LNG Unlimited

LNG JOURNAL PUBLICATION 28 April 2020

Qatar chooses to build up to 20 ships at China yards as Koreans have to wait

Qatargas fleet expansion plans starts with berths at Hudong-Zhonghua booked for newbuilds

LNG Journal editor

Chinese-built LNG carrier at Qingdao Port in Shandong

Qatar Petroleum has entered into an agreement worth more than $3 billion to reserve LNG ship construction capacity in China to be used for construction of additional ships for the Gulf nation's LNG expansion plans.

The agreement was entered into between Qatar Petroleum and Hudong-Zhonghua Shipbuilding Group Co., a wholly owned subsidiary of China State Shipbuilding Corp. (CSSC).

Reserved

"Pursuant to the agreement, a significant portion of Hudong's LNG ship construction capacity will be reserved for Qatar Petroleum through the year 2027," said a statement.

The Qataris had been expected to centre most of their carrier building in South Korea but have surprisingly chosen China over the Koreans for the first tranche of berth reservations.

The agreement on. berths was signed by Qatari Minister of State for Energy Affairs, the President and Chief Executive of Qatar Petroleum, Saad Sherida Al-Kaabi, and the Chairman of CSSC Lei Fanpei, in a virtual ceremony.

"The value of this landmark agreement has the potential to be well in excess of 11 billion Qatari riyals ($3.02Bln), depending on our requirements and the extent of China's LNG shipbuilding capacity expansion," stated Al-Kaabi.

This would suggest an initial booking to build at least 16 or up to 20 ships in China. Also present at the transmitted event was Qatargas CEO Khalid Bin Khalifa Al Thani and the Chairman of the Hudong shipyard Chen Jianliang, as well as other senior executives.

"We have taken yet another concrete step to reinforce Qatars commitment to its global reputation as a safe and reliable LNG producer at all times and under all circumstances," said QP CEO Al-Kaabi.

"By entering into this agreement to reserve a major portion of Hudong's LNG ship construction capacity through the year 2027, we are confident that we are on the right track to ensuring that our future LNG fleet requirements will be met in due time to support our increasing LNG production capacity," he added.

The South Korean shipbuilders Samsung Heavy Industries, Hyundai Heavy Industries and Daewoo Shipbuilding & Marine Engineering, which has merged with Hyundai won all of the last round of Qatari newbuilds.

Between 2004 and 2007, Qatar ordered 45 LNG carriers from the Korean yards when Daewoo built 19 Qatari carriers, Samsung constructed 18 vessels and Hyundai received orders for eight ships.

Now the Qataris have first booked Chinese berths for the start of its shipbuilding programme, which could amount to at least 80 vessels, according to previous statements.

The global LNG fleet consisted of 601 vessels at the start of 2020, including medium-scale vessels of up to 50,000 cubic metres capacity.

A total of 44 newbuild vessels were delivered into the fleet in 2019 while 62 units were ordered versus 77 newbuilds in 2018, mostly from the Korean yards.

Qatar has start developing its drilling campaign for the Persian Gulf feed-gas from the North field that will underpin the feed-gas needs for the LNG expansion at Ras Laffan from 77 million tonnes per annum to 110 MTPA.

Second phase

A second phase of the North Field LNG expansion, called the North Field South Project (NFS), will further increase Qatar's LNG production capacity from 110 MTPA to 126 MTPA.

The scope of the first phase of the expansion at the Ras Laffan production complex involves an additional four Trains, each with 8.0 MTPA of output.

■

UNLIMITED AGENDA

Japanese utilities tested by increasing LNG reliance after more nuclear power goes offline in emergency

LNG Journal editor

Japan has only two weeks of LNG reserves in storage as the nation entered a state of emergency a week ago because of the coronavirus and this has coincided with cutbacks in its current limited nuclear power generation capacity.

A report in the Japanese financial daily Nikkei said that as the lock-down procedures were introduced in Japan, measures have also had to be taken to keep up LNG flowing.

