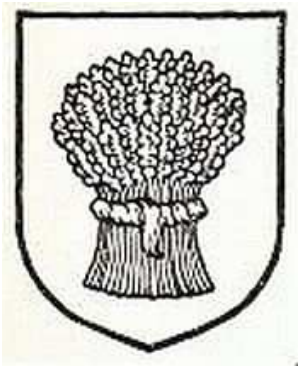
Wednesday, September 30, 2020



HALLGARTEN & COMPANY

Corporate Actions

Christopher Ecclestone
cecclestone@hallgartenco.com

Australian Strategic Materials

(ASX:ASM, OTCQX:ASMMF)

Strategy: SHORT

Key Metrics	
Price (AUD)	$ 2.11
12-Month Target Price (AUD)	$ 1.50
Upside to Target	-29%
High-low (12 mth)	$0.84 - $2.64
Market Cap (AUD mn)	$ 251.2
Shares Outstanding (millions)	119.05

Australian Strategic Materials

Breaking Up is Easy to Do

- + The demerger from Alkane has been long overdue, and welcome, with the gold assets remaining in the former structure
- + The Dubbo Zirconia Project (DZP) is akin to having several horses running in the same race. It has Rare Earths, Zirconium, Niobium and Hafnium in its mix, all of these being metals that have registered high demand and prices at varying times over the last decade
- + Base case of 1mn tpa throughput, but possible unitization into two phases of 500K tpa each
- + FEED study in 2018 forecast CapEx (base case) of AUD$1.3bn, with an additional AUD$124mn of sustaining capital over 20 years LOM
- + Estimated NPV (@8%, pre-tax) of AUD$1.236bn with 17.5% pre-tax Internal Rate of Return
- + Rare Earths prices and sentiments look likelier to move higher rather than lower at this stage
- ✘ The stock, after a brief post-demerger swoon, has risen too far too fast
- ✘ At a market capitalization of AUD$250mn the company is patently overvalued
- ✘ The Hafnium price is well off its mid-decade highs and has not advanced in the last 2 ½ years
- ✘ Ferro-niobium is not a strategic metal and its price has declined around 20% over the last 12 months
- ✘ It's tough for the Dubbo project, despite its multi-metal nature, to get traction without Rare Earths prices moving to a better place than they have been in the last five years
- ✘ Poor NPV compared to capex (i.e. less than one) and prices of most commodities in the Dubbo mix have declined since 2018
- ✘ Financing environment for specialty metals stories remains challenging

The Great Schism

It's now four years since we first mused out loud that Alkane should break up into its constituent parts. In saying we were also reading the minds of investors. It's taken that long for the board to see the light and recognize what everyone else in the market had been thinking.

The gold assets were at the time the "lesser" of the Alkane treasures in the view of management but as things have turned out, the Alkane entity (with the gold assets) came out of the demerger with a market capitalization of over AUD$700mn, while the Dubbo Zircon Project, embedded in a new entity called Australian Strategic Materials has debuted with a value of AUD$116mn. In the immediate wake of the transaction, more shareholders appeared to want shot of the latter than the former.

In this note we shall revisit the DZP and see what has happened, if anything, in the interim.

DZP- Redefining "Polymetallic"

The term "polymetallic" is common in the mining arena and usually refers to base metal with base metal or base metal *with* precious metal(s) and occasionally refers to specialty metal with base metal or specialty metal with specialty metal (an example of the latter being tin/tantalum). The Dubbo Zirconia Project (the DZP) of Alkane though is a whole different level of polymetallic with a very unique mix of rare and specialty metals (Zirconium, the Rare Earths, Niobium and Hafnium) which makes it a potential trove of high value and high-demand metals all with applications in new and evolving technologies. But it allows potentially makes it a stew with some unappetizing pieces floating about in it, depending on what the investors' spheres of interest might be.

Alkane was a Rare Earth developer back in the days when the universe was only this company, Great Western and Avalon. Indeed Alkane first identified the REE potential at DZP in 1999. Of that group it is the only one still advancing a REE project and indeed it has outlived the vast horde of lesser challengers that appeared and fizzled.

In a canny move that separated it from the rest of the Rare Earth pack, Alkane dusted off a gold project (Tomingley) in its immediate vicinity during 2014 and gained itself not only an insurance policy against the notoriously fickle REE space, but cash flow and producer status as well. If this digression achieved anything (beyond ultimately a big payday on valuation) it was that the cashflow from the gold managed to stave off the specialty metals components (i.e. DZP) sinking beneath the waves without a trace as so many other Rare Earth players have one over the last decade.

The Demerger

Australian Strategic Materials was demerged from Alkane in August 2020 with eligible shareholders entitled to receive one ASM Share for every five Alkane shares. The structure post-deal looks like:

The DZP

ASM's main project is located in central west New South Wales, some 400km northwest of Sydney within a region that has substantial infrastructure - roads, rail, power, gas, light engineering, substantially populated (with 100,000 people in relative proximity). The zone is an important agricultural and mining area.

The DZP consists of a very large polymetallic resource of the metals Zirconium, Hafnium, Niobium, Tantalum, Yttrium and Rare Earths (of which 25% of the potential Rare Earth output is claimed to be in the Heavy Rare Earth category). The company has touted the Tantalum potential in the past as sizeable by global standards and yet seems to have dropped all mention of this in recent times.

Past Studies

ASM/Alkane has been working up this project for around 15 years and now has a demonstrated flow sheet with a pilot plant at ANSTO turning out products for market evaluation.

