Trek Metals Limited

Two battery metal projects

18 May 2023

Metals

TKM ASX A$0.082 **TARGET PRICE** **A$0.25** SPEC BUY

Trek is exploring for Lithium in the same region at Pilbara Minerals and has a Manganese Resource that could also feed into the Electric Vehicle battery industry. The team behind Trek were responsible for Pilbara Minerals' Lithium success.

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RAWSON LEWIS

Manganese not valued in Trek share price

Trek priced on Lithium as Lithium juniors rebound

The junior Lithium stocks have seen their share prices fall to half their September 2022 levels on the back of the falling Lithium price. The Lithium price is starting to recover and so are Trek's peers which should benefit Trek.

Lithium drilling to drive rerating

Spodumene Lithium explorers which have reported drill intersections of 1% Li20 currently trade at an Enterprise Value of between A$38M and over A$61M (Trek EV is A$26M) on current comparisons which are likely to appreciate. The size of the re-rating will depend on drilling success. If Trek can report a Resource, it will fall into a peer group with EVs of A$300-400/t LCE or A$66M to A$412M.

Lithium and Manganese both essential to batteries

Lithium Manganese chemistries appear to be strongly preferred for the high-performance Electric Vehicle market. Trek has a Resource of 11.3Mt @ 15% Manganese worth between A$5-10M today.

Peer valuation supports our price target of 25cps

Trek is fairly valued at 8cps on its lithium alone and has upside to 13.7cps if manganese is included. If Lithium drilling is positive (ie intersections of 1% Li2O or better), we expect TKM will trade between 15-35cps.

Company Data

Shares Outstanding (M	363.9
Options & Performance RIghts	50.5
Price ($/sh)	0.082
Market Capitalisation ($M)	29.8
Free Float (%)	92%
Free Float Market Capitalisation ($M)	106
12 Month Low ($/sh)	0.045
12 Month High ($/sh)	0.145
Average Daily Volume ('000)	711

Data Source: ASX, Company, Rawson Lewis

Share Price Chart

Source: ASX to 16 May 2023

Directors

Tony Leibowitz - Non Exec Chairman
Neil Biddle - Non Exec Director
John Young - Non Exec Director
Valerie Hodgins - Non Exec Director
Derek Marshall - CEO

Shareholders

Alex Jordan	4.95%
Tony Leibowitz	3.77%
Biddle Partners	2.83%
SD&KE Amos	2.68%
BNP Paribas Noms	2.22%
Tiford Corp	1.37%
Pilbara Minerals	1.32%
John Young	1.31%

1. Investment Proposition

A few definitions

- LCE – Lithium Carbonate Equivalent
- Li2O – Lithium Oxide (one tonne of Li2O is equivalent to 2.47 tonnes of LCE)
- Spodumene – Preferred Lithium containing mineral mined from a hardrock mine (vs Brine)
- HPMSM – High Purity Manganese Sulphate Monohydrate is the feedstock for making Lithium battery precursor

Trek priced on Lithium as first drilling commences

Drilling at the Tambourah Lithium project starting in the June 2023 quarter will test the priority spodumene pegmatite veins and geochemical targets identified in 2022. This is a first pass program which will test spodumene pegmatite veins and geochemical targets identified in 2022. We believe the market has not priced in much in the way of success so any drill intersections averaging 1% Li2O or more are likely to have a positive impact on the company's share price.

Exploration success and a recovering Lithium price could drive 200% share price rise

Spodumene Lithium explorers which have reported drill intersections of 1% Li20 or more currently trade at an Enterprise Value of between A$38M and over A$61M (Trek EV is A$26M) and those with Resources trade at A$300-400/t LCE or A$66M to A$412M. These metrics are at current Lithium prices. Junior Lithium equities have been sold down to half their 2022 peaks, and we expect Trek's peer group share prices will appreciate over the next six months or more, which should benefit the Trek share price by lifting the prices of its comparable companies.

Manganese is Lithium's partner in high performance Electric Vehicle batteries

While Manganese is not used in all Lithium battery chemistries, it is increasingly used in high performance applications to achieve high energy density for a given weight of battery, which is the key to solving issues relating to vehicle range and related customer anxiety. It is also cheaper and has a more stable price that competitors, nickel and cobalt, making it more attractive to industry.

Trek has a quality Manganese Resource of 11.3Mt at 15% Mn that could add extra upside

By having an existing Resource and the potential to expand it, Trek is already on the way to being able to enter the market to produce High Purity Manganese Sulphate Monohydrate (HPMSM).

Enterprise Values for Trek's Manganese peers range from around A$5M for explorers with little or no Resource to between A$7M to A$88M for companies the completed scoping or feasibility studies Most of these peers that are focussed on producing Manganese concentrate are bunched in the A$10M to A$20M range. The outliers at EVs of over A$60M are generally well advanced on the path to producing battery grade HPMSM.

Table 1 Valuation Summary supporting our 25cps price target

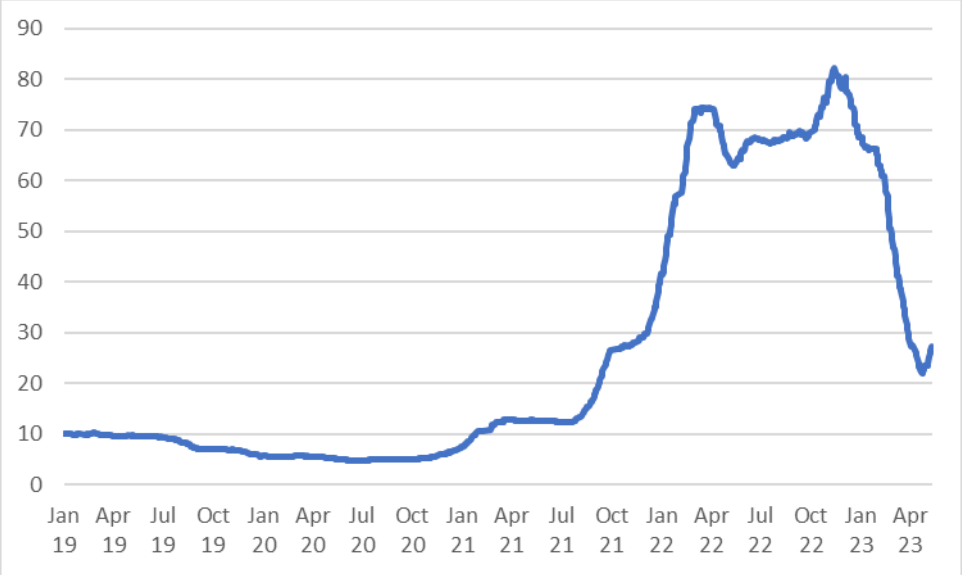
	Today		Post Positive Drilling	
Valuation	A$M	cps	A$M	cps
Tambourah Lithium	26-32	7.1-8.8	38-61	10.4-16.8
Hendeka Manganese	5-10	1.4-2.7	10-60	2.7-16.5
Other Assets	5.0	1.4	5.0	1.4
Cash at 31 March 2023	2.7	0.7	2.7	0.7
Combined	38.7-49.7	10.6-13.7	55.7-128.7	15.3-35.4

Source: IIR estimates sourced from following text – See Table 2 and Table 4

2. Trek Part 1: The Lithium story

Lithium prices likely to be rebounding

Figure 1 Lithium Carbonate price (99% ex works China) in US$/kg



Source: au.investing.com

The Lithium price appears to have stabilised. The Chinese involvement in the Lithium market generally means that traders destock into a falling market, then rebuild positions when the price starts to rise, leading to a price cycle that is likely to see the Lithium price rise from here.

Junior Lithium stocks have been sold down with the fall in the Lithium price with many trading at half of their September to November 2022 values. Equity prices appear to be generally firming on the change in Lithium price direction. The Trek share price is likely to participate in the general Lithium sector recovery.

Valuing Lithium exploration

Valuing exploration is highly subjective and because it is all about expected future drilling results is highly speculative. However, by analysing the share prices of other Lithium explorers, investors can get a sense of what is likely to happen to Treks share price as it reports the results of its maiden Tambourah drilling program.

Summary of Lithium peers

We have reviewed Trek's listed Lithium exploring peers and have concluded that in the current market which reflects the Lithium driven fall in share prices:

- Companies which have reported spodumene Resources with a grade of around 1% Li2O or better have an Enterprise Value (EV) of A$66M or more (Table 3)
- Companies which have reported drill intersections but have yet to report a spodumene Resource trade at an Enterprise Value of between A$38M and over A$61M (Table 2)
- There are 60 Lithium explorers with Enterprise Values less than A$25M, excluding Trek, and the common themes in this group appear to be that their Lithium assets were recently acquired or being earned into, the Lithium exploration program is at early stages with no

timing on drilling, and the companies own other exploration tenements for other commodities which will consume cash to hold and more to explore so focus may be lacking.

At Trek's market capitalisation of A$29M we do not believe there is much expectation of exploration success built into Trek's share price. While the share price could soften if the market perceived a lack of cash, appropriate human resources or management intention, that is unlikely to be the case with Trek so we perceive that risk to be low. The more likely outcome is for positive news flow driven by the following elements:

- Trek has a quality Board and management team, which was responsible for the setting up Pilbara Minerals.
- Tambourah is located in a region known for hosting good quality spodumene Lithium deposits such as the Wodgina operation of Pilbara Minerals and the geology of those deposits is well understood. Initial assessment including geochemistry has indicated the presence of the appropriate geology at Tambourah including pegmatites swarms showing Lithium-Caesium-Tantalum (LCT) gradation.
- The maiden drill program is starting in the June 2023 quarter. This is evidence that the company has a high degree of focus on exploring for Lithium.
- The company has A$2.7M cash on hand at 31 March 2023 which is sufficient to fund the proposed exploration program but will need to be augmented within the next six months.

The detail of that program is yet to be announced, but part of the program is likely to be contingent of initial drilling results. However, the release of 17 April 2023 suggests that the intention is to drill a number of targets, rather than pattern drill a specific target to generate a Resource.

Peer Comparison

Table 2 Spodumene explorers with no Resources with Enterprise Values around Trek's

Code	Company	Location	Shares M	Price cps	Market Cap A$M	Cash A$M	Debt A$M	EV A$M
WR1	Winsome Res	Canada	170.3	184.00	313.30	51.01	0.00	262.29
IR1	Iris Metals	USA	101.1	116.00	117.25	0.77	0.00	116.49
TYX	Tyranna Resources	Namibia	2404.0	2.60	62.50	0.91	0.00	61.59
XTC	Xantippe Resources	Argentina	10580.1	0.50	52.90	3.45	7.58	57.03
1MC	Morella Resources	USA	6098.6	1.00	60.99	9.10	3.34	55.23
FBM	Future Battery Minerals	USA WA	427.8	12.50	53.48	2.08	0.00	51.40
PSC	Prospect Resources	Namibia	462.3	15.00	69.34	28.45	0.00	40.89
CY5	Cygnus Metals	Canada	209.9	22.50	47.23	8.87	0.00	38.37
ETM	Energy Transition	Spain	1355.7	4.10	55.59	23.47	0.00	32.11
GW1	Greenwing Resources	Argentina	149.9	23.50	35.23	8.88	4.06	30.41
SGQ	St George Mining	WA	840.5	4.10	34.46	5.68	0.00	28.78
TKM	**Trek Metals**	**WA**	**363.9**	**8.00**	**29.12**	**2.72**	**0.00**	**26.40**
LPM	Lithium Plus	NT	97.2	32.00	31.12	5.03	0.00	26.09
SCN	Scorpion Minerals	WA	345.7	7.40	25.58	0.89	1.18	25.87
AS2	Askari Metals	Namibia	67.4	40.00	26.95	3.00	0.00	23.95
BM8	Battery Age Minerals	Canada	80.0	34.00	27.19	4.53	0.00	22.66

Source: Company presentations, 2A's, ASX share price on 15 May 2023 – Stocks highlighted in blue have just started maiden drilling programs at their Lithium prospects

The table above shows Lithium spodumene explorers which do not have Resources. Most but not all of the stocks in the table with an Enterprise Value over A$38M have reported their own or historical drill results. St George, Morella, Future Battery, Prospect and Cygnus have reported the first drilling results within the last six months, which is where Trek will be in four to six months' time.

The bottom two (Askari and Battery Age) have only reported rock chips and have yet to announce a drilling program.

Trek's Enterprise Value is at the lower end of an A$26-32M of peers just starting to drill

Scorpion, Lithium Plus, Energy Transition and Greenwing have just started their maiden drill programs so are in the same stage of exploration as Trek, and St George has completed its first program in late 2022.

On the basis of these comparisons, Trek at an Enterprise Value of A$26.4M is at the lower end of a group of four peers with EVs ranging from A$25.9M to A$32.1M at share prices of 15 May 2023.

