LNG Unlimited

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Australia has double LNG and supply boost for domestic gas

East Coast gas supply begins to be resolved while staying No. 1 ahead of Qatar

LNG Journal editor

Australian liquefied natural gas production in the third quarter of 2019 represented an annualised rate of 79.5 million tonnes, keeping the nation in the No. 1 spot of global producer, ahead of Qatar's nameplate capacity of 77 MTPA.

The output reached a record 20.0MT in the third quarter, up from 19.3MT in the second quarter and 18.1MT in the same three months a year ago, according to a report from consulting firm EnergyQuest.

Climbing

"We expect total Australian shipments to be about 82MT in the 2020 fiscal year," said EnergyQuest.

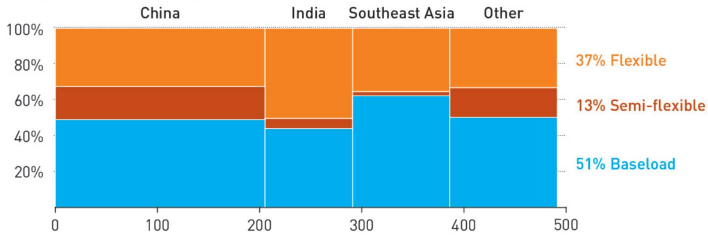
Following the commissioning earlier in 2019 of the Royal Dutch Shell-operated Prelude FLNG plant offshore northwest Australia, national nameplate liquefaction capacity rose to 87.45 MTPA.

However, EnergyQuest said that the last quarter had seen dramatic declines in international energy prices compared with a year earlier.

"The biggest falls have been in spot LNG and coal but oil has also experienced a significant decline," it added.

"However, the long-term oil-linked contracts that underwrote Australia's LNG investment boom are still quarantining local producers from a global LNG glut that has taken Asian spot prices to a 10-year low," explained EnergyQuest.

Composition of LNG imports in 2040



Emerging Asian economies become heavyweights in global LNG markets, with their share of global LNG trade more than doubling to 60% by 2040.

Australia has a high proportion of long-term contracts

The Australian LNG price in the third quarter was between US$7.60 per MMBtu and US$8.80 per MMBtu.

During the quarter, the Australian East Coast natural gas market posted its largest surplus since LNG exports began from the three coal-seam-gas-to-LNG plant on Curtis Island near Gladstone in Queensland.

Natural gas production reached a record 500.1 petajoules during the three months with the new Northern Gas Pipeline supplying 6.1 petajoules, and amounting to a total increase in supply of 26.5 petajoules from the previous quarter.

"This is the largest East Coast surplus since the beginning of LNG exports and a dramatically better outcome than in the third quarter of 2018 when there was a deficit," stated the report.

The LNG plants, Queensland Curtis, the Gladstone and Australia-Pacific LNG supply the main North Asian nations such as China, Japan and South Korea.

Australia-Pacific, operated by ConocoPhillips, ships cargoes to Chinese major Sinopec, which has a 7 million tonnes per annum contract, while the Shell-owned QCLNG delivers many cargoes to southern China.

"Record CSG production allowed Queensland's LNG projects to satisfy political pressure to supply more gas to the domestic East Coast market while modestly increasing gas exports," explained EnergyQuest.

Short-term east coast gas prices averaged A$8.23 per gigajoule (US$5.32 per million British thermal units), down by 7.8 percent from an average A$8.93 per gigajoule (US$5.77 per MMBtu) in the third quarter last year.

EnergyQuest noted that the Queensland prices were lower than those in the South of Australia and the significant fall in prices was likely to weaken the case for tightening the Australian Domestic Gas Security Mechanism (ADGSM) to guarantee domestic supplies.

