EVOLUTION CAPITAL

ASX: ESS

Essential Metals Limited

Equity Research

12th October 2022

SPECULATIVE BUY

Share Price	$0.515
Price Target	$1.120

52-Week Range	$0.140 - $0.735
ESS Shares Outstanding	247.5m
ESSO listed Options ($0.15 30 Nov 2022)	19.7m*
Unlisted Options (various)	2.8m
Unlisted Options ($0.25 31 Jan 2024)	0.5m
Unlisted Options ($0.35 31 Jan 2024)	0.5m
Unlisted Options ($0.45 31 Jan 2024)	0.5m
Unlisted Options ($0.125 30 Sep 2024)	0.2m
Unlisted Options ($0.175 30 Sep 2024)	0.2m
Unlisted Options ($0.225 30 Sep 2024	0.2m
Performance Rights (exp. 30 Jun 2024)	1.6m
Performance Rights (exp. 30 Jun 2025)	2.1m
Performance Rights (exp. 30 Jun 2026)	0.4m
Market Capitalisation	$127.5m
Cash (30 June 2022)	$10.5m*
Enterprise Value	$117.0m

* The conversion of the ESSO options adding potentially $3.1 million

Substantial Shareholders

Citicorp Nominees Pty Limited	6.0%
BNP Paribas Nominees Pty Ltd	2.4%
HSBC Custody Nominees (Australia) Ltd	1.3%
Top 20 Holders	21.5%

Board & Management:

Craig McGown	Chairman
Tim Spencer	Managing Director
Paul Payne	Non-Executive Director
Warren Hallam	Non-Executive Director
Carl Travaglini	CFO and Company Secretary
Andrew Dunn	Exploration Manager

Essential Metals Ltd (ASX: ESS) is a mineral exploration and development company, with its main focus being on its flagship project, the 100% owned Pioneer Dome Lithium Project, located in a "lithium corridor" including the Mt Marion mine operated by Mineral Resources Ltd (ASX: MIN), the Bald Hill mine operated by Alita Resources Ltd (SGX: 40F) and the Buldania project developed by Liontown Resources Ltd (ASX: LTR). ESS's assets portfolio also includes the Golden Ridge gold project (100% owned), the Acra gold project JV (30% free carried) and the Blair-Golden Ridge nickel JV (ESS 25%).

Pioneer Dome following the development path of Finniss

Tier-2 Pioneer Dome Mineral Resource: On 29th September 2020, ESS released a mineral resource estimate (MRE) of 11.2 Mt @ 1.21% Li_2O. Both the resource tonnage and the contained lithia (Li_2O) increased by 33%. More importantly 5.4 Mt or 51% of the contained lithia is classified as an Indicated mineral resource hence supporting the economic evaluation of the project through a scoping study. We assumed 7.5 Mt of mining inventory.

Great Location and Access: The project is located 10km from the Coolgardie-Esperance regional highway that connects the main mining centre of Kalgoorlie (150km to the north) and the large dry bulk & container seaport of Esperance (275km to the south). Unsealed access road connects the Project to the main highway.

Tier-1 Infrastructure and jurisdiction: The Pioneer Dome project is perfectly located to develop a mining operation. The surrounding land is flat-lying, lightly wooded land with no environmental or native title complexities. Both gas pipeline and water pipeline located alongside the main highway

Path to Production: thanks to a number of projects developed and now operating successfully, Australia has a developed significant processing expertise. In this context, the development of the Pioneer Dome will be facilitated for the benefit of Essential Metals.

Capital Expenditure: to allow for the flotation circuit and costs inflation, we assumed a development capital expenditure of $265 million, including $250 million pre-production. Note $85 million was estimated for the Finniss project.

Operation Costs: those were derived from the Mt Cattlin restart study (1.6 Mt throughput) dated March 2021 after applying a 15% cost increase.

Lithium Outlook: after a few booms and bursts observed in the lithium sector over the last 15 years, the Electric Vehicle and Energy Storage revolution is now well underway. Lithium products pricing is at all time-high and all downstream off-takers are likely to struggle to secure raw materials for the foreseeable future.