With drilling success we see Trek's Enterprise Value rise

If Trek reports positive intersections (ie 1% Li2O or better) from its maiden drill program, its Enterprise value should increase to anywhere between A$28M (SGQ) to over A$61M (TYX). The capitalisations of Winsome and Iris are possible stretch targets, but the median valuation is more like A$55M.

We see an EV of A$55M or A$0.15/sh as a reasonable target on the back of this drilling program, depending on the nature of the results. Note this includes no value for Trek's other assets. The full valuation summary is in Table 1.

Table 3 Companies with reported Lithium resources

Company	A11 Atlantic Lithium	LRS Latin Res.	GL1 Global Lithium	DLI Delta Lithium	GT1 Green Tech.	EUR European Lithium	ESS Essential Metals	CRR Critical Resources
Location	Ghana	Brazil	WA	WA	Canada	Austria	WA	Canada
Shares M	669.9	2528.0	259.0	446.0	253.9	1489.2	267.6	1594.8
Other M	60.7		11.7	76.7	21.3	824.6	7.2	64.4
Price cps	64.00	17.00	170.00	58.00	67.00	10.25	47.00	4.50
Market Cap A$M	428.74	429.76	440.38	258.69	170.11	152.65	125.76	71.76
Cash A$M	15.98	21.03	70.60	51.95	20.55	24.29	8.74	5.59
Investment A$M								
Debt A$M	0.00	0.00	0.00	0.00	0.02	0.00	0.00	0.00
EV A$M	**412.75**	**408.73**	**369.78**	**206.74**	**149.58**	**128.36**	**117.01**	**66.18**
EV A$/tonne LCE	**757**	**1036**	**293**	**549**	**408**	**403**	**366**	**313**
Resource Mt	17.7	13.3	50.7	12.7	14.4	12.9	11.2	8.0
Grade Li2O	1.25%	1.20%	1.01%	1.20%	1.03%	1.00%	1.16%	1.07%
LCE Kt	546	395	1260	377	367	318	320	212

Source: Company presentations, 2A's, ASX share price on 15 May 2023

If Trek drilling is sufficiently successful as to produce a Resource, then in the current market (15 May 2023) that Resource ought to be valued at between A$300-400/tonne Lithium Carbonate Equivalent (LCE where 2.47tonne of LCE = 1tonne Li2O).

Stocks that have Resources trade at Enterprise Values between A$66M and A$412M depending on grade, potential Resource upside, timing of Feasibility Studies and other factors.

3. Trek Part 2: The manganese story

Market understands lithium but not manganese

The market is well informed and understands the Lithium exploration proposition. At the recent 2023 Sydney Resources Roundup, a poll of attendees rated Lithium as the commodity investors were most interested in by a substantial margin.

In the same survey at the Sydney RIU which rates Lithium so highly, Manganese received no votes of interest at all, despite two Manganese explorers with Resources exhibiting at the conference. This is surprising given that Manganese is an essential fellow traveller with Lithium in most of the high growth Lithium battery chemistries.

Manganese is a second string to Trek's bow of exploration properties and provides the company with an additional opportunity to benefit from the Electric Vehicle revolution.

Trek has two value adding opportunities:

- Mine and sell Manganese concentrate
- Convert that concentrate into High Purity Manganese Sulphate Monohydrate (HPMSM)

These activities are inclusive. Mining and shipping concentrate is an essential part of making battery grade Manganese. There is very significant financial support for project development available to Manganese project sponsors for downstream consumers, including the automobile manufacturers but one of the major investment criteria is that the miner must be perceived as competent at mining.

One way for a project developer to demonstrate mining and operational competence is to start mining and shipping concentrate. There are other pathways but commencing production establishes operating credibility and creates a cash flow to support the next stage on investment.

Manganese Peer Comparison

Trek's Hendeka Manganese project is worth A$5-10M at present

Trek has a quality asset that is smaller in tonnage but higher in grade than most of its peers. This can be a function of cutoff grade, but in this case Hendeka is a different minerology to that of Element 25, Firebird or Black Canyon. Adding significant tonnage is likely to require the discovery of new pods of ore rather than growing the Hendeke deposit itself.

However, tonnage does not appear to matter much when it comes to valuation. A Manganese project sponsor needs enough to support a business and the market doesn't appear to value additional tonnage. The market appears to focus more on what a company plans to do with its deposit. Costly projects to produce concentrate are not popular (witness Firebird's discounted valuation).

The Trek Resource is probably close to what would be required to support a High Purity Manganese Sulphate Monohydrate (HPMSM) project. From that point of view, it is close to being in the same position as the other smaller project sponsors, so should have a similar value, ie A$5-10M.

If it could get into production without a big capital call on shareholders, then there is the prospect of being re-rated like Element 25 into the A$60M EV territory. Doing that would probably require a partner like OM Holdings in Bryah's project, or a prepayment from a concentrate offtake customer, if the economics stacked up.

Some peers have been excluded from our comparison table

A number of overseas listed Manganese explorers and project developers including Vancouver listed Giyana Metals, Nevada Silver and Manganese X Energy, have been identified with market capitalisations of A$15-33M. They have not been included in the table below due to space limitations but if included would not change the comparative picture.

We have also excluded multi-commodity producers like South 32 and Anglo American, as well as Jupiter Mines, OM Holdings and Resources Development Group. Jupiter Mines is an existing commodity Manganese producer, OM Holdings ASX:OMH is a ferro alloy plant owner and minority investor in mines, and Resources Development Group is a processing plant constructor with a small Manganese Resource.

Table 4 Manganese peers

Code	BYH	AX8	FRB	BCA	TKM	EMN	E25
Name	Bryah Resources	Accelerate Resources	Firebird Metals	Black Canyon	Trek Metals	Euro Manganese	Element 25
Location	WA	WA	WA	WA	WA	Czech	WA
Issued Shares M	281.3	377.0	73.1	51.7	363.9	401.4	190.5
Options M	2.0	0.0	29.6	3.2	62.0	42.5	10.9
Share Price AUD cps	1.8	2.1	12.0	23.0	8.0	20.0	66.0
Market Capitalisation A$M	**5.1**	**7.9**	**8.8**	**11.9**	**29.1**	**80.3**	**125.7**
Cash at 31 Mar 2023	0.5	2.5	2.1	1.7	2.7	15.2	37.6
Debt	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Enterprise Value A$M	**4.5**	**5.4**	**6.7**	**10.2**	**26.4**	**65.1**	**88.1**
EV A$/t Mn in Resource	**24.42**		**0.27**	**0.69**	**15.57**	**32.59**	**3.35**
Resource Mt	0.9		234.2	143.0	11.3	27.0	263.0
% Mn	21.0%		10.5%	10.3%	15.0%	7.4%	10.0%
Mn Contained Mt	0.2		24.7	14.7	1.7	2.0	26.3

Source: Latest company shareholding releases, December quarterlies, most recent Resource statements

Euro Manganese and Element 25 demonstrate two pathways for Trek

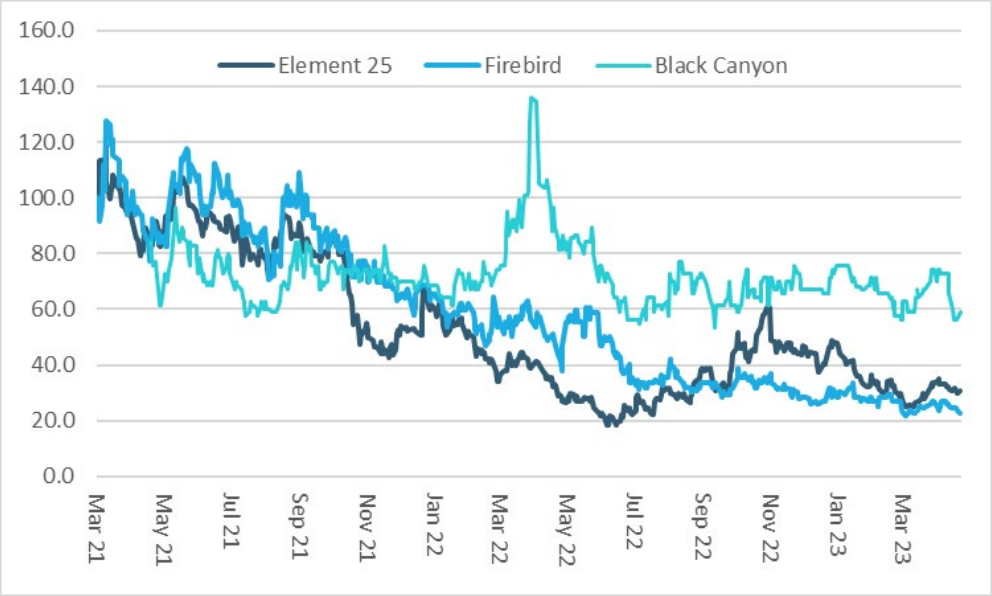
Of relevance to Trek is the market capitalisations of Euro Manganese and Element 25. Both companies are trading at Enterprise Values of around A$65-88M and represent two different pathways to Trek's share price appreciation.

- Element 25 is a Pilbara based project developer which commenced production and sales of a planned 30% Manganese concentrate on 15 July 2021, and has completed a Feasibility Study into a High Purity Manganese Sulphate Monohydrate plant in the USA. The concentrate business has been burning around A$7M every six months, at least to December 2022, but was reportedly cash flow positive in the March 2023 quarter. The share price would probably be substantially higher if the business had been cash flow positive for longer.
- Euro Manganese is focussed on developing a High Purity Manganese Sulphate Monohydrate plant in the Czech Republic. The deposit is probably too low grade and the wrong minerology to be shipped as concentrate to the steel industry. However, being a Manganese carbonate, it may be easier to process into HPMSM than manganese oxide deposits. The higher market capitalisation may be reflecting that potential processing advantage.

Why is Element 25 at a premium to Firebird and Black Canyon?

It is clear from Table 4 that Firebird has a Resource that is very similar in size and grade to that of Element 25, yet its enterprise value is 13.7% of the EV of Element 25. Black Canyon has a resource that is 67% of Element 25 and an EV of 15.5%, All deposits are together to the south of Newman in the Pilbara region of Australia. Black Canyon has a smaller Resource but has outperformed Firebird.

Figure 2 Element 25 vs Firebird and Black Canyon share prices rebased to 100



Source: ASX

From a review of the three companies' share prices since Firebird and Black Canyon listed in 2021, it appears that the relative valuation of Element 25 and Firebird has not changed much, with Element 25 currently showing a 35% "premium". Black Canyon share price performance has been very different and has outperformed by tracking a relatively unchanged path.

While it is possible the stock market is not efficiently pricing one of these two companies, that would be extremely unusual over such a long period of time, to the point of being impossible.

There are only two explanations we can offer at this stage.

Market expectations on further share issuance

Element 25 has been in production since 15 April 2021. It has been selling Manganese concentrate since 18 June 2021. Whilst it has had a rocky start Element 25 delivered a $5M cash operating surplus in the March 2023 quarter.

Firebird has a market capitalisation of A$8.8M. Its start up project to make manganese concentrate has an initial capital cost of A$143.8M including a renewable power plant which would probably be taken off balance sheet. What the current share price differential may be saying is that the market thinks the current shareholders will own around 13% of Firebird once they have been diluted by the capital issuance required to get into production.

Black Canyon has a market capitalisation of A$11.9M and a capital cost to fund of A$44M, implying the market thinks current shareholders will be left with a sixth of the asset post capital raising.

Market prefers to focus on making battery precursor

In the period since Firebird listed, Element 25 has been emphasising the work going into its investigations of converting its ore into Manganese Sulphate for use in Lithium ion batteries. While Firebird and Black Canyon have also mentioned making precursor products, both were more focussed on starting manganese production.

Investing downstream in battery chemical production

From a review of the commentary from several High Purity Manganese Sulphate Monohydrate (HPMSM) project promoters, there appears to be a number of steps that could lock in a significant cost advantage if the project was able to access the technology.

The price of battery grade HPMSM has been over US$4000/tonne and up to US$7000/tonne (Euro Manganese Feasibility 12 September 2022). We believe that a competitive cost advantage of between US$1000/t and US$2000/t might be achieved by developing the right processing technology and by strategic plant location.

Jupiter Mines has its criteria for entering the HPMSM market

Jupiter Mines has conducted an extensive analysis of the electric vehicle battery precursor product market (31 March 2023) and has determined that it is an attractive market for a manganese ore miner. Jupiter has analysed the market from its own perspective, but the basis its analysis can be applied to any manganese miner. The factors that make the battery precursor market attractive are:

- Supply demand analysis by Benchmark Mineral Intelligence indicated that the market will need significant new capacity on the supply side from 2025 onwards.
- Production of battery grade manganese sulphate is very sensitive to ore impurities which required intensive testing.
- Competitive advantage in the production of battery grade Manganese can arise from a combination of ore reserve related scalability (ie resource not a constraint) and counterparty quality, forecast cost structure, existing strong relationships, financial capacity and established ore production.
- The best market entry model for Jupiter will be to coinvest (with downstream channel partners) in a High Purity Manganese Sulphate Monohydrate production facility in either North America or Europe.