Kashiwazaki-Kariwa nuclear plant in Niigata is now needed

Huge volumes

JERA Co. Inc., the largest LNG importer with 35 million tonnes per annum of volumes, is also Japan's biggest fossil-fuel generator and is owned jointly by Tokyo Electric Power Co. and Chubu Electric.

A report in the Japanese financial daily Nikkei said that as the lock-down procedures were introduced in Japan, measures have also had to be taken to keep LNG flowing.

The Nikkei report cited a meeting at the JERA power station in Tokyo's Shingawa district that provides the capital with electricity.

"We have multiple measures to maintain a stable supply even if the infection spreads," said the Nikkei report, citing the JERA official.

"If commuting becomes too risky, employees will sleep at the power station," said the official.

He added that when an LNG carrier arrives at port, onshore workers are not allowed on board and other security measures have to be taken.

"With shipments arriving constantly, a few missed shipments now will not immediately signal a crisis but an extended cut-off would do," said the Nikkei report.

"Japan has already faced a power shortage this year, so the timing is very bad," explained the report.

"The number of nuclear reactors in operation in 2020 is falling from nine to four or five, so Japan cannot rely on nuclear power," the report added.

"One reason that Tokyo Electric is rushing to restart its Kashiwazaki-Kariwa nuclear plant in Niigata Prefecture is because the heavy concentration of LNG power in Tokyo Bay is a major risk to the stable supply of power," said the report, citing power industry executives.

Tokyo Bay, which stretches around the prefectures of Chiba, Tokyo and Kanagawa, is Japan's most important LNG hub and is a key centre of gas-fired power generation.

The Tokyo area plants needing LNG also account for 30 percent of Japan's total gas-fired power generation, producing 26 million kilowatts of electricity.

JERA operates various power plants around Tokyo Bay and they are all fueled with regasified LNG.

The Nikkei report stated that the coronavirus pandemic was providing a stern test for the Japanese government and its utilities on whether they have an adequate diversification of energy sources to meet the risk of supply threats.

The Sendai nuclear power plant in Kagoshima Prefecture was shut down in March 2020 because it failed to meet anti-terrorism changes in the now extremely highly regulated nuclear regulatory system.

The No. 3 reactor at the Ikata nuclear power plant in Ehime Prefecture is also off line because of a court injunction.

The Nikkei report said that a contractor at the Genkai nuclear power plant in the southern Prefecture of Saga, tested positive for the virus and the plant was shut down.

Before the Fukushima earthquake and tsunami and nuclear plant explosion in March 2011, Japan had over 50 N-power plants in operation. ■

Japan's LNG imports fell last month as cargoes from Middle East dropped and thermal coal increased

Japanese liquefied natural gas imports declined again last month while prices were 13.5 percent lower than a year ago as Australian cargoes increased and Middle East shipments fell.

Japan imported 7.20 million tonnes of LNG in March, down 1.2 percent from the 7.29MT received in March 2019.

The volumes amounted to around 100 cargoes. The nation had imported 6.60MT of LNG in February 2020, down 9.6 percent.

The March shipments cost the nation 384.64 billion yen ($3.56 Bln), down from the March 2019 import bill of $444.66Bln yen ($4.12Bln), according to the preliminary monthly figures from the Japanese Finance Ministry.

One of the main competitor fuels for power generation, thermal coal, posted a 3.4 percent increase in shipments in March amid the LNG decline.

For the fiscal year, April 2019 to March 2020, the Ministry said LNG imports for the 12 months came to 76.50MT, down 5 percent.

The country's imports of LNG fell for the whole of last year were 77.32MT, which was 6.7 percent lower than the 82.85MT of shipments that arrived in 2018.

Asian LNG cargo deliveries in March from nations such as Malaysia and Indonesia, Papua New Guinea and Brunei amounted to 1.74MT, up 0.1 percent from the same month a year ago.

Middle East deliveries from countries like Qatar, the United Arab Emirates and Oman dropped by 29.4 percent to 937,000 tonnes.

Shipments from Russia, mostly from the Sakhalin Island plant in the Far East, amounted 522,000 tonnes, a decline of 0.2 percent on the same month last year.

