

LNG Unlimited

LNG JOURNAL PUBLICATION

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LNG Canada puts case for progress on project free of political nonsense

Investor group on move again after 2016 suspension of Kitimat venture
LNG Journal editor

LNG Canada, the largest export project proposed for the Pacific Coast province of British Columbia, could hold a ground-breaking ceremony before the end of 2018 as the joint venture led by Royal Dutch Shell gets back on track and seeks to advance by putting jobs and investment over the political showboating of others.

The Chief Executive of LNG Canada, Andy Calitz, said the investor group had been making steady progress in the 22 months since plans were suspended to construct the export facility and liquefaction plant near the town of Kitimat.

Stakeholders

Calitz said a wide range of stakeholders such as equipment suppliers, engineering consultants, Indigenous leaders, including the Haisla First Nation, and local mayors have been following LNG Canada's efforts to relaunch the venture since the final investment decision was postponed in July 2016.

"At that time when they asked the inevitable question, our answer was, 'We will be in construction in 2018.' I reaffirm that commitment," said Calitz at the Canada Gas and LNG conference in Vancouver.

He said Shell and its three partners in LNG Canada are keen on exporting from Kitimat to Asian markets.

"External market conditions in terms of oil prices, free cash flow,



LNG Canada CEO Andy Calitz prepares political ground

energy prices and just the supply-demand balance didn't make sense in July, 2016," the CEO added.

Shell Canada President Michael Crothers had said earlier that management was "cautiously optimistic" about going ahead with the start of building.

Shell holds a 50 percent stake in the project, PetroChina has 20 percent and Korea Gas Corp. and Japan's Mitsubishi Corp. each own 15 percent.

The BC provincial government has given LNG Canada until November 2018 to accept an incentives offer to build the facility.

If it were to move forward, LNG Canada would export up to 3.7 billion cubic feet per day of the Canadian gas glut to Asian markets.

Energy project construction companies JGC Corp. of Japan and Fluor Corp. of the US were awarded an engineering, procurement and construction order in April 2018 to design and build the plant.

The BC government has offered incentives amounting to US\$4.8 billion in provincial income, sales and carbon tax cuts to build the facility.

However, LNG Canada has yet to give a specific date for a construction ceremony in regard to

the November deadline. The liquefaction plant is proposed for a coastal brownfield site acquired several years ago near Kitimat and is expected to cost around US\$11Bln using modular construction methods.

Additional costs will include feed-gas supplies and an investment in the multibillion-dollar TransCanada pipeline project, the Coastal GasLink.

LNG Canada already holds a 40-year export licence from the National Energy Board for exports of domestic gas overseas, though further final permits are required, including one from the federal government.

While BC province itself formerly had 20 LNG export ventures on the table, there are now only two others moving forward, the small-scale Woodfibre LNG venture at Squamish in BC and the Steelhead LNG venture on Vancouver Island.

The Canadian federal government had given conditional approval to the large-scale Pacific Northwest LNG project proposed by Malaysian energy company Petronas.

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US equity fund Harbour Energy makes new offer for key Asia-Pacific LNG stakeholder Santos

LNG Journal editor

Santos, the Australian stakeholder in three Asia-Pacific LNG export ventures, has received a binding bid from Harbour Energy, a subsidiary of US equity firm EIG Global Energy Partners, confirming an original offer of \$US10.4 billion (\$A13.8Bln) with a number of changes relating to large Chinese shareholders.

Harbour Energy has not altered the value of its \$A6.63 (\$US4.98) a share offer made on April 3, though oil prices have risen 18 percent since the original offer was made.

Conditions

The new binding bid is conditional on completion of final due diligence and the recommendation of independent directors of the Santos board, plus shareholder and Foreign Investment Review Board approval.

Santos said the revised Harbour



Santos has been controlling LNG project debts

proposal while involving no change in price included a number of “significant changes” to the transaction structure relating to ENN Group of China and Chinese equity fund Hony Capital who hold a combined 15 percent of the Australian company and a board presence.

