LNG Unlimited

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Mozambique FLNG venture partners achieve successful project financing

China and Korea export credit agencies underwrite development loans

Our Europe editor

Coral project is first sanctioned by Area 4 licence holders

Italian energy company Eni and its partners in the Mozambique Coral South floating LNG production joint venture offshore the south-east African nation have secured a project financing deal amounting to almost $4.7 billion from a group of export credit agencies.

"Coral South FLNG is the first project sanctioned by the Area 4 Partners for the development of the considerable gas resources discovered by Eni and its Partners in the Rovuma Basin offshore Mozambique," said Eni.

First phase

The export credit agencies and credit insurance bodies are contributing an initial $4.67Bln in loans and underwriting.

They include the Italian export credit agency, the South Korean Ex-Im Bank, the Korea Trade Insurance Corp. and China Export and Credit Insurance Corp.

Discovered by Eni in 2012, the Coral natural gas field contains around 16 trillion cubic feet of gas resources.

The first phase of the Coral field development will involve 5 Tcf of gas and production is expected to begin by 2021.

The Eni-led project is targeting the southern part of the Coral reservoir of the prolific Rovumo Basin by means of a floating LNG plant with output capacity of 3.4 million tonnes per annum.

The whole Rovuma Basin is estimated to hold recoverable reserves of around 70 Tcf and will supply importers around the world through several projects, of which Eni's is the first to move forward.

Eni noted in its statement on the financing that a Sale and Purchase Agreement (SPA) was signed in 2016 for 100 percent of the Coral LNG production to BP of the UK.

Eni is the operator of the Area 4 licence and holds a 50 percent interest through its participation in subsidiary Eni East Africa.

Eni and ExxonMobil have also signed an accord to enable the US major to acquire a 25 percent interest in Area 4.

A 20 percent stake in the licence is held by a unit of China National Petroleum Corp. and 10 percent shares are held by Mozambique's national energy company ENH, Korea Gas Corp. and Galp Energia of Portugal.

An onshore project is being developed by the holders of a licence in another block in the Basin known as Area 1. This group is led by Anadarko Petroleum of the US.

The onshore liquefaction plant will be constructed near the port of Pemba in the northeast Cabo Delgado Province and is also expected to eventually include Area 4 licence holders as well.

Proposals

Plans have been made for an initial four onshore liquefaction Trains, though the plant area could accommodate more processing capacity.

Anadarko has a 26.5 percent stake in Mozambique's offshore Area 1 and Japanese trading house Mitsui holds 20 percent.

Indian companies, including Bharat Petro Resources, ONGC Videsh and Oil India Ltd., hold a further 30 percent.

The Mozambican state energy company ENH has 15 percent of the licence and Thailand's PTT Exploration & Production has an 8.5 percent shareholding.

> "Coral South FLNG is the first project sanctioned by the Area 4 Partners for the development of the considerable gas resources discovered by Eni and its Partners in the Rovuma Basin offshore Mozambique"
>
> *- Eni*

UNLIMITED AGENDA

Cove Point plant starts LNG Train production and Shell on standby to ship first cargo

Our North America editor in New York

Dominion Energy said it had introduced feed-gas into its newly constructed Cove Point liquefied natural gas liquefaction facility on Chesapeake Bay in the state of Maryland, becoming the second US export plant to come on stream.

"All major equipment has been operated and is being commissioned as expected following a comprehensive round of testing and quality assurance activities," said Dominion.

Feed-gas

Utility company Dominion, based in Arlington, Virginia, said Royal Dutch Shell's US subsidiary, Shell North America, is providing the natural gas needed for liquefaction during the commissioning process and will off-take the LNG that is produced.

These commissioning volumes usually amount to several cargoes.

Dominion said that when commissioning was completed, including the shipping of the first cargoes, the volumes would revert to the Japanese joint venture of Sumitomo Corp. and Tokyo Gas, as well as Gas Authority of India (GAIL), under their 20-year contracts. Cove Point, which had been an existing US import terminal since 2003, added on its liquefaction Train to produce 5.25 million tonnes per annum of LNG.

Liquefaction plant now in operation at the site in Maryland

Combined with the 18 MTPA now being produced at the other on-stream plant, Sabine Pass in Louisiana owned by Cheniere Energy, the US now has net export capacity of 23.25 MTPA, with two more Trains under development at Cheniere's plant.

