Focusing on battery materials at #PDAC2021, Publisher starts with the rare earths experts from Search Minerals

It’s the week where the mining world usually descends in Toronto for PDAC 2021 (#PDAC2021) conference….last year I gained a business partner and 2 Board members , this year I am committed to reviewing every single battery material, critical material, technology metal and associated cleantech/greentech and EV company participating.

Often asked how I find companies, the answer is always the same – relationships. 20+ years now on Bay Street, am always seeking the story behind the deal, this one is about Newfoundland and Labrador. A deal that has not only made every local a potential shareholder, is championed by the government but is about the value of investing in people for the future good of the whole.

For #PDAC2021, I urge you to start with going to the Search Minerals Inc. (TSXV: SMY) virtual booth. Off to a good start in 2021, especially on the money side of their business. They closed an oversubscribed private placement in January ($534,000), received another $150,900 in warrant proceeds in early February and announced another non-brokered private placement in mid-February for maximum gross proceeds of $1.75 million. This is expected to close on or before March 15.

Recall that the company has a 100% interest in an approximate 70 kilometer long by 8 kilometer wide region in the Fox Harbor volcanic belt located in the Port Hope Simpson area of southeastern Labrador. Within this area is a belt 63 km long and 2 km wide which is road accessible, on tidewater, and

located within 3 local communities. Search is focused on finding and developing Critical Rare Earths Elements (CREE), Zirconium (Zr) and Hafnium (Hf) resources.

Exploration commenced in 2009 and it quickly became apparent that the district was rich in rare earths. The Foxtrot deposit was discovered in 2010 followed by Deep Fox in 2014 and Fox Meadow in 2016. While all of these discoveries have significance, there are more than 20 additional exploration prospects identified in the immediate area, providing future exploration inventory. Search has completed a preliminary economic assessment report for Foxtrot and a resource estimate for Deep Fox. Search is also working on three exploration prospects along the belt which include: Fox Meadow, Silver Fox and Awesome Fox.

The company now has five major discoveries in this area with excellent road and power infrastructure with deep-water port access nearby that would support a low-cost development scenario. Foxtrot is the most advanced with a Preliminary Economic Assessment (PEA) on the prospect and an NI 43-101 report prepared in 2016. The deposit, which would be mined with both open pit and underground workings, contains the key rare earth elements neodymium, praseodymium, dysprosium and terbium, necessary for permanent magnets used in electric cars, wind turbines and many high-tech products.

In addition to being a mineral exploration company, management recognized the importance of leveraging the cost advantages provided by the physical location of Foxtrot as well as the subsequent discoveries. The company developed a patented proprietary Direct Extraction technology which has produced a 99% high purity mixed rare earth concentrate via two continuous pilot plants. Search has continued to optimize their patented Direct Extraction Process technology with the generous support from the Department of Tourism, Culture, Industry and Innovation, Government of Newfoundland and Labrador and from the Atlantic Canada Opportunity Agency

(ACOA).

Greg Andrews, President and CEO of Search Minerals commented in their February 10, 2021 news release that “Search has received internal engineering studies which outlines the capital and operating costs for constructing a 1/200th scale demonstration plant in St. Lewis Labrador (10 tonnes per day). The demonstration plant would be essential for 1) training our future workforce for plant operations, 2) producing sufficient quantities of mixed rare earth concentrate for demonstration of commercial rare earth separation, and 3) large scale validation of our Direct Extraction processing flowsheet. We are putting together our business plan for the construction of the demonstration plant with our funding partners.”

While their technology has been proven, scaling up to a plant will require significant capital and the company now needs to securing funding and/or a partner to further refine the process in a demonstration plant. In addition, the company will require further funding to continue infill drilling to take the discoveries to feasibility study stages.

We note that the company has a Memorandum of Understanding with the Saskatchewan Research Council (SRC), signed in late October 2020, for technical collaboration. The company has also entered into a Technical Collaboration Framework Agreement with USA Rare Earth, LLC to explore further separation capabilities.