> "The biggest falls have been in spot LNG and coal but oil has also experienced a significant decline"
>
> *- EnergyQuest*

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Engineering tender package issued for proposed Lake Charles plant of Shell and Energy Transfer

LNG Journal editor

Lake Charles LNG, the US export project being pursued by pipeline and midstream company Energy Transfer and Royal Dutch Shell, has issued a tender package for engineering, procurement, and construction and for contractors to submit firm bids.

The Lake Charles facility was the longest-serving US import terminal before the shale-gas boom and previously imported cargoes from Trinidad and Equatorial Guinea.

This import facility was first awarded export permit in 2013

Transforming

Under the transformation, Lake Charles will become an export facility with capacity to ship 16.45 million tonnes per annum.

Bids from the leading LNG engineering companies and joint ventures are expected to be received by the Lake Charles project by the second quarter of 2020.

The commercial tender expands on the invitation to tender announced in May 2019 that focused on the technical scope of the project, specifically verifications of the engineering and design of the liquefaction facility.

"This is an important step in the continued development of this LNG project with Shell," said Tom Mason, President of Energy Transfer LNG.

"This project capitalizes on repurposing existing brownfield regas assets to achieve cost savings in the construction of the liquefaction facility," added Mason.

"The project will also benefit from the unique strength of Energy Transfer as a leading natural gas pipeline operator with extensive connectivity to the Lake Charles facility," he stated.

EPC contractors are invited to make "comprehensive commercial bids for the lump-sum, turnkey contract based on a fully developed scope related to design, engineering, technical and safety specifications for the construction, commissioning, and start-up" of the Lake Charles plant.

Energy Transfer and Shell have signed a framework agreement designating Shell as the project leader and as construction manager and operator of Lake Charles LNG when it is finally sanctioned.

Energy Transfer will be site manager and project coordinator prior to the final investment decision.

Shell said the commercial tender represented another important landmark on its phased approach to developing a credible and safe LNG project with Energy Transfer.

"We look forward to continue leveraging our global experience in LNG development and build on our positive collaboration with EPC contractors to drive value and competitiveness throughout the bid process," said Frederic Phipps, Shell, Vice President of the Lake Charles project.

The Federal Energy Regulatory Commission has authorized a deadline for the Lake Charles plant to be completed by mid-December 2025.

The Lake Charles export project had received a draft environmental impact statement from the FERC as far back as September 2015.

Shell gained its stake in the Lake Charles facility from its takeover in 2015 of BG Group of the UK.

The export project will include the construction of three liquefaction Trains and will use the existing LNG storage and marine berthing facilities owned by Equity Transfer since its takeover of Southern Union Co. in 2013 for more than $5 billion.

Cedar FLNG project backed by Kitimat region's main First Nation in BC starts to make regulatory progress

Cedar LNG in Canada, a proposed floating export plant backed by the Haisla First Nation in the province of British Columbia, is the subject of a funding offer for citizens to take part in the Canadian federal government's impact assessment as the venture moves forward.

The processing and export venture is seeking permission to construct facilities near the town of Kitimat, where Royal Dutch Shell is building the LNG Canada plant with up to 20 million tonnes per annum of output.

The Cedar project would process and liquefy natural gas to produce only 4 MTPA of LNG and would include storage capacity of up to 250,000 cubic metres.

In addition to the LNG project, the Haisla First Nation also has an accord with the Pacific Trail Pipeline project to bring shale-gas from northeast BC to the Pacific Coast near Kitimat.

The Haisla are hoping to develop their own project to generate employment and shared revenues, though under commercial terms.

The Impact Assessment Agency of Canada said it was making funding available through its Participant Funding Program to assist the participation of the public and Indigenous peoples in the federal impact assessment for the venture.

"Funding is available for eligible individuals and groups to assist their participation in upcoming steps of the impact assessment, specifically for reviewing and providing comments on the draft information requirements that will inform the assessment," said the agency.

"Once this phase is complete, the public and Indigenous groups will have another opportunity to apply for funding to assist their participation in the next phases of the impact assessment process," it added.