US cargo deliveries to Japan came to 394,000 tonnes, down on last month's total of 473,000 tonnes, though double what was received in March 2019.

Japan will be importing more low-priced US cargoes in the years ahead from booked volumes and the spot market with six US export plants now in operation.

Last year the US shipped 3.69MT to Japan, a rise of 48.2 percent on 2018. ■

Port Arthur expansion receives its FERC dates

US regulators have released the environmental review schedule for Sempra Energy's Port Arthur LNG Phase II expansion in Texas as part of a project expected to be backed by Saudi Aramco, the largest oil production company.

The expansion would add a total of around 13.5 million tonnes per annum of liquefaction capacity to the project with the largest capacity Trains of all proposed US plants.

The Federal Energy Regulatory Commission said it expected to issue its Environmental Assessment of the expansion on January 15, 2021.

Other federal agencies having jurisdiction over the Port Arthur plant will have until April 15, 2021 to complete their reviews.

Sempra has already said that the site located on nearly 3,000 acres of land along three miles of the west side of the Sabine-Neches waterway is capable of supporting multiple expansions and could become the largest of the US plants.

Sempra's expansion will include two liquefaction trains, Train 3 and Train 4, which are identical to Train 1 and Train 2 previously approved by the FERC.

Each of the two incremental liquefaction Trains will be capable of producing under optimal conditions 6.73 MTPA.

The addition of Train 3 and Train 4 would double the facility's output from the current 13.46 MTPA to a total of almost 27 MTPA.

Sempra signed an Interim Project Participation Agreement (IPPA) in January 2020 with Aramco Services Company, a subsidiary of Saudi Aramco, for investment in the four-Train Texas plant. ■

Cameron LNG given permission to start commissioning of third Train

LNG Journal editor

The US Cameron LNG project on the Calcasieu Ship Channel in Louisiana has been granted permission by US regulators to start commissioning procedures for the third liquefaction Train.

The Cameron plant is one of three facilities and projects owned by Sempra Energy, the California-based utility with ambitions to become the biggest LNG producer in North America.

Ventures

Sempra owns the Costa Azul LNG terminal on the Pacific Coast of Mexico that is being transformed into and export plant, as well as the Port Arthur export project in Texas.

The Cameron Train 2 came one stream in February 2020 and the plant has received permission from the Federal Energy Regulatory Commission to introduce gas into the system for Train 3.

"I grant your April 15, 2020 request to introduce hazardous fluids and commission the Train 3 Feed Gas to Warm End System," said the FERC letter.

Cameron plant near Hackberry in Louisiana is ramping

"I remind you that Cameron LNG must comply with all applicable remaining terms and conditions, as well as procedures stipulated in previous filings," it added.

"Please note that this approval does not grant Cameron LNG the authority to introduce hazardous fluids or commission other project facilities at the LNG terminal," stated the regulator.

The Cameron plant is located just outside the town of Hackberry and Sempra's partners in the project are three Japanese companies Mitsui & Co., Mitsubishi Corp and shipping company NYK Line, along with French energy major Total.

The first LNG cargo from Cameron Train 1 was lifted almost 11 months ago on the 31st of May 2019 and it was delivered to France.

The first Cameron cargo was loaded following a visit to the facility by US President Donald Trump who praised the Gulf Coast LNG export programme for boosting the economy and providing jobs, particularly during construction. ■

Annova project backed by power firm Exelon awarded key permit

Annova LNG, the medium-scale US project planned for the south bank of the Brownsville Ship Channel in Texas, and whose owners include Chicago-based power company Exelon Corp., has received one of its final permits to begin construction.

The permit granted by the Texas Commission on Environmental Quality (TCEQ) was a clean air permit.

The Annova project is expected to ship around 6.95 million tonnes per annum from its proposed liquefaction and plant planed as part of the second wave build-out for exports.

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

"Annova LNG is taking extensive steps to minimize air emissions as part of our commitment to achieve the lowest carbon footprint per pound of production among all US LNG providers," said Omar Khayum, Annova LNG Chief Executive.