Building deep cost competitiveness

What was not emphasised by Jupiter was the building of deep cost advantage in the supply of Manganese units to the Electric Vehicle market. Jupiter's focus is on its low-cost manganese mining operation, but cost competitiveness in High Purity Manganese Sulphate Monohydrate (HPMSM) is a lot more than just mining.

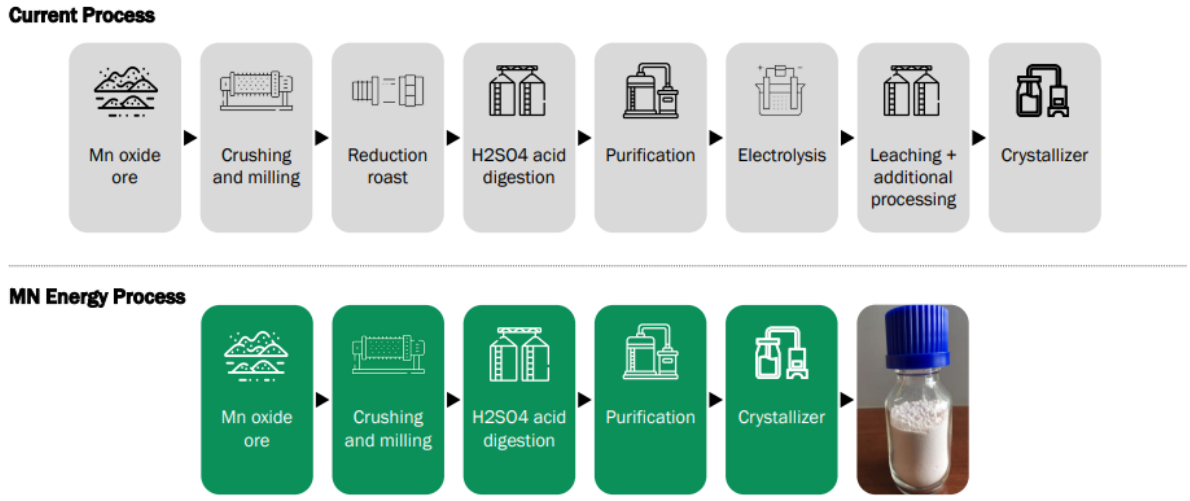
Cost competitive advantage is the single most powerful element of a successful supplier in any commodity. For supply of manganese to the Electric Vehicle market, the steps that build advantage relate to the elimination of processing steps.

Reducing energy intensive processing stages

The figure below highlights that if High Purity Manganese Sulphate Monohydrate (HPMSM) can be created by direct leaching, it eliminates two very energy expensive steps:

- Reduction roast which is typically at 1000^{o}C which generally is a coal fired rotary calcining kiln which adds approximately US$500-1000/t in cost to the final product
- Electrolysis to Manganese metal which consumes 6000-7000kWh/tonne of power if selenium is added or 10000-11000kWh/tonne if not. More than 3parts per million of selenium makes the product unfit for battery use. At the higher power rate, the power cost of this stage alone in US$500-1000/tonne, depending on cost of power.

Figure 3 Comparing production of High Purity Manganese Sulphate Monohydrate by direct leach (MN Process) vs the conventional process



Source: https://www.mnenergy.com.au/shareholders/

Eliminating an additional stage by being close to a major customer

The above figure ends with the production of High Purity Manganese Sulphate Monohydrate (HPMSM), which involves an energy intensive crystallisation step. If the plant is built beside a battery precursor manufacturer, the crystallisation step can be eliminated, further reducing costs and increasing the competitive position of the supplier. Euro Manganese (ASX:EMN) is proposing to do this at its Canadian plant.

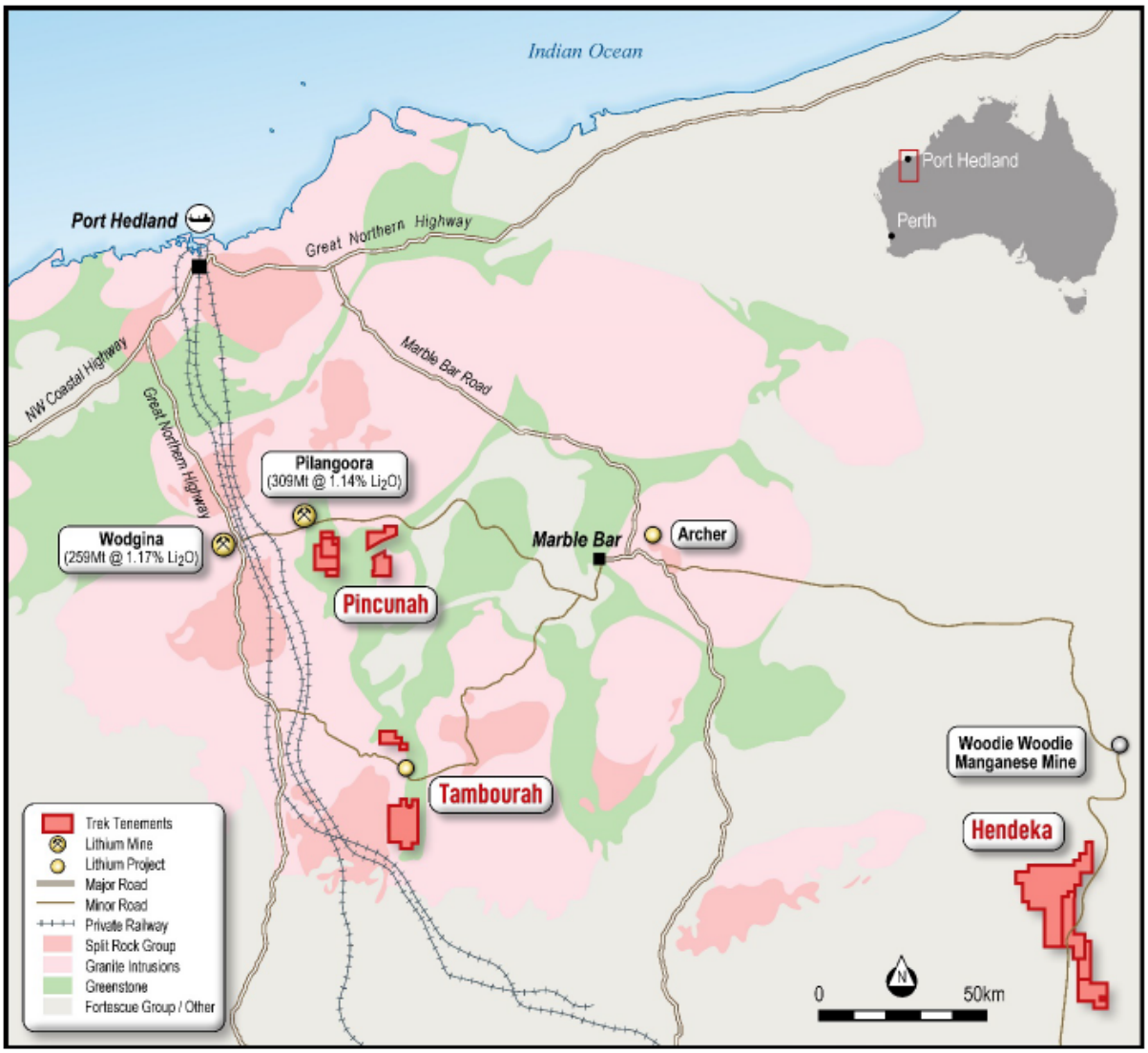
Other cost or pricing benefits from being close to customers

Finally, there is an additional cost advantage relative to Chinese producers that will arise from being close to customers in Europe and the USA.

- Saving ocean freight and potentially land freight
- Receiving price premia that may accrue to the local producer from workings of tariffs or provision of provenance (ie where the product has come from, and the ESG rating of its production).
- Part of the pricing formula may include a bonus or penalty for carbon production during the manufacture of the HPMSM.

4. Overview of Trek's Assets

Figure 4 Location of Pilbara assets



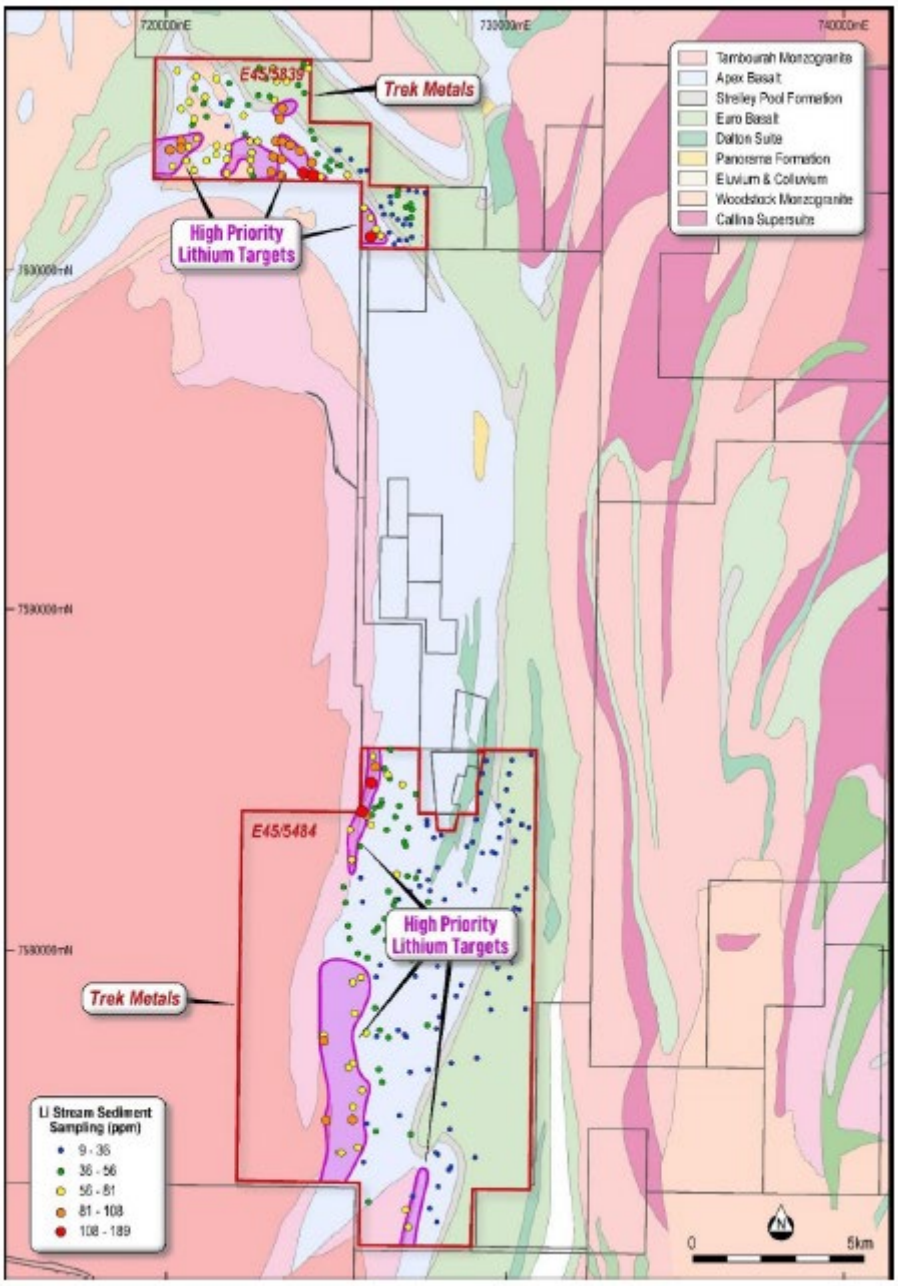
Source: TKM release 17 April 2023

Trek's major two assets, Tamborurah Lithium Project, and Hendeka Manganese Project, are both in the Pilbara region of Western Australia.

It has other assets in Western Australia outside the Pilbara, and in the Northern Territory.