It stressed that only applications received by January 6, 2020, will be considered.

The Government of BC has requested that the conduct of the federal impact assessment process be substituted to the province.

"This means if the Agency determines an impact assessment is required, and the Minister of Environment and Climate Change decides that the provincial process is an appropriate substitute for the federal process, the provincial government would conduct the assessment," it explained.

As a next step, the Agency will determine whether a federal impact assessment is required for the project and if one is required, recipients and the amount of funding allocated will be announced soon.

McDermott and Chiyoda in Cameron plant success

McDermott International of the US and Chiyoda Corp. of Japan said they had reached the final commissioning stage at the Sempra Energy-operated Train two at the Cameron LNG export project in Louisiana.

"This includes the introduction of pipeline feed gas into Train 2 of the liquefaction export facility, the precursor for the production of LNG," said McDermott.

McDermott had introduced feed gas to Train one at the facility on the Calcasieu Ship Channel on April 15, 2019. This was followed by first LNG on May 14 and first cargo from Train 1 on May 31.

"Congratulations to the entire Cameron LNG project team who continue to make strides on this project and remain focused on providing stellar project delivery," said Mark Coscio, McDermott's Senior Vice President for North, Central and South America.

McDermott and Chiyoda have provided the engineering, procurement and construction for the Cameron LNG project since the project's initial award in 2014.

The Cameron project is owned by Sempra, French major Total and Mitsui & Co of Japan as well as Japan LNG Investment, comprising Mitsubishi Corp. and shipping company Nippon Yusen Kabushiki Kaisha, or NYK Line.

The Cameron project includes three liquefaction Trains with planned exports of over 12 million tonnes per annum of LNG, or around 1.7 billion cubic feet per day.

According to the schedule, Train 3 at Cameron LNG is expected to start commercial operations in the third quarter of 2020.

CME set to launch LNG freight futures trade from December 23

LNG Journal editor

CME Group, the global exchange and energy and commodities derivates trading and clearance platform operator, said it planned to offer the first futures contracts for liquefied natural gas freight.

CME, which is the former Chicago Mercantile Exchange, said the LNG freight futures would be launched on December 23.

Derivative aims to reduce charter and shipping risks

Physical

"Following the recent launch of our physically delivered LNG futures contracts and alongside our benchmark Henry Hub futures and growing European Gas and JKM contracts, these new LNG freight futures contracts provide the missing link to allow counterparts to hedge their exposure along the full gas supply chain," said a CME statement.

"The biggest unhedged risk (on the LNG market) is on the freight side," it added.

"We have had a lot of demand from brokers and traders and are launching the LNG freight contracts as soon as possible," stated CME.

The contracts offered are based on the assessment of three LNG shipping routes that the London-based Baltic Exchange started publishing earlier this year.

The Baltic Exchange collects data from shipping brokers to provide assessment of three routes: 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. "OTC activity is a good indicator for us," said CME. "Clearing via the exchange will bring this trade to the next level," it added.

CME noted that LNG freight futures will be available on the New York Mercantile Exchange (Nymex) for trading.

So far, multi-month charters of physical vessels have been the major tool to hedge price fluctuations on the LNG shipping market.

"Strong volatility in shipping rates last year, when charter rates for LNG tankers doubled between August and October, increased the need for financial products to mitigate price risks," said CME.

National Grid given positive report for small-scale US LNG expansion

The US Federal Energy Regulatory Commission has carried out a construction inspection of the small-scale LNG liquefaction project in Providence, Rhode Island, being built under an expansion permit by the US subsidiary of UK company, National Grid plc.

The FERC first carried out an environmental assessment for the Fields Point liquefaction project in June 2018 covering the existing storage facility at Providence now being extended within its existing boundaries.

The project is being developed by National Grid, a company active in natural gas pipeline and supply operations in the US Northeast and which also operates the UK gas grid and the Isle of Grain LNG import terminal near London.