"In addition to contracting for the use of 100 percent carbon-free renewable energy to power our electric-driven compressors, we will minimize venting and flaring by recovering air emissions from the liquefaction process," added the CEO.

Annova LNG is considered a "minor source" of air emissions, according to the TCEQ and Environmental Protection Agency review regulations.

The project's investment-grade equity owners, including Exelon, are Black & Veatch Corp. of Kansas and Kiewit Corp. of Nebraska.

Annova is one of three LNG plants planned for the Port of Brownsville and comprise multiple liquefaction Trains and around 37 MTPA output.

The other two projects include the Rio Grande venture of NextDecade Corp., with 27 MTPA of output, and the smaller scale Texas LNG venture.

Annova's strategy is to offer volumes to mid-scale customers who are seeking to buy increments of 1.0 MTPA. ■

For ALL your LNG Transport & Storage needs.

Factory built, fast delivered
1,200+ m3 LNG Tanks.

On-site or Factory Built Storage Tanks, Intermodal ISO Tank-Containers, Railroad Tank Wagons, & more..

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

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

www.CorbanEnergyGroup.com

CORBAN ENERGY GROUP
Your Solution for LNG/LPG

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

NEWS NUDGES

Nakilat profits rise

Qatar Gas Transport Co., also known as Nakilat, finished the first quarter of 2020 with an 18 percent rise in net profits of 279.5 million Qatari riyals ($76.8M), compared with 236M riyals in the same period in 2019. The company's fleet comprises 70 LNG vessels and several other ships. Revenues came in at 1.22 billion ($280.7M), up 13 percent.

Port Kembla advances

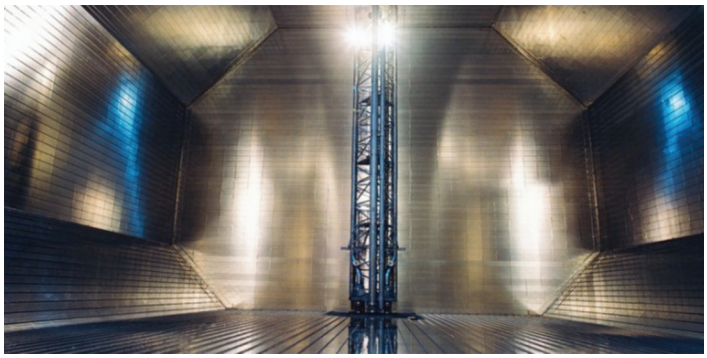
Australian Industrial Energy (AIE) said that the state of New South Wales had approved modifications to the capacity of the Port Kembla LNG and gas terminal project. "The modification to the original development consent will satisfy the market need for more gas during the cooler winter months," said AIE. "It allows an increase in throughput, as well as an increase in the number of LNG cargoes able to be received at each year, without modifying the design," said AIE.

China gets US cargo

The 173,605 cubic metres capacity LNG carrier "Maran Gas Vergina" unloaded a US cargo at the Chinese port of Tianjin. This was the first US LNG shipment received by the Chinese since March 2019 when trade started to be hindered by tit-for-tat tariff measures by the US and China over trade disagreements. The Greek-owned tanker, charted by UK major BP, lifted its cargo at the Freeport export plant on Quintana Island in Texas on March 21 and discharged the LNG on April 20 at Tianjin, according to shipping data

French LNG storage firm GTT posts increase in revenues

LNG Journal editor



All systems go for GTT's patented Mark III Flex storage tank

Gaztransport and Technigaz (GTT), the French technology designer of LNG maritime and onshore storage systems, reported a 74 percent rise in first-quarter revenues as orders were solid and it began expanding its services offerings.

GTT said its revenues in the first three months of 2020 came to €102.5 million ($111.4M) versus €55.9M million in the same quarter of 2019.

Royalties

The company's earnings mostly come from royalties obtained from shipyards for copying its design technology for onboard tanks and some for onshore storage projects.

Revenues from new construction were €99.4 million, up by 80 percent. Royalties from LNG carrier tank designs increased by 88 percent to €86.9M and royalties from floating storage and regasification units rose by 80 percent to €9.4 million.