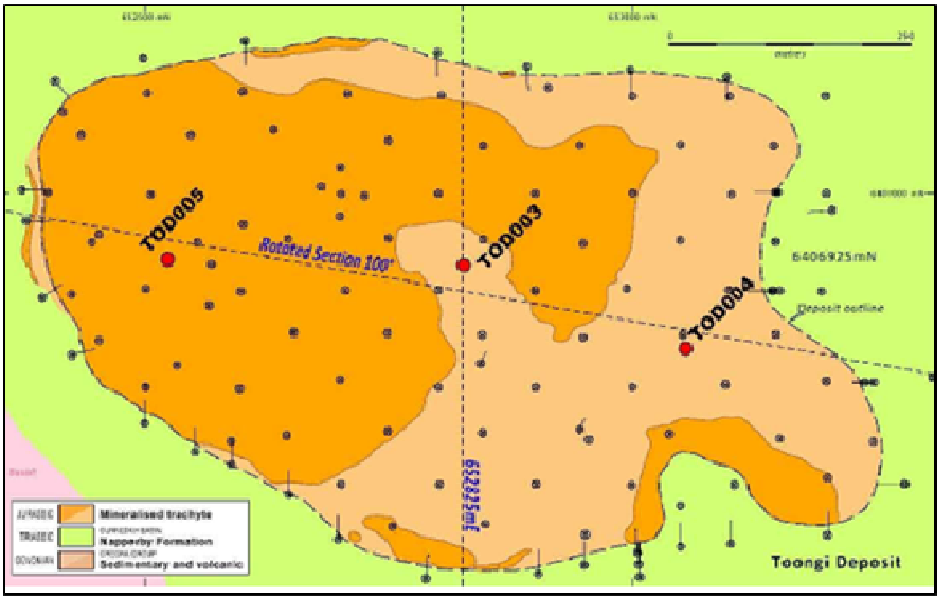
It came up with a financial feasibility study, which was completed in April 2013. After that it stated that all environmental approvals, both state and federal, were in place for the project to proceed to construction. In August 2015, it published a Front End Engineering Design (FEED) study that significantly revised and improved previous versions of the flowsheet and demonstrated a financially viable project, even at the then-reigning spot prices for the metals. However, yet another FEED study came out in 2018 and still the project has not moved off the starting blocks.

The Geology at DZP

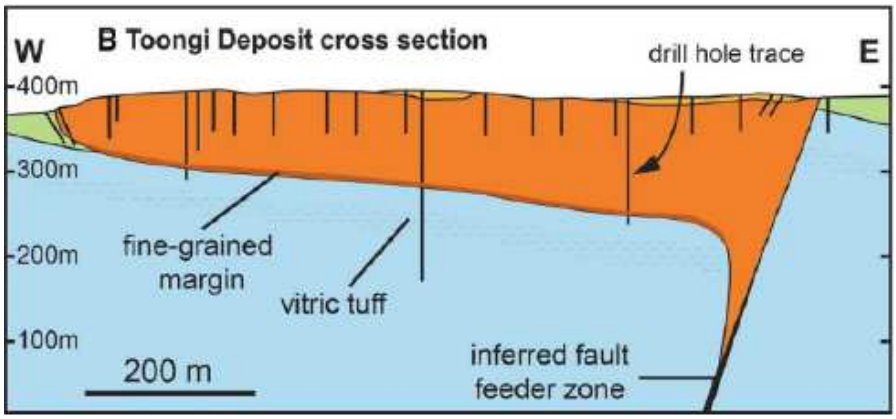
While the project name is the DZP, the geological name for ASM's mineralization is the Toongi intrusive. This is a Jurassic-aged trachyte lava flow with approximate dimensions of 900 metres east-west and 600 metres north-south and a lozenge shape with maximum of 200 metres depth. The body exhibits uniformly elevated grades for Zirconium, Hafnium, Niobium, Tantalum, Yttrium and Rare Earth elements laterally and vertically.

Mineralogical studies indicate that ore minerals are very fine grained being less than 100µm in size (mostly less than 20µm) and generally of extremely rare compositions. Calcium- and REE-rich zirconosilicates (similar to eudialyite or armstrongite) are the dominant ore minerals of Zirconium, Hafnium and Yttrium/HREE, while natroniobite (NaNbO3) and calcian bastnasite are the major source of Niobium, Tantalum and LREE's respectively. All these minerals are soluble in sulphuric acid and only minor amounts of refractory Zircon and a refractory Niobium mineral (possibly columbite) have been detected.

The elliptical-shaped body has approximate dimensions of 850m east-west by 550m north-south. The deposit forms a low irregular topographic rise and has a depth extent of 115m below surface.



The orebody also contains low-level uranium and thorium values but is not classified as radioactive ore.



Eudialyte

In the white hot days of the Rare Earth boom 2009-11, this mineral was much bandied about with the late Tony Mariano regarded as its guiding spirit. Despite the *sturm und drang*, none of those projects touting its virtues as their virtues has actually reached production. The relevance here is that Dubbo is the "Last of the Mohicans" in advocating its attractions.

The name of this mineral derives from the Greek phrase Εὖ διάλυτος eu dialytos, meaning "well decomposable". It is a somewhat rare, nine member ring cyclosilicate mineral, which forms in alkaline igneous rocks, such as nepheline syenites. Its name alludes to its ready solubility in acid.

Eudialyte was first described in 1819 for an occurrence in nepheline syenite of the Ilimaussaq intrusive complex of southwest Greenland.

Eudialyte is used as a minor ore of zirconium. The mineral typically has a significant content of U, Pb, Nb, Ta, Zr, Hf, and Rare Earth elements. Because of this, geoscientists use eudialyte as a geochronometer to date and investigate the genesis of the host rocks.

Eudialyte was promoted as a potential REE primary resource due to its good solubility in acid, low radioactivity and relatively high REE content. The main challenge has been in avoiding the formation of silica gel, which is non-filterable when using acid to extract REE.

Other well-known REE projects claiming Eudialyte as an attraction include Kvanefjeld and Norra Kärr.

The Resource and Reserve

The estimates on the size of the deposit at Dubbo are somewhat aged now, dating back to September 2017. Below can be seen the Resource and Reserve estimates for the DZP.

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*

The company claims a theoretical mine life of 75 years. The Reserve, however, supports a 20-year mine life at one million tonne ore processing per annum with the defined resource potentially supporting a significantly longer operation.

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

**TREO% is the sum of all rare earth oxides excluding ZrO_2, HfO_2, Nb_2O_5, Ta_2O_5, Y_2O_3*

Progress at DZP

The Dubbo project has been around since before the REE boom erupted and was still there after the tide had gone out. Part of its longevity is that it is multi-metal in nature. Management has long-touted it is one of the world's largest in-ground resources of rare metals and rare earths. A demonstration pilot plant at ANSTO (the research complex on the outskirts of Sydney) has been running since 2008, tasked with proving up the DZP's technical and financial viability. The pilot plant aided in the development of a

working flowsheet and verified resource extraction and processing methods for the complex mineralogy.

