



Cassini Resources (ASX: CZI)

Cassini Resources Set to Ride the Nickel Cycle High

Cassini Resources (ASX: CZI) is well-positioned to take advantage of the expected growing global demand for nickel and copper created by the emerging electric vehicle industry

THERE WAS A TIME IN THE NOT-TOO-DISTANT past when it was thought that stalwart metals such as nickel and copper were to become the horse-and-cart of modern battery technology as demand grew for a fresher suite of commodities.

That was until technology overlord and Tesla CEO Elon Musk was reported on the Benchmark Mineral Intelligence Blog to have said:

“Our cells should be called nickel-graphite, because primarily the cathode is nickel and the anode side is graphite with silicon oxide... [there’s] a little bit of lithium in there, but it’s like the salt on the salad.”

It was a moment that made the market stand back and take notice of the position nickel could once again occupy on the global stage.

As analysts and market watchers realised the importance of nickel and its capacity as a critical input for electric vehicle battery manufacturers, Musk’s words and the subsequent response were not lost on mining giant BHP, which flagged its intention to take its share of the electric vehicle inspired nickel pie by building the world’s biggest nickel sulphate plant.

BHP Nickel West will spend \$US43.2 million on a downstream processing plant at Kwinana, south of Perth, as part of a broader plan to reposition the business around the lithium-ion battery market.

BHP Nickel considers demand from the battery market could account for about 90 per cent of BHP’s nickel output within five or six years.

The conversation in the nickel market has been driven by this demand, particularly surrounding the industry’s preferred feedstock—high purity nickel sulphate.

It is becoming apparent that an insufficiency of sulphate production capacity exists to meet even the conservative demand growth scenarios being developed.

“There is a demand for good sulphide feed,” Cassini Resources managing director Richard Bevan told *The Resources Roadhouse*.

“Through our original scoping study and the current Further Scoping Study, we have demonstrated that we can produce a high-quality, clean concentrate that will be very marketable.”

“The other thing presently in our favour, is that there are very few projects like ours in the pipeline.

“Now that the Nova operation of Independence Group (ASX: IGO) has come online, we haven’t been able to find another nickel sulphide project to be at the same stage we are – one that is funded, and of the same scale as the West Musgrave Project.”

Cassini Resources’ focus of late has been centred on the company’s West Musgrave Project, which is subject to a farm-in and Joint Venture deal with OZ Minerals (ASX: OZL)

The WMP is a world-class asset with a current Resource boasting over 850,000 tonnes of contained nickel and 1.8 million tonnes of contained copper within the Nebo and Babel deposits.

It also contains the 156 million tonnes at 0.6 per cent copper Succoth deposit.

The farm-in and Joint Venture Agreement entitles OZ Minerals to earn up to 70 per cent of the project by spending \$36 million towards feasibility studies and exploration.

The first stage of the farm-in is currently underway and involves Further Scoping Study (FSS) activities aimed to follow-up results achieved in an earlier Scoping Study completed by Cassini in 2015.





The latest work includes metallurgy, mining optimisation and alternative power solutions, and is due for completion during Q4 this year.

The testwork carried out by Cassini in the 2015 scoping study was focused on the relatively high head grade ore domains, which would be processed through a 1.5 million tonnes per annum treatment plant.

The FSS testwork program has been looking at whole ore composites and variability samples, representative of the ore domains and average head grades aligned with the increased project size development options.

To date, the JV has been able to increase its understanding and confidence in the metallurgical performances across a complete range of mineralisation types within the Nebo-Babel deposits.

This was achieved through focussing on lower head grade samples across the primary and weathered ore domains, some of which were not previously tested.

A major component of the testwork included optimisation of the process flow sheet, and testing of alternative reagent regimes, all of which were aimed at further improving nickel and copper recoveries and concentrate grades.

The program has produced separate, saleable nickel and copper concentrates from all mineralised domains, from which Cassini expects to receive by-product credits for cobalt, platinum, palladium and gold.

“When we commenced the FSS we were targeting two key technical outcomes to ensure the viability of the project—the identification of a near-by groundwater source, and confirmation that the metallurgy results we had previously achieved

could be reproduced at lower nickel and copper grades and throughout the weathered zones,” Bevan said.

“We were extremely pleased to achieve positive outcomes in both endeavours.

“The most important outcomes were that the metallurgical program confirmed there to be no fatal flaws in the mineralogy and that the processing flowsheet will be comparable to other nickel and copper sulphide projects globally.

“With the amount of metallurgical work for a scoping level study we have carried out through the course of the FSS, we are extremely confident that we will continue to improve these outcomes as we progress through the next study phases.”

Cassini has no desire to rest on its metallurgy laurels and is preparing further work on the optimisation of concentrate grades and recoveries by completing additional locked cycle tests on multiple master composites, representing run of mine material across different ore domains and nickel and copper grades at various stages through the mine plan.

Cassini also completed a trial magnetic separation test on Nebo massive sulphide mineralisation as an alternative processing method aimed at improving nickel concentrate grade in the final step of the process flow sheet.

This produced encouraging results, including a 11.7 per cent nickel concentrate with greater than 80 per cent recovery.

This proof of concept will be applied to the disseminated styles of mineralisation, and if proven successful could potentially lead to lower capital and operating costs.

An important aspect of the deal with OZ Minerals that should not be

overlooked is that as a junior exploration and development company, Cassini is free carried through to a Decision to mine at the WMP.

The farm-in/JV also includes OZ to undertake a minimum of \$8 million expenditure on regional exploration in Stages 2 & 3.

All of which, provides the company with a clear and defined development pathway to cashflow.

“The thing that we have always believed with the West Musgrave Project, which we have demonstrated and now confirmed with this latest work, is that we are going to have a project that has a long mine life – that allows us to take advantage of the cyclical nature of commodity prices,” Bevan said.

“A really key decision for us will be whether OZ Minerals wants to proceed or not.

“It’s always been a big project, so for a company like Cassini the question has always been – how do we fund that?”

“Should OZ decide to push the button on the next phase that immediately provides more certainty around the funding pathway.” 🍷

The Short Story

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