There would be a US dollar offer of a cash consideration for shareholders other than ENN Group and Hony Capital, with no fixed Australian dollar component.

There would also be an offer to ENN and Hony to roll-over their existing Santos shares into a Har-

bour investment vehicle and subscribe for new shares. This option is not available to other Santos shareholders.

“The independent directors of Santos will consider the revised Harbour proposal and will update shareholders accordingly,” said Santos.

“Santos shareholders are advised to take no action in relation to the revised proposal at this time,” it added.

Linda Cook, the Harbour Chief Executive and former Royal Dutch Shell executive, has led the take-

over bid by the US company attracted by Santos's stakes in three LNG projects, Gladstone LNG, Darwin LNG and the Papua New Guinea plant and its expansion project.

Santos is Australia's second-biggest independent oil and gas producer after Woodside Petroleum.

The company had previously rejected a number of other takeover offers, including one from the Brunei and United Arab Emirates-backed Sceptre Partners.

Cook retired from Shell in 2010 after about 30 years of service with the Anglo-Dutch energy major and has wide LNG experience.

Harbour Energy completed a transaction at the end of October 2017 to buy Shell oil and gas assets in the North Sea for around \$3 billion.

Its EIG equity fund parent company has around US\$18 billion under management for investors. ■

US Coast Guard gives positive report on Oregon waterway access for Jordan Cove on Coos Bay

The US Coast Guard has completed its review with a positive report for regulators after conducting a waterway suitability assessment for the Canadian-led Jordan Cove LNG export plant proposed for Coos Bay in the northwest state of Oregon.

Coast Guard personnel recommended to the US Federal Energy Regulatory Commission that the waterway should be considered suitable for LNG marine traffic associated with the venture of Pembina Pipeline Corp., based in Calgary in the Canadian province of Alberta.

Pembina continues to advance with the Coos Bay facility and its related Pacific Connector Gas Pipeline that will transport natural gas from the Malin Hub in southern Oregon to the liquefaction plant.

The company closed its acquisition in October 2017 of another Canadian operator Veresen Inc., in-

heriting the Jordan Cove venture.

Jordan Cove officially filed its application with the FERC in September 2017 with the company expecting an outcome during the second half of 2018.

Jordan Cove if approved would produce 7.8 million tonnes per annum of LNG for export to Asian markets.

“Based upon this review, the Captain of the Port Sector Columbia River recommended to the FERC that the waterway in its current state be considered suitable for LNG marine traffic associated with this project,” said the Coast Guard.

The Coast Guard report pointed out that since January 2018 the Sector Columbia River personnel had worked with Pembina Pipeline and with state and local police and fire brigade as well as port and community stakeholders to

assess the safety and security issues associated with LNG carriers traveling into Coos Bay.

“We continue working with local officials and the port community to ensure that every measure is taken to ensure the excellent safety record of the marine transport of LNG is continued if an LNG terminal is built in Coos Bay,” said Capt. William Timmons, head of the Sector Columbia River.

“At this point, the waterway can accommodate the types of vessels associated with the proposed Jordan Cove LNG facility,” he added.

“We are working together to make sure that any resource issues are resolved through the Emergency Response Planning Process,” stated Timmons.

The Coast Guard said it would continue working with the FERC on the development of an Environ-

mental Impact Statement that addresses the effects of the proposed safety and security measures along the waterway.

If Jordan Cove is given the go-ahead by the FERC, Pembina would be required to submit Emergency Response and Transit Management plans that identify the resources necessary to support the Waterways Suitability Analysis and facility operation.

“The applicant will also have to document its cost sharing arrangements with the affected communities for project related expenses,” said the Coast Guard.