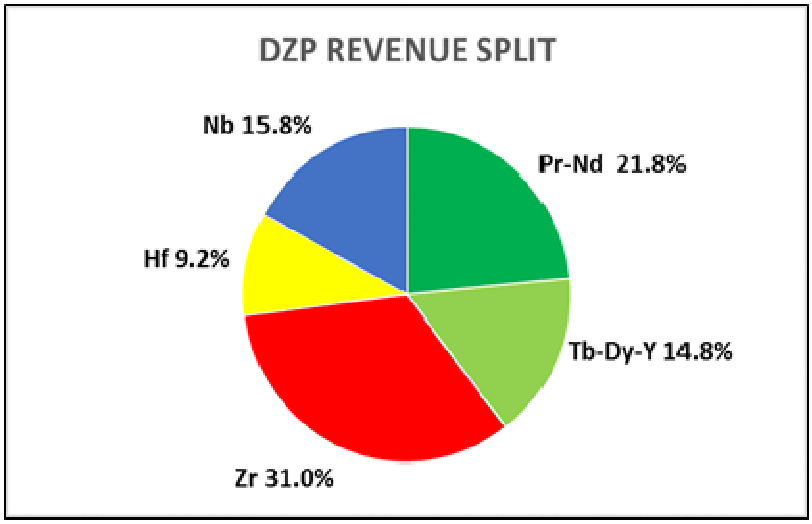
Old FEED

In a new twist on Feasibility Studies, Alkane published in August 2015 its Front End Engineering Design (FEED) prepared by the well-known consultants, Hatch, rather than a Feasibility or Scoping Study. The most salient information was that it estimated the economics of the DZP as being anticipated product revenue of around US$17/kg with costs of approximately US$8/kg. The study estimated annual revenue to be approximately AUD$580mn with operating costs of AUD$260mn delivering a AUD$320mn EBITDA. The NPV over a 20-year mine life was AUD$1.22bn and IRR of 17.5%.

The FEED came in with a capital estimate for the DZP of US$0.97bn, which included a contingency of AUD$103mn.

The FEED envisaged the DZP revenue split from the various metals in the DZP mix. The split is, of course, a moving feast as prices were constantly moving.

The FEED came in with a capital estimate for the DZP of US$0.97bn, which included a contingency of AUD$103mn.



The FEED provided around 30% detail design and that the Project Engineering design is now at the construction stage awaiting finance.

New FEED

The results of all of additional work streams, carried out from 2015 through to early 2018, were combined internally in an Engineering & Financials Update released by Alkane in June 2018.

This update anticipated that, at full capacity, the Dubbo Project processing plant would be capable of receiving one million tonnes per annum of crushed ore, which would be processed using sulphuric acid leach and solvent extraction recovery to recover Zirconium, Hafnium, Ferro-niobium and REE products.

The study incorporated process improvements and optimisation of the flow sheet, particularly in the area of product purity which was achieved through research at ANSTO Minerals. Product development objectives were based on market research and discussions with potential end-users.

Changes from the 2015 study were driven by the need to produce more specialised products that had higher price points (i.e. higher-purity or specific downstream products). As a result, the final suite of products is very different from the original three product streams proposed in 2002.

The 2018 version of the flow sheet shows the following product streams:

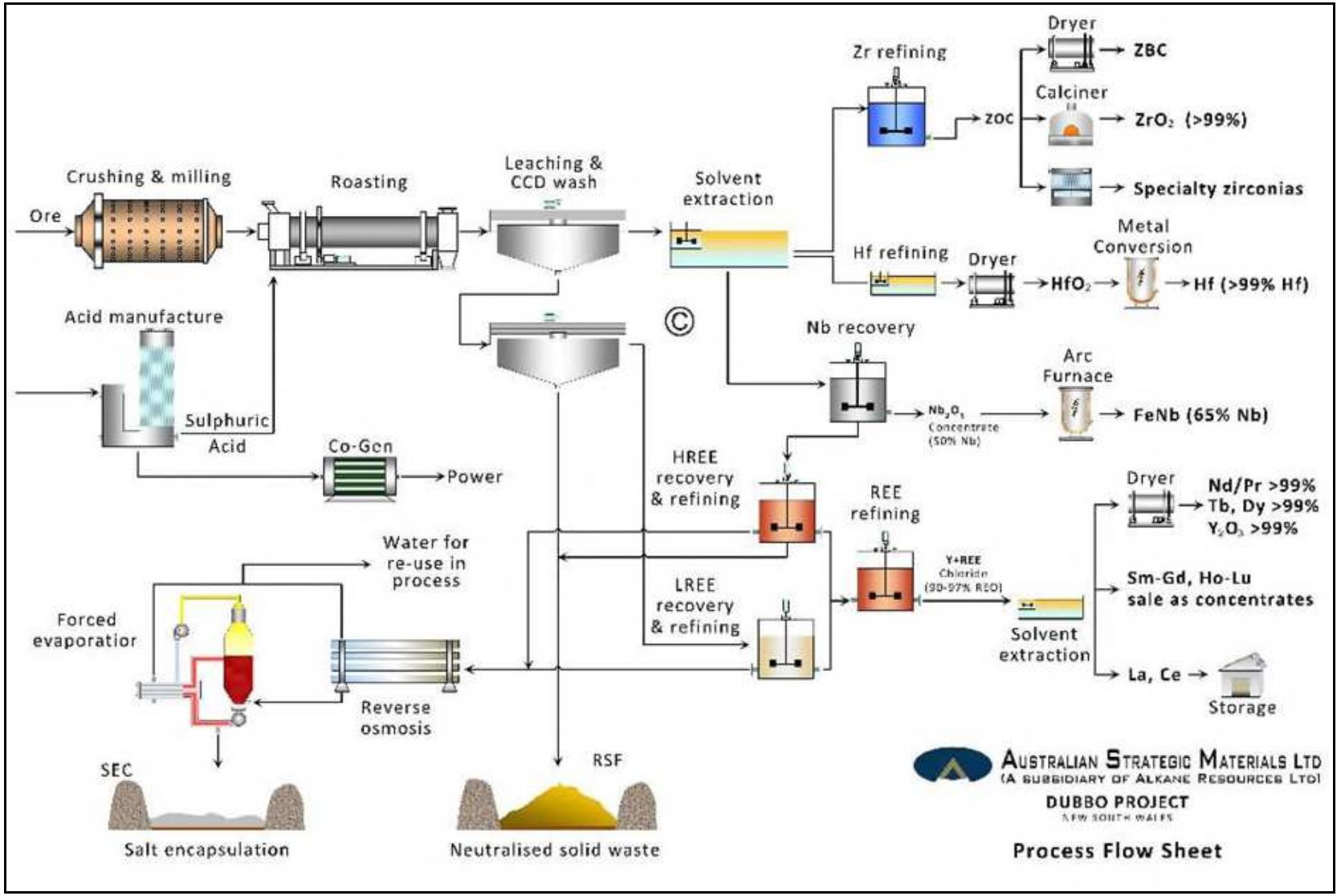
- Zirconium as Zirconium oxychloride (ZOC)
- Multiple streams of Rare Earths (with one being the magnet materials Nd, Pr, Dy and Tb)
- Ferro-niobium
- Hafnium materials