"Construction of the liquefaction facility began in October 2014, following more than three years of federal, state and local permit reviews and approvals," said Dominion.

"With a cost of $4 billion, it is the largest construction project ever thus far for Maryland and for Dominion Energy. "Construction has involved more than 10,000 craft workers and a payroll of more than $565 million," the company added.

The US subsidiary of IHI International Corp. of Japan and Kiewit Corp. of Omaha, Nebraska, are the engineering, procurement and construction contractors for the liquefaction facilities.

Additionally, the $5-billion Atlantic Coast Pipeline project and other operating pipelines will enable the delivery of feed-gas from the Marcellus Shale to LNG export plants in Maryland, Georgia and further south as well as to pipeline consumers.

The US began exporting LNG for the first time from the Lower 48 states in February 2016 when the Sabine Pass plant came on stream.

The nation had previously shipped about 900,000 tonnes per annum of LNG to Japan from Alaska from the mid-1960s until 2015 when the small Kenai export plant closed.

Cove Point is relatively small in size compared with other projects.

Several of the next wave of plants will be more than three-times larger in volume production, as is the case with Sempra Energy's Cameron LNG in Louisiana and the Freeport plant on Quintana Island in Texas.

The feed-gas volumes for Cove Point are expected to raise capacity on both the Loudoun and Pleasant Valley interconnects with the Columbia Gas Transmission and Transcontinental Gas Pipeline.

As regards earnings, Cove Point gives Dominion cash from liquefaction services and export capability.

However, the rest of its business is huge in comparison to Cove Point, combining 25,600 megawatts of electricity generation, 15,000 miles of natural gas transmission, gathering and storage pipeline, as well as 6,600 miles of electric transmission lines. ■

Alaska LNG signs supply accord with Tokyo Gas after wide-ranging project deals with China

Alaska LNG has signed an accord with Japanese utility and importer Tokyo Gas for the sale of cargoes as well as a commitment to explore other opportunities for the Japanese in the project to use feed-gas from the US state's North Slope for processing at a large-scale liquefaction plant.

Alaska Gasline Development Corp, now leading the venture to build a liquefaction plant at the Kenai Peninsula to ship LNG to China and other destinations, said it signed a letter of intent with Tokyo Gas.

The Japanese utility and city-gas company serves more than 11 million customers in the Greater Tokyo area including Kanagawa, Saitama, Chiba, Ibaraki, Tochigi and Gunma prefectures.

Tokyo Gas had previously received cargoes from the small-scale LNG plant on the Kenai Peninsula, operated by ConocoPhillips, and which shipped cargoes to Japan for over 40 years until it was shut in 2015.

"Alaska is a trusted source of LNG," said Michiaki Hirose, President of Tokyo Gas.

"For more than 40 years Tokyo Gas received shipments of LNG from Alaska," said Hirose.

"As the closest source of North American LNG to Japan, with a shipping time of as little as seven days point to point, Alaska LNG is naturally an economic and reliable source for Tokyo Gas," added Hirose.

Alaska Governor Bill Walker said the utility and Alaska had a special relationship in LNG.

"I was very pleased to host President Hirose for meetings and a project update in Juneau this past August to help continue that kinship," said Alaska Governor Bill Walker. Alaska has added the Tokyo Gas accord to wide-ranging agreements signed with China in November 2017 during a trade mission to Beijing led by President Donald Trump.

The Alaskans signed a joint development agreement with three Chinese companies.

The US state's AGDC signed agreements with China Petroleum & Chemical Corp., also known as Sinopec, as well as the financial institutions, the Bank of China and China Investment Corp. ■

Steelhead LNG changes name of its Sarita project

Steelhead LNG, one of the few remaining Vancouver-based energy companies focused on liquefied natural gas project development in the province of British Columbia, has changed the name of its Sarita venture to reflect the participation of its First Nation tribal partners.

The name was changed by the Huu-ay-aht First Nation, an indigenous community located on the west coast of Vancouver Island in BC and the development partner of Steelhead.

"The Huu-ay-aht First Nation and Steelhead LNG are pleased to announce that the co-managed LNG project in Sarita has a new name," a statement said.