The small-scale liquefaction Train, including heat exchangers cooled by a closed-loop nitrogen refrigeration cycle, is part of an improvement project for an existing peak-shaving facility to guarantee supplies in Providence during peak winter demand periods.

"LNG is crucial to meeting the demand for gas on the coldest winter days," the UK-based company has said.

National Grid noted that Fields Point facility has been located at the current site in Providence to provide safe and reliable service to customers for over 40 years.

FERC said the purposes of the latest inspection by two officials was to verify that construction activities were consistent with FERC's authorizations and to confirm that National Grid is complying with the environmental and engineering conditions attached to the permit issued in October 2018.

The LNG will be stored in the existing and operational 600,000 barrels (2 billion cubic feet of natural gas) capacity LNG storage facility at Fields Point near the Providence River.

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NEWS NUDGES

New ENN President

ENN Energy Holdings, the independent Chinese LNG importer and natural gas pipeline owner and distributor, said company President Liu Min had resigned from his position and as a director, citing family reasons. Liu will be replaced by Zhang Yuying. "Mr Liu has confirmed that there is no disagreement with the board and there is no matter relating to his resignation that needs to be brought to the attention of the shareholders of the company nor the Stock Exchange of Hong Kong," said a statement.

BV bunker approval

French classification society Bureau Veritas Marine and Offshore has granted an approval in principle to the design for a 19,000 cubic metres capacity dual-fuel LNG bunkering vessel with a GTT membrane type tank. The design is by Marinnov, a Paris-based consulting company created in 2007 and specializing in developing concepts for the industry and initiating projects for newbuilds or conversions. The vessel's "Quadelprop" name reflects features in the design and propulsion arrangements to enable high maneuverability and station keeping.

Osaka Gas shale move

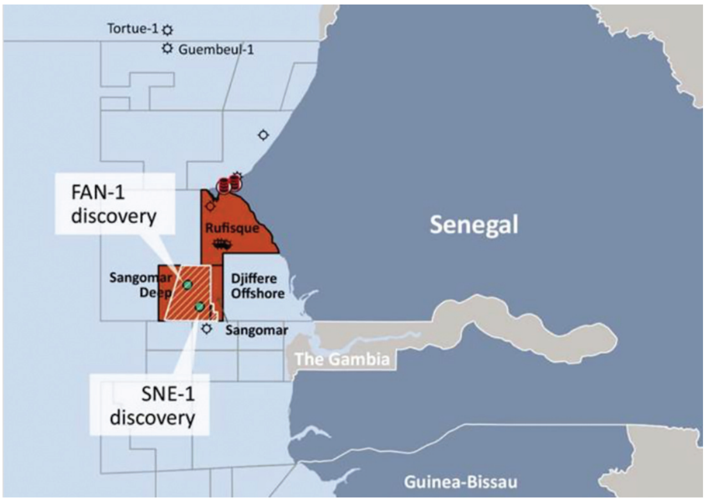
Osaka Gas, the Japanese utility and LNG buyer, has completed the purchase of a US upstream oil and gas firm, Sabine Oil and Gas Corp. from its parent company Sabine Holdings. As part of the sale, Osaka Gas said its US subsidiary would retain the current Sabine executive team and employees. Osaka Gas President Takehiro Honjo said he welcomed the acquisition of US expertise in shale development.

Woodside files Sangomar field development plans for Senegal

LNG Journal editor

Australian liquefied natural gas operator Woodside said it had submitted its plans for the Sangomar Field Development project offshore Senegal, the West African nation also participating in separate floating LNG projects led by BP of the UK.

"The Development and Exploitation Plan and exploitation authorization request are the last major regulatory submissions required before the final investment decisions can be made by each joint venture participant," said Woodside.