Mine Plan

The mining of the ore deposit will take place in a single open pit (to a maximum depth of 32m), using drill and blast methods to fragment material that will then be transported to the Run-of-Mine (ROM) Pad for crushing and grinding. The conceptual layout of the processing component is shown below:

Sulphuric acid used for leaching will be produced on site using a sulphur burning acid plant that also generates electricity and steam for the process plant. A small amount of waste rock will be extracted and transported to a small waste rock emplacement to the southwest of the open cut. The liquid and solid residues from the processing plant will be transported and stored in liquid residue storage facilities, solid residue storage facilities and salt encapsulation cells.

The flowchart is shown on the following page:


Dryer
Zr refining
ZBC
Calciner
ZOC
ZrO₂ (>99%)
Specialty zirconias
Crushing & milling
Roasting
Leaching & CCD wash
Solvent extraction
Ore
Metal Conversion
Hf refining
Dryer
HfO₂
Hf (>99% Hf)
Acid manufacture
Nb recovery
Arc Furnace
Sulphuric Acid
Nb₂O₅ Concentrate (50% Nb)
FeNb (65% Nb)
Co-Gen
Power
HREE recovery & refining
REE refining
Dryer
Nd/Pr >99%
Tb, Dy >99%
Y₂O₃ >99%
Water for re-use in process
Y+REE Chloride (90-97% REO)
LREE recovery & refining
Forced evaporation
Sm-Gd, Ho-Lu sale as concentrates
Solvent extraction
Reverse osmosis
La, Ce
Storage
SEC
RSF
Salt encapsulation
Neutralised solid waste
AUSTRALIAN STRATEGIC MATERIALS LTD
(A SUBSIDIARY OF ALKANE RESOURCES LTD)
DUBBO PROJECT
NEW SOUTH WALES
Process Flow Sheet

The crushed ore is then dry ground to the optimum particle size for good extraction of valuable elements. The dry ground ore is then mixed with concentrated sulphuric acid and roasted to form sulphated solids.

These solids are cooled and mixed with chilled water in a leach tank, where the sulphate species formed during the sulphation process (including zirconium, hafnium, niobium and rare earths, along with impurities of iron, aluminium and zinc) are leached into solution.

After a nominal time of leaching, the leach slurry is passed through a circuit to wash and separate the solids into two liquors: one that comprises the majority of the LREE and a second bearing Zirconium/Hafnium/Niobium/HREEs.

The LREE liquor passes directly to the LREE recovery circuit. The remaining liquor passes through several stages of a solvent extraction (SX) circuit to separate each metal in solution:

- Zirconium/hafnium (combined) is recovered from the loaded strip liquor in the first SX stage
- The raffinate from the first SX cycle is heated to recover a crude niobium-tantalum precipitate, which is then further refined to produce the final Niobium product
- Following niobium recovery, the main process liquor stream is cooled and contacted in the SX plant by the circulated organic flow to recover residual Zirconium (Zirconium scavenging)
- The remaining process liquor (mainly HREE concentrate) is combined with the LREE concentrates and pumped to a REE SX separation process, which produces final separated REEs in oxide form
- After recovery and purification, some of the Zirconium stream passes through a Hafnium removal circuit. Both zirconium and hafnium then enter product finishing and packing circuits.

Therefore ore will be processed via a sulphuric acid leach and solvent extraction to recover zirconium, hafnium, niobium and rare earth products. Sulphuric acid used for leaching will be produced on site using a sulphur burning acid plant that also generates electricity and steam for the process plant.

The process envisioned has morphed over time as the planned product mix has evolved. Most recently this has included a Hafnium circuit to extract this element as it became clear that this could be an important addition to the revenue mix and a positive to the overall financials as a by-product credit.

The Zirconium Strategy

Management hopes that the DZP will insert itself in the market for premium Zirconium chemicals and claims its zirconia can compete with Chinese production of Zirconium chemicals and fused zirconia. It claims a major advantage of the DZP is the quality of its Zirconium product output, which is derived directly from the ore and not a zircon source.