Pembina is also continuing the development of its liquefied petroleum gas export terminal on Watson Island, near the port of Prince Rupert in the Canadian British Columbia. ■

Japanese spot LNG cargoes now cost much more

Japanese spot cargoes contracted in April to arrive in Japan at a later date cost an average of \$9.10 per MMBtu compared with \$5.70 per MMBtu in April 2017, a rise of 59 percent and along with oil-linked, long-term contract deliveries will be adding to the nation's energy import costs as oil prices rebound.

Japanese spot LNG cargoes that arrived in April cost an average of \$8.80 per MMBtu compared with \$5.90 per MMBtu in the same month a year ago, a rise of almost 50 percent.

Spot prices for shipments that arrived in Japan in March were around \$10.20 per MMBtu compared with \$7.70 per MMBtu a year before and the contracted March price was at \$8.80 per MMBtu versus \$6.20 per MMBtu in March 2017, an increase of 42 percent.

The spot cargo numbers come from the commerce division of the Japanese Ministry of Economy, Trade and Industry and are only issued if a minimum number of two trades are recorded.

The Ministry emphasizes that "spot LNG" refers to fuel traded on a cargo-to-cargo basis and does not mean shipments under contracts on a short-term, medium-term or long-term basis. The statistical accounting of the spot prices started in March 2014.

Overall Japanese LNG imports dropped 2.6 percent in March as Australian and spot volumes offset a large fall in shipments from Asia and thermal coal was preferred to LNG for power generation.

The March LNG imports amounted to 7.93 million tonnes compared with 8.14MT in the same month of 2017, according to the trade figures from the Japanese Finance Ministry.

French energy major Total plans Oman bunkering with own output

LNG Journal editor

French energy major Total has signed an accord with the Government of Oman to develop an LNG fuel supplies hub for the maritime industry with bunkering infrastructure and a small-scale production plant at Sohar Port.

Total said its agreement with the Sultanate of Oman was in the form of a memorandum of understanding covering both upstream and downstream businesses, including the development of on-shore natural gas fields.

Discoveries

Total and Royal Dutch Shell plan to bring on stream several natural gas discoveries located in the Greater Barik area on onshore Block 6 in Oman with respective shares of 25 percent and 75 percent.

The Greater Barik project has a production target of around 500 million cubic feet per day and potential to reach 1 bcf/d at a later stage.

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



Sultanate of Oman's Sohar Port and Freezone

for LNG bunkering services to supply LNG as a fuel to ships.

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

Total said its LNG hub project would involve a small-scale modular liquefaction plant to be built in Oman's Sohar port.

The plant will comprise a processing Train with capacity of around 1 million tonnes per annum and will offer the flexibility for expansion as required by the development of the LNG bunkering market.

"We are pleased to sign this MoU with the Sultanate of Oman that will give us access to new gas resources and the opportunity to

develop an integrated gas project," stated Arnaud Breuillac, President Exploration & Production at Total.

"We will bring our expertise in LNG and will introduce access to a new gas market for the Sultanate," added Breuillac.

"Developing an LNG bunkering service will generate in-country value and job opportunities, and will support industry diversification through fostering the shipping activity in Oman," stated the Total executive.

Total is a long-standing participant in the Omani energy industry and is a shareholder in Oman LNG, along with other companies, including Shell and Japan's Mitsubishi Corp. and Mitsui & Co.

Newest LNG importer Bangladesh in LNG supply agreement with Oman

Bangladesh, the world's newest liquefied natural gas importer with a floating regasification and storage unit provided by Exceleerate Energy of the US at Moheshkhali Island on the Bay of Bengal, has signed an LNG supply agreement with the Sultanate of Oman.

Oman Trading International (OTI), a subsidiary of Oman Oil Co, said it had signed a 10-year accord to sell LNG to Bangladesh state-owned energy company PetroBangla to supplement the Asian nation's main supplies from Qatar.