Offshore acquisition by Woodside from ConocoPhillips in 2016 now ready for subsea engineering advances

Purchase

Woodside, operator of the North West Shelf and Pluto LNG plants in Western Australia, acquired the Sangomar stake in the highly prospective Atlantic Margin region from US major ConocoPhillips in 2016.

The blocks, located southwest of the Senegalese capital Dakar, include the SNE discovery, now renamed Sangomar, which offers near-term oil production and a foundation for creating an energy hub.

The Phase 1 development is expected to include up to 26 oil production and gas and water injection wells. Natural gas is expected to be transported to shore.

Woodside CEO Peter Coleman said the submission demonstrated the Australian company's commitment to meeting the permit conditions and progressing the development of the Sangomar field.

"The submission of the Exploitation Plan and authorization request is the culmination of front-end engineering design activities," said Coleman.

"These are the final documents required by the Government ahead of granting approval to proceed," he added.

"We look forward to continuing to work with the joint venture, the Government, our contractors and other stakeholders to develop this opportunity, which will also be Senegal's first oil project," he said.

Senegal National Oil Company (Petrosen) is also part of separate joint ventures in Senegalese waters with BP of the UK, Kosmos Energy of the US and West African neighbour Mauritania in developing several floating LNG projects. ■

Santos outlines expansion plan for PNG and Darwin exports

Australia-Pacific LNG project shareholder Santos said it was set to advance with production expansion, including using the Barossa feed-gas field for Darwin LNG and investment in the construction of additional Trains for the Papua New Guinea export plant.

Santos said it was lifting its 2025 production target further to 120 million barrels of oil equivalent, more than double last year's figure.

"The new target, up from 100 mmboe set in 2018, represents a cumulative annual growth rate in production of over 8 percent to 2025," said the company.

Santos gave the update at the company's Investor Day event in Sydney addressed by Santos Chief Executive Kevin Gallagher.

"Our strategy has been to establish a disciplined low-cost operating model that delivers strong cash flows through the oil price cycle," stated the CEO.

"Our 2019 forecast free cash flow breakeven oil price is now US$29 per barrel," he explained.

"The recently announced acquisition of the ConocoPhillips interests in northern Australia and Timor-Leste will further reduce our breakeven oil price and deliver operating interests in long-life, low-cost conventional natural gas assets and strategic LNG infrastructure," added Gallagher.

"We are now positioned for disciplined growth leveraging existing infrastructure in all five of our core assets," he said.

The Barossa LNG project for the Darwin plant purchased from ConocoPhillips has a final investment decision scheduled for the first quarter of 2020.

Santos said PNG LNG expansion was still heading for a start in front-end engineering and design in 2020. ■

German utility Uniper seeks accord with Qatar for LNG shipments to Wilhemshaven terminal

LNG Journal editor

Qatar Petroleum and German utility Uniper are in firm talks on the supply of LNG by Qatargas to the proposed import terminal at the North Sea port of Wilhemshaven in the state of Lower Saxony.

The Minister President of Lower Saxony, Stephan Weill, confirmed the advanced state of talks as head of a trade delegate visiting the Qatari capital Doha.

Concrete

"So far, negotiations (between Qatar and Uniper) are at a very deep and concrete stage," said Weil, who was leading a delegation of 40 German companies in talks in Qatar.

"We are going out of nuclear power and we're getting out of coal power," said Weil.

"But we are also going into renewable energies and in relation to that, I see a lot of interesting perspective especially for liquid gas," he added.

The Uniper utility itself is based in Duesseldorf in the state of North Rhine North Rhine-Westphalia.

Uniper said recently that the Wilhelmshaven FLNG terminal is expected to start up by 2023, just after another LNG project, the rival Brunsbuettel venture proposed for the Elbe River near the port of Hamburg.

Minister President of Lower Saxony Stephan Weill in Doha

Uniper already trades LNG like most European utilities and describes itself as the facilitator of the Wilhelmshaven regasification project.

