STOCKS DOWN UNDER

15 APRIL 2021

Resources Stocks Down Under

"I learned law so well, the day I graduated I sued the college and got my tuition back."

- Fred Allen (1894 - 1956), American radio comedian

NEOMETALS

Ahead of the curve on battery recycling

METALS X

Tin is out of the can

FYI RESOURCES

This High Purity Alumina is almost as pure as the driven snow

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Stocks Down Under rating: ★★★★

ASX: NMT
Market cap: A$ 248M

52-week range: A$0.14 / A$0.47
Share price: A$ 0.445

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Share price chart

Source: Tradingview

As we all know, the lithium-ion battery has a great future ahead of it because of all those Electric Vehicles (EVs) that are going on the road. But have you thought for a second about what happens to all those batteries when they finally reach their use-by date? Because the EU has. In December 2020 the European Commission proposed new battery regulation to make such products more 'sustainable'. What the Commission wants is minimum recycling quotas for batteries entering the EU, and, starting in 2027, it wants those batteries to come with a declaration of their recycled cobalt, lead, lithium and nickel content. Around 2030 it wants minimum recycled content quotas, and five years after that, it intends to take the quotes up. So, for example, in 2030 every battery would have to have 4% recycled lithium, but in 2035 that would rise to 10%. The general thinking is the more recycling, the less carbon emissions.

From the company that brought you Mt Marion

Neometals has spent the last few years developing a recycling technology which it believes will fit the bill for the kind of policy proposed for the EU. You may know Neometals as the company that picked up the Mt Marion Lithium Project near Kalgoorlie in 2009, back when it was called Reed Resources and before most people realised how valuable hard rock lithium plays would become. When Neometals finally sold its last

13.8% of Mt Marion to its current owners, Mineral Resources (ASX: MIN) and Ganfeng it made $103.8m on the deal in early 2019. So, it's fair to say that Neometals has a reputation for being ahead of the game in its chosen field.

The recycling technology that Neometals believes will be its next company-maker has its origins in the work of Dr Bryn Harris, an authority on metallurgical processes and formerly of McGill University in Montreal, and his colleague Carl White. When Neometals was looking for ways to produce titanium dioxide from its Barrambie Titanium Project in Western Australia, it licensed the Neomet hydrometallurgical process that those two had created.

From Dusseldorf, with love

From early 2017, on the conviction that lithium-ion battery recycling was going to be huge in the future, Neometals worked with Harris and White to develop a patented process (see WO/2018/223192) that could extract more than 90% of the lithium, cobalt and other valuable metals from such batteries. By June 2019 a scoping study had shown that the process was very economic and that, in turn, attracted the Dusseldorf-based SMS Group as a potential joint venture partner. It was when the SMS joint venture was formalised in August 2020, off the back of some great pilot data in November 2019, that Neometals' stock re-rated.

If you thought SMS Group was some kind of tech company that had pioneered text messaging you'd be mistaken, but you probably wouldn't be alone. Neometals' new partner is, in fact, the world's largest maker of steel production machines and a major supplier of metallurgical plants. It's one of those huge, but understated (because family-owned) 'Mittelstand' companies that have been around since the 19th century and made Germany the manufacturing envy of the world.

How huge is this SMS? A mere €3bn or so in annual revenue. It's fair to say that the folks at SMS know a thing or two about metallurgy. Under the August 2020 deal, which created a joint venture company called Primobius GmbH, SMS will now build a demonstration plant for the Neometals battery recycling technology in Germany and complete a feasibility study for the technology. That study isn't expected to be completed before 2021 is out, but in the meantime MoUs for the technology are already being signed with other players in the battery space, such as InoBat in Slovakia and Itochu in Japan.

Cashed up for battery-related opportunities

Neometals has other battery-related projects in its hopper. It believes that Barrambie can be developed as a titanium-vanadium project. And it's also working on a lithium refinery idea as well as a vanadium extraction technology. Should it choose to do more serious work on these projects it has the cash resources to do so, with A$73m still available after the 2019 Mt Marion deal. However, the Primobius joint venture is where all the action is right now.

How valuable is Primobius, potentially? Well, there's a company called Li-Cycle in Toronto that was founded in 2016 to develop a battery recycling process not unlike Neometals' and it is currently going public on the New York Stock Exchange through its acquisition by a SPAC (Special Purpose Acquisition Company) on that exchange. The pre-money equity valuation for Li-Cycle? A mere US$975m, which is A$1.26bn. That might seem high for a tech startup, but everyone agrees that before too long there are going to be a lot of lithium-ion batteries in need of recycling. Li-Cycle represents upside for Neometals, even after the re-rate. With 2021 likely to be a year of progress for Primobius, we rate Neometals as four stars.