4.1 Tambourah Lithium

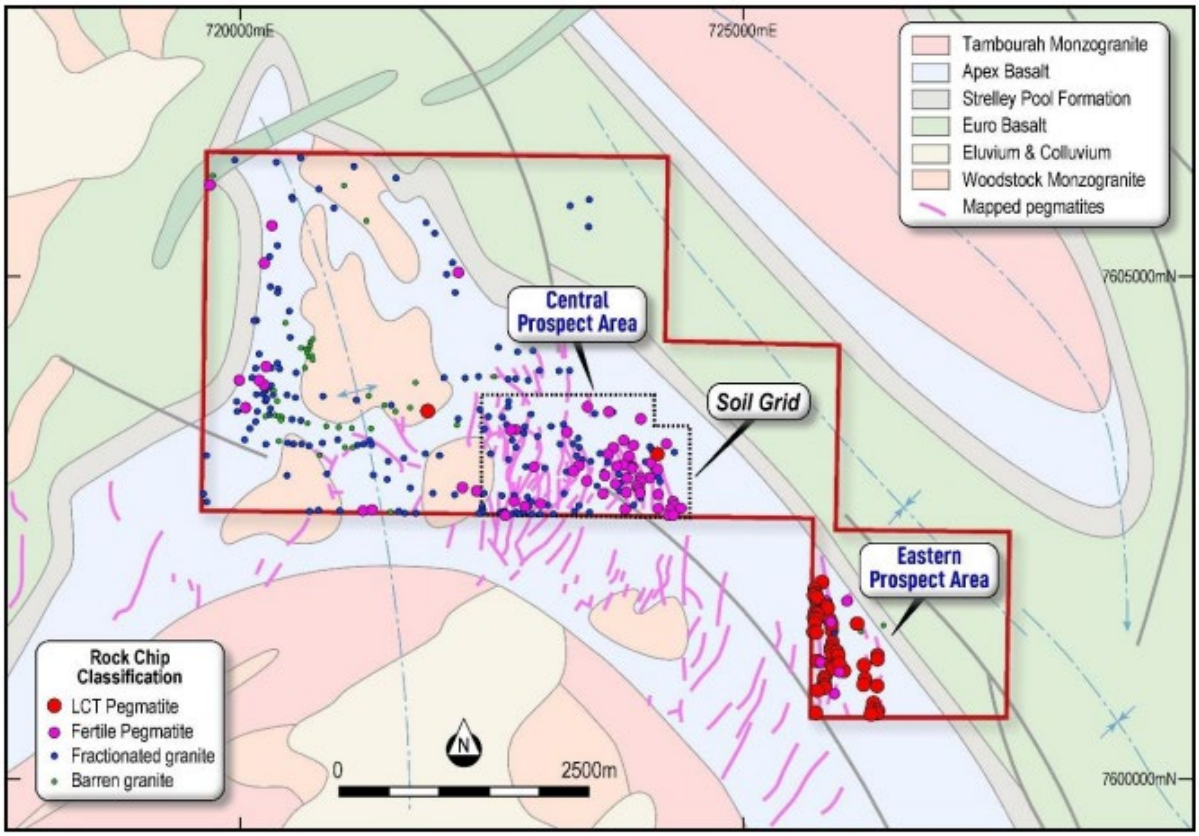
Figure 5 Tambourah tenements with stream sampling to locate priority targets



Source: TKM release 17 April 2023

All permitting was completed by 17 April 2023, and drilling is on track to commence in the June 2023 quarter. Both the northern and southern tenements are expected to see drilling but the focus is likely to be on the northern tenements, and particularly the Eastern Prospect Area in figure below.

Figure 6 Tambourah Central and Eastern prospects



Source: TKM release 12 February 2023

Trek reported the grades of rock ship samples on 22 November 2022 that includes a number of samples of 2-3% Li_2O, identifying the Eastern and Central Zones as being of the greatest interest.

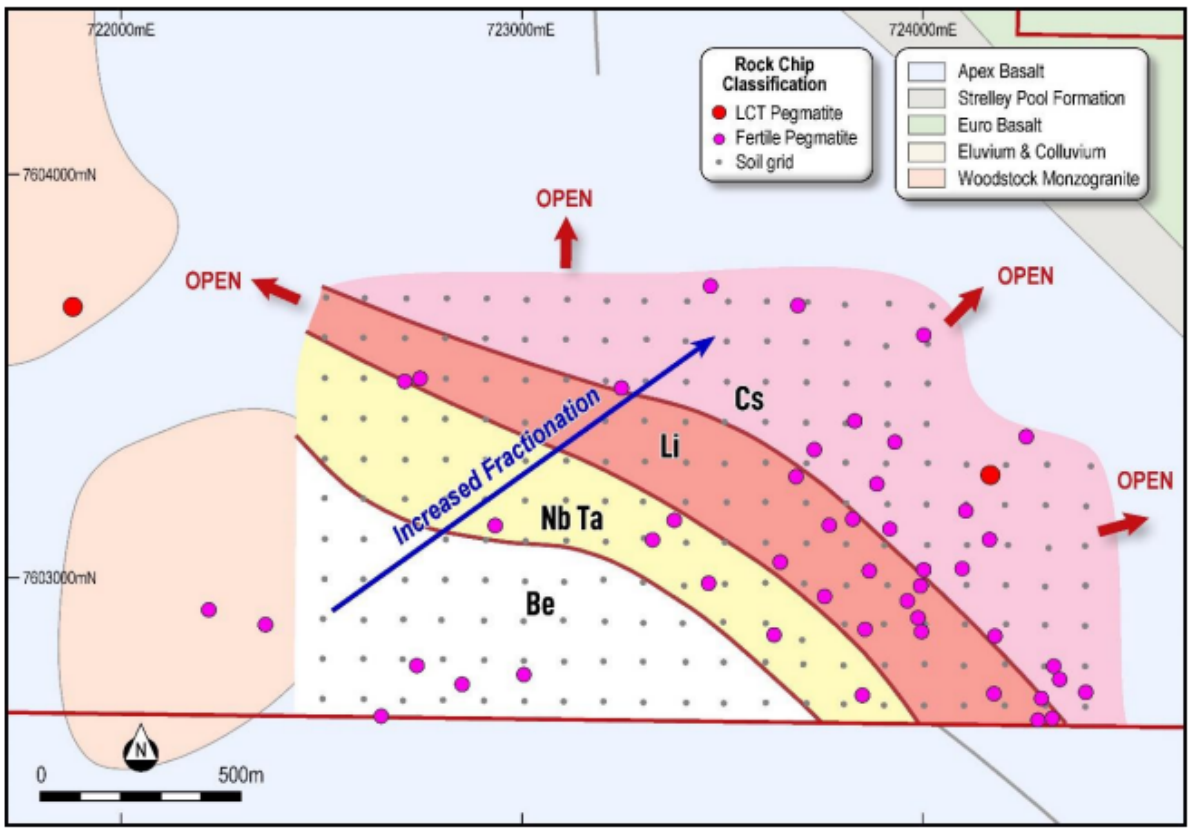
The Eastern Prospect has been identified as the more spodumene dominant zone and therefore of greater interest. Trek is looking for spodumene lithium mineralisation rather than lepidolite or other forms of lithium bearing mineral.

Rock chip and stream sediment sampling data confirms that the Eastern Prospect is the spodumene-dominant zone, where high-grade rock chips were returned last year:

- 3.07% Li2O in TKL0045
- 2.69% Li2O in TKL0042
- 2.36% Li2O in TKL0095
- 2.28% Li2O in TKL0044
- 2.11% Li2O in TKL0083

Recently received soil geochemistry data interpreted to define classic LCT pegmatite zonation, indicating that the Central Prospect is likely within the lithium zone, elevating this area as a high-priority drill target for the upcoming maiden drill program.

Figure 7 Lithium Caesium Tantalum (LCT) zonation in the Central Prospect Area



Source: TKM release 14 February 2023

4.2 Hendeka Manganese

History

Trek acquired Hendeka by merging with Edge Minerals Ltd in November 2022. The shareholders of Edge currently own 13.3% of Trek which implies a market value of Hendeka of A$3.8M based on Trek's current Enterprise Value. In fact, we believe the market is valuing Trek entirely on lithium and is valuing Hendeka at zero.

The expert valuation of Edge in the merger booklet was A$2.1M to A$3.3M. which we believe is fair but conservative relative to where it would trade if Edge was separately listed today.

Resources of 11.3Mt at 15% Mn

The current Resources are probably not quite large enough to support a project, but we believe could be increased for modest expenditure. The Inferred Resource would have to be infill drilled to Measured and Indicated status to support any development.

Table 5 Hendeka Inferred Resources

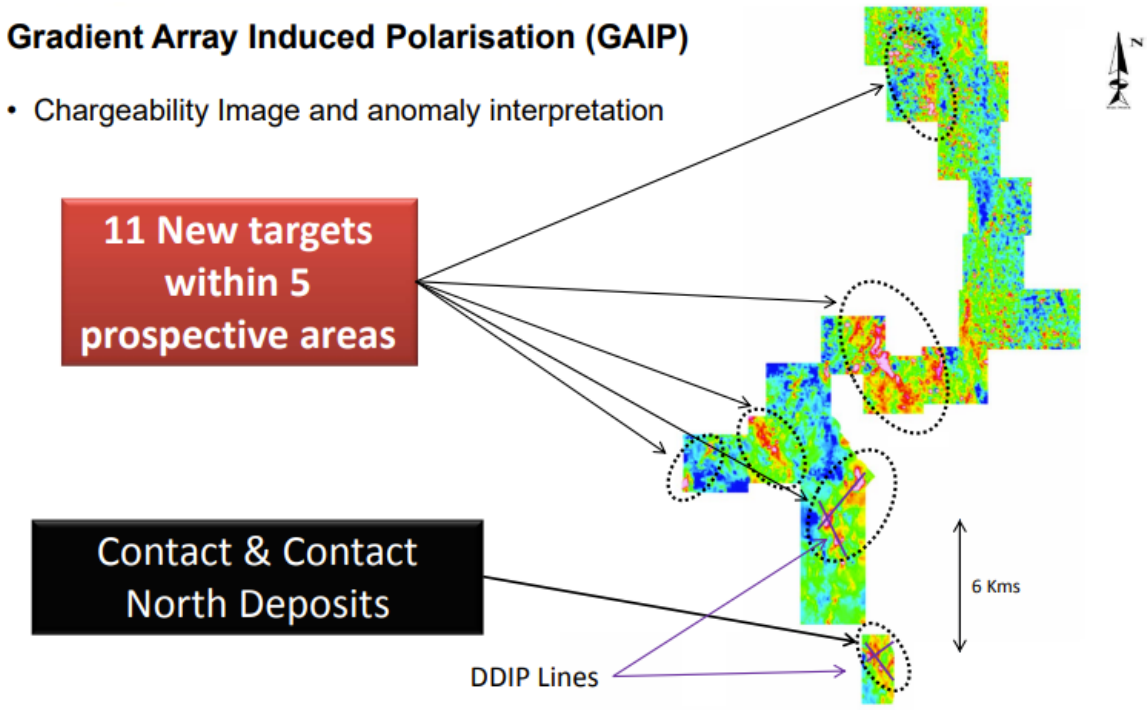
Hendeka Inferred Resource	Mt	Mn%	Al_2O_3%	Fe%	SiO_2%	P%	LOI
Contact	2.8	13.6%	5.1%	15.7%	42.9%	0.1%	8.4%
Contact North	8.5	15.4%	3.0%	15.0%	42.4%	0.1%	8.6%
Combined	11.3	15.0%	3.5%	15.2%	42.5%	0.1%	8.5%

Source: TKM merger document 11 October 2022

There is also a deposit called Tally Ho which has a JORC 2004 Resource of 2.9Mt at 7.1% Mn. It has not been included in the JORC 2012 Resource above, but if Trek were to go down the battery feedstock path, could have potential.

Metallurgical testing by Trek has indicated that Hendeka could produce a 34-44% Mn lump ore product and a 34-44% Mn fines product.

Figure 8 Potential for additional discoveries



Source: Spitfire presentation 6 February 2013

Given the generally uniform distribution of the mineralisation, there is potential for additions to the currently defined Inferred Mineral Resource, adjacent to the known mineralisation. This is supported by the 2014 Gradient Array IP (GAIP) survey (Figure 8) which identified several other anomalies that are immediate drill targets.

The magnitude and size of these IP anomalies suggests that a shallow body of manganese similar to the known Resources may be present. These GAIP targets require additional exploration drill testing, which may confirm GAIP as a cost-effective and rapid exploration tool.

4.3 Pincunah Gold/Base Metals

Pincunah is a zinc, lead, copper and silver project, located 100km south of Port Hedland and 25km west of the Sulphur Springs deposit owned by Develop Global (ASX:DVP).