"Following recommendations from the LNG Advisory Committee, Ḥaw̓iiḥ Council has approved the name Kwispaa (Kwis-pa-a) LNG project," it added.

"The traditional name reflects Huu-ay-aht's elders and its rich history and connection to the land and territory, as well as its stake in this project.

"Keeping in line with the co-management and in the spirit of reconciliation, Steelhead LNG agreed to change the name of the project," the partners stated.

The Kispaa LNG project has received unanimous support from the tribal council of the small First Nation of 750 people.

The newly named Kispaa LNG project is planned for Sarita Bay and is still in the preliminary engineering and conceptual design stage. ■

Canadian LNG export project backed by Singapore-based RGE advances

Our Europe editor

The Canadian Woodfibre LNG export project backed by Indonesian businessman Sukanto Tanoto and his Singapore-based RGE Group and the only liquefaction plant venture with full permit approvals in the Pacific province of British Columbia, has chosen US engineering and construction company KBR Inc. to start preliminary services.

Woodfibre said Houston, Texas-based KBR had been selected to carry out Pre-Notice to Proceed (Pre-NTP) services for the venture. The relatively small-scale project is expected to export cargoes to China and elsewhere in Asia when completed in about four or five years.

Brownfield site in Squamish district was former pulp mill

Licensed

The liquefaction plan will be located in the district of Squamish near Vancouver and is licensed to export more than 2 million tonnes per annum of LNG for 40 years.

The selection of KBR followed the completion of a competitive front-end engineering and design process.

"Pre-NTP services will be carried out by KBR's operating centers in Houston and in the Canadian city of Edmonton," said Woodfibre.

"The services include additional FEED work and cost optimization as well as a proposal for an engineering, procurement and construction (EPC) contract," it added.

Woodfibre expects to commence the EPC phase of the project in 2018.

"The successful completion of FEED and now the selection of KBR to carryout Pre-NTP services are all important steps in moving the Woodfibre LNG project forward,' said Byng Giraud, Manager and Vice President of Corporate Affairs for Woodfibre, a privately held Canadian company set up by Tanoto's RGE.

"We look forward to reaching our next project development milestone, the awarding of an EPC contract in 2018," added Giraud.

Farhan Mujib, President of KBR's Engineering & Construction Americas business, said his company was pleased to continue its relationship with Woodfibre.

"The award of this work reinforces KBR's position in British Columbia as well as our strategic commitment to developing fit-for-purpose LNG facilities for our customers," added Mujib.

Woodfibre was the first project of its kind in the province of BC to receive its full environmental approval from the federal government in Ottawa. ■

Japanese terminal near Fukushima disaster zone receives first cargo

The first LNG shipment has arrived at Japan's new Soma LNG import terminal owned by Japan Petroleum Exploration Co. and located in Fukushima Prefecture in eastern Japan, near where the nuclear disaster happened in March 2011.

The shipment was sourced by Malaysia and arrived on board the 137,100 cubic metres capacity carrier "Puteri Intan Satu", owned by Malaysia International Shipping Corp. and chartered to Malaysian energy company Petronas.

"We will be transferring LNG from the tanker to the storage tank at the terminal over a period of one week," said Japex.

Japex had been a shareholder in the cancelled Canadian LNG export project, the Pacific Northwest venture planned for British Columbia and in which Petronas was the largest shareholder.

Japex's Soma terminal gives Japan 35 regasification facilities and satellite terminals in its network as it consolidates its position as the world's biggest LNG importer.

The Soma terminal has a single storage tank with 225,000 cubic metres capacity and two berths to accommodate imports and shipments from small-scale domestic LNG carriers. Soma is a coastal city located in the Hamadori area of Fukushima and partially destroyed by the tsunami caused by an earthquake in 2011 that led to the meltdown of the nuclear plant owned by Tokyo Electric Power Co.

The city of Soma is 45 kilometres from the destroyed Fukushima nuclear plant.

Japan badly needs additional LNG import facilities as only four of the nation's more than 50 nuclear power generating reactors have come back on line since the Fukushima disaster. ■

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NEWS NUDGES

FERC head sworn in

The US Federal Energy Regulatory Commission, the permit authority for LNG export projects and other energy ventures, has a new Chairman in Kevin J. McIntyre who was sworn in after being confirmed by the US Senate. Prior to joining the Commission, McIntyre was joint leader of the global Energy Practice at the US firm Jones Day, where he practiced law for almost 30 years. "At the firm, he had an expansive FERC practice, counselling and representing clients in nearly all industry sectors, including natural gas, conventional electricity, oil, hydropower and renewable resources," said a FERC statement.