Pioneer Dome Valuation: using various spodumene prices,

Spodumene Price	NPV 8%	IRR
US$1,500/t	$394m	54%
US$2,500/t (Base Case)	**$1,153m**	**112%**
~US$3,000 (S&P Global)	$1,606m	141%
US$4,000/t	$2,291m	186%

News Flow and Funding: upcoming news flow includes drilling results, metallurgical testwork, update of the mineral resource estimate and scoping study results all expected before the end of 2022, and environmental permitting milestones. ESS is well funded to continue to develop and evaluate the Pionner Dome Lithium Project with $10.5m cash as at 30 June 2022 and potentially up to $3.1m from options conversion by the end of November 2022.

ESS Valuation: in addition, our sum of the parts valuation assumes an equity capital raising of $20 million @ $0.40 to complement the funding of the exploration and evaluation programs. Based on all those parameters, our price target for ESS stands at $357m or $1.12 per share. This price target is supported by the market values of Global Lithium Resources Ltd (ASX: GL1, mineral resource of 18.9 Mt @ 1.32% Li2O through two projects) and Red Dirt Metals Ltd (ASX: RDT, maiden mineral resource to be announced) with a current average market capitalisation of $328 million.

Investment Perspective: Mining is cyclical and timing is critical. After experiencing multiple successive boom and bust cycles, ESS appears very well positioned to benefit from a stronger and longer lithium market cycle as the EV market growth is accelerating on a global scale and will reach mass production level and adoption within the next five years.