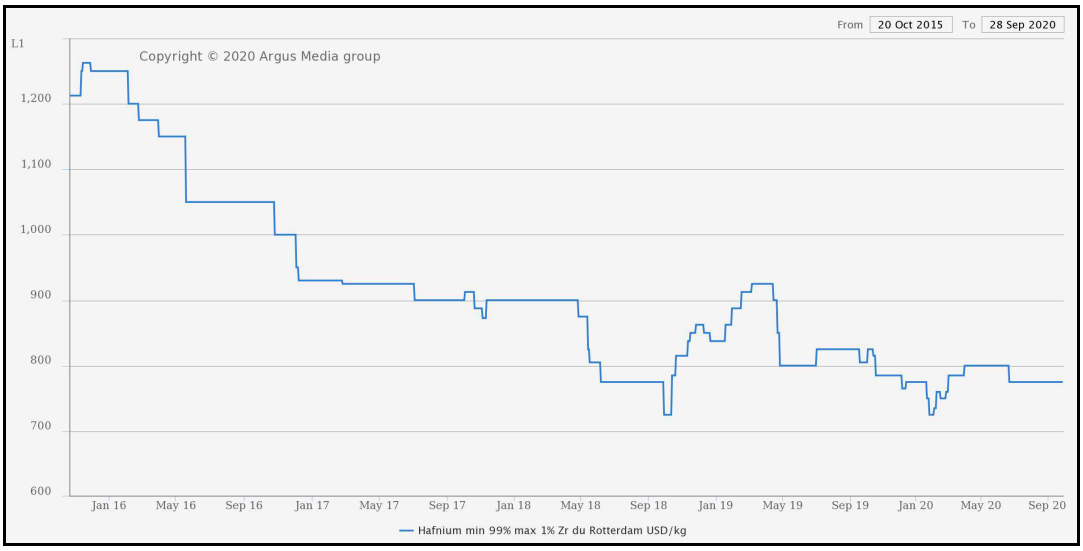
The specs of zircon produced are very important to end-users as global zircon production is becoming increasingly "dirty". This impacts the ability of the processors to achieve on-spec Zr products.

The company is aiming to produce 16,374 tpa of 99% ZrO_2, which is about 8% of current world demand for chemicals.

Hafnium

For more on this metal see our recent Hafnium review (from August 2020). In this we discuss the competitive environment, demand and processing options, as well as the specifics of ASM's planned flowchart.

The price picture in recent times has not been a happy one as the chart below from Argus Metals shows.



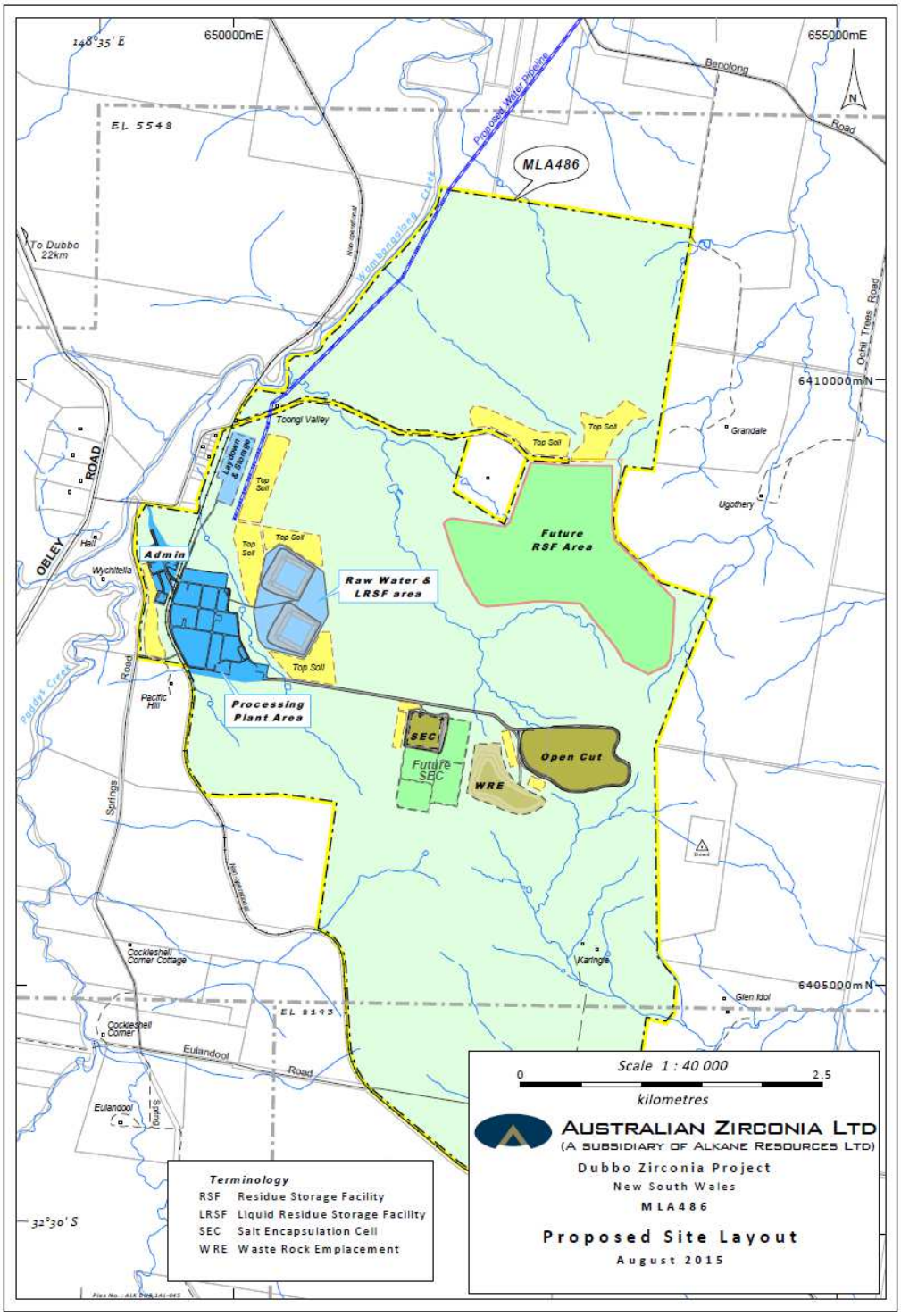
The Two Scenarios

The project, so management posits, can either be developed in one blow or in two phases. The first scenario (at least based on 2018 projections) leaves a most skinny return while the phased production approach is very unpalatable indeed.

The move to one million tpa is the base case. This had a forecast CapEx of A$1,297mn with an additional AUD$124mn of sustaining capital over the 20 year LoM. This gives an estimated NPV (@ 8%, pre-tax) of AUD$1.24bn and estimated 17.5% pre-tax Internal Rate of Return. This gives a mediocre NPV/CapEx ratio of around 1.