An interesting company with good assets, Search has a nice, compact area of operations and have had good exploration success under the helm of some of the most respected rare earths experts such as Dr. David Dreisinger. They are in the right resource space at the right time (in my opinion*) – and with the critical piece of business in the market (always) being leadership, Greg Andrews has been at the helm since 2014 and is evidence that indeed, investing in relationships in the community is a long term strategy for the wise.

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MOU with the Saskatchewan Research Council signals another milestone for Search Minerals on their quest to produce rare earths in NA

A likely Biden victory in the USA is positive for all the rare earths miners. This is because one of Biden's key policies is a massive $2 trillion green infrastructure and jobs plan over his first term in office that aims to have a US carbon pollution-free power sector by 2035. This would be a huge tailwind for the US renewable energy sector (solar and wind) as well as supportive to the US electric vehicle (EV) industry. Any North American rare earths suppliers who can potentially supply the USA and/or Canada with rare earths would be likely to benefit as North America embraces the green revolution.

One rare earth miner worth considering is Search Minerals Inc.

(TSXV: SMY) (“Search”). Search is focused on finding and developing critical rare earth element mineral assets in Labrador, Canada.

In some very exciting recent news Search has signed a Memorandum of Understanding (MOU) with the Saskatchewan Research Council (SRC). The MOU outlines a collaboration with SRC as they build their Rare Earth Processing Facility in Saskatchewan, Canada.

Search Minerals President and CEO, Greg Andrews, commented: “We anticipate using the (SRC) conventional solvent extraction process to enable Search to validate the ability to produce the individual rare earth oxides necessary to enter the rare earth supply chain.

Recent announcements regarding building electric cars in Canada and other government led initiatives for clean and green technology provides the framework for industry access to a secure rare earth supply chain in Canada. We believe Search is well positioned to capitalize on these opportunities.”

Search controls properties in three areas of Labrador, Canada. These are:

- The Port Hope Simpson (PHS) Critical Rare Earth Element District in SE Labrador
- The Henley Harbour Area in Southern Labrador
- The Red Wine Complex located in Central Labrador

Search Minerals has nearby infrastructure in place at St. Lewis, Labrador, Canada

Community of St. Lewis

- Diesel power plant (expandable)
- Ice-free deep sea port: reagents & other supplies
- 12km from Foxtrot
- 2km from Deep Fox
- Small aircraft airstrip
- Fox Harbour House: housing, office, core shack, workshop

Trans-Labrador Highway

- All season paved highway – transport REE Concentrate

Source

Within the Port Hope Simpson District Search's main discoveries are the **Foxtrot Resource, Deep Fox, Fox Meadow, Silver Fox, and Awesome Fox deposits** which contain rare earths including dysprosium (Dy), neodymium (Nd), praseodymium (Pr), terbium (Tb), yttrium (Y), zirconium (Zr), and hafnium (Hf).

The district covers a 63 km long and 2 km wide belt. At Foxtrot the total Indicated Resource is 7.392 million tonnes with grades of neodymium oxide (1,732ppm), neodymium (1,485ppm), praseodymium (397ppm), and dysprosium (191ppm). The 14 year Life of Mine (LOM) Foxtrot Project offers an IRR of 16.7% on an after tax Net Present Value (NPV) 10% of $48M, with a CapEx of only $152M. The NPV quoted above is only for the Foxtrot Project, so once the other projects are combined

into a bigger project the NPV should improve.

At Fox Meadow, 2020 channel assay results outlined two mineralized zones on the surface: The NW zone is up to 175m wide and the SE zone is up to 116m wide. Combined, the mineralization is at least 790m long and contains similar grades of the REE magnet materials (Nd, Pr, Tb and Dy) as Foxtrot and Deep Fox. This is a good result as it means Search is continuing to find more REE mineralization to potentially further grow their resource.