The arrival of the FSRU, the "Excellence", in April 2018 set in motion the first of two Bangladesh import projects with the Mo-

heshkhali Island venture co-developed by PetroBangla, Exceleerate and the International Finance Corporation, part of World Bank Group.

The "Excellence" will enable Bangladesh to import around 3.5 million tonnes per annum of LNG.

An onshore gas pipeline connects the FSRU to Chittagong, the Bay of Bengal port and the country's second-largest city after the capital Dhaka.

Regular supplies will come from Qatar under a 15-year supply agreement with Bangladesh for volumes of 2.5 MTPA.

Under the Oman deal, PetroBangla will receive 1 MTPA of LNG once the Asian nation com-

pletes the installation of its second LNG import facility in 2019.

"This marks an import milestone in the relationship between Oman and Bangladesh," said Chief Executive Talal Al Awfi of the Omani trading company OTI.

"Oman already exports oil products to Bangladesh and we are pleased to sign this strategic long-term supply agreement," added Al Awfi.

In addition to trading crude, petroleum products and chemicals, OTI commenced its LNG trading business in 2016 after the amalgamation of the Sultanate's two liquefaction plants, Oman LNG and Qalhat LNG.

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Zhang Jia-Hua

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NEWS NUDGES

Exmar barge charter

Belgian LNG shipping line Exmar whose managed and owned fleet consists of three LNG carriers and 11 floating storage and regasification units (FSRUs) has signed a 10-year charter with international commodities company Gunvor for the provision of its newbuild FSRU barge for Bangladesh. Exmar said the barge was currently at Keppel Shipyard in Singapore undergoing modifications after having been delivered from the Wison Offshore and Marine shipyard in Nantong, China, in December 2017.

Ophir-Kosmos project

Two LNG project stakeholders in West Africa, Ophir Energy of the UK and Kosmos Energy of Texas, will jointly develop an exploration and production licence offshore Equatorial Guinea. Ophir, a stakeholder in the Fortuna floating LNG venture with other companies offshore Equatorial Guinea, acquired its newest Block EG-24 exploration licence in nation's 2017 bidding round. Kosmos, a joint venture partner with BP of the UK in two FLNG projects offshore Mauritania and Senegal, will acquire a 40 percent non-operated interest in Block EG-24 from Ophir.

LNG fuel conversion

The Damen Ship Repair yard in the French Channel port of Dunkirk has begun the conversion of the dredger "Samuel de Champlain" from diesel-electric propulsion to dual-fuel capability combining LNG and marine gasoil. A new section of hull will be installed to hold the generators and other equipment. The "Samuel de Champlain" was built in 2002.

MISC posts lower revenue and profit amid better outlook for LNG sector

LNG Journal editor

Malaysian International Shipping Corp., whose liquefied natural gas fleet comprises 30 vessels among its 120 ships, posted lower first-quarter revenue and profits, though the outlook for the LNG sector was viewed by the company as positive.

The decrease in profit and income was mainly due to the group's Offshore division and lower freight rates in the Petroleum segment, as well as lower charter rates for LNG.

Operating losses

Group revenue for the quarter amounted to 2.02 billion Malaysian ringgit (\$505 million), down 23.3 percent on the same three months of 2017 when revenue was 2.98Bln ringgit.

First-quarter operating profit amounted to 383.4 million ringgit (\$97M) versus 683.3M ringgit in the year-ago quarter, a drop of 49.5 percent as both the Petroleum and Heavy Engineering divisions posted operating losses.

"MISC Group will strive to sustain our financial performance and



'Seri Cemara' is fifth in series of five Moss-Type vessels

continue to focus on generating a target level of operating cash flow that will fund our pipeline of growth projects in the coming years," said Group President and Chief Executive Yee Yang Chien.

"While 2018 is expected to be another difficult year, nonetheless, the recovery of oil price will benefit the offshore sector the most and we are positive about the opportunities available on the upstream deepwater projects locally and globally," he added.