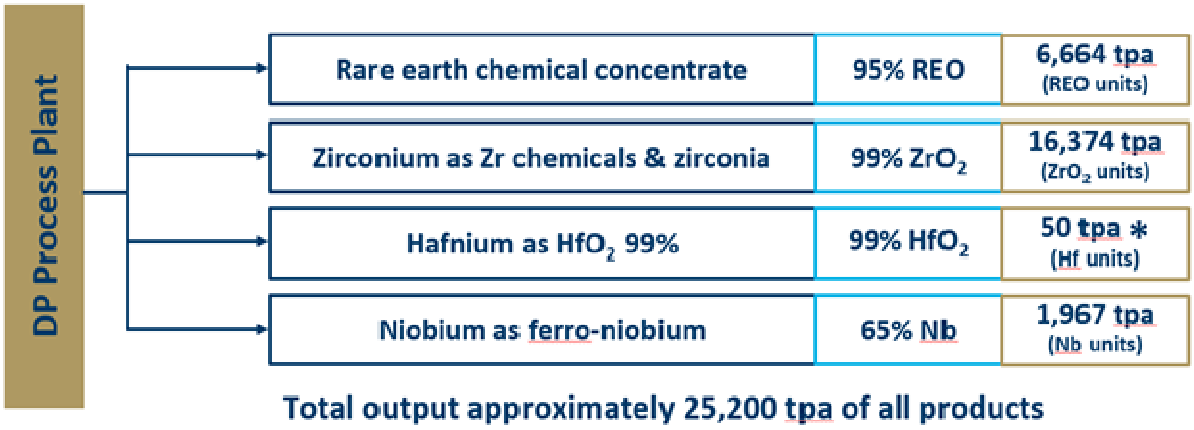
The other option, a two-phase build, has a forecast CapEx of AUD$808mn for Stage 1 and AUD$692mn for Stage 2 (with opportunities to stage further) and an additional AUD$39mn of sustaining capital over a 20 year LOM. This option gives an estimated NPV (@8%, pre-tax) of AUD$909mn and an estimated

16.1% pre-tax Internal Rate of Return. This scenario has an even more startling NPV/CapEx ratio of a mere 0.6.



Production Outlook

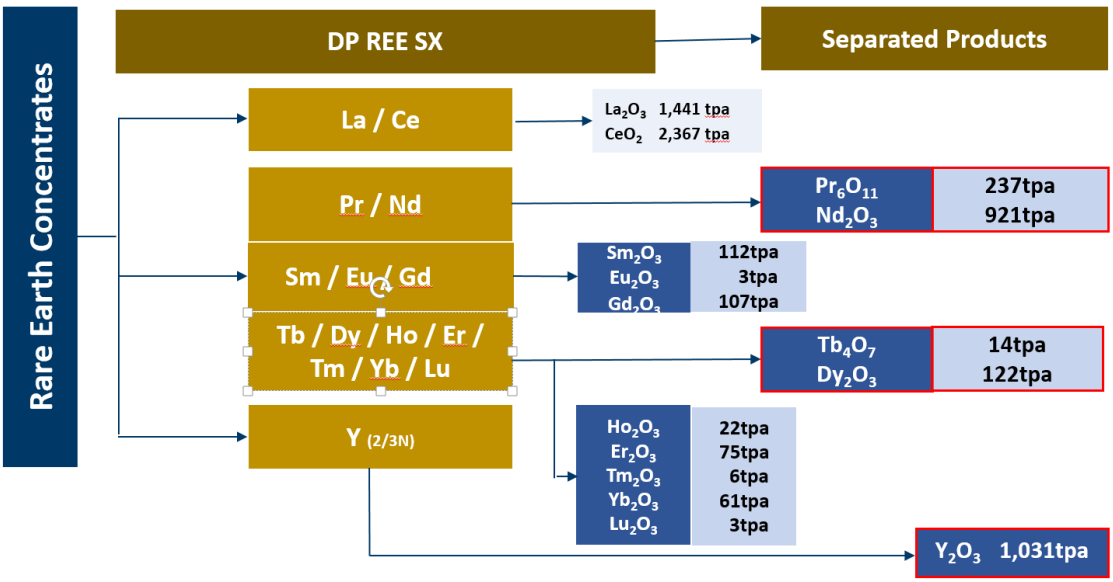
The 2018 study posited the following volumes in the one million tpa scenario:



The global market should be able to absorb the amount of Rare Earths being proposed, though much of that assumption depends on the Unknown Unknown (as Donald Rumsfeld would have put it) of who gets to production ahead of ASM. The Zirconium is not a market disruptive amount but could soften prices. It would definitely not firm them up.

With total production of Niobium in 2019 estimated by the USGS at 74,000 tonnes, the Nb contribution of nearly 2,000 tpa of Nb is insignificant.

The Hafnium quantity does have the potential to upset the apple cart on pricing of that metal.



Output

As is well documented we are bullish on the outlook for select Heavy Rare Earths, such as Terbium, Erbium (the secret sauce in 5G) and Dysprosium. We are also well-disposed towards Praesodymium and Neodymium, despite the fact that the much vaunted EV Revolution has not done much to jolly up their prices. We also remain one of the few to view favorably the outlook for Samarium (the key component on Samarium-Cobalt magnets) and Gadolinium.

ASM's study downplays the Lanthanum and Cerium components (presumably thinking they go away by putting them in a smaller font) and the end-user for the Yttrium is not made obvious.

The volume and revenue economics of the 2018 FEED study are shown in the table below:

Measure	*Unit*	*1 Mtpa Base Case 20YP*	*Staged Build 20YP*
Production			
Nd	t (as oxide)	17,843	15,720
Pr	t (as oxide)	4,581	4,036
Tb	t (as oxide)	267	236
Dy	t (as oxide)	2,348	2,069
ZrO2	t (as oxide equivalent basis)	317,266	280,210
FeNb	t (Nb metal basis)	38,138	33,652
Hf	t (metal basis)	968	968
Ore Processed	Mt / % of Resource	19.3Mt / 26%	16.7Mt/ 22%
Gross Revenue	A$M	12,768	11,495
Undiscounted Free Cash Flow (pre-tax)	A$M	4,656	3,943
Annual Full Capacity Free Cash Flow (pre-tax)	A$M	323	323

Capex

Finally we get to the fatal flaw in all this which is the outsized capex in the current model. As can be noted from the table on the following page the mining component, for such a shallow at-surface deposit, is in fact rather minimal. This reinforces our oft-repeated observation that REE-mining is in fact

closer to low-value quarrying than many other mining practices.