The other royalties are primarily from LNG as fuel in the amount of €1.7 million and an onshore gravity-based tank at €500,000.

GTT is trying to broaden the sources of future income by entering other areas such as offering smart shipping solutions and other services.

First-quarter storage tank orders from shipyards were received for four newbuild vessels.

The current order book comprises 130 units, including 112 LNG carriers and five FSRUs.

"After receiving eight orders at the very end of 2019, GTT booked four LNG carrier orders during the first quarter," said the company.

"These LNG carriers will all be equipped with recent GTT technology (Mark III Flex and No. 96 L03-plus). Delivery is scheduled for the second quarter of 2022," added GTT.

GTT said other services activities were growing in the fields of supplier certification, training and pre-engineering studies.

Highlights during the quarter included the February 2020 acquisition of the Iceland-based smart-shipping firm Marorka.

Burckhardt ties up compressor business acquisition in Japan

Swiss company Burckhardt Compression, whose LNG offerings include the Laby brand of compressors and boil-off gas solutions, has completed the acquisition of a global compressor business from The Japan Steel Works Ltd (JSW), its second recent acquisition.

The JSW deal was first announced last month and broadens Burckhardt's offering in gaining the compressor business unit from the highly diversified Japanese manufacturer of steel, powerplant equipment and industrial machinery.

The acquisition will first of all strengthen the Winterthur, Switzerland-based company's compressor market presence in Japan.

Burckhardt said both parties had agreed not to disclose the value of the transaction.

JSW, a company listed on the Tokyo Stock Exchange, has recently posted overall annual sales of US$1.96 billion, and between 1 percent to 2 percent of that was estimated to have been generated by the compressor business.

The Burckhardt (Japan) unit is headquartered in Yokohama and will assume responsibility for the new customer base.

Burckhardt had acquired a US field services firm in November 2019 to also boost its American activities.

It bought 60 percent of the Arkos Group it did not already own, having purchased a 40 percent stake in 2015 in the company of 250 employees.

Burckhardt's US purchase gave it a wider presence in providing equipment and services in the upstream, midstream and downstream sectors.

In its LNG service business, Burckhardt in March 2020 signed a five-year agreement covering nine LNG carriers with a total of 12 Laby-GI Compressors onboard.

All nine LNG carriers are fitted with two-stroke, slow-speed and electronically-controlled, gas-injection M-type (ME-GI) engines and equipped with Laby-GI Compressors for boil-off gas management.

Thailand's PTTEP prepares for bright future with multiple LNG and gas field supply opportunities

LNG Journal editor

PTTEP of Thailand, the oil and gas producer, may be able to market its largest ever natural gas discovery made last year offshore Malaysia to the Bintulu LNG production plant.

PTTEP, whose official name is Exploration and Production Public Company Limited (PTTEP), noted in its latest newsletter to shareholders that it was continuing efforts to secure Thailand's energy security and monetize resources.

The Sarawak SK410B field may contain 2 TCF of gas

Key assets

In the LNG sector, PTTEP has an 8.5 percent stake in the Area 1 licence of the Rovuma Basin offshore Mozambique.

Part of the overall stake, about 26 percent, was transferred to French major Total from Anadarko Petroleum of the US as a side-deal to the Occidental Petroleum takeover of Anadarko.

PTTEP in 2019 made a Malaysian acquisition from Murphy Oil of the US, including a large stake in the Rotan natural gas discovery offshore Malaysia, which is subject to a floating LNG joint venture.

The company's deal with Murphy comprised five Malaysian oil and gas projects located in shallow and deep water off Sarawak and Sabah.

"We made several major achievements under our strategy including the first investment in the United Arab Emirates and the signing of Production Sharing Contracts (PSCs) for the G1/61 field (the Erawan field) and the G2/61 field (the Bongkot field), in the Gulf of Thailand," said PTTEP in its newsletter.

