

Australian Strategic Materials demerger from Alkane Resources unlocks shareholder value

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.

Jack Lifton with David

Woodall on Alkane's rare earths demerger and ASM's 'game changer' technology for strategic minerals

"We had an AGM with Alkane where shareholders voted 99.95% in approval to de-merge. The rationale is very simple. The market likes to have pure plays. So, Alkane which went into rare earths and then into gold, will be purely a gold focused company and ASM will be purely a strategic minerals company." States David Woodall, Managing Director of Australian Strategic Materials Limited (ASX: ASM), in an interview with the InvestorIntel's Jack Lifton.

David went on to say that ASM will be producing key strategic minerals like neodymium, dysprosium, zirconium, hafnium and praseodymium at its Dubbo Project. He also said that ASM's strategy is to become a vertically integrated strategic materials company.

David also provided an update on ASM's joint venture with Korean R&D partner ZironTech which he said will be a "game changer for the rare earths and strategic minerals industry". ASM and ZironTech recently produced titanium metal alloy using 45% less energy. David continued, "The trade tensions and the COVID-19 impact on the supply chains has made people look at the modification of the global supply chain. I think ASM is well located to be able to go into that supply chain and work cooperatively with various companies."

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Alkane to demerge Australian Strategic Materials (ASM) to unlock value of its rare earths project

Alkane Resources Ltd. (ASX: ALK | OTCQX: ALKEF) plans to soon demerge their poly-metallic and rare earths holding company Australian Strategic Materials Limited (ASM) and pursue a separate listing of ASM on the Australian Stock Exchange. ASM is the 100% owner of the very promising, long life, poly-metallic and rare earths project known as The Dubbo Project, located in NSW, Australia.

Today I look at what investors need to know and the potential of the new company.

About Australian Strategic Materials (ASM)

ASM's three key assets include:

- **The Dubbo Project** – ASM owns a 100% interest in the project which is a 'construction ready' poly-metallic and rare earths project with potential to become a key global supplier of specialty metals and rare earths.
- **Metals Technology Business** – ASM is investing in new

technologies related to the separation, purification and metallisation of oxides. ASM's goal is to establish an independent facility that produces high-purity metals and value-added metal oxides, particularly in relation to hafnium separation from zirconium and other materials from The Dubbo Project. In 2019 ASM initiated a joint venture with South Korea's Zirconium Technology Corporation (ZironTech) to pilot the production of hafnium and zirconium by combining their proprietary process with ZironTech's metallisation technology. ASM has exclusive global commercialisation rights under the licence. The pilot plant is in the final stage of construction in South Korea and production is due to commence in mid-2020.

- **Toongi Pastoral Company** – The Company owns 3,500 hectares of freehold and leasehold land 25kms south of Dubbo, NSW, Australia.

Highlights of ASM's 100% owned Dubbo Project



Source

The Dubbo Project

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 incredible 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 licences 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.

Total Mineral Resources are 75.18Mt @ 1.89% ZrO₂, 0.04% HfO₂, 0.44% Nb₂O₅, 0.03% Ta₂O₅, 0.74% TREO. Total Ore Reserves are 18.90Mt @ 1.85% ZrO₂, 0.04% HfO₂, 0.44% Nb₂O₅, 0.029% Ta₂O₅, 0.735% TREO.

The Dubbo Project resource estimate

Dubbo Project – Mineral Resources

Resource Category	Tonnes (Mt)	ZrO ₂ (%)	HfO ₂ (%)	Nb ₂ O ₅ (%)	Ta ₂ O ₅ (%)	Y ₂ O ₃ (%)	TREO* (%)
Measured	42.81	1.89	0.04	0.45	0.03	0.14	0.74
Inferred	32.37	1.90	0.04	0.44	0.03	0.14	0.74
Total	75.18	1.89	0.04	0.44	0.03	0.14	0.74

*TREO% is the sum of all rare earth oxides excluding ZrO₂, HfO₂, Nb₂O₅, Ta₂O₅, Y₂O₃

Dubbo Project – Ore Reserves

Reserve Category	Tonnes (Mt)	ZrO ₂ (%)	HfO ₂ (%)	Nb ₂ O ₅ (%)	Ta ₂ O ₅ (%)	Y ₂ O ₃ (%)	TREO* (%)
Proved	18.90	1.85	0.04	0.440	0.029	0.136	0.735
Probable	0						
Total	18.90	1.85	0.04	0.440	0.029	0.136	0.735

Next steps for ASM will include:

- Proof of capability for commercial-scale production of hafnium and zirconium.
- An updated FS or BFS.
- Forming strategic customer relationships and offtake agreements.
- Establishing the capability to process other Dubbo Project outputs, including rare earth metals, in

Australia and South Korea.

- Project financing. Export Finance Australia (EFA) recently confirmed interest in being part of the financing consortium for The Dubbo Project.

About the demerger

- The demerger is subject to finalisation of outstanding regulatory matters and shareholder approval at the Alkane Resources extraordinary general meeting scheduled for 16 July 2020. ASM is currently anticipated to list shortly after on the ASX on July 30 (indicative date only).
- Alkane Resources shareholder are to receive one share in ASM for every five Alkane Shares held (rounded down to the nearest whole number) on the demerger record date. Ineligible Foreign Shareholders are excluded.
- Under the demerger, the Alkane and ASM entities will be separated, and no cross-holdings between companies will exist.
- ASM will be demerged with its cash reserves of A\$20 million and no bank debt.
- All interests in the Dubbo Project and associated assets (including land and water rights), together with ASM's investment in South Korean metals technology company RMR Tech Corporation (RMR Tech), will be 100% owned by ASM following the demerger. Note that ASM is a part-owner of RMR Tech, which is majority-owned by ZironTech.

Alkane Resources Chairman Ian Gandel stated:

“Since joining in February, ASM Managing Director, David Woodall, and the ASM team have focused on distilling the key value drivers for ASM and the Dubbo Project, and have brought new focus, momentum and opportunity to the team which is working hard to realise catalysts for the Dubbo Project and the ‘Clean Metal’ metallisation technology in South Korea. The demerger of ASM will provide investors two opportunities to

grow value; in Alkane as a growing gold exploration, development and production company, and in ASM as an exciting critical materials business leveraged to the changing world economy.”

As a ‘rough’ guide as to what ASM’s market cap may end up being once listed we can look at current listed pure play Australian rare earth developer Arafura Resources (ASX: ARU) which has a market cap of A\$119 million. Of course the mix and grade of critical metals and rare earths differ, so this is only a rough guide. If we value ASM based on say 10% of the 2013 DFS value of a pre-tax NPV8% of A\$1.235b, then we get a rough value of A\$123 million. This gives zero value to the extraction technology or the A\$20 million in cash.

Closing remarks

Given the gold production success at Alkane Resources their massive Dubbo poly-metallic and rare earths Project was left in the shadow. The proposed demerger will help ASM to stand on their own and focus on getting their Project and processing up and running. For investors it should unlock value that was not recognized previously in Alkane Resources.

The Dubbo Project is development-ready, subject to financing, with the mineral deposit and surrounding land acquired, all major State and Federal approvals in place and extensive piloting and engineering completed. In term of financing the Australian Government (via EFA) has shown interest and we all know that the US government is also looking seriously at developing a safer rare earths supply chain and safely sourcing critical materials.

Investors in Alkane Resources will automatically get shares in the demerged company on a one for five basis. For new investors ASM is indicated to list on the ASX on July 30, 2020. It will be very interesting to see what value the market assigns Australian Strategic Materials and how it progresses

from here.