



Australia's grand plans

Analysis - Liquefied natural gas 2008-10

There are plans for up to 68m t/y of new export capacity in Australia. If all these projects come to fruition, they would help to relieve an increasingly tight supply situation, writes Ian Lewis

CHEVRON has upped the ante in the race to exploit Australia's liquefied natural gas (LNG) potential, significantly scaling up its proposed Wheatstone export facility on the Western Pilbara coast. But the need to secure gas to supply up to five production trains could pit the US major against Woodside Energy, which is seeking feed gas for its own LNG projects in the region.

Chevron first floated the idea for a 5m tonnes a year (t/y) single-train facility in March, based on gas reserves of around 4.5 trillion cubic feet (cf) at its Wheatstone field, in the Carnarvon basin. But since then, a very large discovery at the company's nearby Iago field has prompted a more ambitious, two-train initial development plan, with production planned from 2015. In July, the Iago-2 well discovery produced a flow rate of 53m cf/d, indicating a southerly extension of the Iago field into a previously untested area.

Table 1: Australia's existing and potential LNG production capacity

Project	Start up	Number of trains	Capacity (million t/y)
Existing			
NWS LNG	1989	3	7.50
NWS LNG 4	2004	1	4.40
Darwin LNG	2006	1	3.24
NWST5	2008	1	4.40
Under construction			
Pluto LNG	2010+	2	4.80
Total capacity			24.34
Planned/proposed			
Pilbara LNG	2010+	1	6.00
Gorgon LNG	2010+	3	15.00
Darwin LNG T2	2010+	1	5.00
Browse	2011/14	2-4	15.00
Speculative			
Ichthys	2014/15	1	5.00
Greater Sunrise	2013	1	5.00
Wheatstone LNG	2015	5	25.00
Total potential capacity			100.34

Source: Petroleum Economist LNG Data Centre

And, if Chevron can source enough extra gas from third-party providers and its own local operations, it says it may add another three trains, bringing total capacity to 25m t/y, which would make it the largest natural-resources project to be developed in Australia, at an estimated cost of more than A\$30bn (\$20bn). In terms of scale, it would overtake Woodside's up-and-running 16m t/y North West Shelf Venture (NWS) project and the proposed 15m t/y Chevron/ExxonMobil/Shell Gorgon scheme.

It is still early days for Wheatstone, with Chevron yet to select a site on a 100 km stretch of coast south of the Burrup Peninsula and government approval still required. But if the project

goes ahead, Chevron will go it alone, following Woodside's lead in developing its Pluto project on its own.

"Trying to get alignment between multiple shareholders can be tricky and that seems to have been one of the attractions of the first Pluto train, which was 100% Woodside and moved to construction quickly as a result. Some of that thinking has rubbed off on Chevron with Wheatstone," says Frank Harris, head of global LNG at Wood Mackenzie, a consultancy. One of the main problems in achieving progress with the Gorgon project was aligning the schedules of the project's three partners. "If it's your project, you may have a greater risk in the sense that you are carrying all the costs, but you don't have to negotiate with partners all the time," says Harris.

Gorgon progress

Chevron says Wheatstone will not affect development of the three-train Gorgon project on Barrow Island, which is making progress, despite delays caused by labour shortages and environmental-approval issues.

Underpinned by reserves of 45 trillion cf in the Greater Gorgon area – around a quarter of Australia's known gas reserves – Gorgon remains at the initial engineering and design stage, with a date yet to be set for start-up. Chevron has a 50% stake, With Shell and ExxonMobil holding 25% each.

Where the Wheatstone development may hit a snag is in the sourcing of gas for Woodside's Pluto facility. Pluto is under construction on the Burrup Peninsula at a cost of around A\$12bn, with its initial phase underpinned by sales agreements with Japan's Kansai Electric Power and Tokyo Gas, which each have a 5% in the project. Pluto had been seen as a possible offtaker for Wheatstone gas until earlier this year,



when Chevron first said it might develop its own facility. The realisation of Woodside's plan to expand the 4.8m t/y project from one to two trains will hinge on its ability to line up new gas supplies.

Woodside had indicated that it wants to take a final investment decision on the second Pluto train by the end of the year. But analysts say this seems unlikely, given that sufficient feed gas has yet to be identified. Recent finds on the NWS by smaller companies could provide part of the solution, if they turn out to be significant. For example, Apache says a series of wells drilled on its NWS acreage suggest a gas accumulation of 2-4 trillion cf. Meanwhile, fellow US independent Hess has drilled a series of successful wells on its NWS acreage, the latest of which was made in September at its Nimblefoot-1 well.

Another potential Woodside LNG project in the NWS region, the proposed 15m t/y plant based on its Browse basin finds, has moved a small step forward with the signing of a provisional sales deal with PetroChina, for 2m-3m t/y for 15-20 years. The deal would be the largest single export contract signed by an

Australian company, although it is non-binding at this stage, so is not guaranteed.

Elsewhere, the Ichthys LNG facility, planned by a venture between Inpex (76%) and Total (24%) has also moved closer to realisation, with a decision to site the plant near Darwin, in the Northern Territory. The project is on a tight schedule, with first exports scheduled for late 2014 or early 2015, and project costs have risen sharply since it was proposed – the latest estimate from Inpex suggests a price tag of around \$20bn.

Plans into reality

With other projects, such as Woodside's Greater Sunrise, also proposed, the industry is focusing on the practicalities of turning all the plans into reality. Labour shortages have already delayed some LNG plant construction and that situation is unlikely to improve. "Getting the capability and expertise to develop all these projects will act as a constraint," says Harris. He notes that one benefit of Woodside's decision to push ahead with the first train at Pluto before lining up supply for a second is that the firm will be able to harness expertise and equipment before they are snapped up by rival groups, making them more readily available to work on future site expansion.

While much of Australia's LNG potential has yet to be fulfilled, concrete developments are taking place within existing projects. The Woodside-operated NWS Venture's fifth train at the Karratha gas plant in Western Australia began exports in September. The A\$2.6bn expansion has brought the NWS facility's total capacity to more than 16m t/y. The six equal participants in the North West Shelf project are BHP Billiton, BP, Chevron, Japan Australia LNG – a Mitsubishi-Mitsui venture – Shell, and Woodside.

Meanwhile, the Angel Platform – the NWS LNG venture's third large offshore gas-production facility – became operational in October and is now supplying Karratha. The platform, in 80 metres of water 120 km northwest of Karratha, is tied back to the North Rankin A facility. Angel has a production capacity of 0.8bn cf/d of gas and up to 50,000 b/d of condensate. Woodside says the A\$1.6bn Angel project was completed on time and under budget.

On the export side, Tokyo Gas signed a sales and purchase agreement in October for 0.53m t/y from NWS LNG from April 2009, when existing contracts expires. Tokyo Gas signed a 25-year contract in 2004 for 1.07m t/y from NWS LNG.