Pincunah consists of two exploration licences (E45/4909 and E45/4917) and one exploration licence application (ELA45/6113). An exploration licence application (E45/6240) for the “Forrest Project” to the east of tenement E45/4917 is pending. On 7 November 2022, Trek acquired a 100% interest in tenement E45/4640 from Pilbara Minerals Limited (ASX: PLS) for A$300,000, paid in TKM Shares plus a 2.5% NSR Royalty

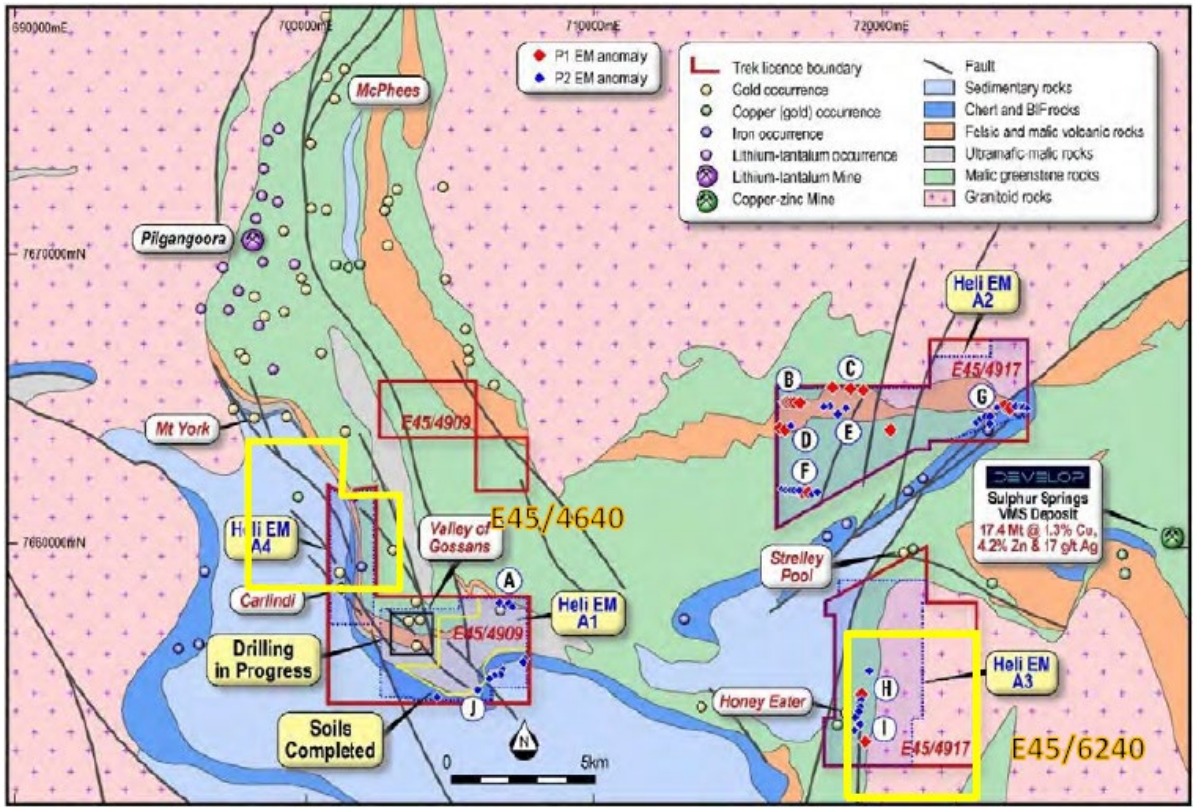
The Pincunah Project comprises two exploration focus areas, namely the Valley of the Gossans (VOG) prospect and the broader Pincunah area.

Trek's maiden drilling program at VOG in 2021 highlighted the potential for a large scale volcanogenic massive sulphide ("VMS") base metal system. Results from drilling confirmed the presence of highly anomalous zinc, copper and silver, with indications of a fertile volcanic environment.

Trek is targeting the broader Pincunah Project area for gold and base metal opportunities.

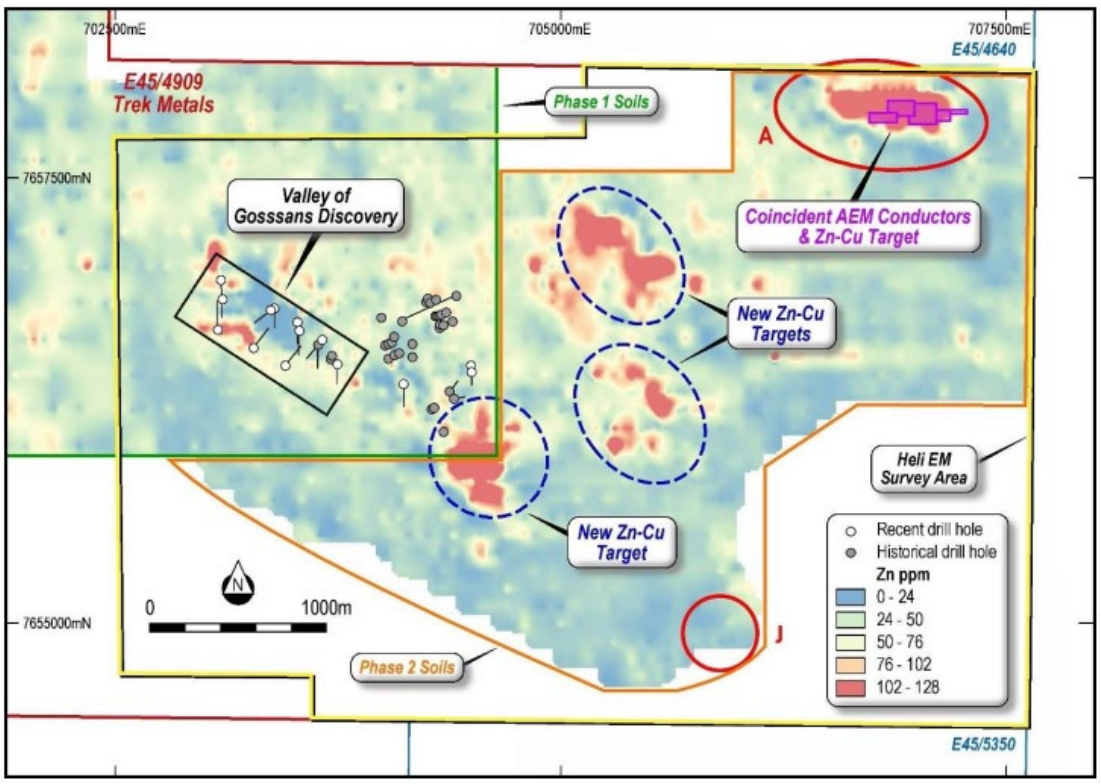
The 1.104Moz Mt York Deposit held by Kairos Minerals (ASX: KAI) is less than 5km to the north west and in the same geology that runs down into Trek's tenements.

Figure 9 Regional geology showing Mt York and Sulphur Springs relative to the Trek's ground



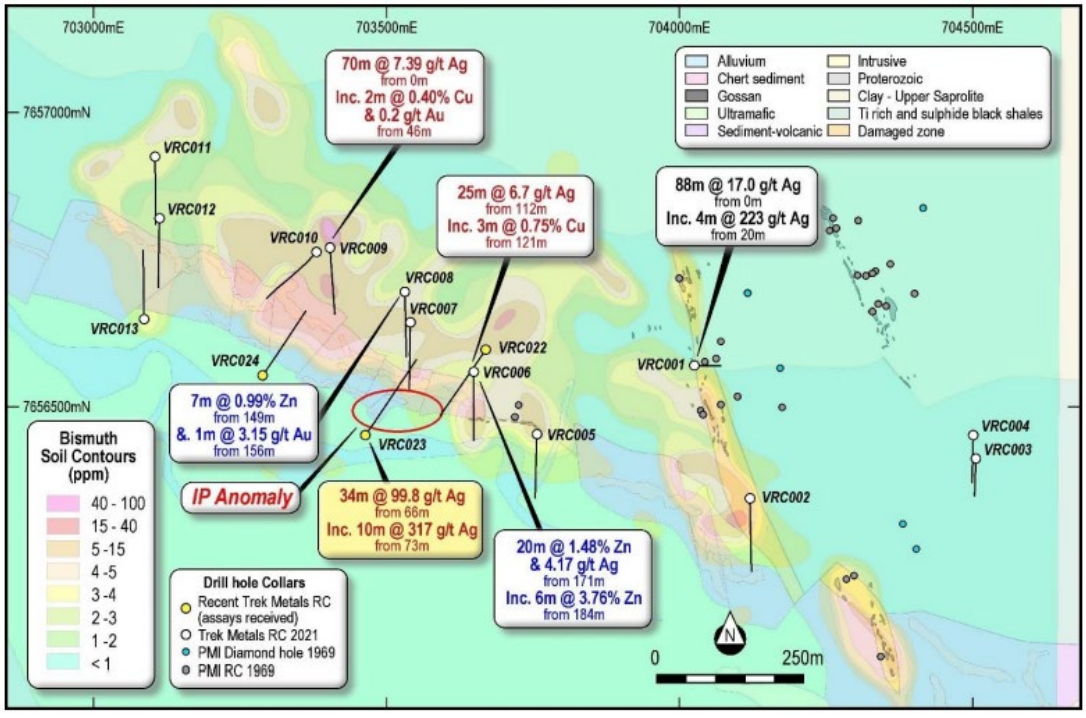
Source: TKM merger document 11 October 2022

Figure 10 Pincunah base metal targets



Source: Source: TKM merger document 11 October 2022

Figure 11 Valley of Gossans RC collars and intercepts



Source: TKM release 4 March 2022

4.4 Jimblebar Nickel-Copper Project

The Jimblebar Project ("Project") is comprised of Exploration Licences E52/3605, E52/3672, E52/3983 and E52/4051 (the "Tenements"). The Project is located 40km south-east of Newman and includes the western arm of the Jimblebar greenstone belt, a constituent of the Achaean Sylvania Inlier. The project is considered highly prospective for magmatic nickel-copper sulphide mineralisation.

On 12 May 2023, Trek entered into Option Agreement with Rio Tinto Exploration (RTX) to explore Jimblebar. During an initial option period, RTX may elect to farm-in to the Project with the right to earn an 80% Joint Venture interest by sole funding A$5 million in exploration expenditure.

Upon completion of the 80% earn-in sole funding period, an 80/20 Joint Venture will be established whereby RTX will free-carry Trek until the earlier of delivery of an "Order of Magnitude" study or expenditure of a cumulative A$40 million.

4.5 Other Assets

Midwest Lithium Brine Project

Trek has three granted and two pending mineral exploration licenses held by 100% owned subsidiary Anaheim Pty Ltd in the Midwest region They overlap Strike Energy's Geothermal Power Project which is based on the Kingia Sandstones target horizon.

Strike is proposing to develop the Mid-West Geothermal Power Project and as part of this proposed development, Strike has applied for a Geothermal Exploration Permit which is currently pending.

On 11 November 2022, Trek and Strike Energy (ASX:STX) signed a Heads of Agreement in which Strike will provide brine samples to Trek from its drilling over the next 2-3 years. If Trek identifies a sufficient quantity and quality of Lithium within the brine sample, the two parties will then consider a potential further agreement that may govern the next stage of a potential project, including such items as:

- Further drilling of wells and testing for Lithium brines;
- Investigating the legislative regime for undertaking a joint Lithium and geothermal power project;
- Conducting scoping and commercial feasibility studies; and
- Undertaking further investigation on the interaction between direct Lithium extraction (DLE) technology and geothermal power projects.

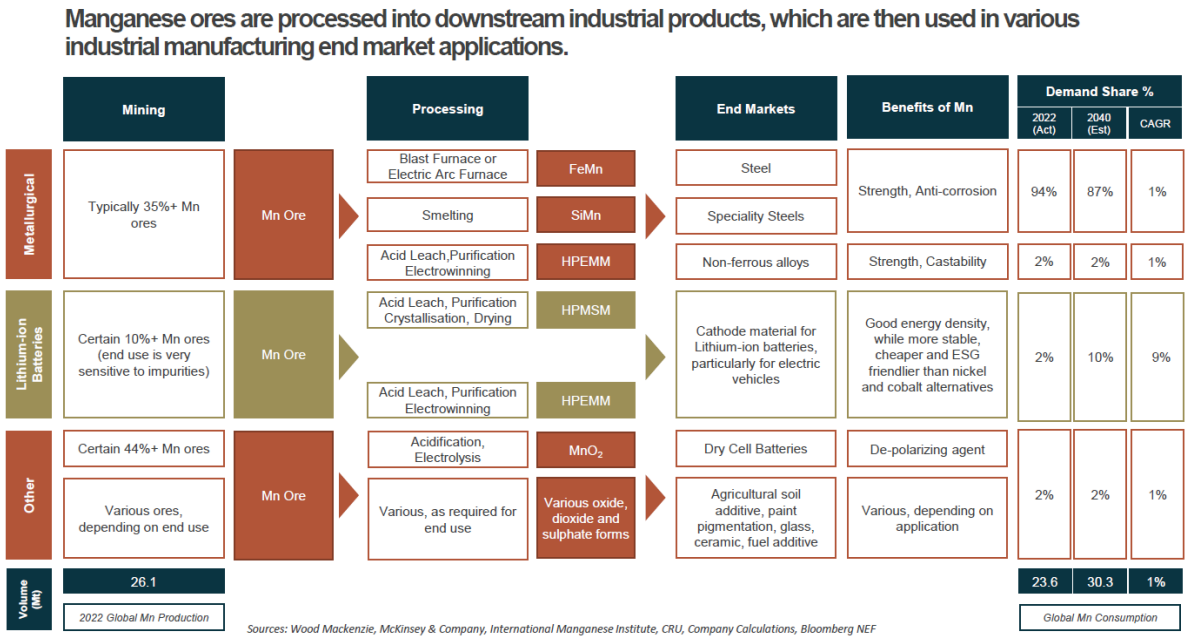
Shares in Apollo (ASX:AON)

Apollo has purchease the remaining interest in the Kroussou Project in Gabon with consideration being 3,000,000 ordinary shares and 1,000,000 unlisted options with an exercise price of A$0.12 expiring on 30 June 2024 issued to Trek.

