they will play in allowing participants to now manage freight risk alongside the commodity risk and therefore optimise their global natural gas portfolios," added Bennett.

ICE said the freight contracts would form part of its global natural gas complex as the market manages freight price risk alongside existing Dutch TTF, UK National Balancing Point, US Henry Hub, JKM LNG (Platts) and the West India Marker (WIM LNG) contracts from Platts.

LNG Journal Subscription Package



LNG Journal is a ten-in-one subscription product with end-to-end insight into liquefied natural gas. The LNG Journal platform includes:

LNG JOURNAL	Monthly Online + optional print magazine
LNG UNLIMITED	Online every Tuesday
GAS TO POWER JOURNAL	Online every Friday
LNG MARKET TRACKER	Online every Wednesday
LNG SHIPPING NEWS	Online every second Thursday
LNG MONTHLY MARKETS	Online Monthly
LNG CHINA	Online every second month
LNG NORTH AMERICA	Online every second month
LNG FUELLING	Online every quarter
DAILY UPDATES and Newsletters	

Subscription Contacts

For new subscriptions or general subscription queries please contact:

Stephan Venter | venter@lngjournal.com
+44 207 017 3407

To renew an existing subscription or to upgrade your package, please contact:

Gabi Weck | gabi@lngjournal.com

Sign up now for an Online Subscription at only US\$950; €725 or £595

Discount options are available for multi-users
Contact us for more information or to arrange a free trial

Ghana takes step closer to imports

French classification society Bureau Veritas has granted operational mode for the Torman LNG floating regasification unit (FRU) at Tema port in Ghana, opening the way for the West African nation to become an LNG importer.

The unit is combined with a floating storage unit (FSU) for the delivery of gas to onshore consumers.

Jiangnan Shipbuilding, a subsidiary of China State Shipbuilding Corp., built the FRU and the vessel left the Chinese yard at the end of November 2020 for the voyage to African waters for deployment.

A venture called Access LNG comprising Helios Investment Partners, a leading Africa focused private investment firm, and Gasfin Development, an LNG infrastructure company, is developing the facility.

Gasfin has led the design of the project and the fabrication of the floating infrastructure with capacity to deliver 2 million tonnes per annum of LNG.

The Tema project is designed around the FRU working in conjunction with an up-graded 127,500 cubic metres capacity LNG carrier, which will act as floating storage, to deliver 250 million standard cubic feet per day of gas.

"This exciting development of Gasfin's facility, involving the Torman LNG FRU and a Moss-type LNG floating storage unit (FSU), both classed by Bureau Veritas, paves the way for the first deliveries of LNG to a terminal in sub-Saharan Africa," declared Bureau Veritas.

"The project will contribute to meeting Ghana's growing cleaner energy demand," said the French class society.

French major Total postpones full work schedule for Mozambique

LNG News Editor

French energy major Total said resumption of a full work programme scheduled at the Mozambique LNG export project had been postponed after another attack by extremists in the north of Cabo Delgado province.

Total has now reduced the workforce to a bare minimum at the liquefaction plant site on the Afungi Peninsula near the port of Pemba.

The Mozambique government said fighting in the region linked to an Islamist insurgency was concentrated at the town Palma, near the border with Tanzania and 400km (248 miles) north of Pemba.

"Total trusts the government of Mozambique whose public security forces are currently working to take back the control of the area," stated the French company.

The Mozambican government has now arranged additional security, including a 25 kilometres (15.5 miles) buffer zone around the site of the liquefaction plant.

The French company has been gradually "remobilising" the project's workforce and contractors at the site.



Plant site on Afungi Peninsula near the port of Pemba

"The government of Mozambique has declared the area within a 25km perimeter surrounding the Mozambique LNG project as a special security area," said Total.

The Total-led project includes the development of the Golfinho and Atum gas fields located within offshore Area 1 of the Rovuma Basin.

The liquefaction plant site had already been cleared for construction when Total acquired it from Occidental Petroleum in an almost \$4 billion deal in November 2019 for a 26.5 percent operated interest previously held by Anadarko Petroleum.

Total has initially planned to build two liquefaction Trains, each

with capacity of 6.45 million tonnes power annum, and with the possibility of up to two additional Trains and overall output of 25 MTPA.

The Rovuma Basin Area 1 licence has estimated resources of more than 60 trillion cubic feet of gas resources of which 36 Tcf could be developed for a four-Train plant.

The Area 1 shareholders in addition to Total include Mozambican state-owned energy company ENH with 15 percent.

Japan's Mitsui & Co. has a 20 percent stake, while Indian companies, ONGC Videsh, Bharat PetroResources and Beas Rovuma Energy each hold 10 percent and Thailand's PTTEP 8.5 percent.

ABB wins Mozambique plant contract for multiple systems

ABB, the Swiss-Swedish power and systems company, said it was awarded a key contract for the Mozambique LNG export project in southeast Africa being developed by French energy major Total.

ABB has been contracted to deliver an end-to-end electrification package for the export project aimed at transforming the nation's economic fortunes.

The contract was awarded by the Mozambique project's joint venture engineering, procurement and construction consortium comprising Italy's Saipem, McDermott of the US and Japan's Chiyoda.

ABB said its package of "integrated and intelligent electrical systems" is scheduled to be installed by the start of first LNG production in 2024.

With LNG capacity of 13 million tonnes per annum, the development will see Mozambique supply clean energy exports to the nations of Europe and Asia.

"Winning this project is a testament to ABB's technical superiority in electrification technologies, as well as our highly skilled management and engineering capabilities," said Brandon Spencer, President of ABB Energy Industries.