"We made the acquisition of Murphy Oil Corp's business in Malaysia, the acquisition of Partex Holding B.V., which has key investment in the largest onshore producing oil asset in Oman, and the Final Investment Decision announcements for both the Mozambique Area 1 Project and the Algeria Hassi Bir Rekaiz Project," added the company.

However, PTTEP alluded again in the newsletter to "the largest commercial discovery of petroleum resources PTTEP had ever made" in its first exploration well at the Sarawak SK410B Project in Malaysia in mid-2019.

The natural gas discovery was made at the Lang Lebah-1RDR2, the first exploration well in Sarawak SK410B project located offshore Sarawak.

The well encountered 252 metres of net gas pay, "indicating a multi-TCF gas discovery", according to PTTEP.

The Sarawak SK410B project is located in the shallow waters, approximately 90 kilometres offshore Sarawak with acreage of around 1,870 square kilometres.

"PTTEP plans to accelerate exploration activities in high potential areas including Malaysia and Myanmar such as the Myanmar MD-7 project and the Lang Lebah-1RDR2 exploration well in Malaysia's Sarawak SK410B block," it said. Analysts estimate that Lang Lebah-1RDR2 discovery will have recoverable resources of around 2 trillion cubic feet of natural gas.

It is in the deeper reservoir of the basin and is reported to have relatively clean gas qualities and low impurity content.

Analysts expect the Lang Lebah discovery to have a high chance of commercialization as feed-gas at the onshore Malaysia LNG complex in Bintulu.

The plant is in need of new supply as existing sources have only met 85 percent of its requirements in the past year.

Existing fields for MLNG have also experienced sand influx and water breakthroughs, while many of the remaining undeveloped discoveries require advanced carbon-dioxide processing.

Gas quality is expected to be a key consideration and determine the future monetization plans for Lang Lebah, which is also close to the Bintulu plant and existing infrastructure.

PTTEP is operator of the Lang Lebah discovery and the Sarawak SK410B block with a 42.5 percent stake, equal to the shareholding of partner Kuwait Foreign Petroleum Exploration Company, while a unit of Malaysia's Petronas owns 15 percent. ■

LNG Unlimited Data

The whole LNG Market at your fingertips

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

IEnova sees earnings rise from newest gas pipeline

IEnova, the Sempra Energy Mexico-based subsidiary developing the Costa Azul LNG export plant on the Pacific Coast, boosted its first-quarter earnings with revenues from the South Texas-Tuxpan natural gas pipeline.

IEnova said first-quarter gross earnings amounted to US$251 million, up 10 percent from the US$229M recorded in the same three months of 2019.

"The increase of US$22 million was mainly due to the start of operations of the South Texas-Tuxpan pipeline and higher transportation rates, partially offset by the revenue deferment at the Guaymas-El Oro pipeline and lower operational results at Termoeléctrica de Mexicali power plan," said IEnova.

The company's new South Texas-Tuxpan joint venture pipeline only started-up in 2019 and is already a crucial outlet for US natural gas and fundamental to maintaining a reliable gas service in the southeast of Mexico with 2.6 billion cubic feet per day of capacity.

The pipeline crosses part of the Gulf of Mexico from Texas and was built at a cost of $2.5 billion. It is jointly owned by IEnova and Canadian pipeline company TC Energy.

The Costa Azul liquefaction and LNG export project is also still on track and has received US authorizations for natural gas to be exported to Mexico and re-exported to Non-FTA countries.

"We have implemented very strict protocols to protect the health of our employees and are supporting our customers and communities," said Tania Ortiz Mena, Chief Executive of IEnova in relation to the coronavirus.

■

Spanish grid and LNG operator Enagas manages the crisis

LNG Journal editor

Enagás, the Spanish natural gas operator and LNG terminal owner, reported an almost 15 percent rise in net profits as it enacted special working measures to keep LNG flowing at its three main regasification terminals.

The company achieves a profit after tax of €119.1 million ($129M) s compared with €103.9M in the same quarter of 2019, an increase of 14.9 percent.

The Enagás Huelva LNG terminal in southwest Spain

Expertise

The owner of four LNG regasification plants in Spain and with stakes in two others in South America also operates 11,000 kilometres of high-pressure gas pipelines in Spain and 19 compressor stations.

