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HD **LNG boom fuels Australia hopes**

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The flame flickering on top of a gas flare tower on Curtis **Island** in Gladstone is a symbol of a rising power in the liquefied natural gas market as three huge coal seam gas plants prepare for switch on.

In Asia, where governments are seeking cleaner energy sources to complement coal and oil, LNG is highly prized. For Australia, it has changed the country's energy landscape.

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"Australia is poised to become the world's biggest exporter with 84m tonnes of LNG capacity coming into production by about 2018," says Rod Duke, head of LNG at Santos, an Australian energy **company**.

"The Gladstone projects will be the main contributors," he says.

Energy companies have invested $200bn in Australian projects over the past decade, including three LNG plants in Gladstone operated by consortiums led by the UK's BG **Group** and Australia's Santos, and Origin Energy.

The plants are the first in the world to convert coal seam gas to LNG. BG **Group**'s plant is due to go into production within weeks while the other facilities will be switched on next year.

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< > But as the country prepares to overtake Qatar as the world's biggest LNG exporter, Australia faces competition from US shale gas, a proposed pipeline between Russia and **China** and rising costs.

This has caused investors to press the pause button on a further $100bn plus planned projects as they consider which country offers the best return on LNG investments.

"We think it will be very difficult for new green field Australian projects to compete equally with those from the US, particularly as the buyers are now looking for lower LNG pricing," says John Hirjee, Deutsche Bank analyst.

A shale gas revolution in the US, which is forecast to see LNG production treble by 2035, is prompting companies such as Cheniere Energy and Sempra Energy to export to Asia. More than a dozen projects in Africa and Canada are also planned, which provides Asian buyers alternative and cheaper supplies.

Deutsche says current contract prices to ship LNG from Australian to Japan are about $14-$15 per million British thermal units whereas the equivalent price of US LNG is $11.84.

Increased competition has hit Chevron's Gorgon project in Western Australia, which is scheduled for completion in 2015. So far it has **sold** just 65 per cent of gas in 20-25 year long term contracts, compared with a target of 85 per cent.

"With the degree of uncertainty that there is about US exports and the size of US exports, I think you can understand why buyers might want to wait a little bit to see how that all lands out before going

forward to secure longer-term contracts," Pat Yarrington, Chevron's chief financial officer, said last month.

Santos says the threat posed by US shale is overblown due to huge demand growth, with LNG's share of Asian gas supply forecast to rise from 35 per cent to 52 per cent by 2030. It questions whether US shale gas will be cheaper for Asian buyers in the long run.

"If you look at the cost of liquefying that gas and transporting it via the Panama Canal all the way across the Pacific. The actual delivered price into north Asia is not materially different from Australian projects," says Mr Duke.

He adds that a planned pipeline supplying Russian gas to **China** will only meet 6 per cent of gas demand and therefore not threaten LNG exports.

The greater threat to Australia's LNG industry is high costs, according to producers, who have incurred spending "blow outs" when building projects. For example the Gorgon project is now forecast to cost $54bn, compared to initial estimates of $37bn in 2009. Santos' plant in Gladstone was initially due to cost $16bn and will now come in at $18.5bn.

McKinsey & Co has estimated it costs 20-30 per cent more to build projects in Australia than in the US or east Africa due to a strong local dollar, high labour costs and the nature of its gas reserves.

Several projects are stalled, including an A$10bn coal seam gas LNG plant in Gladstone, which is proposed by a consortium of Arrow Energy, Royal Dutch Shell and PetroChina.

"There a lot of risk built into these projects," says Alistair Cathcart, head of LNG at Bechtel, the US **company** building all three of the coal seam gas plants in Gladstone.

He says it is unlikely investment will begin flowing into green field projects anytime soon.

"The clients will probably draw breath and then look at the global picture because LNG is a global market as to what their investment is going forward," says Mr Cathcart.

The LNG industry is also lobbying Canberra to reform employment law and stream line visa regulations for foreign workers, warning Australia could lose its crown as the world's biggest LNG exporter shortly after it achieves this goal.

"Greenfield projects in any part of the world are always challenges," says Mr Duke. "The challenges for those projects can be overcome if both companies and governments really get their act together and overcome some of the constraints and challenges they are facing."

Coal seam gas explained

It is the biggest building **site** in Australia with more than 13,000 employees toiling away over five years to construct the world's first coal seam gas LNG plants.

Each of the three plants on Curtis **Island** uses two and half times as much concrete as the Empire State building and five times as much steel as the Eiffel Tower. A single gas storage unit is the size of a football field and 30m tall.

"What is pioneering about the project is that we are taking that coal seam gas and making it into LNG and selling it into the market in Asia," says Brenton Hawtin, Santos general manager.

Coal seam gas is a type of natural gas high in methane, which is trapped underground in coal seams by water and ground pressure. It is recovered by drilling wells, fracking the coal seam and removing water. The gas is pumped via pipeline from the Queensland interior to Curtis **island**.

The gas is cooled to -161 degrees Celsius, which shrinks it in size making it easier and more efficient to transport to markets in Asia such as Japan, **China** and South Korea.

The three consortium's all include Asian energy companies. Australia Pacific LNG is a joint venture project between ConocoPhillips, Origin Energy, and Sinopec. Santos has teamed up with Petronas, Total and Kogas while BG **Group**'s partners are **China** National Offshore Oil Corporation and Tokyo gas.

CO boral : Origin Energy Ltd | brgas : BG Group PLC

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