At Silver Fox, Search has recently successfully expanded the Silver Fox high grade zirconium-hafnium (REE) mineralized zone. In the news release Search commented: “This surface expression is significantly longer, but thinner, than the surface expressions of the nearby and related Foxtrot and Deep Fox Resources. The mineralization is similarly hosted by peralkaline volcanic rocks and contains lower grades of the REE magnet materials (Nd, Pr, Tb and Dy) but significantly higher grades of Zr and Hf.”

At Awesome Fox, the 2020 channel program (7 new channels) along with previous channels has outlined a REE mineralized zone ranging from about 4-43m thick and 850m long.

Source

Closing remarks

Earlier in 2020, rare earths expert Jack Lifton stated about Search Minerals: “I think it may well be Canada’s first commercial rare earth producer.” Given Search has completed a Resource estimate (Foxtrot, Deep Fox), a PEA (Foxtrot), has successfully produced 99% purity REO concentrate from their pilot plant and patented process, and now has a potential larger scale processing option with SRC; this all combines to suggest that Search Minerals is well on the way towards commercial production. Next steps would involve a BFS and potentially some trial production with SRC once their facility is built.

Search Mineral’s current market cap is only C$10.5M suggesting there may be plenty of upside potential ahead, especially if they continue to successfully advance towards production.

How to evaluate a rare earths opportunity

The race is on for rare earths investment, but what should you look for?

So where do we go from here? That is, what are the criteria investors should consider when they are looking for rare earth/zirconium investment opportunities?

At this early stage of developing a domestic critical minerals supply chain, and as mentioned previously, one of the most important criteria for investors to consider with rare earths is whether the resource offers potential to recover other commonly associated critical minerals such as zirconium/hafnium and scandium, that are also largely controlled by China. These may offer better opportunities than rare earths for quickly finding domestic market outlets for the processed forms of these elements.

The rare earth elements neodymium, praseodymium and dysprosium are well known for application in high strength permanent magnets, now in increasing demand for electronics, wind turbines and electric vehicle motors. There are also opportunities in aircraft construction, where aluminum and titanium have been the traditional metals of choice. Zirconium and hafnium can be used in various combinations to make certain titanium and aluminum alloys that are perfectly suited for the high-temperature regions of jet engines. Similarly, scandium is in increasing demand as an additive to aluminum alloys to increase their strength and reduce their weight. When all of these elements are recoverable from the

