

Australian Strategic Materials demerger from Alkane Resources unlocks shareholder value

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[Australian Strategic Materials Limited](#) (ASX: ASM | ASMMF) (“ASM”) is the result of [Alkane Resources Ltd.](#) (ASX: ALK | OTCQX: ALKEF) demerging their Dubbo rare earths and poly-metallic project [in late July 2020](#) to form a new listed company. The combined market cap of Alkane Resources and ASM now exceeds its previous value as a single company, showing that the demerger achieved its goal of unlocking shareholder value.

The key assets of the newly-listed Australian Strategic Materials (“ASM”) include:

- **The Dubbo Project** (flagship) is a 100% owned ‘construction ready’ poly-metallic and rare earths project with potential to become a key global supplier of specialty metals and rare earths. The Dubbo deposit is a proven, large deposit of Zr, REE, Nb and Hf minerals
- **Metals Technology Business** – ASM is investing in new technologies related to the separation, purification and metallisation of oxides. Their JV pilot plant with ZironTech is now in operation.
- **Toongi Pastoral Company** – The company owns 3,500 hectares of freehold and leasehold land 25kms south of Dubbo, NSW, Australia.

What’s happening now with Australian Strategic Materials

ASM’s strategy is to not only produce rare earths concentrate but to go further up the value chain and produce various

strategic metals. Should ASM succeed, it would place them in that exclusive club in the mining industry of being an alternative strategic high value metals producer outside of China.

To achieve this goal of producing metals from their Dubbo Project, ASM is working with their Joint Venture (JV) partner, South Korea's Zirconium Technology Corporation ("ZironTech"). The JV is now advancing a pilot project to produce various metals by combining their proprietary process with ZironTech's metallisation technology. ASM has exclusive global commercialization rights under the licence. The pilot plant is now up and running in South Korea.

Australian Strategic Materials plans to move up the rare earths and strategic materials value chain



[Source](#)

The latest progress in pilot testing the extraction of strategic metals:

[July 2, 2020](#) – ASM/ZironTech JV produces titanium metal alloy with a 45% power saving. The commercial pilot plant was commissioned on time and on budget, with ~30kg of titanium metal alloy produced. A subsequent run of the pilot plant produced another 22kg of titanium metal alloy, with up to [50% less](#) energy than current commercial production methods. Then in August ASM [reported](#) that their JV produced 9.16kg titanium (Ti) metal powder assaying 99.83%.

[July 13, 2020](#) – ASM/ZironTech JV produces high quality neodymium (Nd) metal alloy, with successful laboratory production of ~1kg

of neodymium metal alloy.

ASM & ZironTech produce a ~1kg of neodymium (87%) metal alloy using their 45% more efficient reduction process at their pilot plant



[Source](#)

[August 19, 2020](#) – JV produces second key permanent magnet metal, praseodymium (Pr). Commercial pilot plant produces 5.3kg Pr metal assaying 99.3%. JV announces a forward plan for commercial pilot plant production of neodymium, praseodymium and dysprosium metal in August.

ASM & ZironTech produce 5.3kg of high purity praseodymium metal (99.3%)



[Source](#)

“This is a major milestone in ASM’s integrated strategy that includes clean metal production for all products from the development of the Dubbo Project in Central West NSW”, [according to](#) ASM’s Managing Director, David Woodall. “This integration of metal production into ASM’s business is consistent with the Australian Government’s objective of adding value within Australia, while ensuring supply security and stability of these critical materials to global and domestic Australian manufacturing sectors.”

The Dubbo Project is a large resource of zirconium, hafnium, niobium, and rare earths (including praseodymium, neodymium, and yttrium). It is the most advanced poly-metallic project of its kind outside China. The Project has an estimated 70-year mine

life and can be an open pit design. The Project is ready for construction with all major state and federal approvals and licenses in place. The [2013 DFS](#) resulted in a pre-tax NPV8% of A\$1.235 billion, and a pre-tax IRR of 19.3%. The Company has since proposed a two stage production start up so as to lessen the first stage CapEx from an estimated US\$930 million to [US\\$480 million](#). A [follow up FS](#) plans to incorporate the new and improved processing techniques from their ZironTech JV.

Closing remarks

Rare earths are not rare in the earth's crust, however extracting and purifying them is the challenge that has traditionally been an expensive and polluting process, mostly done in China. What ASM and their JV partner ZironTech are doing is revolutionizing the process of rare earth metals production, using much more energy efficient methods that are also less harmful to the environment. It is still early days with their pilot plant testing however results so far with titanium, neodymium, and praseodymium appear to be highly promising.

Effectively ASM is working towards becoming a vertically integrated ("mine to metal") western producer of high purity strategic/critical and valuable metals. Subject to further testing and funding [the plan](#) is to have clean metal processing plants in Korea and Australia. More efficient processing techniques should significantly improve the economics of ASM's Dubbo Project as well as opening up the opportunities for wider commercialization of their breakthrough technology.

The market seems to agree. Australian Strategic Materials' stock price has doubled so far in August and ASM is now trading on a market cap of A\$264m.