The Wilhelmshaven FLNG venture will have capacity of around 7.5 MTPA and Uniper has said various possible partners are interested in booking capacity as well as buying shares in the German import project.

The German utility has already lined up LNG supplies from Pieridae Energy, the developer of the Goldboro project in the Canadian Atlantic province of Nova Scotia.

Uniper has a 20-year supply agreement and a final investment decision on the Canadian plant is scheduled by September 2020.

Calgary-based Pieridae is seeking to build a liquefaction plant with an initial two Trains northeast of the Nova Scotia capital, Halifax.

The 20-year agreement with Uniper is for 5 million tonnes per annum of LNG, half of the Canadian plant's expected first phase capacity.

The rival to Uniper's North Sea LNG terminal, the onshore Brunsbuettel facility on the banks of the Elbe River, is already at the engineering stage and reaches an important deadline this week.

It is being developed by a company called German LNG Terminal and made up of European companies.

The Brunsbuettel project is a joint venture involving two Dutch companies, natural gas operator Gasunie, global storage company Vopak as well as German energy firm Oiltanking GmbH, a subsidiary of Marquard & Bahls AG of Hamburg.

The Brunsbuettel developers have chosen four groups to compete for the engineering, procurement and construction contract.

This follows a pre-qualification process that ran from June to September 2019.

German LNG's EPC tender closed on the 5th of December 2019 with the subsequent EPC contract award planned before the end of April 2020.

The shortlisted companies and consortia to build Brunsbuettel are: Spanish bidders Cobra Instalaciones y Servicios SA and Sener Ingeniería y Sistemas; South Korea's Hyundai Engineering Co. and Korea Gas Corp; a French-led consortium comprising Sacyr Fluor SA, Entrepose Contracting, VINCI Construction Grands Projets and Sacyr Somague SA; and a Spanish-German bid from Tecnicas Reunidas SA and Heitkamp GmbH.

The EPC scope contains a jetty with two berths for LNG carriers ranging from 1,000 up to 265,000 cubic metres capacity, both with LNG unloading and loading capabilities, LNG storage tanks, LNG vaporization and distribution facilities for a total capacity up to 6 MTPA.

Leviathan gas field set to start amid FLNG plan

Delek Group, the Israeli company developing the Leviathan gas field offshore Israel with Noble Energy of the US, confirmed the start of first gas deliveries in December and ongoing plans for a floating LNG project.

Delek outlined its proposals as it reported third-quarter revenues of 2.0 billion Israeli shekels ($578 million), down 9 percent compared with $2.2Bln ($651M) posted in the same three months of 2018.

Nine-month revenues were 6.04Bln shekels ($1.75Bln) versus 6.11Bln shekels ($1.76Bln) in the same period of 2018.

"The Leviathan project is fully complete, with domestic gas sales and exports to Egypt and Jordan scheduled to begin in the coming weeks," said Delek.

The Israeli Leviathan gas field has resources of around 21.4 trillion cubic feet while the Tamar gas field reserves are 11.2 Tcf.

Other Delek-Noble interests in the Eastern Mediterranean include the Aphrodite gas field offshore Cyprus with an estimated 4 Tcf of recoverable resources.

Delek's share of revenues from oil and gas sales, net of royalties, totaled 1.01Bln shekels ($291M) compared with 1.06Bln ($305M) million in the same period last year.

"In studying options for increasing production output in the Leviathan Reservoir Delek Drilling and the other Leviathan partners signed two separate interim agreements on July 29 with technology and FLNG service providers," noted the company.

"These agreements concern suitability studies and detailed engineering design works for building an FLNG facility for the Leviathan Project in Israel's exclusive economic zone," it stated.

Japanese shipbuilders in alliance amid sector's Asia merger race

LNG Journal editor

Two Japanese shipbuilders, Imabari Shipbuilding and Japan Marine United, are forming an alliance to compete better against merging South Korean and Chinese shipyards, though will concentrate on LNG-powered vessels rather than high-value orders for LNG carriers.