What is not clear to us is why the infrastructure costs have knocked the ball out of the park at AUD$247mn. The site is flat with all services in close proximity, great road access and even a rail line right nearby. This number in turn inflates EPCM and contingency costs. This budget seems to be padding upon padding with owner's costs and provisions sounding like the type of things that are usually in EPCM and contingency.

A very sharp razorblade needs to be taken to this capex budget to get it back inside the ballpark.

Plant Area	Base Case 1Mtpa (A$M)
Mining, crushing and grinding	28
Roasting and leaching	47
Solvent extraction, product refining and finishing	298
Waste treatment	161
Reagents (incl. acid plant)	199
Infrastructure	247
EPCM, construction facilities and freight	140
Contingency	103
Owners costs and provisions	74
TOTAL	1,297

Clean Metal

ASM inherited Alkane's existing minority investment in RMR Tech Corporation and agreed exclusive global commercialisation rights to use the "Clean Metal" metallisation technology. The technology converts metal oxides into metals through a carbon-free electrolytic process, with oxygen as a by-product, making it a cost effective and environmentally superior alternative.

It has been proven to be applicable to Zirconium, Hafnium, and permanent magnet Rare Earths metals (neodymium, praseodymium, dysprosium and terbium). These elements together represent over 80% of forecast revenue streams from the Dubbo project.

In June of 2019 Alkane announced that it was investing US$1.2mn towards a pilot plant facility to complete late-stage piloting and a feasibility study for larger-scale development and commercialisation of RMR's processing technology.

In return Alkane received a 10% interest in the developing company as well as exclusive rights to use the technology at commercial scale in relation to Zirconium and Hafnium.

ASM's agreement is with a South Korean company, Zirconium Technology Corporation, with the research having been developed by scientists at Chungnam National University's Department of Materials Science and Engineering in Daejeon.

The technology has the potential to replace the Kroll process, a highly energy intensive process that has

been used broadly in industry since its development in the 1940s, with a more environmentally sustainable process which, when commercialised, is estimated to reduce metallisation costs by in excess of 50%.

In September, ASM announced that it had moved to acquire 100% of the current joint venture company RMR Tech. The mechanism for this is that RMR Tech acquires 95% of the shares in Ziron Tech (with the founder, Professor Lee, retaining a 5% stake in Ziron Tech and become Chief Technology Advisor for ASM's metallisation business. ASM will have a call option over Professor Lee's 5% stake in Ziron Tech.

The consideration to current Ziron Tech shareholders (via a holding entity) consists of 1,306,417 ordinary ASM shares for consideration of US$2mn. These shares will be subject to voluntary escrow for 12 months. ASM has also granted Ziron Tech shareholders (via a holding entity) a 5% NSR from any global commercial metallisation facility established using the technology, subject to a 50% step-down of the royalty after payments of US$20m have been made.

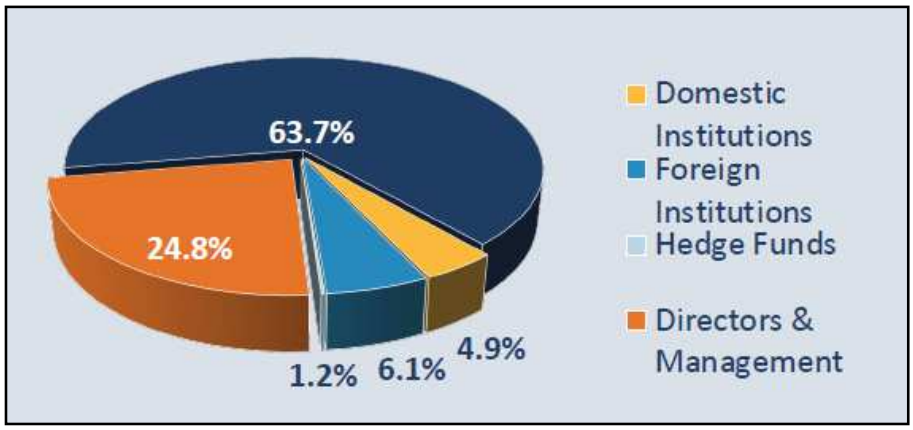
Financing

As at the 30th of June 2020 (the last results before the demerger, ASM had cash on hand of AUD$19mn and total liabilities of AUD$144mn (of which $26mn was deferred tax). Some $117mn was shown as payable to related parties (i.e. Alkane). The total amount was capitalized or forgiven prior to the demerger.

Clearly this puts the company in an attractively cashed up position. The recent price surge would otherwise have provided a good opportunity to add to the war-chest. A Ra Earth developer can never have too much cash in the bank.

Prior to the issue the share register looked as displayed in this pie chart. Of the institutional investors (at least from last records we have) Fidelity accounted for around 10%.

At the date of the demerger, a substantial shareholder notice was filed by Abbotsleigh Pty Ltd (the company of the billionaire shareholder, Ian Gandel) with a stated position of 24.76% of the shares. He is the non-executive Chairman of ASM.



Interestingly, Mr Gandel makes up almost the entirety of the holding of management & directors.

Government

In March 2020, the company announced that Export Finance Australia (EFA - Australia's Export Credit Agency) had confirmed its interest in participating in the financing consortium for the development of the Dubbo Project, subject to the finalisation of normal due diligence, acceptable financing structure and the Dubbo Project meeting the EFA's eligibility and credit requirements. ASM continues to liaise closely with the EFA and other Australian government departments in relation to financing and other support.

Risks

It is important to highlight some of the risks in any such venture. At least with its location in the well-known and long established mining jurisdiction of NSW, it is unlikely that any problems should present themselves on that front. However, one should consider:

- Financing difficulties
- Price fluctuations in what are relatively opaque markets for the various metals ASM will eventually produce
- Failure of demand to match rising production (i.e. build it and no-one comes) in Hafnium
- Excessive number of competing projects could crowd the scene and hog capital in the event that REE prices turn up
- An extended period of weakness in Zircon prices

An advantage that ASM has is that its reputation was not sullied after the REE boom rose and fell. The Japanese clearly regarded the company highly which is in stark contrast to their history with Canadian players. Despite that offtake deals and processing arrangements have come and gone in the interim as players tired of waiting or their own strategies changed. Obtaining offtake agreements will be key to moving the financing of the DZP ahead.