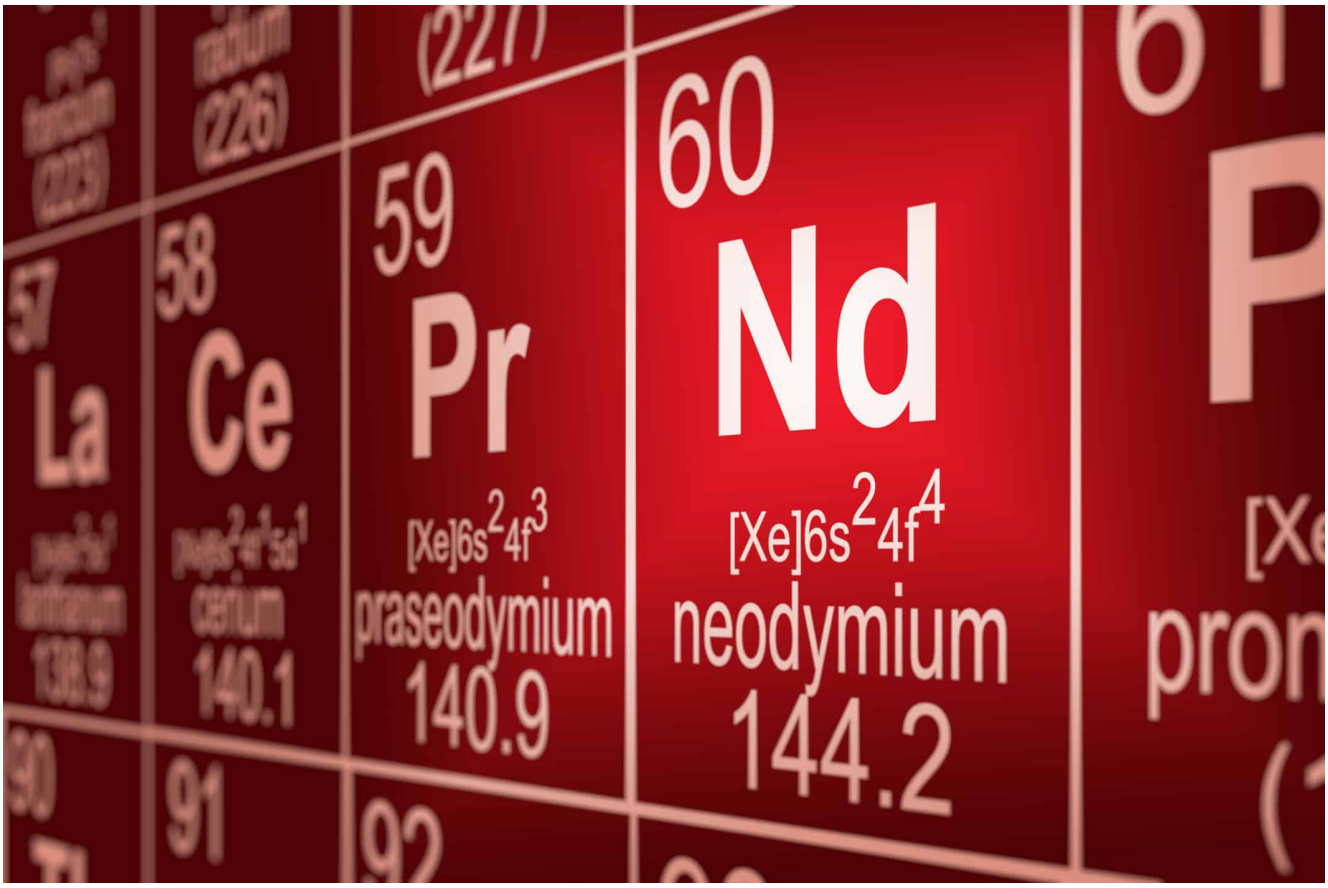
same resource, it becomes a much more attractive investment opportunity.

A couple of North American rare earth projects that meet most of these criteria, are Avalon Advanced Materials' Nechalacho Basal Zone Heavy Rare Earth project in the Northwest Territories and Imperial Mining's Crater Lake Scandium project in northern Quebec. The Nechalacho resource contains the critical elements zirconium/hafnium as well as both the light and heavy rare earth elements. The Crater Lake Project is a rare earth resource with exceptional scandium enrichment and is now being looked at mainly as a scandium project. It also contains concentrations of zircon as well as the rare earths.

Another factor to keep in mind is the balance between the Light Rare Earths (Lanthanum through Samarium) and the Heavy Rare Earths (Gadolinium through Lutetium), plus Yttrium. Most rare earth resources are dominated by the light rare earths, but having recoverable heavy rare earths as well can further enhance the overall value proposition as demand for these will grow as new supply becomes available.

Once the investor has identified a rare earth project that also contains other critical elements like zirconium and scandium, the next step is to assess whether they occur in minerals that are amenable to economic processing and recovery. The feasibility study (FS), Pre-feasibility Study (PFS) or Preliminary Economic Assessment (PEA) are the best sources of this type of information. Many early stage projects are focused on defining the largest potential size and grade of resource without focusing on whether the elements of interest occur in minerals that are amenable to economic recovery. These projects should not be considered as attractive investment opportunities until an appropriate economic extraction process has been identified. The next step is to be certain that the recovered products will meet the specifications required by the consumer.