5. Introduction to the Battery Manganese Industry

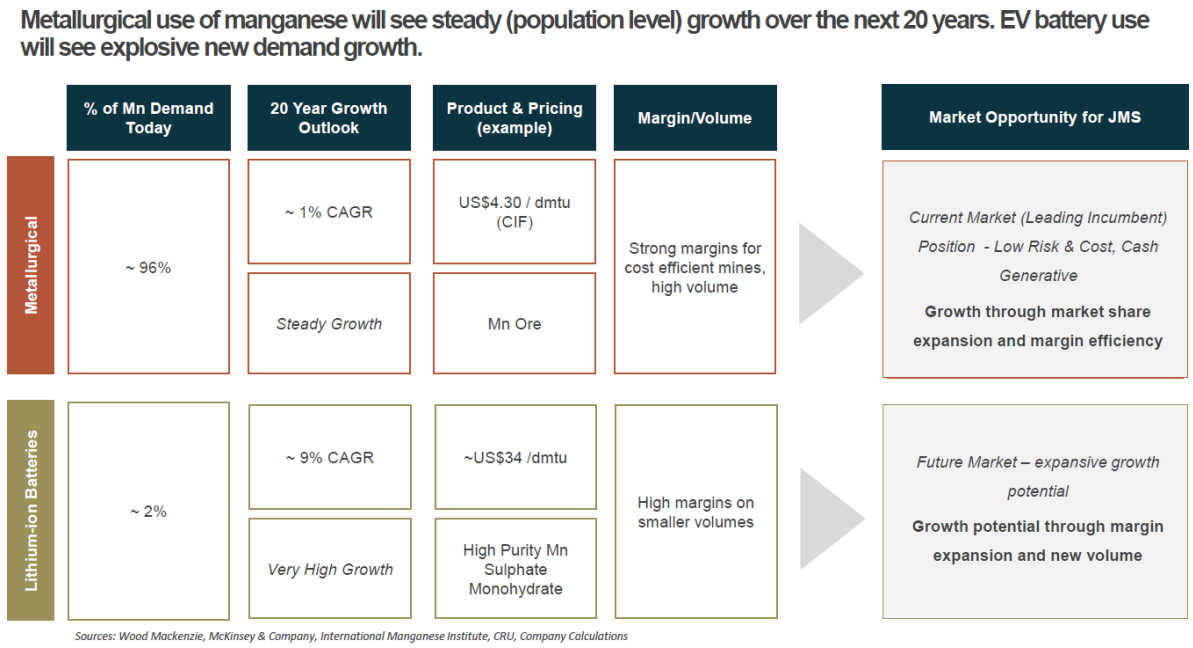
Manganese is one of the largest volume metal markets. At 26Mtpa of manganese contained in ore produced, it is on a par with copper (21Mtpa copper in mine output) and is significantly larger than any of the battery metals like nickel (2.6Mtpa), cobalt and Lithium.

Figure 12 Summary of the manganese processing streams and end uses



Notes: FeMn = FerroManganese alloy, SiMn = Silicon Manganese alloy, HPEMSM = High Purity Manganese Sulphate Monohydrate, HPEMM = High Purity Electrolytic Manganese Metal, MnO2 = Manganese Dioxide.
Source: Jupiter Mines ASX:JSM presentation 31 March 2023

Figure 13 Pricing and demand growth contrast between metallurgical and battery markets



Notes: dmtu = dry metric tonne unit (see page xx) Source: Jupiter Mines ASX:JSM presentation 31 March 2023

Around 95% of manganese is consumed in the production of high quality carbon steel to remove impurities like sulphur, oxygen and hydrogen, making the steel more corrosion resistant, and in some cases harder as in tool steel and items like hacksaw blades.

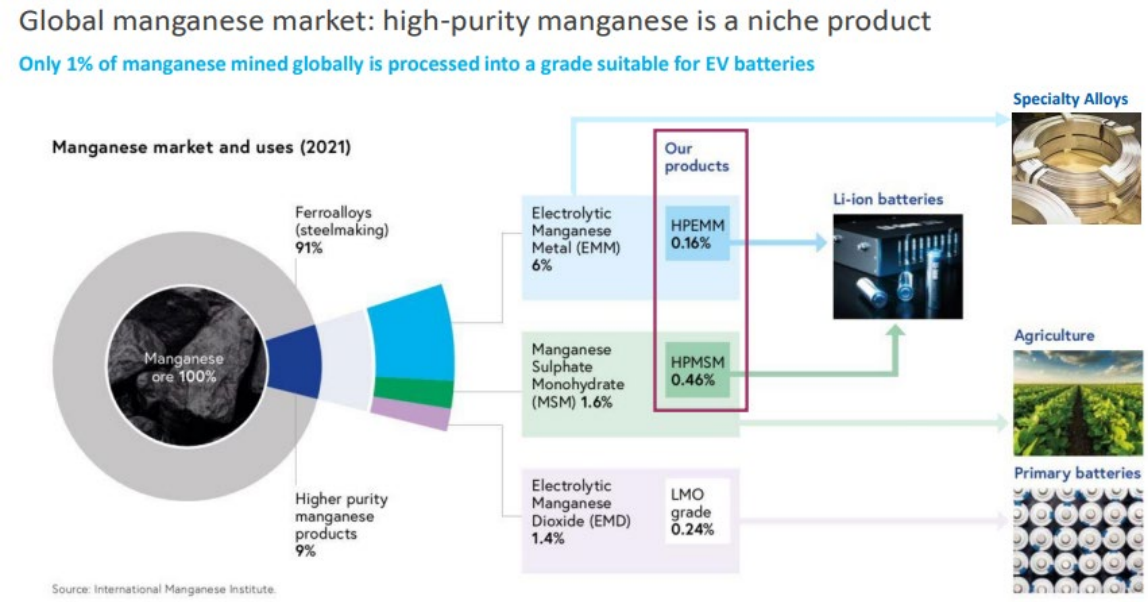
Manganese already has a major role in the non-rechargeable alkaline batteries used in consumer goods and has a growing importance in Lithium ion battery chemistries where it allows higher charge densities and substitutes for nickel and cobalt. However, the Lithium battery market is currently very small at around 2% of total Manganese consumption, and another 2% for alkaline batteries. There are some important general comments to make on the demand side:

- The demand for manganese from the Lithium battery segment is expected to be very fast growing (9%pa compound growth) from the current small base.
- The impact of that growth on manganese ore prices generally is likely to be positive but not in the spectacular fashion we have seen in lithium, because of the large volume of existing manganese production.
- The battery market is likely to pay a premium for manganese ore which is low in specific impurities that matter to the battery makers, and for the ore types that are the easiest to purify into battery grade precursor chemicals. Battery precursor refiners are prepared to take 10% Mn concentrate if it is low impurity. Individual deposit mineralogy will be very important.
- A potential left field issue is that if a greater percentage of steel is made using hydrogen instead of carbon as the reductant, increased amounts of manganese may be required to remove entrained hydrogen from the steel. The presence of hydrogen in steel in even minute amounts has catastrophic consequences for steel strength and ductility. However, given there is very little momentum towards production of steel using hydrogen reduction, this is unlikely to be an issue in the next five years.

Battery manganese supply and demand

Lithium ion battery manganese is currently a small specialty market

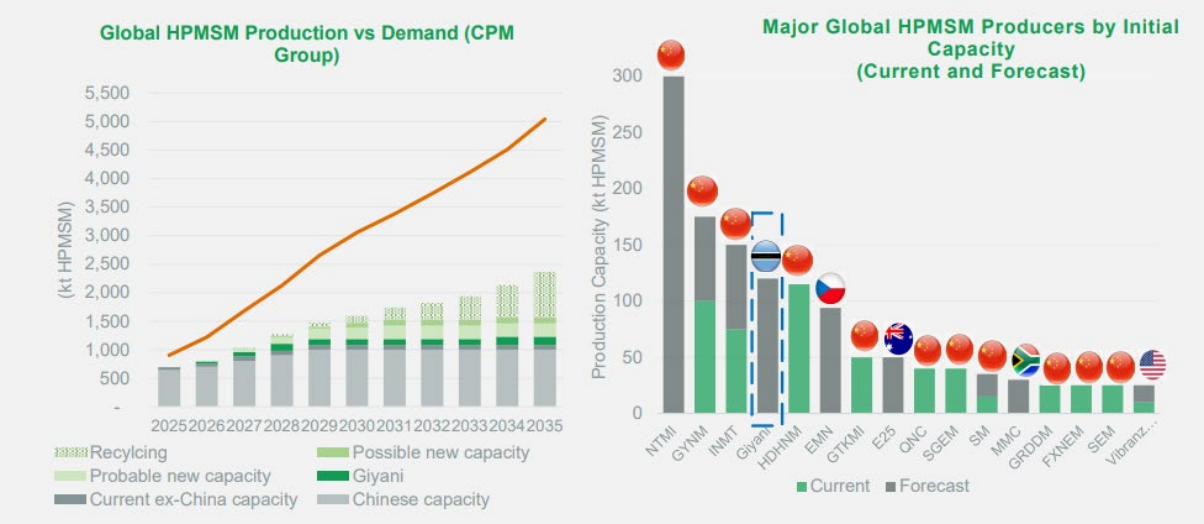
Figure 14 Where lithium battery demand fits into the overall demand for manganese



Source: Euro Manganese ASX:EMN release 24 February 2023

The lithium-ion battery related demand for manganese is 2% of total manganese consumption in 2021 or around 400,000 tonnes per year of contained manganese. This is expected to rise to 700ktpa in 2025 and to 2400ktpa by 2035.

Figure 15 Battery grade HPMSM demand and supply



Source: Giyani Metals TSV:EMM presentation https://giyanimetals.com/ quoting research from CPM Group's 31 March 2023 supply demand analysis https://mmta.co.uk/2023/03/31/energy-transition-and-metal-requirements-a-realistic-assessment/

Currently planned supply is less than 50% of the expected demand in 2035

The figure above highlights the expected supply shortage in High Purity Manganese Sulphate Monohydrate (HPMSM) which is expected to emerge in 2025 and grow substantially in following years, in the absence of new capacity.

It also highlights the expected new supply, which is dominated by China, with very few non-Chinese entrants, including Giyani in Botswana, Australia's Element 25, South Africa's Manganese Metal Company and Brazilian group Vibrantz.

New potential suppliers becoming visible, but still a large gap

Not included in the above figure are two ASX listed companies. Jupiter Mines (ASX:JMS) is considering entering the HPMSM market, and Euro Manganese (ASX:EMN) is planning to add 100ktpa of HPMSM and 15ktpa of Electrolytic Manganese Metal capacity by 2027. We have no doubt that other projects will emerge to try to close the gap, but as we have seen with the lithium market, demand has a habit of accelerating ahead of even very bullish expectations.

Battery demand will not be large enough to materially impact manganese ore pricing…

The forecast growth in demand for HPMSM of almost 5mtpa of HPMSM would require 1.6Mtpa of additional manganese units by 2035. This is unlikely to have a material impact of the manganese ore market which is currently 26Mtpa of contained manganese, so we do not expect general ore producers to see battery demand related price spikes.