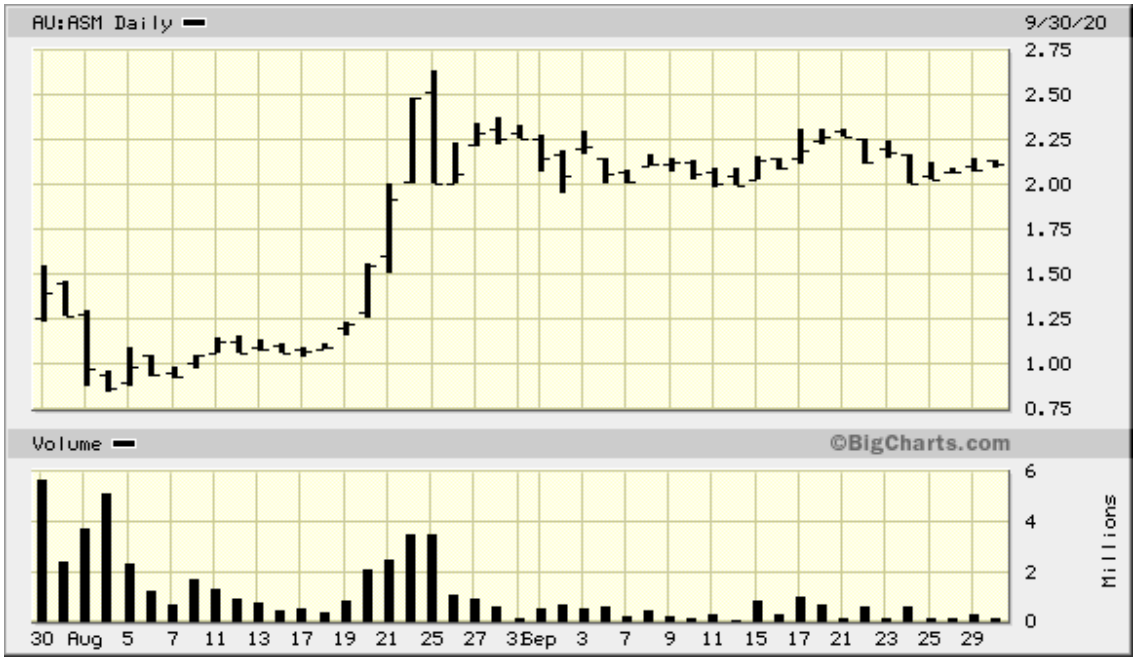
The CapEx is currently a deal-killer. ASM need to get Dubbo a production plan that works and that means eschewing the Rolls-Royce approach currently being taken. Can the management make the intellectual jump to "slumming it" as many other brethren in the REE space have resolved to do?

The Sell-Off

It would seem inevitable as Alkane became a gold story that the specialty metals bulls would be a minority on the register. Thus when Alkane set the ASM entity free it had on board a large number of players who had entered in recent years to play the attractions of Tomingley. With a residual stake in a specialty metals stock on their hands these investors almost inevitably decided to exit and tipped stock into the market in the days and weeks following the demerger.

This resulted in a brutal fall in the stock price from nearly $1.60 per share down to nearly 80 cts before the clean-out finally dissipated.

The stock has since staged a stunning rally which saw it triple in value in as many weeks before hitting the glass ceiling of sanity and retracing lower. However, not low enough in our view.



Conclusion

While the sound and fury of the REE boom is but a distant memory Australian Strategic Materials, with its Dubbo Project, is still with us. Only a mere handful of other REE names have survived the Great Cull since 2011. Dubbo survived within the cocoon of Alkane with the gold operations cushioning the pain of generalized investor disinterest. Now with a gold boom upon us the Tomingley operations (overvalued, dare we say it) have become the tail that wags the dog and divorce was an inevitability.

We have called the Dubbo project "prismatic" in the past, principally because it looks different from different direction and in the light of different market trends. Was Alkane a Rare Earth stock, a Titanium story, Zircon, Hafnium or Gold? This was not helped by the company changing its tune depending upon the audience. At least we can say post-merger what it is not… a gold stock.

It is as it should be. Indeed Dubbo project has probably stood the test of time better than most exactly because it did not make itself solely dependent upon the suite of REE metals and most particularly Alkane's gold "sideline" provided cashflow when RR were in their deepest period of despair. Now with gold gone from the equation the Dubbo project must stand on its own merits and moreover fund itself.

However, the 2018 FEED study did not scare the bogeyman of fundamental unviability from the door. Little attempt has been made to right-size the project instead it continues to suffer from volume bloat and capex bloated. The one thing that is not bloated is the returns. With NPV roughly matching Capex one might well ask the question "why bother?". And then in the phased approach the upfront capex goes down and the NPV *vis-a-vis* CapEx ratio plunges. This is so dramatic that one does bother to ask the question "why bother?" as the answer is that investors should not even get out for bed for this project.

Our belief is that it will ultimately be a recovery in REE prices that will drive sentiment in a positive direction and focus attention on whether the DZP is the most likely next cab off the rank in the REE production space in Australia. Then there is the Zircon and the Hafnium. The trick is to get the prices of the three metals firing on all cylinders at the same time. Beyond that trick, there is needed a serious return to the drawing board to take this project out of La-La Land and move it into the realms of the doable at a much lower CapEx.

In the time since this note started to be written the stock has gone from post-demerger swoon/sell-off to an exponential riser. It is like investors have not actually looked at the market cap of this entity. At an over AUD$200mn market cap this stock is patently overvalued. Our original NEUTRAL stance has needed to be jettisoned. Therefore we now rate Australian Strategic Materials as a **SHORT** position with a 12-month target price of AUD$1.50.

Important disclosures

I, Christopher Ecclestone, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or view expressed in this research report.

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60 Madison Ave, 6th Floor, New York, NY, 10010