Demand in Spain for natural gas was negatively affected as a consequence of the Covid-19 crisis, mostly during the last two weeks of March.

However, Enagás said demand for natural gas in Spain decreased by only 2.4 percent in the first quarter compared to the same three months in 2019.

"So far this year, total demand through April 20 decreased by 5.8 percent compared with the same period last year," added the company.

The company also launched its Coronavirus Contingency Plan and the Spanish Gas System operated normally.

"In the infrastructure that the company has throughout the Spanish territory, such as regasification plants, underground storages, transport centres and the entire gas pipeline network, where physical presence is essential, shifts for employees and checkpoints were reorganized to minimize the risk of contagion," explained Enagás.

"In the three main regasification plants in Spain, in Barcelona, Cartagena and Huelva, a special work system was established that included the confinement of two operator shifts for 15 days," added company.

"In addition, the shifts were working in parallel with two control centres for greater security," said Enagás.

The company additionally holds a 40 percent stake in the Altamira terminal on the Gulf Coast of Mexico in partnership with the Dutch storage company Vopak, owner of the remaining 60 percent.

Enagás is also the majority shareholder of the Quintero regasification terminal in Chile.

■

South Korean utility and LNG player sells stake in China Gas

SK E&S, a leading South Korean LNG operator and utility company, has sold its entire stake in a Chinese private natural gas company to improve its own finances amid the demand and prices drop in the energy industry.

The energy unit of SK Group said it sold all of its remaining 10.25 percent stake, amounting to 535 million shares, in China Gas Holdings through a block deal on the Hong Kong Stock Exchange, according to a regulatory filing.

The sale price was 1.80 trillion South Korean won (US$1.47 billion).

China Gas is the largest independent Chinese city-gas distributor and owner of over 550 filling stations for gas-powered vehicles.

The Chinese company has been in a partnership with Kunlun Energy, a subsidiary of LNG importer PetroChina, to connect households and businesses to city gas in China's northeast provinces.

SK E&S said the move to sell the Chinese shares was aimed at improving its own financial structure as it also increases its energy investments in Australia.

It had previously sold a 3.3 percent stake in China Gas in September 2019 for 786.8 billion won. Currently, only its subsidiaries own stakes in CGH, totaling 1.45 percent. The company is a unit of the SK Group, the third-largest conglomerate in South Korea, and a competitor to Korea Gas Corp, the largest LNG importer.

SK E&S, which has booked volumes from Freeport LNG in Texas, also has capacity at two South Korean import terminals, the Boryeong and Kwangyang facilities.

It is additionally a shareholder in the Barossa natural gas field development in Australia's Northern Territory that will provide feedgas for the Darwin LNG export plant at Wickham Point.

■

Maximize your LNG value chain

Equipment failure. Excessive energy consumption. Inefficient process control. All of these issues are added costs along the LNG value chain. Atlas Copco Gas and Process, a leader in highly-efficient LNG processing technology, can offer you 99.8% reliability and 99.7% equipment availability for your LNG compressor and expander needs. From cryogenic high- or low-pressure BOG, to SMR compressors, to cryogenic expanders or the Compander™ for liquefaction, we'll help you handle the pressure in your LNG value chain.

Find out how at atlascopco-gap.com

Future Omani LNG bunkering and supply port signs up with maritime fuel group Sea-LNG

LNG Journal editor

Sea-LNG, a global coalition led by energy and shipping companies backing the increased use of liquefied natural gas as a maritime fuel, has signed up a Port in Oman in the Arabian Peninsula aiming to be a main LNG base with its own production plant.

The body said it welcomed the Omani Sohar Port and Freezone as its first Middle Eastern port member.

Oman's Sohar Port is the first member from Middle East

Liquefaction

Sohar is joining Sea-LNG to promote its plans to boost investment in LNG bunkering facilities.

Oman is already a major anchorage and stop-over point for tankers and other vessels on trade routes between the Middle East, Asia and Europe.

