

Bumps in road towards Beetaloo gas

Angela Macdonald-Smith

Lacklustre drilling results in the much-hyped Beetaloo Basin in the Northern Territory have stoked doubts in the market over whether the shale gas-prone region will live up to the high expectations of industry and governments.

Initial flow test results released on Tuesday by Tamboran Resources fell short of the threshold that some say is needed for commercial flows.

The drilling taking place in the Beetaloo will be critical to determine whether the region lives up to its promise as a potentially large, lucrative source of gas that could rival some of the shale basins that transformed the US from gas importer to exporter.

The region about 500 kilometres south-east of Darwin is one of the undeveloped gas provinces receiving federal government funding as part of Canberra's plan to support economic recovery from the COVID-19 recession.

The awarding of \$21 million of fed-

eral grants to Beetaloo explorer Empire Energy was blocked in the Federal Court in December, but federal Resources Minister Keith Pitt said at the time the ruling cleared the way for the development of gas in the basin.

While Tamboran chief executive Joel Riddle said there was no justification for any disappointment on the latest results, some in the market are asking whether they are good enough to convince Tamboran's senior partner in the drilling, Santos, to fund further work there.

Funding for the current phase of work is already committed.

"In early wells, it's quite normal to get a conservative result like this because that will allow us to get a stepping stone into the next series of wells," Mr Riddle told *The Australian Financial Review*.

Tamboran, which is backed by US oil and gas billionaire Bryan Sheffield, advised in December that independent analysis estimated that fracked horizontal wells in the Beetaloo needed to

yield at least 3 million cubic feet per day of gas per 1000 metres of horizontal well section to be commercial.

The 30-day flow test at the two Tanumbirini wells achieved normalised rates of 2.5 million and 2.6 million cubic feet per day.

But Mr Riddle said the commerciality threshold estimated by Santos and Tamboran was about 2 million cubic feet per day, while independent modelling showed there was potential in future wells for production of more than 5 million cubic feet per day per 1000 metre horizontal section once fracking was optimised.

He said experienced investors in shale such as Mr Sheffield understood that "this is the natural trajectory" for new basins looking to be unlocked for commercial production.

"The rocks are working as expected and the next steps are to optimise the results with larger and more effective fracture stimulation designs," he said.

Shares in Tamboran dropped 13.5 per cent on Tuesday after the res-

ults were released and regained some of that ground yesterday, climbing 4.9 per cent to 32¢.

Analysts caution that work in the Beetaloo remains in its early stages, and extensive gas processing and pipeline infrastructure will be required to bring gas to market, requiring a large resource to warrant the cost. At the same time, the climate for investments in new fossil fuel developments looks set to get increasingly difficult as climate pressures mount in the journey towards net zero emissions.

One energy analyst suggested the market had "got a bit ahead of itself" in terms of expectations for Beetaloo gas, saying the US's extensive gas infrastructure, well-developed service industry, easier land access and huge domestic market all provided significant advantages over Australia in terms of shale gas development.

"Where is the infrastructure? Where is the market? It's very long-dated," the analyst said, adding there was "no line of sight" to earnings from Beetaloo gas.

The Santos/Tamboran venture is one of a handful now working on drilling and testing for gas in the Beetaloo, including a venture between Origin Energy and Falcon Oil & Gas, and Empire Energy, which is drilling in its 100 per cent-owned acreage.

Empire, which has yet to frack its first horizontal well in the area, on Monday said the Beetaloo basin was in a "pivotal" period given the drilling and testing now under way or planned.

Like Mr Riddle, Empire managing director Alex Underwood pointed to the critical situation in global energy security, with severe energy shortages in Europe, record high international gas prices and geopolitical tensions.

Mr Riddle said, pointing to high prices plaguing Europe, partly driven by under-investment in new supply: "It's sort of playing out like everyone had feared 12 months ago."

"The work we're doing in the Beetaloo, mid term and long term is going to work to offset a lot of the supply crunch you're seeing in Europe."



Rare earths are used in magnets that are important components in wind turbines. PHOTO: GETTY

Critical minerals miners soar as federal loans push clean energy

Michael Bennet

Shares in several critical minerals companies have soared after winning loans from the federal government as part of a push to make Australia a leader in the global shift to clean energy and electric vehicles.

In what was marketed as the government's first cash splash in a rare earths sector, Hastings Technology Metals said it had secured a \$140 million loan from the Northern Australia Infrastructure Facility (NAIF), paving the way for the development of one of Western Australia's next major rare earths projects.

The conditional loan would form part of an up to \$400 million debt funding package for the Yangibana project in WA's Gascoyne region, which would make it Australia's second rare earths producer alongside major Lynas.

It came as the government revealed the first loans under its recently established Critical Minerals Facility worth a total of \$239 million have been provided to graphite miners EcoGraf and Renascor Resources. Shares in the latter soared 20.8 per cent to 29¢, while EcoGraf jumped 7.8 per cent to 69¢.