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Share price chart

Source: Tradingview

Now is a great time to be a producer of tin, that is, Element No. 50 on the periodic table. On the London Metals Exchange tin was just US$13,000 a tonne at the bottom of the Corona Crash in March 2020. By February 2021 it was close to US$27,000 a tonne and it's not far away from that level now. And no wonder. You see, tin is no longer one of those prosaic metals you use to make cans and tinfoil. Ever since it became a replacement for lead in solder for connecting electronic circuits, tin is very much a 21st century commodity. And one there's a shortage of at the moment because of the worldwide shortage of semiconductor components that Marc and Stuart talked about in their Friday Beers programme back on 26 February. You can check it out in the Insights section of our web site, stocksdownunder.com.

The mine that just keeps on delivering

Metals X is a significant beneficiary of tin's return to favour because its company-maker was the Renison Tin Mine in Tasmania, located near Zeehan on the island's mineral-rich West Coast. Metals X didn't discover the mine. If you consult the venerable Australian Dictionary of Biography you'll learn that George Renison Bell (1840-1915) did that way back in 1890. Indeed, Metals X is just the latest of many owners, including one who older investors may remember called Renison Goldfields Consolidated, for which the tin mine was a foundation asset.

What Metals X did do was buy at the right time, acquiring the operation in 2006 when the price of tin was lousy and mining was suspended, but where the upside was strong because Renison has historically been one of the highest grade tin mines in the world.

It's not Area 51, but Area 5's returns could be out of this world

In June 2020 Metals X announced the completion of a mining optimisation study which suggested that Renison was good for the rest of the decade. The company had drilled a new resource in a part of the mine site imaginatively called 'Area 5' and found that it now had 9.3 million tonnes of ore to work with over the next ten years, grading a very nice 1.4%. $50m or so in capex would allow Area 5 to be profitably exploited and Renison's All-In Sustaining Costs would gradually trend down from about A$19,000-20,000 a tonne at the start to more like A$16,000-17,500 a tonne after about five years.

Metals X only owns 50% of this bonanza, with the other half held by China's Yunnan Tin Group. But that 50% of the mine plan still had an NPV of $185m at an 8% discount rate. And that was calculated using a tin price of under US$17,000 a tonne. Tin, as we noted above, has been doing a lot better than that lately. However, the current market cap of Metals X is only A$213m. And that's after Metals X agreed to sell the Nifty Copper Mine in WA's Pilbara region on 10 February, along with a couple of other exploration projects. The buyer is Cyprium Metals (ASX: CYM) paying $60m, which is around the level of capital required for Renison. All of which might explain why Executive Director Brett Smith was an on-market buyer of Metals X stock on 3 March at 20.5 cents per share.

Potential nickel upside as well

At the current market capitalisation of Metals X you're getting the Wingellina Nickel-Cobalt Project for almost nothing. Wingellina is part of Metals X's Central Musgrave Project, which straddles the point where the borders of Western Australia, South Australia and the Northern Territory converge at 129 degrees East longitude and 26 degrees South latitude.

Wingellina covers a resource of 1.95 million tonnes of nickel and 154,000 tonnes of cobalt, which makes it the largest undeveloped nickel-cobalt project in Australia. And get this: The yellowish-brown host mineral of this resource is limonite.

You heard that right – this 2 million tonnes of nickel is in just the right mineral to make High Pressure Acid leaching work like a dream. The environmental approvals and Native Title Agreements are in place and the only downside is that 129 E / 26 S is truly in the middle of nowhere. But with nickel and, importantly, cobalt looking good right now we suspect the time is right for some decent partnering discussions for Wingellina.

But to return to Renison and its tin riches, Tin has a habit of being a 'boom or bust' metal, with the busts caused by major discoveries, such as Bom Futuro in Brazil in 1986 or Man Maw in Myanmar in 2013. Both those discoveries resulted in significant market oversupply. What could be different about the current boom is the fact that tin might be moving beyond its use in solder into even bigger territory. How big? There's a school of thought that tin could be a great metal to enhance the performance of Electric Vehicle battery anodes. Throw in the paucity of new tin mines out there and Metals X could be well placed for a while yet. Four stars from us.

