Gas shortage dents Australia's CBM-to-LNG exports

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CONCERNS are mounting as Australia's coal-bed methane (CBM) to liquefied natural gas (LNG) export projects' production looks set to fall short of targets during the initial years.

Six LNG trains are being built over three projects with a combined investment of over $60 billion at Curtis Island in the state of Queensland. The combined output from the schemes is planned to hit 25 million tonnes per year (t/y) by 2020, roughly equal to Australia's total LNG production in 2013. By the end of 2015, all six trains are set to be up and running. But while, CBM is nothing new, the scale and ramp up of production in the port town of Gladstone is unprecedented and fraught with risk.

Reserves and flow rates remain a concern and there is a risk that ramp up rates could disappoint, said Wall Street research firm Bernstein.

"While we believe there is sufficient gas (if uncommitted third-party reserves are included), the flow rate per well and ability to ramp up production remains uncertain given the geological variability of the coal seams."

Off target

The LNG plants will need a combined export volume of 4 billion cubic feet per day (cf/d) by 2020 to hit the 25 million t/y off-take targets. But analysts at Bernstein believe it will take longer than three to four years to hit plateau rates as production stands at 700 million cf/d today. By way of comparison, it took the US close to a decade to hit 4 billion cf/d of unconventional gas flows from output levels under 1 billion cf/d.

Bernstein's analysis shows that the average well delivers 500,000 cf/d, meaning that 30,000 wells need to be drilled over the life of the projects. This will add a further $20 billion to $30 billion in capital spend, eroding some of the projects' free cash flows.

Australian-based consultancy EnergyQuest describes the job of bringing thousands of CBM wells onstream as a 'mammoth task' and has pointed to the risk of delays emerging.

Meanwhile, the reserves coverage for each project varies considerably. While concerns are nothing new, they are intensifying as these mega projects prepare to start-up. The 7.8 million t/y Gladstone LNG (GLNG) project, operated by Australian independent Santos, is most at risk of a reserves shortfall.

The other two projects are UK gas group BG's 8.5 million t/y Queensland-Curtis LNG (QCLNG) plant, and the 9 million t/y Origin Energy-led Australia Pacific LNG (APLNG) scheme.

With over 30 trillion cubic feet (cf) of proven and probable (2P) CBM reserves in Queensland, analysts believe there should be ample gas to cover off-take agreements for the six trains being built. APLNG seems best placed in terms of cover with over 12 trillion cf of 2P reserves. But GLNG the venture, which also includes Malaysian national oil company (NOC) Petronas, France's Total and South Korea's Kogas, has only 5.4 trillion cf of 2P reserves. Nevertheless, there are still options to make up the short fall especially with the Arrow LNG project – a joint venture between Shell and PetroChina – yet to push ahead with its proposed CBM-to-LNG export development.

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Even the APLNG project, which has the most reserves of the three schemes, is likely to face a shortfall when it starts up next year, US bank Citigroup said.

"We no longer forecast an excess of APLNG gas during its ramp-up," the bank said.

APLNG is owned by ConocoPhillips, Australia's Origin Energy and Chinese NOC Sinopec. Origin, the project's operator, has several deals to supply gas to the neighboring QCLNG and GLNG projects, but due to delays with its upstream infrastructure it will not initially be able to fully meet its original commitments.

QCLNG is due to start up later this year, followed by APLNG and GLNG next year. Citigroup expects the three projects to experience gas short-falls in the 12 months from the fourth quarter of 2015, when all six liquefaction trains are due to be on line, squeezing domestic supplies and forcing up prices.

Competition

The three projects are expected to seek third-party gas supplies in the long term to meet export commitments. Santos has always said it will continue to seek third-party gas and that it will gradually ramp-up production of its second train, over two to three years, to suit the rising volume of gas available from its CBM fields.

BG, which operates QCLNG on behalf of partner China National Offshore Oil Corporation (Cnooc), said last month that it expected to rely on third-party volumes for up to 20% of its gas initially, later declining to about 5% once the plant is operating at full capacity.

Competition from LNG operators is likely to send domestic gas prices soaring to A$10-12 per gigajoule (GJ) in the short-term, later stablising at around $8/GJ ($7.66/million British thermal units) in the longer term in the absence of cheap gas or high price demand, forecasts Citigroup. East coast wholesale gas prices have surged from around A$3/GJ to more than A$8/GJ over the past two years.

"We forecast a small window of opportunity for third-parties to supply the CBM-to-LNG industry at higher prices, before the industry moves back to being self-sufficient," said the bank. ●