MISC recently took delivery of an additional newbuild, the "Seri Cemara", the fifth in a series of five vessels with Moss-type storage tanks.

The LNG carriers are chartered

to state energy company Petronas.

The new 150,200 cubic metres capacity carriers were built for MISC by Hyundai Heavy Industries of South Korea.

"In the LNG shipping segment, spot charter rates have eased off in the first quarter on the back of diminishing winter demand and new tonnage delivery, after a strong pick up towards the end of 2017," said MISC.

"Similar to petroleum shipping, the LNG shipping market is expected to face a weak spot market during the year as a result of tonnage overcapacity, exacerbated by a large number of long-term charter expirations," it added.

South Korea to start state supports for LNG fuel with bulk carrier orders

The South Korean government will place the first order for vessels powered by liquefied natural gas by August to support a more environmentally-friendly shipping sector and to develop associated industries as well as more LNG bunkering facilities in its ports.

The Ministry of Oceans and Fisheries said it was firstly considering backing orders for two 200,000-ton bulk carriers to sail between South Korea and Australia.

The government has been seeking to develop the emerging LNG-fueled shipping sector to comply with the International Maritime Organization's sulfur cap of 0.5

percent on marine fuel content set to be enforced from 2020.

LNG-powered ships are considered one of the options to meet strengthened regulations, but the high cost of the ships have posed challenges for ship owners.

Currently only one LNG-powered vessel is operating in South Korea and the Ministry is leading plans for up to 200 orders to be made for ships with LNG capability, including dual-fuel vessels, over the next three years.

South Korea's orders are seen by the government as a way of helping its shipping and shipbuilding industries to recover from a

slump in global demand and losses that forced restructuring at the largest companies.

It is part of a five-year plan to rebuild its shipping industry while also meeting tighter global anti-pollution regulations in regions such as Europe and North America where Emission Control Areas have been established around ports.

Its shipping support programmes include the establishment of the Korea Ocean Business Corporation that will seek a "win-win approaches between the shipping and shipbuilding industries and ship owners and shippers".

LNG producer Abu Dhabi National Oil Company plans \$45Bln downstream project investments

LNG Journal editor

Abu Dhabi National Oil Company (Adnoc), the leading energy group in the United Arab Emirates and a long-standing LNG exporter, plans to expand by investing \$45 billion with partners in various downstream projects in the next five years as it also boosts natural gas production.

The plans were unveiled in Abu Dhabi at the Adnoc Downstream Investment Forum.

Strategy

"The unprecedented investment programme will underpin a new downstream strategy to significantly expand Adnoc's refining and petrochemical operations at Ruwais in the UAE, and involve highly targeted overseas investments to secure greater market access," said Adnoc.

Adnoc's existing and sizeable downstream portfolio comprises eight companies processing 10.5 billion standard cubic feet of gas per day, and with a refining capacity of 922,000 barrels per day of condensate and crude. They also produce some 40 million tons per year of refined products.

The UAE is one of the oldest



Focus is now on finding partners for various projects

LNG producers from the Das Island plant offshore Abu Dhabi consisting of three Trains that process an average of 8 million tonnes of LNG per annum from associated and non-associated gases.

The Das Island LNG plant, commissioned in 1977, is run by Adgas, a subsidiary of Adnoc and mainly supplies Japan.

The UAE is also an LNG importer at facilities in Dubai and Ruwais to help meet its own domestic gas needs.

Moves are also under way to boost Abu Dhabi's gas production and the emirate in January 2018 awarded the two front-end engineering and design contracts for its planned offshore sour gas mega-project, consisting of the Hail, Ghasha and Dalma fields.

The Hail-Ghasha-Dalma project is forecast to produce about 1 billion cubic feet of sour gas per day when completed.

"Building on the existing strengths and competitive advantages of the Ruwais Industrial Complex, Adnoc will create the world's largest and most advanced integrated refining and petrochemicals complex," said Adnoc.