Other important points to consider when considering new rare earth project investment opportunities is the content of radioactive elements uranium and thorium which often occur with rare earths. High levels of uranium and thorium can be problematic from an environmental regulatory standpoint. Some jurisdictions are more challenging than others. Personal experience has shown that regulations in Canada are better than in the U.S. by providing an appropriate level of environmental regulation while not causing any unnecessary burden on industry.



Rare Earths

Finally, regardless of the balance of critical elements contained in a rare earth resource, the operation will need a well-qualified team to perform the development and product marketing work. So, the most important requirement at this early stage of creating a new supply chain is finding the people with both the appropriate skill sets and experience. Companies with these assets will have a greater chance of

success.

In summary, an investor looking for a rare earth project with the best prospects of success should be one that has the following attributes:

1) a resource that also contains significant recoverable quantities of zirconium/hafnium, scandium or heavy rare earth;

2) contains low level of radioactive elements or is located in a region that has less-burdensome environmental regulations;

3) has a defined a viable extraction process flowsheet; and,

4) has the appropriate, key people available for the early stage of development.

Now the trick is to find them.

Zirconium and establishing a domestic rare earths supply chain

A clear path forward required for reducing our reliance on China

Despite its relative obscurity, zirconium remains a critical material with significant supply risk. China controls most of the industrial production capacity to process zirconium mineral concentrates into the basic starting compounds needed for downstream zirconium products. In fact, **China controls 95% of the world's production of the key zirconium compound**

Zirconium Oxychloride (“ZOC”), which is the starting material required for downstream manufacturing into various commercial products including nuclear-powered naval vessels. Currently, 100% of the ZOC used outside China must be purchased from producers in China. A second basic zirconium compound required by industry is Zirconium Basic Carbonate (ZBC). The ZBC is derived from ZOC. The current North American annual demand for ZOC is approximately 50,000 tonnes. Worldwide demand outside of China is approximately 150,000 tonnes per year.

To reduce reliance on China for a domestic supply of critical zirconium starting compounds such as ZOC, a North American production facility for zirconium compounds must be established. And, with zirconium minerals often found associated with rare earth minerals, developing a rare earth supply chain could create an opportunity to establish a new primary supply of zirconium minerals at the same time.

There are several examples in North America of primary rare earth resources that also contain zirconium minerals. This is commonly the case with rare earth deposits that occur in alkaline igneous intrusive rocks. These rocks may contain resources of a number of critical minerals as well as some more familiar metallic commodities such as copper and iron ore. In some cases, where such resources were mined for base metals, the tailings may contain significant quantities of recoverable critical minerals. An appropriate rare earth / zirconium resource could supply the ZOC compound for the zirconium production industry as well as the refined rare earth products to downstream users.

Zirconium dioxide is a white crystalline oxide of zirconium. Its most naturally occurring form is the mineral baddeleyite.

Zirconium is usually found in the silicate mineral zircon ($ZrSiO_4$) which always contains another rare element, hafnium,

averaging a low 2% concentration. Hafnium can be a valuable by-product of zirconium recovery from a zircon resource. One interesting application for hafnium is its addition to nickel-based superalloys used in gas turbines. The other zirconium ore mineral occasionally found in a type of alkaline intrusive rock called carbonatite is baddeleyite, a pure ZrO_2 mineral that offers a simpler processing solution to produce ZOC, if it can be found in sufficient concentrations to justify recovery.

Unlike the rare earth industry's lack of domestic, downstream-refining and manufacturing capacity to make the needed derivative products such as magnet alloys, **the zirconium industry does have downstream manufacturers for all the current products needed in industry**. Because the downstream manufacturing capacity of zirconium products is available, it could be argued that an attractive development option for a combined rare earth / zirconium resource would be to start by selling ZOC and stockpile the rare earths until downstream rare earth consumers can come on line. There is also a potential role for government to purchase the rare earths for a government managed stockpile of critical minerals until the downstream components of the supply chain are established.