Alkane's Chalmers on the supply shortage of rare earths

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"Surprisingly the rare earth market still has not shown the jumps that we believe it would have by now. The equity market is still very skeptical of us. I think that is a combination of things. Eventually the customers, the equity market are going to lock on or understand that if we are going down this path, which we all believe we are going, then the demand for rare earth magnets is just going to have to increase dramatically and there is not the supply around at this point in time." States Ian Chalmers, Technical Director of [Alkane Resources Ltd.](#) (ASX: ALK | OTCQX: ANLKY), in an interview with InvestorIntel Corp. CEO Tracy Weslosky.

Tracy Weslosky: Ian, the headlines everywhere, we have got U.S.-China trade negotiations happening. We have China and Canada at each other. What is happening with the rare earth market?

Ian Chalmers: That is a good question actually. It is pretty hard to summarize in a short space of time. Surprisingly the rare earth market still has not shown the jumps that we believe it would have by now. The equity market is still very skeptical of us. I think that is a combination of things. Eventually the customers, the equity market are going to lock on or understand that if we are going down this path, which we all believe we are going, then the demand for rare earth magnets is just going to have to increase dramatically and there is not the supply around at this point in time. At some point in the not too distant future the market is going to crack and we are going to see some

really, really strong interest.

Tracy Weslosky: Ian I think we are both getting our updates on what is happening with Lynas for instance from just the general news media. What is your understanding of what is happening right now?

Ian Chalmers: My understanding, and again like you I am just getting it from the public domain, is that Lynas had been instructed that they have to come up with a solution to the radioactive waste. Now in the meantime they have stopped production. I understand it was only initially for a month while this review was completed, but they have to come up with an issue to deal with the radioactive waste that is already on site. It is a serious problem, but it is a problem I do not believe the Malaysian government cannot resolve because there is too much outside influence on the Malaysian government. There is a strong relationship between Japan and Malaysia and really a lot of Lynas' product goes to Japan. I think I would be very surprised if the Malaysian government shut down the operation.

Tracy Weslosky: I really appreciate the update with that. Speaking of updates, considering the size and the magnitude of your critical material resource, can you give us an update on what is happening with the Dubbo Project?

Ian Chalmers: Basically the Dubbo Project is ready to go. We are continuing to work on offtake agreements. We are continuing to work on the finance. One of our major issues is our customers, particularly in the rare earth space keep wanting to see discounts. They want to see discounts to Chinese domestic price. In other words they are saying to us, yeah we will sign an off take contract, but you accept the 7%-8% vet as a discount and you put another small discount on top of that as the Chairman stated at the lead in to our annual general meeting back earlier

in November...to access the complete interview, [click here](#)

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Alkane's Nic Earner on the 'Critical Link' between lithium and rare earths

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May 18, 2018 – “This conference is going to focus a fair bit on the battery, but I am going to talk about what this battery drives, which in general is a rare earth permanent magnet. I think we can all agree on the scale of the trend. There is a trend occurring and it is one of the most fundamental and rapid shifts we have seen in consumer behavior in a generation. Rare earths, particularly the permanent magnets, are going into all these places, but the big change that is coming is the drivetrain...” states Nic Earner, Managing Director of [Alkane Resources Ltd.](#) (ASX: ALK | OTCQX: ANLKY), in a recent presentation at the 7th Annual InvestorIntel Summit – Buds, Batteries & Blockchain 2018.

Nic Earner: I am going to focus on industry dynamics as distinct from talking about our project. If that disappoints you, you can grab my colleague John or I and we can make it so that you regret ever asking us at lunchtime and also we can tell you the joke I was going to tell you until I realized I was being recorded. I also have an update to our business case for our

Dubbo Project coming out in May as well. That will have a lot more data. I do not need to convince this audience because we just heard there from Paul that there is a significant transformation in the specialty metal sector underway at the moment. Here is a Tesla. I love the fact that it has got no grill. I think that is the most subtle piece of marking I have ever seen in a car. I think it is fantastic. This conference is going to focus a fair bit on the battery, but I am going to talk about what this battery drives, which in general is a rare earth permanent magnet. I think we can all agree on the scale of the trend. There is a trend occurring and it is one of the most fundamental and rapid shifts we have seen in consumer behavior in a generation. Rare earths, particularly the permanent magnets, are going into all these places, but the big change that is coming is the drivetrain because actually rare earth magnets are being used in the devices inside doors and windows and wipers for quite a few years. Most major manufacturers have been debating, do or do they not incorporate rare earth permanent magnets inside their drivetrains and they are starting to do that now. The Tesla long-range vehicle has a rare earth permanent magnet. These magnets consume about 0.7 to 1 kilogram per vehicle of neodymium and praseodymium in the vehicle. Depending on how many bells and whistles you buy in this one or the Mercedes S Class you will be up at $1\frac{1}{2}$ kilos in the other drive (inaudible) within the vehicle, but there is a minimum of 0.8. You are talking somewhere around $1\frac{1}{2}$ kilos of rare earths in each electric vehicle. Numerous projections on this; I will not spend too long. We can see that from ground zero we are talking $6\frac{1}{2}$ times the amount of rare earths. People can argue about the ups and downs to that, but broadly we can agree that there is a fundamental shift occurring in the market. It is really interesting. We as a company go looking for offtake contracts to launch the project. The most common thing that I have heard across this last year has been, rare earths have got a problem

there mate. Well, they actually do not say mate. That is me. They say, I know we have got a problem there, but we are going to get to that soon. We are so busy dealing with the lithium and cobalt supply chain issue at the moment that we will deal with rare earths later...to access the complete presentation, [click here](#)

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