Ahmed Al Jaber, UAE Minister of State and Adnoc Group Chief Executive, said that given the projected increase in demand for petrochemicals and higher value refined products, the company was repositioning itself to become a leading global downstream player.

"We will invest significantly in Ruwais and open up attractive partnership and co-investment op-

portunities along our extended value chain to create a powerful new downstream engine and springboard for growth that will benefit our country, our company and our partners," said Al Jaber.

"Importantly, the expansion plans for Ruwais will also support Abu Dhabi and the UAE's economic development and diversification, create high-skilled jobs and enhance the country's status as a globally attractive destination for energy investments," he added.

"The unique competitive advantages and world-scale of Ruwais, combined with a \$45 billion investment plan and our ambitious smart growth strategy, create a unique opportunity for Adnoc to redefine the global refining and petrochemicals landscape," stated Al Jaber.

The infrastructure requirements for the sour gas venture alone include a minimum of 11 offshore artificial islands to be designed and constructed.

The project, in the northwest offshore area of the UAE, could meet 20 percent of domestic gas demand by the second half of the next decade.

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PetroChina to expand the Tangshan LNG terminal

PetroChina plans to expand the Tangshan LNG import terminal that supplies the capital Beijing to become the largest of the nation's network of 18 terminals, while the company will also start building work soon on its fourth regasification facility.

The PetroChina plans coincided with its sale of a one-third stake in Tangshan LNG to Beijing Blue Sky Holdings for 1 billion yuan (\$157 million), according to a Hong Kong stock exchange statement.

The Tangshan receiving terminal consists of port facilities and handling capacity for up to 10 million tonnes per annum of LNG.

PetroChina and Beijing Blue Sky will each add two 160,000 cubic metres capacity storage tanks to double the site's storage capacity to 1.28 million cubic metres.

The PetroChina terminal is located in the Caofeidian Industrial Zone of Tangshan City and the company has two other facilities in eastern China, the Rudong terminal in Jiangsu province near Nantong and the Dalian terminal on the Liaodong Peninsula of northeast China.

The Tangshan terminal consists of a port and handling capacity of 10 million tonnes per annum as well as an inter-connecting pipeline to the national network.

It is a key supplier of pipeline gas to the Beijing region from the cargoes it receives from Qatar and Australia. Another terminal supplying Beijing is the Tianjin facility, owned by Sinopec.

The three PetroChina terminals have a combined annual receiving capacity of 19 MTPA, though on average they only run at around 40 percent of capacity except in the peak winter months.

Doris Engineering completes North West Shelf study for Australian firm

LNG Journal editor

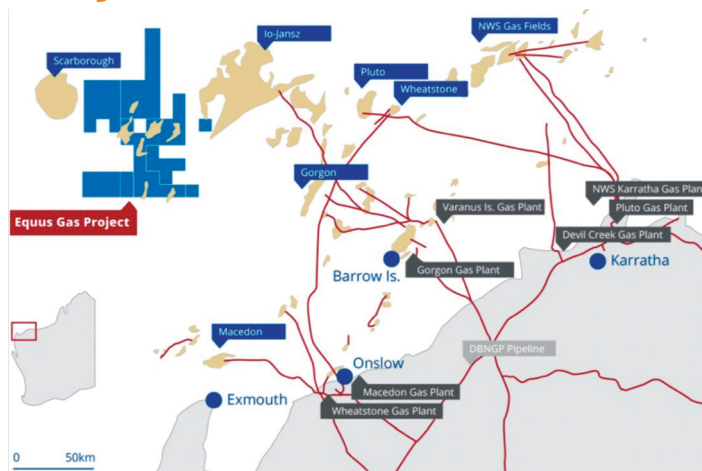
Doris Engineering, the French energy contracts company with global operations, said it completed a study for Western Gas, an Australian operator based in Perth and developing the Equus natural gas field offshore Western Australia.