JGC work in Indonesia

JGC Corp., the leading Japanese LNG and energy engineering company, said it received a contract worth around $850 million with two Indonesian partners for the engineering, procurement and construction (EPC) of a gas processing plant at Bojonegoro in the East Java Province of Indonesia. The lump-sum, turn-key contract was awarded by Indonesian state-owned energy company Pertamina. The project will process volumes from the Jambaran-Tiung Biru gas field amounting to 330 million standard cubic feet per day for the domestic market.

Chevron to spend $18Bln

Chevron Corp., currently ramping up its new Wheatstone LNG export plant in Western Australia, said it had set aside $18.3 billion for its 2018 capital and exploratory spending program. This figure includes $5.5Bln for the company's share of expenditures by affiliated companies. "Our 2018 budget is down for the fourth consecutive year, reflecting project completions, improved efficiencies and investment high-grading," said Chairman and Chief Executive John Watson. ■

Australia's Santos buys stake in new Papua New Guinea gas play

Our Asia-Pacific editor

Australian energy company Santos, a shareholder in three Asia-Pacific LNG plants, has acquired a stake in a new exploration and production play near significant gas discoveries in Papua New Guinea where the Adelaide-based operator already participates in the PNG LNG venture and its expansion project.

The license is located within the Aure Fold Belt, southeast of one of the region's biggest onshore natural gas resource areas, the Elk-Antelope fields.

Farm-in agreement signed with PNG company Kina

Farm-in accord

The Santos stake is in the Petroleum Prospecting Licence (PPL) 339 via a farm-in agreement with PNG company Kina Petroleum.

Santos is purchasing 20 percent of the licence for an undisclosed sum while Kina will retain 10 percent of its current 30 percent holding.

French energy company Total and Australian-listed Oil Search each have 35 percent of the licence.

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

Santos said recently that the PNG plant, operated by ExxonMobil, had output 25 percent higher than its nameplate capacity and was on course to produce around 8.6 million tonnes in 2017 from its two Trains.

The Australian company is pursuing LNG expansion in PNG with Oil Search, ExxonMobil, Total and several local companies with existing resources in the Elk-Antelope basin and in new discoveries such as the Muruk field.

Engineering studies have been taking place on the various integrated LNG development options for the Elk-Antelope fields.

The half-dozen companies taking part in discussions on commercial structures for PNG's LNG expansion have reported good progress.

The joint venture partners are working towards being in a position to present an aligned view on the development to the PNG Government by early 2018.

Together with existing resources and the upgrade in PNG feed-gas reserves, there are sufficient gas resources available to support further expansion of LNG production as well as building two new PNG LNG-sized Trains. ■

FSRU import venture for offshore England has tolling accord extended

LNG Ltd, the developer of two North American LNG export projects, said it had agreed to extend the financial closing date for an offtake agreement with Meridian LNG Holdings Corp., the owner of an import venture proposed for offshore Cumbria in northwest England.

LNG Ltd, with fully approved plans to build the Magnolia LNG plant at Lake Charles in the US state of Louisiana and at Point Tupper in Richmond County in the Canadian Atlantic Coast province of Nova Scotia, said the Meridian binding offtake agreement would now run until March 31, 2018.

"All other provisions of the governing agreements not specifically amended by this extension remain in full force and effect," it said.

"LNGL's agreement with Meridian LNG was signed on 23 July 2015 and included firm capacity rights at Magnolia for up to 2 million tonnes per annum for an initial term of 20 years with an option to extend by a further five years," the company explained.

The Chief Executive of the UK-based Meridian LNG project is Roger Whelan who formed Liberty Natural Gas in the US in 2008 and subsequently merged it into a unit of the Canadian equity fund West Face Capital.

Meridian also has a joint development agreement with Hoegh LNG of Norway for the operation of two floating storage and regasification units for the project in England.

Meridian has been assembling strategic assets in recent years to develop a business in the global gas value chain.