Hastings Technology Metals jumped more than 10 per cent in early trade before closing up 7.7 per cent higher at 28¢.

"At a time of booming global

demand for smartphones, electric vehicles and other technologies, this commitment ... positions Australia strongly into the future in the critical minerals sector," Trade, Tourism and Investment Minister Dan Tehan said.

Hastings Technology Metals chairman Charles Lew said the NAIF's commitment would enable the company to finalise the funding for Yangibana and move into full-scale construction throughout 2022 before first production by 2024.

The company requires total debt of \$300 million-\$400 million to fund the project, which includes a mine and plant at Yangibana and a hydro metallurgical plant near Onslow on the coast, with a final investment decision expected in "coming months".

"Yangibana is an amazing rare earths opportunity that will supply the world's highest composition neodymium and praseodymium concentrate to tier-one customers in Europe and Asia," Mr Lew said.

Canaccord Genuity analyst Reg Spencer said the 12.5-year, \$140 million loan was larger than expected and followed the company's securing of in-principle support from export credit agencies in Germany and Finland, and commercial banks.

"We assume project capital costs of \$590 million ... compared to [the company's] prior \$449 million plus 15 per

cent contingency estimate in July 2020," he said, noting the company also held \$96 million in cash as at December. "Our assumption reflects current industry inflationary pressures, with finalisation of project capex (and updated project economic assessment) expected in the next month."

According to the company, the Yangibana project will meet about 6 per cent to 8 per cent of global demand for the rare earth minerals neodymium and praseodymium used to make permanent magnets, and benefit from the global boom in electric vehicles and decarbonisation of the energy sector.

These rare earths, known as NdPr, account for around a third of global rare earth demand by volume but more than 80 per cent by value at spot prices as the market remains in deficit amid strong EV demand, according to analysts at Macquarie.

Even after China, the world's biggest supplier of rare earths, this week unveiled higher than expected rare earth production quotas for 2022 - lifting mining and refining quotas 20 per cent to 100.8 kilotonnes and 97.2 kilotonnes, respectively - the analysts said demand would continue to dwarf supply. "The rare earth quota for the calendar year 2022 was higher than we had expected, however we still believe the NdPr market remains in deficit despite the increased supply," the analysts said.

Fortescue adds Sparc Hydrogen to its assets

Colin Packham

Fortescue has acquired a minority stake in a hydrogen technology company as the miner's clean energy division seeks to position itself to capitalise on soaring demand for fossil fuel substitutes.

Fortescue Future Industries will spend \$1.8 million to take a 20 per cent stake in Sparc Hydrogen, which has an exclusive licence to develop and commercialise green hydrogen technology created by the University of Adelaide and Flinders University. FFI has the option to increase its stake to 36 per cent for an additional \$1.475 million.

Sparc Hydrogen is researching technology which could see green hydrogen produced by only sunlight and water, instead of using electrolysis powered by renewable sources.

Should the technology prove viable, Fortescue would be able to produce hydrogen without the need for electrolyzers, which are typically expensive and require substantial energy.

When powered by renewable energy, the electrolyser - which splits hydrogen from water - does not produce emissions. The process can, however, also be powered by fossil fuels.

FFI chief executive Julie Shuttleworth said: "There is irrefutable scientific evidence that the planet is warming. Green hydrogen is a practical, implementable solution to decarbonise hard to abate sectors, including heavy industry."

"The research being undertaken by Sparc Hydrogen is important for FFI's growing technology portfolio as we continue to develop technologies to lower emissions globally. We are excited to enter into this relationship and to support this critical research into green hydrogen."

Fortescue said last year it would build a \$1 billion electrolyser factory in Gladstone in central Queensland. The project is expected to break ground this month.

Fortescue chairman Andrew Forrest has described the development of the electrolyser factory as critical if Australia is to fully capitalise on demand for hydrogen.

China is the world's largest producer of electrolyzers, stoking concern that Australia is falling behind.

Fortescue has moved aggressively to expand its hydrogen presence, which is tipped to see substantial growth as



FFI's Julie Shuttleworth says the "research being undertaken by Sparc Hydrogen is important for FFI's growing technology portfolio". PHOTO: TREVOR COLLENS

the world seeks to limit catastrophic global warming.

Wood Mackenzie said last year Australia was at the head of a group of nations chasing huge opportunities in the export of hydrogen. Demand may climb as much as sixfold by 2050, the company said.

Global demand for low-carbon hydrogen could reach as high as 530 million tonnes by mid-century under the 1.5 degree warming scenario, with almost 150 million tonnes of that involving cargoes shipped by tanker, Wood Mackenzie said.

Many expect hydrogen to be the main source of fuel in heavy industrial vehicles, supplementing batteries that would be the main source of power for passenger cars. That theory is built on the notion that a battery capable of powering a haul truck full of iron ore would be unsuitably large and heavy.

Fortescue agreed last week to a \$311 million deal to acquire a battery and engineering company with historic links to the famous Williams Formula One motorsport team, which the miner said would help it build batteries for trucks and trains.