Doris said Western Gas has a time-scale on the project located on the North West Shelf to have first gas by 2023. The gas could come ashore near one of the three world-class onshore LNG liquefaction plants in the area as well as associated domestic gas plants.

Teams

"The Paris and Perth teams successfully interfaced with Western Gas which allowed Doris Engineering to demonstrate its strong capabilities in performing screening and concept selection studies for subsea developments," said Doris, whose project experience stretches back to the 1970s in the UK North Sea.

Benoit Lamoureux, Doris Managing Director for the Asia-Pacific region, said Western Gas has been able to take advantage of the French company's strong track record in field development studies.



Equus field is in prime LNG spot offshore Australia

"We engaged with Western Gas locally and delivered a fit-for-purpose study that met Western Gas's expectations and needs," said Lamoureux.

"We look forward to continuing our working relation with Western Gas and wish them the best for Equus," he added.

Andrew Leibovitch, Chief Executive of privately-held Western Gas, said he was appreciative of the efforts of the Doris team.

"Doris's work was of high quality and we will definitely consider their engineering support in the future," added Leibovitch.

Western Gas is the owner and

operator of the Equus Gas project and is seeking a project development partner.

"Thanks to Doris, Western Gas was able to investigate alternative options for developing the Equus field, which allowed us to move forward with our base case and consequently issue a Request for Proposals (RFP) to secure a local partner," said Leibovitch.

"Project development services being sought by Western Gas embrace full field development, including drilling, subsea, offshore processing and a gas pipeline to shore," he stated.

Marathon signs accord to process third-party gas in Equatorial Guinea

Marathon Oil Corp. and its partners said they signed an agreement with the Government of Equatorial Guinea and third parties to establish the framework for processing natural gas volumes at the onshore liquefaction plant at Punta Europa on Bioko Island.

The accord for the LNG plant on third-part volumes also applies to the Alba Plant for liquefied petroleum gas.

"With the Punta Europa facilities becoming a hub for the potential development of local and regional natural gas, the project will sustain the operating rates of

the Alba Gas Plant and prolong the life of the EG LNG plant, both of which are proven integrated gas assets with high reliability and low capital demands," said Marathon.

The Equatorial Guinea LNG plant began production in May 2007 and its single processing Train currently produces 3.7 million tonnes per annum.

The shareholders of EG LNG's holding company include Marathon, Sonagas and Japan's Mitsui & Co. and Marubeni Corp.

The US company holds a 60 percent equity interest in the LNG plant. EG LNG was contracted to

Royal Dutch Shell under a 17-year agreement inherited from BG Group of the UK.

BG originally signed that deal to ship the LNG cargoes to the Lake Charles import terminal in the US state of Louisiana before the shale-gas expansion turned the US into an exporter.

The Equatorial Guinea national energy company is a stakeholder in the Marathon plant and is also currently backing a separate floating LNG export venture offshore the West African nation involving companies such as Ophir Energy of the UK and Golar LNG.

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Adelaide APPEA event hears Chevron urge industry rivals to share liquefaction and other LNG infrastructure

LNG Journal editor

The head of Chevron Corp. in Australia has called for the sharing of LNG infrastructure among the major operators of four world-class liquefaction plants in Western Australia to improve energy economics and profitability.

Speaking at the Adelaide conference organized by the Australian Petroleum Production and Exploration Association, Chevron Australia Managing Director Nigel Hearne outlined a concept for the sharing by rival gas producers of LNG infrastructure while continuing to competitively develop the many offshore gas fields.

Operator

Hearne's company Chevron is operator of the Gorgon LNG plant on Barrow Island and the Wheatstone plant near Onslow in the Pilbara region of Western Australia with other major shareholders including Royal Dutch Shell, Woodside Petroleum, ExxonMobil and Japanese utilities.