…but will result in pricing power for favourable minerology and HPMSM producers

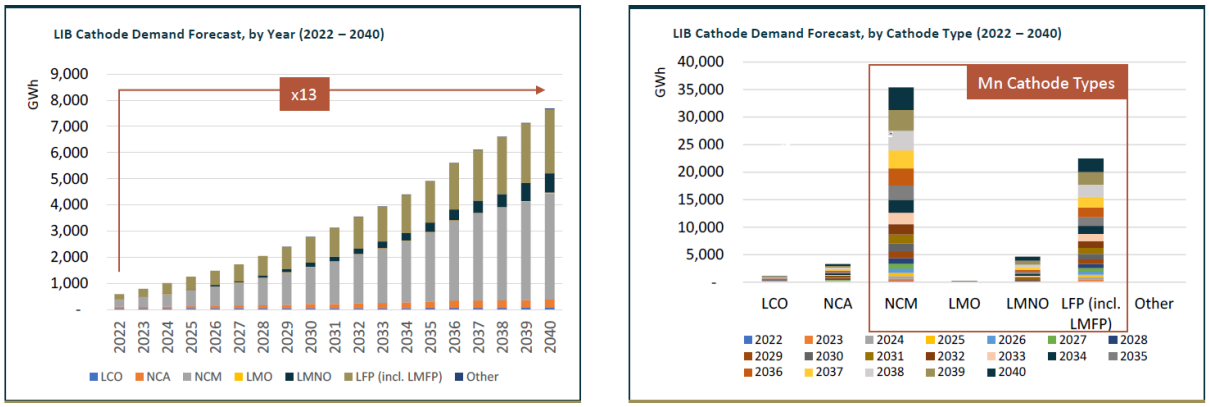
However, two groups of companies are likely to benefit from superior pricing power arising from battery demand:

- Producers or ore that is very low in impurities and/or have mineralogy more easily processed into High Purity Manganese Sulphate Monohydrate should be able to sell at a significant premium compared to manganese concentrates destined for the steel industry
- Producers that are early movers in the production of High Purity Manganese Sulphate Monohydrate should be able to lock above normal returns on contracted capacity and would benefit from retaining a component of production to sell on a spot market when it emerges.

Underlying this is the forecast that manganese lithium chemistries are preferred over nickel and cobalt

The battery industry forecasts appear to be very confident that manganese chemistries will provide the bulk of the growth in lithium-ion battery demand, as evidenced by Figures16 below.

Figure 16 Nickel Cobalt Manganese chemistries forecast to be strongly preferred



Source: Jupiter Mines ASX:JMS presentation 31 March 2023, provided by Benchmark Mineral Inteligence

There are plenty of current anecdotes supporting the view that manganese will have an increasing role to play in the battery space:

- CATL announced (July 2022) the M3P battery which adds Mn (21%) to LFP batteries increasing the range to 700km without substantially increasing the manufacturing cost
- Svolt unveiled the Dragon Armour (Dec 2022) high manganese iron-nickel cells achieve a range of greater then 900km with mass production expected in 2024
- Umicore (Feb 2023) starts industrialization of its leading manganese-rich HLM (High Lithium, Manganese) battery with production planned to commence in 2026
- Sodium based batteries with up to 28% Mn content are being further investigated

High demand growth means a cost curve with high cost old technology and low cost new technology

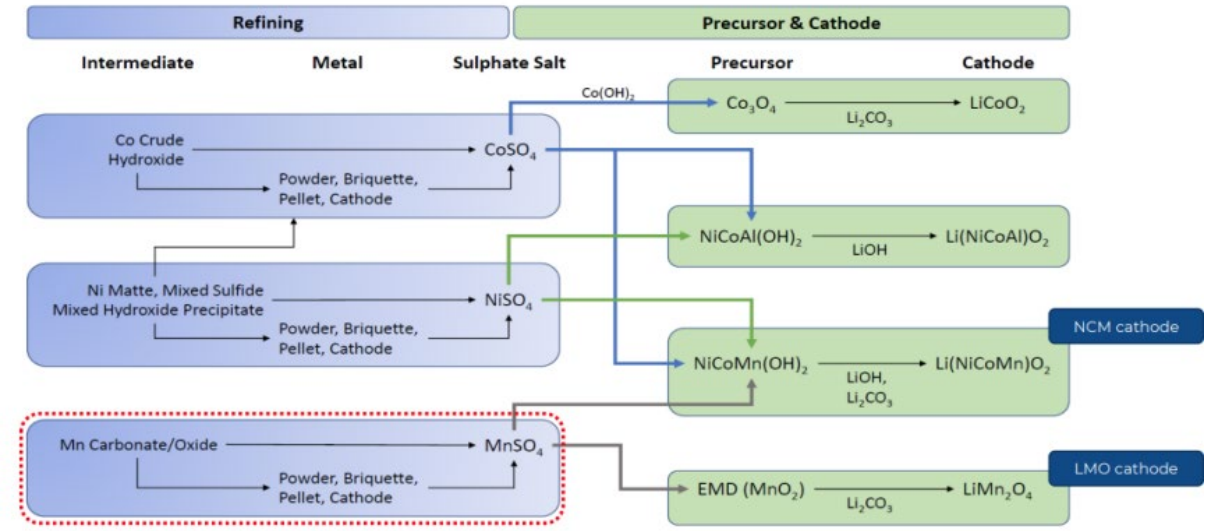
We expect that this very strong growth will induce its own structural changes in the technology used to produce the supply, and those changes will create opportunities for companies and investors. The technically simplest way to increase supply is to take manganese alloy destined for the steel industry

and convert it to High Purity Manganese Sulphate Monohydrate (HPMSM). However, that is unlikely to be the lowest cost production route.

That creates the possibility that by 2030, the HPMSM cost curve will have a large cost difference between the high cost quartile and the low cost quartile, which will have significant long term earnings benefits for those companies that invest in engineering for low cost.

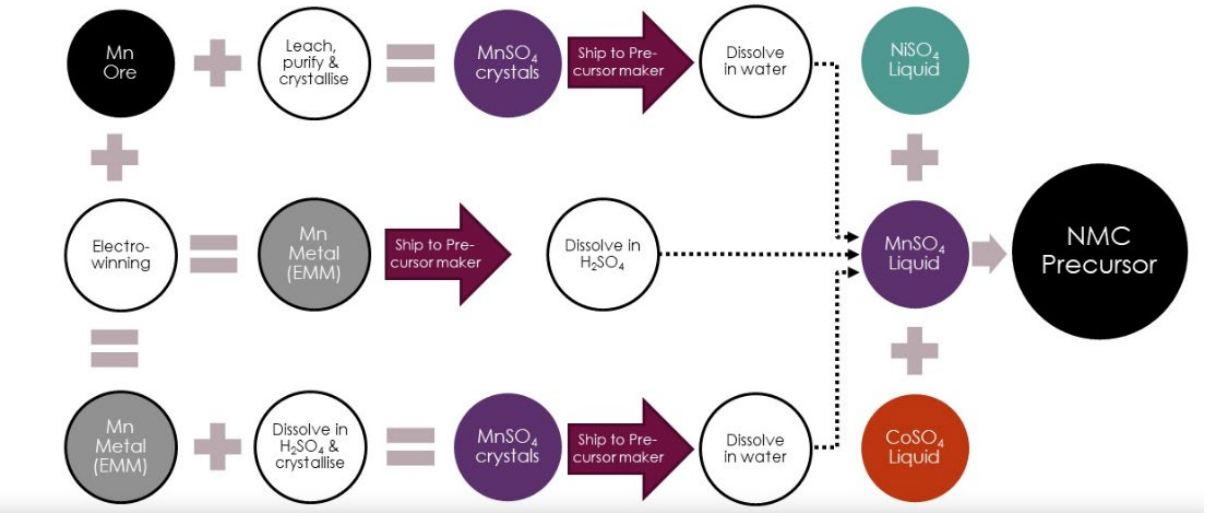
A closer look at the processing of Manganese into precursor

Figure 17 Processing pathways for Manganese and its competitors, cobalt, and nickel



Source: Jupiter Mines ASX:JMS presentation 31 March 2023

Figure 18 Manganese processing stages from ore to battery precursor



Source: Manganese Metal Company 2023 https://www.mmc.co.za/applications/batteries

Manganese chemistries are the mainstay of the conventional carbon or alkaline non-rechargeable battery used in consumer goods. Alkaline non-rechargeable batteries use zinc paste and manganese oxide as the main charge generating components.

Manganese is now seeing rapidly accelerating demand in lithium-ion batteries. It does not play a role in all lithium chemistries, and the figure above highlights the chemistry pathways manganese and its competitors, cobalt, and nickel. In Figures 17 and 18, the refined product MnS04 is the same as High Purity Manganese Sulphate Monohydrate (HPMSM).

Figure 19 shows that mined ore can be converted into High Purity Manganese Sulphate Monohydrate by a leach process or by electrowinning. The electrowinning stage can accept a wider range of feed material but at higher conversion cost due to the higher power consumption.

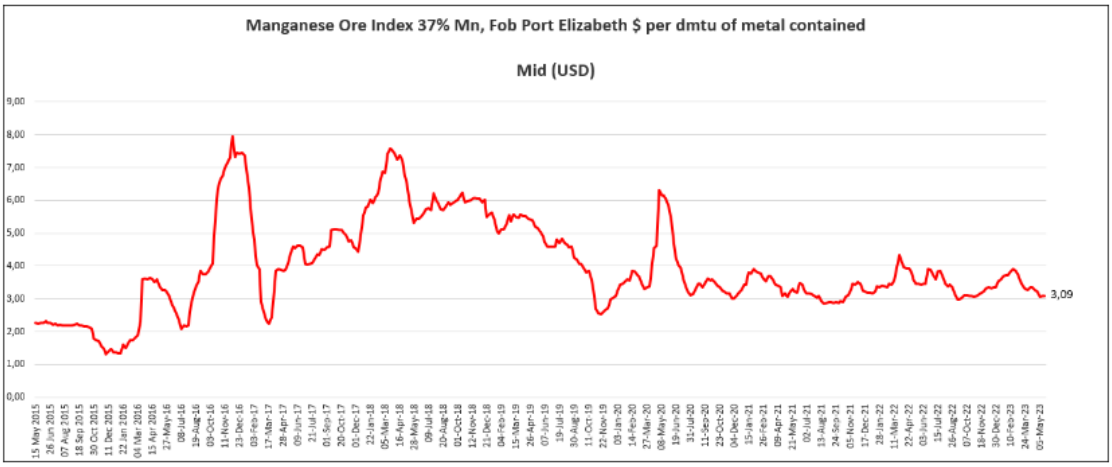
Manganese pricing

Manganese concentrate/ore price history – What is a dmtu?

The basic pricing unit for manganese ores is in US dollars per dry metric tonne unit (US$/dmtu). The unit referred to is 1% manganese contained in the ore. Put it another way, a price of US$4/dmtu converts into US$132/t for a concentrate containing 33% manganese (ie 4 x 33 =132) or US$180/t for concentrate containing 45% manganese.

Mangenese is a high volume industrial product that is principally consumed by the steek industry. Its price has been relatively stable historically, as shown in the chart below, which starts in 2015. Since mid 2019, the price has been between US$3/dmtu and US$4/dmtu with rare exceptions.

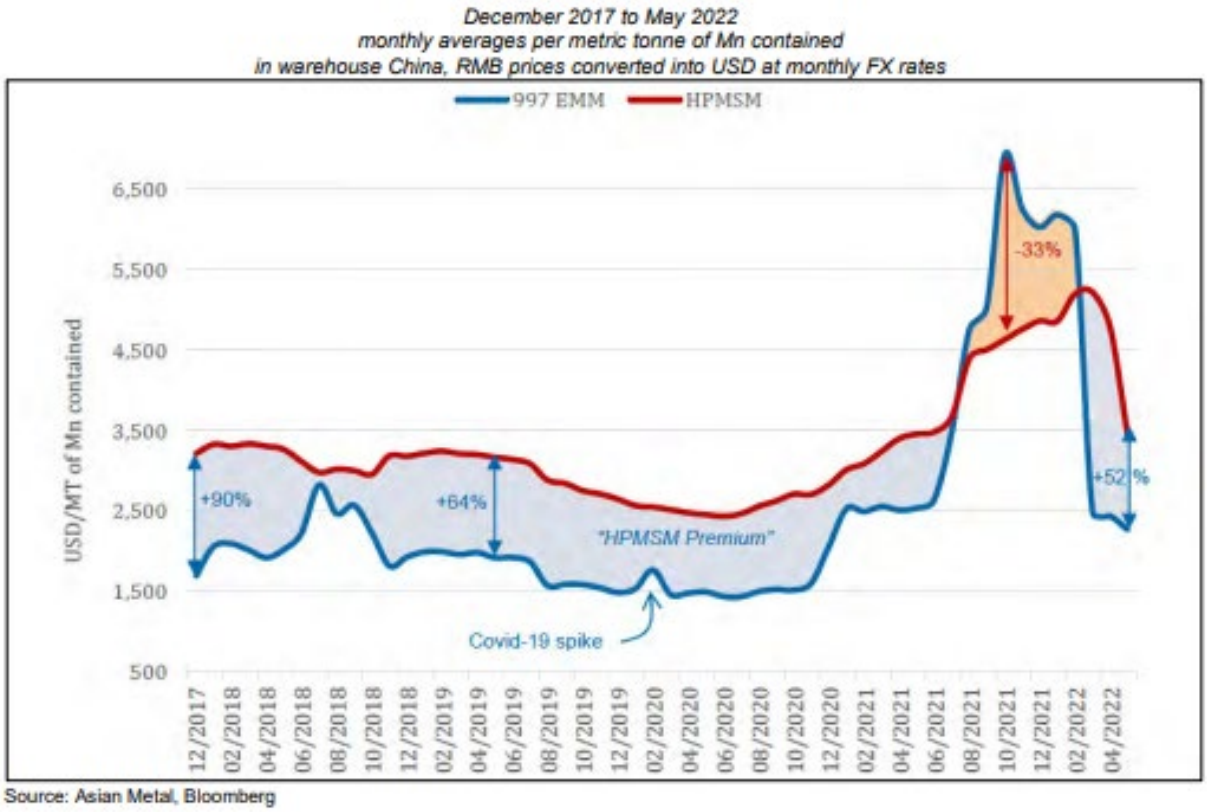
Figure 19 Manganese concentrate price history since 2015 in US$/dmtu



Source: https://www.jupitermines.com/tshipi-Manganese/tshipi/Manganese-price-information

Pricing of High Purity Manganese Sulphate Monohydrate

Figure 20 HPMSM price vs Electrolytic Manganese Metal (EMM) price



Source: Euro Manganese (ASX:EMN) Feasibility Study 12 September 2022

The following commentary is a summary of the more detailed commentary to be found from page 19-43 in the Euro Manganese 43-101 Report releases on 12 September 2022.