"We are proud to be part of Africa's economic growth story, especially Mozambique's," stated Spencer.

ABB said its project contract would take around 26 months to complete and would involve multiple divisions and regions of the company, led by ABB in Singapore.

Fourteen large onshore prefabricated electrical substation buildings (PESBs), specifically designed for oil and gas applications, will be built by the ABB team in Singapore and transported to the Mozambique LNG project site in the northeast Cabo Delgado province.



BRIGHTER FUTURE

COOLER BY DESIGN™

Did you know Chart's LNG power generation solutions provide natural gas to hundreds of thousands of homes? This is one way Chart facilitates LNG as a safe, clean-burning fuel for energy, transportation and industry.

*Learn more at www.ChartLNG.com
LNG@ChartIndustries.com*



Chinese LNG terminal operator and city-gas company ENN increases revenues and profits

LNG News Editor

ENN Group, the leading non-state energy company in China with LNG and city-gas assets, reported an increase in annual revenues and profits as its reach extended to 18 more large towns and cities in 2020.

ENN said annual revenues increased by 2 percent to 71.6 billion Chinese yuan (\$11Bn) from mainly natural gas operations, though it has a growing integrated power business.

Highlights

The company, whose shares are listed on the Hong Kong stock exchange, said profits for the year attributable to shareholders rose 10.7 percent to 6.27 Bln yuan (\$964 million) from 5.67Bln yuan (\$870M) in 2019.

ENN said that among its operational highlights it increased its city-gas projects in China by 18 to a total of 235 during 2020.

The company noted that most of the group's projects are located in key areas of air pollution prevention such as Beijing, Tianjin



Zhoushan LNG terminal in the Zhejiang Free Trade Zone

and Hebei in the northeast, Shandong, Jiangsu, Zhejiang in the East and in the southern province of Guangdong.

ENN owns the Zhoushan LNG import terminal in the Zhejiang Free Trade Zone in eastern China and is planning to launch an expansion in 2021 from 3 million tonnes per annum to 5 MTPA.

ENN will double its LNG storage by adding two more tanks, each with capacity of 160,000 cubic metres.

In line with energy industry liberalization in China during 2020, ENN gave third-party access for the first time, allowing the provincial government-owned company,

Zhejiang Energy, to receive its LNG cargoes at Zhoushan.

The earnings statement showed that total gas sales volumes of ENN and its affiliates and joint ventures grew by 9.7 percent year-on-year to 29.56 billion cubic metres.

ENN said that during the year, natural gas supply was adequate and upstream natural gas and city-gate prices were reduced.

"At the same time, the Group increased low-cost LNG imports through our own long-term contracts and from spot market utilization through the Zhoushan terminal, which effectively optimised the gas supply structure and reduced overall gas procurement costs dur-

ing the year," ENN explained.

ENN said that leveraging on the opportunity of the air pollution control battle, the Group has further explored business opportunities in renewables and clean power and promoted the replacement of coal-fired boilers with natural gas.

It added that national and local government continued to promote policies on energy structure optimisation, energy conservation and emissions reduction, as well as increasing the use of clean energy.

ENN said the pipeline gas penetration rate increased 1.6 percent during the year to 62 percent from 60.4 percent in 2019.

"The global outbreak of Covid-19 disrupted economic activities and caused recessions in various countries in 2020," said ENN.

"Nevertheless, China's economic activities, especially industrial production, have been resumed in an orderly manner since the second quarter of the year with its effective pandemic prevention and control measures," it added.

Saudi Aramco posts drop in profits but sees oil and gas demand recovery in Asia and elsewhere

The Saudi Arabian Oil Company, Saudi Aramco, reported a 44 percent drop in annual profits, though still earned a net \$49 billion in 2020 as it posted record oil and natural gas output even as revenues were affected by lower crude oil prices and sales tumbled because of the economic slump caused by Covid-19.

Aramco, a future player in the LNG market and a developer of green energy such as hydrogen, reported record production during 2020 of natural gas as well as oil.

The company's net profits fell 44.3 percent to 183.7 billion Saudi riyals (\$49.00Bn) for the year to December 2020 from 330.69Bln riyals (\$81.2Bn) in 2019.

Aramco's average hydrocarbon production was 12.4 million barrels per day of oil equivalent, including 9.2 million barrels per day of crude oil.

Aramco noted that in April 2020 it achieved the highest single day crude oil production in its history of 12.1 million barrels per day.

The company also achieved another landmark in August, producing a single-day record of 10.7 billion standard cubic feet per day of natural gas from its conventional and unconventional fields.

Both records were achieved despite lower capital expenditure in 2020.

Aramco's revenues in 2020 in-

creased to 1.22 trillion riyals (\$325.8Bn), up from 1.12Trln riyals (\$301.2Bn) in the previous year.

The company declared a dividend of \$75Bn for the year, reflecting Aramco's strong performance in adverse circumstances.

The company lowered its guidance for spending in 2021 to around \$35Bn from a range of \$40Bn to \$45Bn previously, according to its statement to the Saudi Tadawul stock exchange.

"In one of the most challenging years in recent history, Aramco demonstrated its unique value proposition through its considerable financial and operational agility," said Chief Executive Amin Nasser.

"Our exceptional performance during such testing times owed much to the unwavering spirit and resilience of our employees, who set operational records and continued to meet the world's energy needs both safely and reliably," added the CEO.

"As the enormous impact of Covid-19 was felt throughout the global economy, we intensified our strong emphasis on capital and operational efficiencies. As a result, our financial position remained robust," stated Nasser.

Nasser explained that Aramco was looking ahead with its long-term strategy to optimize its oil and gas portfolio.