In addition to its liquefaction tolling agreement with the Magnolia plant and its joint development accord with Hoegh to invest in FSRUs and LNG carriers, it has a gas sales agreement with German utility and energy company Uniper.

LNG Ltd said recently it was continuing to focus on marketing efforts to secure more tolling agreements for Magnolia and for the Canadian venture called Bear Head LNG. ■

Pavilion Energy chooses French executive Barnaud from Gazprom trading company to head Asian gas group

Our Asia-Pacific editor

Pavilion Energy of Singapore, the LNG and gas company owned by the city-state's wealth fund Temasek, has chosen Frenchman Frederic Barnaud from Russian natural gas giant Gazprom to succeed Seah Moon Ming as Chief Executive.

Barnaud, who is currently the Chief Commercial Officer of LNG and Shipping for Gazprom's Marketing & Trading subsidiary based in London, will replace Seah as CEO of both Pavilion Energy and Pavilion Gas from February 2018.

Barnaud is Chief Commercial Officer at Gazprom unit

Thanks

Pavilion Energy Chairman Tan Sri Hassan Marican thanked Seah for the "pivotal role" he played in the creation and success of the company.

When he was appointed as Chairman of Singapore public transport company SMRT Corp. in July 2017, Seah had indicated his wish to devote more time to his new role and would step down from Pavilion once a suitable successor had been found.

"The Board then embarked on a global search to identify a suitable candidate to take Pavilion Energy forward on its next phase of growth," said Hassan Marican.

"We were delighted that Frederic has agreed to join the company. The Board is confident that Moon Ming leaves the Group in a strong position, and the Group will transit to new leadership based on these solid foundations," added the Chairman. Barnaud is a graduate of the Ecole Nationale des Ponts et Chausseés in Paris and was a research fellow at the Oxford Institute for Energy Studies, Oxford University, and the Cass Business School, both in the UK.

Pavilion has grown from a start-up in 2013 to an energy company with assets along the global LNG value chain.

The Group has acquired gas reserves offshore the East African state of Tanzania and has offtake from US LNG projects and portfolio suppliers.

Pavilion is also a joint owner of three LNG carriers and secured the Singapore LNG licence for the import facility on Jurong Island and accesses its third storage tank for trading activities.

"I am especially grateful for the support the Board has extended to me as well as the hard work of a team of colleagues," said Seah.

"Their support and hard work had enabled me to build Pavilion Energy from scratch to where it is today.

"I know they will give Frederic the same level of support to bring the Group to the next phase of its growth," he added.

"We are at the centre of a growing LNG market, underpinned by China, India and Southeast Asia. I am confident that the Group will continue to do well," stated the outgoing CEO.

Wison of China brings more expertise to FSRU plans

Wison Offshore and Marine, the Chinese company whose shipyard affiliate has expertise in the floating LNG sector, has signed a cooperation agreement that could lead to China building more floating storage and regasification units (FSRUs) to act as import facilities.

Shanghai-based Wison said it had agreed to cooperate with the Wuhan Rules and Research Institute of the China Classification Society (CCS) on developing FSRUs.

Under a strategic cooperation agreement, the parties will embark on a wide range of joint efforts in the development and the optimization of the LNG vessels.

This will include technical standards, design and review, joint research of new technologies and the exchange of know-how.

"As well as improving China's FSRU construction standards, such cooperation is set to promote commercial applications of floating LNG solutions in the country, nurturing LNG development in this huge market," said Shanghai-based Wison and the CCS.

Wison said the agreement comes at a time when China has suffered some natural gas supply shortages triggered by the accelerated shift away from coal as environmental requirements become increasingly stringent.

As the turnkey service provider for the first FSRU ever constructed in China, Wison has accumulated project experience in floating LNG facilities.

The company is also involved in the hull construction sector for gas liquefaction, LNG transportation and delivery and gas-power vessels.