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Share price chart

Source: Tradingview

If you grew up in Australia you doubtless heard a lot about the various pieces of the aluminium ecosystem over the years. That's because our country became a major player in aluminium in the 1960s, thanks in part to Alcoa and Western Mining, as well as other companies. Today, Australia is the world's biggest producer of the raw material, bauxite. It also refines some of that bauxite into alumina, that is, aluminium oxide (Al2O3), while some of that alumina is smelted into aluminium metal. And now, in the 2020s, Australia is set to add another string to its aluminium bow by getting into High Purity Alumina. On 11 January 2021 we wrote about HPA when looking at Alpha HPA (ASX: A4N). In today's article we look another strong contender, FYI Resources.

From low value clay to high value HPA

High Purity Alumina is simply alumina where at least 99.99% of the product is Al2O3 and nothing else. In the trade they call that '4N' HPA. 99.999% HPA is 5N. Used since the 19th century, The Bayer Process to get alumina leaves you with various impurities, such as silica, iron and magnesium. With HPA these are virtually non-existent. HPA is very much a 21st century commodity. If you're making sapphire glass for smartphones or wristwatches you'll need HPA. Same deal with light emitting diodes. And it probably won't surprise you to learn that HPA is increasingly important in the lithium-ion battery space, where it is used as a coating for the separator between the battery's anode and cathode. The price premium tells you how valuable HPA can be. If boring old smelter grade 99.9% alumina might sell for US$1,600 a tonne, 4N might take that to more like US$24,000 a tonne.

About four years ago FYI Resources got hold of a kaolinite deposit at Cadoux, 220 kilometres northeast of Perth in the WA Wheatbelt (the name is pronounced by the locals as 'Cadoo'). Kaolinite is a clay mineral traditionally valued for its use in coated paper, where it helps add the gloss. Since it's mostly alumina, however, it makes a great starter material for HPA and the vendors of the Cadoux project had already worked out an HPA flowsheet. In October 2017 FYI showed at benchtop level that it could get 4N from its kaolinite and by September 2018 a Preliminary Feasibility Study was showing that it could produce around 8,000 tonnes of 4N for 25 years at about US$6,500 a tonne. US$179m in capex would get you a post-tax NPV of US$506m at a 10% discount rate. Not bad.

Good morning Pittsburgh

Alas, the market more or less shrugged its collective shoulders for the next couple of years. It ignored the fact that by the end of 2019 FYI had a site at Kwinana, south of Perth, for its HPA refinery and had successfully produced HPA from a pilot plant that was not quite 5N, but had made it to 99.997% purity. And FYI was doing the job properly, with the industry-standard 'locked cycle testing', where you first complete one full batch, but then in subsequent batches use intermediate material from the previous cycle to show that the whole production cycle is foolproof.

It took until last year for FYI to get its first big break. Not so much when the Cadoux Definitive Feasibility Study published in March, because nothing much had changed from the PFS except the capex bill, slightly higher at US$198m. And the cost of production was down about 4% and closer to US$6,200 a tonne. The result was a US$543m NPV, but the world was coming to an end in March 2020 so who really cared? In September 2020, by contrast, everyone sat up and took notice because that was when FYI signed a Memorandum of Understanding with Alcoa. That's right, Alcoa, NYSE: AA, 2020 revenue of US$9.3bn. It wanted to look at getting involved with Cadoux/Kwinana. That Fortune 500 behemoth more or less invented the aluminium ecosystem as we know it today so FYI was now, potentially, a serious player.

A billion dollar payday on the horizon

The key step in the Alcoa MoU process was for the two companies to collaboratively trial FYI's HPA production process. In February 2021 FYI was able to announce that this time around it had obtained 99.9986% HPA, which again suggests that the Perth-company has the Right Stuff the folks in Pittsburgh are looking for. The next step will be to see what users of the product think of it. That work is ongoing.

Late in March 2021 FYI updated its DFS. It took the discount rate down to 8% and added in some 5N HPA revenue in addition to 4N, among other changes. The result was a post-tax NPV of US$1.014bn. That's A$1.33bn in our money, reflecting the fact that this company now ticks most of the boxes that would take Cadoux/Kwinana into production in a market environment that would value what FYI has to sell. Sure, FYI has re-rated nicely since the Alcoa MoU, but we think the best is yet to come. Four stars.

Pitt Street Research Pty Ltd

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