Spot market prices started to be available in China from 2017, but virtually all sales are at prices agreed between producer and consumer typically every six months, so the actual spot market is very small.

The prices referenced are for 99.7% purity Electrolytic Manganese Metal. However, lithium battery grade HPMSM amount to 22% total HPMSM production and cannot be made from 99.7% Electrolytic Manganese Metal. 99.9% purity EMM is required, and that purity requires an additional 3000kWh/tonne of electrical power and adds US$500/t to the cost of producing EMM, and this extra cost would vary with power prices. In summary, the prices in the chart above are for non battery grade products and the prices for battery grade EMM and HPMSM are higher, often substantially so.

With that caveat in place, the HPMSM price has generally traded at a premium to the EMM price. The premium has closed or moved into discount as was the case in 2021 when demand for Electrolytic Manganese Metal from the steel industry caused the price differential to invert.

Contracting

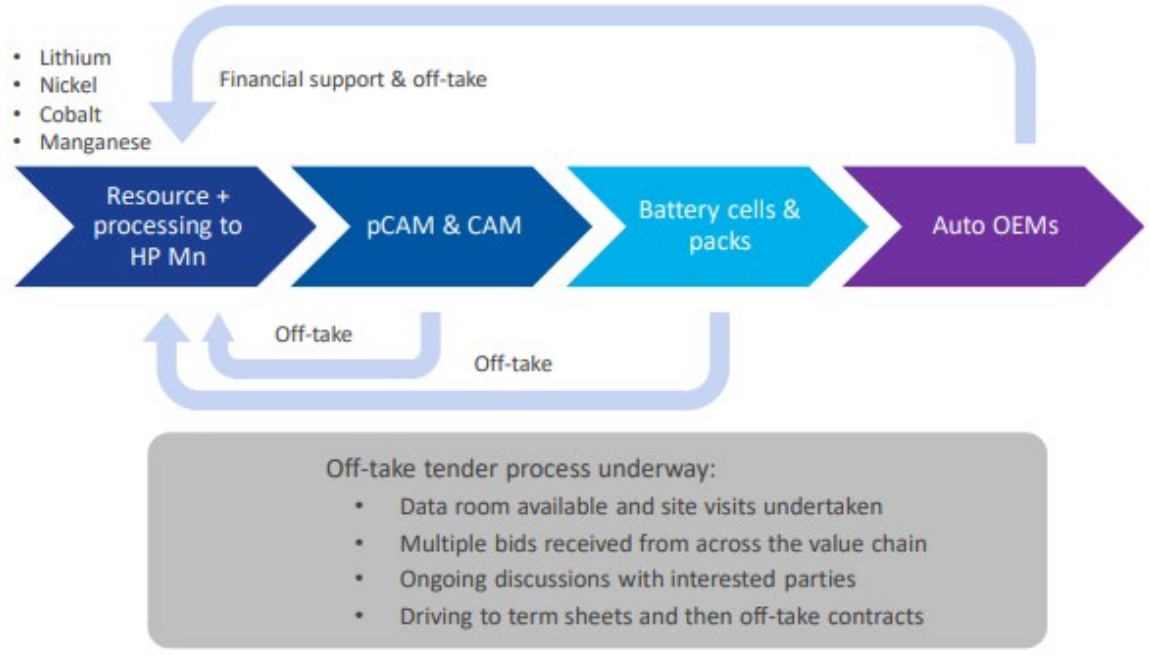
Euro Manganese has provided an overview of its offtake term sheet with Verkor which outlines minimum tonnages (take or pay) and the pricing mechanism is based on:

- Western price index-adjusted using HPMSM benchmark.

- Correlates to CO2 footprint of Chvaletice HPMSM.
- Floor price over debt period to meet banking covenants.

While it is too early for investors in Trek to focus on this, it is worth noting the depth of financial support being offered by the customers. As the figure below shows, the Automobile Original Equipment Manufacturers (ie the Auto companies) are the source of the financial support.

Figure 21 Offtake and financial support from customers



Source: Euro Manganese (ASX:EMN) Feasibility Study 12 September 2022

6. Capital Structure

Issued Capital

Table 6 Issued capital at 6 May 2023

	Million	%	Exercise A$/sh	Raising A$M
Issued Shares	363.9	87.82%		
Options				
31-Oct-23	5.0	1.21%	0.200	1.00
30-Jun-24	1.5	0.36%	0.056	0.08
30-Sep-23	10.4	2.52%	0.056	0.58
Performance Rights	33.6	8.10%		
Diluted Capital	414.4	100.00%		1.67

Source: TRK releases 19 January 2021, 2 May 2023

Ordinary shares represent 87.8% of diluted capital and the share register has no large individual shareholdings. The Board (Leibowitz, Biddle and Young) control 7.9%.

Table 7 Ownership split between original Trek shareholders and Edge Minerals shareholders

	Million	%
Original Trek Share Holders	310.6	85.35%
Edge Minerals Shareholders	48.3	13.28%
Post merger issuance	5.0	1.38%
Current Shares on Issue	363.9	100.00%

Source: TKM merger document 11 October 2022

On 8 November 2022, the merger of Trek and Edge was implemented, combining the two companies and bringing the Hendeka Manganese project into Trek's portfolio of assets.

Shareholders

Table 8 Shareholders at 1 May 2023

	Shares	Interest
MR ALEX JORDAN	18.066	4.95%
KALONDA (Tony Leibowitz)	13.706	3.77%
BIDDLE PARTNERS PTY LTD	10.313	2.83%
MR SD & KE AMOS	9.739	2.68%
BNP PARIBAS NOMINEES PTY LTD HUB24 CUSTODIAL SERV LTD	8.076	2.22%
TIFORP PTY LTD	5.000	1.37%
PILBARA MINERALS LIMITED	4.792	1.32%
MR JA YOUNG + MRS CK YOUNG	4.760	1.31%
FREIGHT SHOW PTY LTD	4.500	1.24%
MS DANIELLE SHARON TUDEHOPE	4.450	1.22%
CITICORP NOMINEES PTY LIMITED	4.149	1.14%
STARCHASER NOMINEES PTY LTD AH & AMB SUPER FUND A/C>	3.900	1.07%
MS AMELIA JANE KAZAKOFF	3.750	1.03%
CHURCH STREET TRUSTEES LIMITED	3.333	0.92%
MR KEVIN JOHN DAVIS	3.040	0.84%
MR VAUGHAN THALES KENT	3.000	0.82%
MUSEUM INVESTMENTS LIMITED	2.869	0.79%
MR SH & SM MICKENBECKER	2.707	0.74%
CAMPBELL KITCHENER HUME & ASSOCIATES PTY LTD	2.671	0.73%
MORGAN STANLEY AUSTRALIA SECURITIES (NOMINEE)	2.534	0.70%
Top 20 Shareholders	115.36	27.83%
Other	248.6	68.3%
Issued	363.9	100.00%

Source: TKM website https://www.trekmetals.com.au/top-20-shareholders

7. Board and Management

Tony Leibowitz Non-Executive Chairman

Mr Leibowitz has over 35 years of corporate finance, investment banking and broad commercial experience and has a proven track record of providing the necessary skills and guidance to assist companies grow and generate sustained shareholder value.

Previous roles include Chandler Macleod Limited and Pilbara Minerals Limited, where as Chairman and an early investor in both companies, he was responsible for substantial increases in shareholder value and returns. Mr Leibowitz was also a global partner at PricewaterhouseCoopers and chaired the board of Bardoc Gold prior to the takeover by St Barbara.

Mr Leibowitz is a Fellow of the Institute of Chartered Accountants in Australia and currently serves as Chairman of Astro Resources NL (ASX: ARO) and Ensurance (ASX: ENA)..

Neil Biddle Non-Executive Director

Mr Biddle is a geologist and Corporate Member of the Australasian Institute of Mining and Metallurgy and has over 30 years' professional and management experience in the exploration and mining industry.

Mr Biddle was a founding Director of Pilbara Minerals Limited, serving as Executive Director from May 2013 to August 2016, serving as a Non-Executive Director from August 2016 to 26 July 2017. Throughout his career, Mr Biddle has served on the Board of several ASX listed companies, including Managing Director of TNG Ltd from 1998 – 2007, Border Gold NL from 1994 – 1998 and Consolidated Victorian Mines from 1991 – 1994. Mr Biddle served on the board of Bardoc Gold prior to the takeover by St Barbara. Mr Biddle currently serves as non-executive Chairman at Greenvale Energy (ASX: GRV)..

John Young Non-Executive Director

Mr Young is a highly experienced geologist who has worked on exploration and production projects encompassing gold, uranium and specialty metals, including tungsten, molybdenum, tantalum and lithium.

Mr Young's corporate experience includes appointments as CEO of Marenica Energy Limited and CEO and Director of Thor Mining PLC. Mr Young was Exploration Manager at Pilbara Minerals Limited from June 2014 until August 2015, appointed Technical Director in September 2015 and transitioned to Non-Executive Director in July 2017 until his resignation in April 2018. Mr Young served on the board of Bardoc Gold, prior to the takeover by St Barbara. Mr Young currently serves as Chairman at Green Technology Metals (ASX: GT1), Non-Executive Director at Astro Resources NL (ASX: ARO) and Non-Executive Director at RareX Limited (ASX: REE)..

Valerie Hodgins Non Executive Director

Ms Hodgins is a highly experienced commercial lawyer with a strong governance and commercial background. Before undertaking legal studies, she worked in the private sector as a human resources professional and in industrial relations before qualifying as a commercial lawyer.

She has worked as a sole practitioner, as well as in the State and local government sectors, and was previously In-house Counsel for CGA Mining Limited, a junior TSX and ASX listed company with mining

interests in the Philippines and Africa, up until its acquisition by Canadian gold miner B2 Gold Corp in January 2013.

As a GAICD and member of AICD WA, and a previous Board member of the Australian Association of Corporate Counsel and the WA Legal Practice Board, Ms Hodgins has a strong governance background and will bring diversity and independence to the Board of Trek.

Derek Marshall Chief Executive Officer

Mr Marshall is an experienced exploration geologist and Member of the Australian Institute of Geoscientists with over 19 years' experience in the exploration and mining industry.

Mr Marshall has worked with both major mining companies and a number of ASX listed explorers, with significant experience in managerial and technical roles in remote locations, ranging from greenfield exploration to Bankable Feasibility Level studies.

He was most recently the Superintendent Exploration with Newcrest (ASX:NCM) at the Havieron Gold-Copper Project, delivering an initial Resource of 3.4Moz Au & 160Kt Cu.

Russell Hardwick CFO/ Company Secretary

Mr Hardwick is a Certified Practicing Accountant with 20 years' experience in a variety of private and public companies. Mr Hardwick is a member of the Australian Institute of Company Directors and is a Chartered Secretary.

Mr Hardwick has extensive experience in corporate secretarial, capital raising and commercial management. He has held the positions of Director or Company Secretary for both AIM listed and ASX listed companies as well as Senior Executive positions within private companies. Mr Hardwick is a graduate of the AICD Company Directors' Course.

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