Crowley Maritime launches second LNG-fueled cargo and container ship

Our North America editor in New York

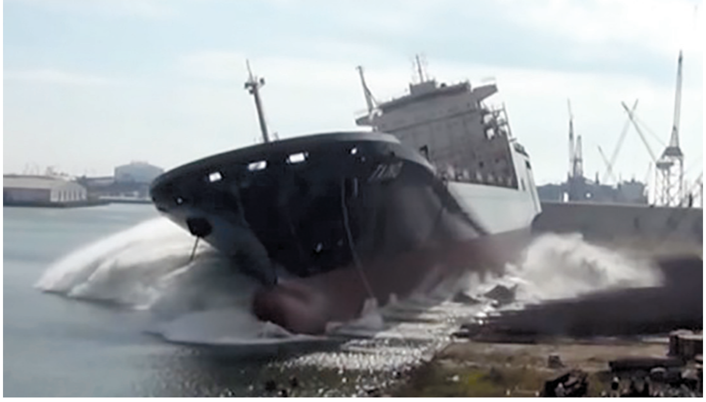
US shipping line Crowley Maritime Corp. has launched its second LNG-powered cargo and container vessel at the VT Halter Marine shipyard in the port of Pascagoula in Mississippi to operate in domestic trade from Florida to Puerto Rico.

Crowley said the Commitment Class ship, the "Taino", a combination container-roll on-roll off (ConRo) vessel joins its sister ship, the "El Coqui", launched earlier in 2017 and undergoing final testing prior to entering service in early 2018.

Dual-fuel

The two dual-fuel ships with LNG capability are part of the US company's plans to transform and modernize its shipping and logistics services between the Florida port of Jacksonville and Puerto Rico.

"The 'Taino' will now proceed through the final topside construction and testing phase before beginning service in the US Jones Act trade in 2018," said the company.



Launch at Halter Marine shipyard at Pascagoula

When using LNG as an alternative to diesel, the ships will be able to reduce significantly reduce carbon-dioxide emissions.

LNG propulsion also cuts out emissions of sulphur oxide and particulate matter and gives a more than 90-percent reduction in nitrogen oxide.

Tom Crowley, Chairman and Chief Executive of the family-controlled firm, said the launch represented an achievement for Crowley, Halter Marine and other partners.

"We appreciate their hard work, and look forward to putting these modern, environmentally-friendly ships into service for our customers and the people of Puerto Rico," said the CEO.

Construction of both the "El Coqui", which is named for the popular indigenous frog on the island, and the "Taino", the name for native Puerto Ricans who live off the land, was managed by the Crowley group, including naval architects and engineers from company subsidiary Jensen Maritime.

French LNG storage company GTT acquires Singapore technology firm

Gaztransport and Technigaz (GTT), the French LNG maritime storage tank firm, has acquired a majority stake in a Singapore-based technology company to reinforce its service portfolio in the area of LNG shipping.

GTT has purchased 75 percent of the company called Ascenz for an undisclosed sum from its two Singaporean founders, Chia Yoong Hui and Sia Teck Chong, and from investment bank investors.

Ascenz specializes in "Smart Shipping" and employs around 40 people for its analytical operations.

The company designs operational monitoring and performance optimization systems for vessels such as LNG carriers.

GTT is a main supplier of the technology for LNG storage tanks on board the global fleet.

Aimed at ship-owners, the Ascenz software solutions offer significant fuel savings and ensure vessel compliance with environmental standards.

"The energy-efficiency systems marketed by Ascenz are meeting with growing success among ship-owners," said GTT.

This transaction boosts GTT's own service offering in the shipping sector given the continued development of distribution networks and infrastructure for LNG as a maritime fuel for the whole merchant fleet.

GTT said that the deal was important for the company to advance and diversify its services.

"With the rise of LNG as fuel, a market in which GTT intends to grow, the energy efficiency systems designed by Ascenz will enable us to provide ship-owners with even more compelling solutions," Philippe Berterottiere, Chairman and Chief Executive GTT stated.

GTT said completion of the deal was subject to the satisfaction of certain conditions and was a cash transaction.

The French company said the two co-founders of Ascenz would retain 25 percent of the share capital and continue to manage the company, notably to contribute to the implementation of the synergies between Ascenz and its new parent.

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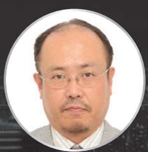

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Qatar and Australia play key roles with shipments to help cut air pollution during China's cold snap

Our Asia-Pacific editor

The Chinese National Development and Reform Commission has urged natural gas supply companies to "standardize price behaviour" amid a surge in demand for pipeline natural gas and LNG for delivery to import facilities such as Tangshan and Tianjin as colder weather hits Northern China.