Just over a year ago French energy major Total and the Sultanate of Oman signed an accord for the development of an onshore natural gas block that will provide feed-gas for LNG production near Sohar to be used for bunkering.

The deal was signed between Ministry of Oil and Gas of Oman and Total and is linked to the award of exploration licence for onshore Block 12 where there are "significant prospective" gas resources.

Total said it would use its equity gas entitlement as feedstock to develop in Oman a regional hub for LNG bunkering.

Since launching in July 2016, Sea-LNG's membership has grown from 13 to more than 40 members from leading global companies, including ports around the world and others such as LNG fuel station and equipment-maker Chart Industries of the US.

"We are excited to welcome Sohar to the Sea-LNG coalition," said Peter Keller, Chairman of Sea-LNG.

He added that the Omani port would provide an attractive global offering once the marine bunkering project is completed.

"From our perspective, this is an opportune time to develop LNG capabilities in Oman given the expansive growth of marine activity within the region," stated Keller.

Total had previously outlined plans for its LNG hub project involving a small-scale modular liquefaction plant to be built near Sohar port.

The plant would be supplied with feed-gas from the onshore Greater Barik gas field and would comprise a processing Train with capacity of around 1 million tonnes per annum and flexibility for expansion as required by the development of the LNG bunkering market.

Sea-LNG said that due to its location outside the Strait of Hormuz and mid-way between Europe and Asia, Sohar is ideally positioned to become a major LNG bunkering hub.

In addition, Sohar has deepwater drafts capable of handling the largest vessels in the world.

"The liquefaction plant and bunkering project will be able to offer attractive business conditions, further enhanced by access to a dedicated logistics chain as well as large domestic gas reserves," added Sea-LNG.

Mark Geilenkirchen, Chief Executive pf Sohar Port, said the Total and Omani-led LNG bunkering hub would generate in-country value and job opportunities.

"The establishment of this facility will make Sohar one of the key LNG bunkering facilities on the main shipping trade routes, alongside other strategic ports, many of whom are already Sea-LNG members, such as the Port of Singapore," said Geilenkirchen. ■

Swiss-Swedish group ABB supplies propulsion and power for Singapore LNG and battery tug

Swiss-Swedish company ABB said it was chosen to provide the electric propulsion and power distribution package for Southeast Asia's first liquefied natural gas hybrid tug ordered to operate in the Port of Singapore.

ABB said its equipment, including energy storage, control and automation technology will be at the heart of the first tug capable of switching between low-emission LNG engines and zero-emission battery power.

The tug, which will operate in Singapore harbour, has been ordered by Sembcorp Marine subsidiary Jurong Marine Services for delivery from the Singapore shipyard by the end of 2020.

LNG as a fuel virtually eliminates sulphur-oxide emissions, while the Maritime Port Authority of Singapore (MPA) is also incentivizing its use to support the International Maritime Organization's aims to halve ship carbon-dioxide emissions in the years ahead.

ABB said the project represents the first delivery of ABB's award-winning power and distribution system, the Onboard DC Grid, for a tug application.

Leveraging the system, the vessel will be able to deploy 904 kilowatt hours of battery power for zero-emission operations, as well as for peak shaving, improving utilization of electricity use on board.

"This is a breakthrough in the tug market for the ABB's energy storage technologies and a strong validation of Onboard DC Grid™ as the ultimate solution for power management efficiency for hybrid propulsion," said Juha Koskela, Managing Director of ABB Marine & Ports.

"Future-proofing for a different energy mix makes particular sense for tugs and other port service vessels, as the most likely candidates to face imminent environmental restriction, added Koskela.

"This is also a great example of a local team meeting a regional priority," he stated.

ABB noted that gas-fueled engines face a particular challenge when it comes to handling the fast-changing load capabilities demanded by tugs.

"Leveraging the Onboard DC Grid system, the tug's engines will be able to run at variable speeds for optimized LNG fuel economy at each load level," said the company.

"Additionally, through integration with an energy storage source, the batteries will be able to provide power to the tug's propulsion system almost instantaneously," added ABB ■

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.™