The two unlisted companies said they planned an agreement whereby Imabari, the larger of the two, would take a 30 percent stake in JMU.

Accord

Both companies said a final accord was expected to be completed by March 2020.

The Japanese shipbuilding industry still has around 10 market participants with varying degrees of profitability.

JMU was itself formed by a 2013 merger of JFE Holdings and IHI Corp.'s shipbuilding operations.

Imabari has had financial problems with sales falling 11 percent to 254.1 billion yen ($2.3 billion) in the last fiscal year, while JMU recorded an April-September net loss of 6.5 billion yen ($60 million).

The 'Castillo de Merida' was built by Imabari shipyard

Along with the capital tie-up, Imabari and JMU will jointly establish a company to design and sell ships.

They will collaborate on a variety of vessels, including cargo vessels, tankers and vehicle carriers, though LNG carriers will be left out of the equation.

Imabari last built the "Castillo de Merida", one of two LNG vessels of 178,000 cubic metres capacity for Spain's Naviera Elcano delivered from the Saijo shipyard of Imabari in Japan.

However, they are expected to pursue orders for LNG-powered vessels such as container ships and bulk carriers.

Japanese marine classification society Nippon Kaiji Kyokai, known as ClassNK, recently approved a design for a bulk carrier to be fuelled with LNG.

The Japanese shipbuilding alliance would be small on a global basis when compared with the recent Chinese merger between China State Shipbuilding Corp. and China Shipbuilding Industry.

South Korea's Hyundai Heavy Industries has also finalized its merger terms with Daewoo Shipbuilding & Marine Engineering.

French grid operator expects adequate winter LNG and gas

GRTgaz, the French natural gas network operator and whose subsidiary manages three LNG import terminals, said no supply problems were foreseen this winter season and added that send-outs of LNG into the system had doubled over the past year.

The company said that French LNG deliveries represented around 20 percent of shipments received in Europe and were almost equal to cargo arrivals at Spanish terminals.

The French Winter Outlook was presented by Thierry Trouvé, General Manager of GRTgaz, and Dominique Mockly, President and Chief Executive of Teréga.

"GRTgaz (national network) and Teréga (southern regional network) have no particular alert to give before the start of this winter," they stated.

Three of France's LNG terminals, Fos Tonkin, Fos Cavaou and Montoir-de-Bretagne, are operated by Elengy within the Engie Group and as subsidiaries of GRTgaz.

The market has been aided by the start in November 2018 of the single French gas marketplace called the Trading Region France (TRF).

Created jointly by GRTgaz and Teréga, the new TRF market has a single exchange point for gas known as the PEG and which was previously divided into the PEG North and the PEG South.

This followed the commissioning of the infrastructure of the Val de Saone project, comprising 188 kilometres of pipelines and additional compression facilities between Etrez and Voisines in eastern France.

The completed infrastructure was an essential link to improve the transit between markets in the North and South.

"The introduction of a single gas price on the wholesale market in France has made it possible to reduce the price differences frequently observed between the North and the South of the country," stated GRTgaz.

Mitsui Osk Lines and Total to deploy their second LNG bunkering ship at Marseille

LNG Journal editor

French energy major Total and Japanese shipping company Mitsui Osk Lines have signed a long-term charter contract for a second large LNG bunkering vessel to be delivered from China in 2021 and deployed in the Mediterranean.

Total said the new bunkering ship would conduct its operations in the South of France, around the Marseille-Fos LNG delivery and port area.

The first LNG bunkering vessel built at Shanghai shipyard

China build

This bunker vessel will be built by Hudong-Zhonghua Shipbuilding in Shanghai, China.

"She will have a capacity of 18,600 cubic metres for a length of about 135 metres and will be fitted with the Mark III membrane containment system provided by French company GTT," said Total.