The US major's two plants have cost a combined A\$90 billion (US\$68Bln) to construct and de-



Chevron Australia Managing Director Nigel Hearne speaking

velop and Hearne sees his proposal as a case of project economics.

The two other liquefaction plants in Western Australia, the North West Shelf facility and Pluto LNG, are operated by Woodside and Chevron is not among the stakeholders.

Hearne said he could imagine an interconnected Carnarvon Basin where a multi-user offshore pipeline brought gas from the undeveloped Scarborough, Thebe and Exmouth fields to the North West Shelf, Pluto and Wheatstone LNG production facilities.

"Something like this would en-

able gas from offshore fields to flow to where it is needed, and when it is needed via an onshore interconnector across the Burrup Peninsula," he told the annual gathering of the Australian oil and gas industry attended by 2,000 people.

"Combining this with existing pipelines to shore that interconnect with the Dampier-Bunbury natural gas pipeline, the opportunities for system optimisation and value creation are mind boggling," stated Hearne.

Hearne called the pipeline concept a Trans-Carnarvon Basin Trunkline.

"If we get it right, it optimises development of potentially stranded resources and has superior economics over individual or 'point-to-point' concepts, keeping LNG and domestic gas plants full for longer and helping secure Australia's energy future," he said.

His concept could see Chevron gas processed at the Woodside-operated North West Shelf and Pluto LNG facilities and the gas of others processed at Chevron's Wheatstone plant.

"There's room for all the resource in all the plants. There's a very efficient way to do that if we collaborate to do so. We're almost agnostic as to where the gas goes," said Hearne.

The Chevron executive compared the concept to how the airport operates. "If you're flying into Perth you don't have the Virgin Australia airport and the Qantas airport you have one airport," he said.

"I don't mind if Chevron gas goes through a different plant as long as you can get access to lift your equity LNG and tie it to your customer base," added Hearne.

Conference hears case for domestic LNG shipments from West to East as preferred option to 1,500km pipeline

Australian energy executives have said at a conference in Adelaide that it would be more economic to ship natural gas as LNG from the West Coast to the East Coast rather than build a trans-Australia pipeline.

Santos Chief Executive Kevin Gallagher said at the annual conference of the Australian Petroleum Production and Exploration Association that a West-East pipeline would be the least viable option for tackling regional natural gas supply shortfalls.

Gallagher's company has stakes in the Gladstone LNG plant in Queensland, which it also operates, and in the ConocoPhillips-run Darwin plant in the Northern Terri-

tory as well as the ExxonMobil-operated Papua New Guinea plant and expansion project.

He was speaking as his own company was the subject of a \$10.4-billion takeover offer made by a subsidiary of US equity firm EIG Global Energy Partners.

"The one that would be the bottom of the list would be a pipeline from the West Coast to the east Coast," he said.

A government-led feasibility study is examining the potential of a West-East natural gas pipeline to supply eastern and southern markets with Western Australia's abundant supplies as an alternative to domestic LNG shipments.

A gas pipeline from Western

Australia's Pilbara region to the Eastern states has won the backing of many because of gas shortages and higher prices in East Coast states such as Queensland and New South Wales.

One outline plan is for a pipeline to be laid from the north-west of Western Australia along a 1,500 kilometres route to link with existing processing and storage facilities at the town of Moomba in the northeast region of the state of South Australia and 770 kilometres north of the state capital of Adelaide.

At the same time, several plans are being developed for LNG regasification facilities near cities such as Sydney to handle West-

East LNG shipments. "You can actually ship Australian gas round to the East Coast a hell of a lot cheaper than building a pipeline from the Pilbara to say, Moomba," said Gallagher.

"I just don't see how the economics of it will ever work," stated the CEO.

Using Western Australia's domestic gas reservation policy as an example, the Santos CEO told the conference that the industry should be prepared to accept a form of domestic reservation when developing onshore gas in the Northern Territory, for example, where a ban on fracking has just been lifted.