

# Gold to hydro plan a revolution for Evolution

A big hole in the ground is a rehabilitation liability for most miners, but renewable energy could turn Queensland's ageing Mt Rawdon gold mine into Evolution's most valuable asset.

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At the Mt Rawdon project 75km southwest of Bundaberg, Evolution Mining is plotting a quiet revolution in the way it looks at the closure of old gold mines, in a plan that could turn an ageing low-grade producer into the company's most valuable asset.

And it's not through a new gold discovery, but the realisation that a big hole in the ground is a valuable asset for renewable energy players looking for a way to smooth out the power generated by intermittent generators such as wind and solar.

Mt Rawdon, for a time the source of gold used to make the Melbourne Cup, has produced more than two million ounces of gold since the mine opened in 2001, and it is due to close in 2027.

But for the last three years Evolution has been quietly working away on a plan to turn Mt Rawdon into a pumped hydro battery capable of generating 2GW of energy for 10 hours – enough to make a valuable contribution to the Queensland energy grid as the state looks to shutter ageing coal plants and generate half of the state's energy needs from renewable energy sources by 2030.

Mt Rawdon is far from the only old mining pit being considered as a possible pumped hydro facility, but Evolution executive chairman Jake Klein said the decision to consider the pumped hydro as a closure option while the mine was still operating represented a revolution in the company's thinking about how to make the best use of its assets, and to try to look after the community it has supported through its decades of operations.

“Mt Rawdon, when bought when our company was formed in 2011, was our most valuable gold asset. Today in 2022, it's not our most valuable gold asset. It's probably – and I'm being a little unkind – our least valuable gold asset because we've

improved the quality of our portfolio,” he said. “But it has the potential by 2028 to be our most valuable asset again.”

The plan is to build a second water reservoir in the range above Mt Rawdon, and drill a pipeline and install turbines to generate power. Water would be pumped into the top reservoir when renewable power is plentiful, and generate power when the sun isn't shining and the wind isn't blowing.

As a potential pumped hydro facility, Mt Rawdon is “blessed by history, topography and location”, according to Mr Klein.

“We have effectively spent about a billion dollars mining 200 million tonnes of material which has been processed for gold production over the 25-year period of its life. That billion dollars has created a big hole which can be used as the lower reservoir of the pumped hydro scheme,” he said.

The topography of the surrounding region also delivers Mt Rawdon a perfect location for an upper reservoir. And Mt Rawdon sits only 25km from major power lines connecting Queensland's southern and central grids.

And on top of that, the timing of the mine's closure almost perfectly aligns with Queensland's decarbonisation strategy, with the state due to close the 700 megawatt Callide B coal-fired power station in 2028.

Traditionally, mines like Mt Rawdon have become hand-me-downs. As mining becomes more difficult and margins diminish, older mines are typically sold down the chain from bigger companies to smaller, until the resource finally runs out.

There is still gold at Mt Rawdon, but a final cutback of the open pit would be expensive. “There is more gold there. It really may be attractive to someone else. But for us to do a stage five cutback really wouldn't fit within our portfolio at that stage,” Mr Klein said.

But thoughts of selling the operation changed when consulting group ICA approached Mt Rawdon's local management to talk about alternative options for the end of the mine's life, including its use as a pumped hydro scheme.

“To the credit of the site management at that time, they started to think about it and became convinced about it,” Mr Klein said.

“And from our perspective it would be just amazing to be able to create an asset which is multi-generational for the wider region.”

Mr Klein said the hope was a pumped hydro facility would provide ongoing local jobs for employees currently working at Mt Rawdon, and assume the gold mine's role as an economic hub.

Despite the billion-dollar head start, turning Mt Rawdon into a giant battery would still be a multibillion-dollar project. But there is plenty of cash sitting on the sidelines of the capital markets for renewable energy projects, and the Queensland government is already following Evolution's feasibility studies closely.

Mr Klein said Evolution was not planning to build the pumped hydro facility itself or retain a major ownership stake, but Mt Rawdon could help the gold miner's decarbonisation plans.

"The key thing for us is to decide on the ownership. And our understanding is that the Queensland government's preference is to own a majority of these assets or a majority percentage of these assets, but they only want to acquire them post the feasibility study," Mr Klein said.

He said power offtake agreements would also need to be negotiated, but there was no shortage of potential buyers for renewable energy in the region.

"But the absolute home run for me would be if Evolution could retain not necessarily a large piece of ownership, but a disproportionate amount of the carbon credits so that we would effectively become the world's first green gold miner," he said.

"There's a lot of structuring work that needs to go into that, but to me that would be a remarkable outcome for Evolution."

Timing remains key to the success of the plan, and Mr Klein said Evolution wanted to move quickly to ensure Mt Rawdon was ready to go when the Queensland energy system needed it, with a feasibility study into the plan due for completion by mid-2023.

"The feasibility study will be completed in the middle of the year. By the end of the year hopefully we have project commitment and funding so that it basically gets built over the next five years and times with the closure of the mine and the closure of those coal-fired power stations," he said.

Built by Nick Giorgetta's Equigold, Mt Rawdon has produced more than two million ounces of gold from its low-grade deposit since entering production in 2001.

Equigold merged with Lihir Gold in a \$1.1bn deal in 2008, and then entered the hands of Newcrest Mining in 2010 in a \$10bn deal targeting Lihir's giant Papua New Guinea mine. But, while always a stable and consistent performer, Mt Rawdon was surplus to Newcrest's requirements and was bought by Evolution in 2011, becoming its flagship asset.

Evolution has since acquired a swath of other quality gold assets, and with only about 300,000 ounces left in current reserves Mt Rawdon is expected to close in 2027. Mr Klein said Mt Rawdon's consistency and longevity was a tribute to the quality of the original design and construction of the mine, which has kept about 250 workers – largely drawn from the Bundaberg region – in employment through its operations.

"It's a testament to Nick Giorgetta and his skills that this mine is still operating. It has always been a low-grade operation, but it's been a remarkably efficient and successful operation," he said.

Nick Evans has covered the Australian resources sector since the early days of the mining boom in the late 2000s. He joined The Australian's business team from The West Australian newspaper's Canberra bureau, w... [Read more](#)

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