Reductions in coal-fired power generation to lower air pollution around the Chinese capital Beijing and other cities has led to higher gas demand and prices and the government is urging price moderation on local gas suppliers.

Shift from coal

The NDRC has noted that the shift away from coal has triggered shortages in gas supply in Hebei, the industrial province around Beijing and in Zhejiang province of eastern China and in the Yangtze River Delta.

LNG shipments from nations such as Australia and Qatar are currently heading for northern China to help fill the energy gap.

PetroChina import terminals are key LNG entry points

China National Offshore Oil Company also has the "GDF Suez Cape Ann" floating storage and regasification unit on charter at Tianjin for a fourth winter to secure additional winter season shipments.

More LNG is also arriving at PetroChina's Dalian terminal in the Liaodong Peninsula of northeast China.

PetroChina has another northern import terminal in Tangshan in Hebei province, the nearest to Beijing. The 266,000 cubic metres capacity "Aamira" was unloading a cargo on December 4 at the Tangshan terminal.

The 174,100 cubic metres capacity "Cesi Gladstone" is scheduled to unload a shipment at the Tangshan facility on December 14 from the Gladstone plant in Australia, according to shipping data.

The 145,000 cubic metres capacity carrier "Methane Lydon Volney" is scheduled to deliver a shipment on December 12 to the Ningbo terminal in the eastern province of Zhejiang, owned by China National Offshore Oil Corp., from Shell's Queensland Curtis LNG plant in Australia.

The regasified LNG from each of these vessels can supply sufficient energy for a large city for about one week.

The NDRC has said it would push forward with gas price reform, though it was required to be conducted in an "orderly manner".

That is to hasten a market pricing formula for residential gas prices and to strengthen supervision of gas distribution in cities with proper regulations for pipelines and other infrastructure.

The Commission is also overseeing the development of the oil and gas trading centres in the cities of Shanghai and Chongqing.

Analysts said that trading volumes at the Shanghai Oil and Gas Exchange Centre in 2017 could reach 30 billion cubic metres.

The plan to address air pollution in northern China in general, and Beijing in particular, involves cutting coal burning in the short term and moving heavy industry away from the most populous cities in the long term. ■

Qatar National Bank gives upbeat assessment of future global LNG market and price indexing

Qatar National Bank said the Gulf state's LNG production overseen by Qatar Petroleum would continue to seek long-term contracts to ensure stable output and to use oil price indexation.

"Despite the market being oversupplied, Chinese buyers have had a difficult time finding LNG because most supplies are locked up in long-term contracts, leaving less than a third of the total LNG supply available on the global spot market," QNB explained in a report.

However, the bank noted that the approaching expiry of some long-term contracts could push more LNG sales onto the spot market and result in shorter contract lengths.

"We expect this gradual shift to continue in the coming years but most of the market, particularly major producers like Qatar, will still operate on long-term contracts providing buyers with long-term energy security," said the report.

It also explained that the global LNG market was operating very differently from the crude oil market.

"There is no singular LNG benchmark price and the market is heavily segmented by region," it said.

"In North America and Europe today, LNG trade is conducted on shorter contract lengths and pricing generally reflects market fundamentals of supply and demand," the report added.

"We expect this gradual shift to continue in the coming years but most of the market, particularly major producers like Qatar, will still operate on long-term contracts providing buyers with long-term energy security," QNB noted.

It pointed out that the volume of LNG traded was relatively low in Europe and North America because of the "mature pipeline infrastructure" through which higher volumes of gas are supplied.

In Asia, where 70 percent of global LNG supply is destined, buyers have historically sought to secure the commodity on contracts of 20 years or more to ensure steady shipments.

QNB said the steady cash flow to producers in recent years has shored up investments in the sector, which in turn has prevented shortages and price spikes for consumers.

The bank explained that market changes were occurring because of two factors, including shale gas from the US offering a new source of supply to the market and lower prices, incentivising buyers to move to shorter contracts.

"As a result, buyers are looking at US gas prices as a floor for the market which will persist as US LNG exports continue to grow," the report said.

QNB added that secondly, the long-term outlook for LNG demand was increasingly looking more bullish than that of oil.

"Projections of LNG demand reveal growth of over 3-5 percent per year until 2030, while base case oil demand growth is expected to be around 0.5-1.0 percent per year over the same period," said the report. ■