The company said the bunkering vessel's construction is in line with the International Maritime Organization decision to drastically limit the sulfur content of marine fuels as of 2020.

"In this context, the transition from heavy fuel oil to LNG is a competitive, efficient and immediately available solution for maritime transportation," said Total.

Used as a marine fuel, LNG sharply reduces emissions from ships, resulting in a significant improvement in air quality, particularly for communities in coastal areas and port cities.

"This vessel has been specifically designed to supply LNG bunker in the Mediterranean area to a wide range of vessels, including containerships, tankers, ferries and large cruise ships," explained Total.

"She will meet the highest technical and environmental standards, herself suing LNG as propulsion fuel and integrating a complete re-liquefaction of the boil-off gas," stated the French company.

The newbuild vessel will be operated under the French flag by MOL, jointly with Gazocean, the French company based in Marseille and one of the most experienced in LNG carrier transportation.

"We are proud to launch with MOL the first large LNG bunkering vessel in France," said Jérôme Leprince-Ringuet, Managing Director of Total Marine Fuels.

"LNG is the best available alternative to reduce the environmental footprint of shipping, as it significantly improves air quality and strongly contributes to reducing greenhouse gases," added Leprince-Ringuet.

The first Total-MOL LNG bunkering vessel was launched in Shanghai in November 2019 and will be delivered in 2020, operating from Rotterdam in the Netherlands and other Northern European ports.

It will supply LNG to commercial vessels, including 300,000 tonnes per annum to the French container line CMA CGM and its nine ultra-large newbuild containerships which will operate on the Europe-Asia trade route.

Kenta Matsuzaka, MOL Managing Executive Officer, said his company was honoured to be chosen by Total as its partner for the second LNG bunkering newbuild.

"We believe this project will further solidify our relationship," said Matsuzaka.

"In recent years, the role of LNG has changed enormously. LNG of course, serves as a clean energy source, and we expect to see wider use for it as a vessel fuel, so we anticipate significant growth in the future," stated the Japanese executive. ■

French LNG maritime storage design firm GTT awards licence for all ships to China's Wison

Gaztransport and Technigaz (GTT), the French technology firm for designs of systems for the maritime transportation and storage of liquefied natural gas, said it signed a technical and licensing agreement with Chinese shipbuilder Wison Offshore and Marine for a range of LNG vessels.

The assistance accord and licensing covers floating LNG production hulls, Floating Storage and Regasification Units (FSRUs), Floating Storage Regasification and Power (FSRP) units and conventional LNG carriers.

Wison is a pioneer in floating LNG in China, being the first in the world to deliver a barge-based FLNG production hull and an FSRU.

The Chinese yard has now obtained its GTT licensing deal after having successfully completed a qualification process that began earlier in 2019, including the construction of a Mark III technology storage tank mock-up.

"This agreement will enable both partners to further expand their offering to ship owners, to target new markets, especially focusing on floating based solutions, and to advance the development of LNG in the global supply chain," said a GTT statement.

The Wison yard in Nantong port in the eastern province of Jiangsu delivered the FLNG production hull currently deployed at the port of Bahia Blanca in Argentina, the "FLNG Tango".

The yard also constructed the world's first barge-based FSRU. Both the LNG production barge and the FSRU were delivered to Belgian shipping line and project company Exmar.

"We are pleased to count Wison among our newbuilding partners," said Philippe Berterottière, Chairman and Chief Executive of GTT.

"We are very interested in developing and building together new LNG infrastructures which can provide innovative natural gas value chain solutions," added the CEO.

The President and Chief Operating Officer of Wison, An Wenxin, said the company was delighted with the deal.

"We are very proud to be licensed by GTT for membrane technologies. This will allow us to offer more actively LNG solutions with GTT's technologies in China, which is what the market is asking for," stated the COO.

In its most recent earnings, GTT reported a jump in nine-month revenues as its order book rose to 120 units. ■