The critical importance of zirconium alone could be sufficient to justify the need for bringing a combined rare earth zirconia resource into production. Significantly, there are many applications that require both a rare earth and zirconium to develop the necessary properties for the application. One example is the use of yttria-stabilized zirconia in hydrogen fuel cell technology.

Zirconium needs to be considered part of the solution for establishing a rare earths supply chain, along with other critical minerals such as scandium, that often occur together with rare earths in the same resource. Developing these resources in alkaline igneous rocks, of which there are a number of examples in North America, offers a clear path

forward for reducing our reliance on China for a basket of critical materials.

The future looks bright for zirconium

The most important metal you never heard of

"Zirconium is yet another example of an obscure critical material with great potential in new technology where China controls the supply chain." – Donald Bubar, President & CEO at Avalon Advanced Materials Inc.

Zirconium is a relatively obscure but important element that is finding increasing application in a range of new technologies. It is most commonly found in zircon ($ZrSiO_4$), an industrial mineral used directly in many high-temperature applications. Zirconium in its many forms is now an essential part of cell phones, nuclear plants, dialysis machines, paint, ceramics and catalytic converters.

Zirconium was discovered in 1789 but it took 35 years to isolate the element. It took another 100 years before a pure zirconium metal was produced. With a high specific gravity, zircon is commonly found with other heavy minerals in deposits of prehistoric beach sands. It is usually a byproduct of mining these sands for titanium. Heavy mineral sand resources are found in several parts of the world with much of the historical production coming from South Africa and Australia. There is another rarer zirconium ore mineral called

baddeleyite (Zr02) presently only recovered from an iron ore mine in Russia. As with many technology metals, the challenge of zirconium is in the economic processing of the mineral concentrates, not in mining the resource. Much of this processing is currently being done in China.

The ceramic pigment market was the main early driver for the development and production of zirconium chemicals of various types. After World War II, the ceramic/refractory industry became interested in zircon and zirconium oxide while the Department of Defense focused on the pure metal of zirconium. The driver behind the need to produce a pure zirconium metal on an industrial scale was to supply the military with alloys of magnesium and zirconium. The second major military market development for pure zirconium metal was for cladding fuel rods for both the nuclear navy reactor as well as for civilian nuclear power stations.

There are at least three things that use zirconium in this photo – the ceramic mug, the cellphone and the wall paint.

Today some of the many applications for different zirconium compounds include kidney dialysis, coated paper (frozen food packaging), pigment coating (Ti02), paint driers, and thixotropic paints (paints that are free-flowing and easy to apply while being brushed on, but quickly reset into a gel). As industry has gained a better understanding of the chemistry, it has been able to move into the growing market of advanced ceramic/oxide applications. Some applications of zirconium ceramics are piezo electrics (spark ignitors, sonar devices, and ultrasonics), thermal barrier coatings (turbine blades), solid electrolytes (oxygen sensors, fuel cells), and catalysts (cracking of petroleum, catalytic convertors).

Demand for zirconium and the appeal of producers will continue to grow, and because of its unique physical and chemical

properties it will find application in many new growth technologies, including more efficient and environmentally-friendly clean technologies. It won't take long before its critical importance is appreciated.

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.”

To access the complete interview subscribe to the **Technology Metals Show** and get exclusive access to member only content through this exclusive site! Or Log-In Here for the latest conversations, debates, updates and interviews with the leaders, thought leaders and investors focused on issues relating to sustainability in the critical materials sector.

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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_2O_5 (%)	Ta_2O_5 (%)	Y_2O_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 ZrO_2, HfO_2, Nb_2O_5, Ta_2O_5, Y_2O_3

Dubbo Project – Ore Reserves

Reserve Category	Tonnes (Mt)	ZrO_2 (%)	HfO_2 (%)	Nb_2O_5 (%)	Ta_2O_5 (%)	Y_2O_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.