PIONEER DOME PROJECT	Unit	Total/ Average	FY2023 0	FY2024 1	FY2025 2	FY2026 3	FY2027 4	FY2028 5	FY2029 6	FY2030 7
PHYSICALS										
OPEN PIT										
Cade										
Waste mined	tonnes	66,000,000		1,000,000	2,000,000	8,000,000	15,000,000	15,000,000	13,000,000	12,000,000
Ore mined	tonnes	6,000,000		500,000	950,000	950,000	950,000	950,000	950,000	750,000
Total mined	tonnes	72,000,000		1,500,000	2,950,000	8,950,000	15,950,000	15,950,000	13,950,000	12,750,000
Strip ratio	x	11.0		2.0	2.1	8.4	15.8	15.8	13.7	16.0
Ore Grade	% Li2O	1.26%		1.30%	1.30%	1.30%	1.30%	1.30%	1.20%	1.10%
Davy										
Waste mined	tonnes	18,200,000			1,000,000	1,000,000	4,000,000	4,000,000	4,000,000	4,200,000
Ore mined	tonnes	1,300,000			150,000	250,000	250,000	250,000	250,000	150,000
Total mined	tonnes	19,500,000		0	1,150,000	1,250,000	4,250,000	4,250,000	4,250,000	4,350,000
Strip ratio	x	14.0				4.0	16.0	16.0	16.0	28.0
Ore Grade	% Li2O	1.13%			1.20%	1.20%	1.20%	1.10%	1.05%	1.00%
Heller										
Waste mined	tonnes	2,400,000								2,400,000
Ore mined	tonnes	200,000								200,000
Total mined	tonnes	2,600,000		0	0	0	0	0	0	2,600,000
Strip ratio	x	12.0								12.0
Ore Grade	% Li2O	1.02%								1.02%
Total										
Waste mined	tonnes	86,600,000		1,000,000	3,000,000	9,000,000	19,000,000	19,000,000	17,000,000	18,600,000
Ore mined	tonnes	7,500,000		500,000	1,100,000	1,200,000	1,200,000	1,200,000	1,200,000	1,100,000
Total mined	tonnes	94,100,000		1,500,000	4,100,000	10,200,000	20,200,000	20,200,000	18,200,000	19,700,000
Strip ratio	x	11.5		2.0	2.7	7.5	15.8	15.8	14.2	16.9
Ore mined	tonnes	7,500,000		500,000	1,100,000	1,200,000	1,200,000	1,200,000	1,200,000	1,100,000
Ore Grade	% Li2O	1.23%		1.30%	1.29%	1.28%	1.28%	1.26%	1.17%	1.07%
PROCESSING										
Processed Ore	t	7,500,000		500,000	1,100,000	1,200,000	1,200,000	1,200,000	1,200,000	1,100,000
Head Grade	% Li2O	1.23%		1.30%	1.29%	1.28%	1.28%	1.26%	1.17%	1.07%
Recovery	%	74.0%		74.0%	74.0%	74.0%	74.0%	74.0%	74.0%	74.0%
Concentrate Produced	dmt	1,177,174		82,931	180,534	195,845	195,845	192,655	178,940	150,424
Concentrate Grade	% Li2O	5.80%		5.80%	5.80%	5.80%	5.80%	5.80%	5.80%	5.80%
SALES										
Concentrate Shipped	t	1,177,174		82,931	180,534	195,845	195,845	192,655	178,940	150,424
Concentrate Grade	% Li2O	5.80%		5.80%	5.80%	5.80%	5.80%	5.80%	5.80%	5.80%
FINANCIALS										
Pricing										
Lithium Price	US$/dmt	1		1,500	1,500	1,500	1,500	1,500	1,500	1,500
Lithium Price	US$/dmt	2		2,500	2,500	2,500	2,500	2,500	2,500	2,500
Lithium Price	US$/dmt	3		3,037	3,082	3,108	3,108	3,108	3,108	3,108
Lithium Price	US$/dmt	4		4,000	4000	4,000	4,000	4,000	4,000	4,000
Selected Price	US$/dmt	**2**		**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**	**2,500**
Exchange rate	x	0.70		0.70	0.70	0.70	0.70	0.70	0.70	0.70
Revenues	US$m	2,943		207.3	451.3	489.6	489.6	481.6	447.3	376.1
Revenues	A$m	4,204		296.2	644.8	699.4	699.4	688.1	639.1	537.2
Costs										
OP Mining Cost	A$/t mined	(4.9)		(4.9)	(4.9)	(4.9)	(4.9)	(4.9)	(4.9)	(4.9)
Processing	A$/t proc	(30.2)		(30.2)	(30.2)	(30.2)	(30.2)	(30.2)	(30.2)	(30.2)
Haulage & Logistics	A$/t proc	(53.9)		(53.9)	(53.9)	(53.9)	(53.9)	(53.9)	(53.9)	(53.9)
Site G&A	A$/t proc	(6.4)		(6.4)	(6.4)	(6.4)	(6.4)	(6.4)	(6.4)	(6.4)
OP Mining Cost	A$m	(465.3)		(7.4)	(20.3)	(50.4)	(99.9)	(99.9)	(90.0)	(97.4)
Processing	A$m	(226.8)		(15.1)	(33.3)	(36.3)	(36.3)	(36.3)	(36.3)	(33.3)
Transport & Shipping	A$m	(404.5)		(27.0)	(59.3)	(64.7)	(64.7)	(64.7)	(64.7)	(59.3)
Site G&A	A$m	(7.6)		(0.5)	(1.2)	(1.3)	(1.3)	(1.2)	(1.2)	(1.0)
Total costs	A$m	(1,104.3)		(50.0)	(114.0)	(152.7)	(202.2)	(202.1)	(192.2)	(191.0)
Unit cost	US$/t con	(472)		(422)	(442)	(546)	(723)	(734)	(752)	(889)
Royalties										
Royalty rate	%			5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Royalty amount	A$m	(210.2)		(14.8)	(32.2)	(35.0)	(35.0)	(34.4)	(32.0)	(26.9)
Operating cash flow	A$m	3,099.9		246.1	530.7	546.7	497.3	485.9	446.9	346.2
Capex				Cade		Davy				Heller
Development Capex	A$m	(265.0)	(200.0)	(50.0)		(10.0)				(5.0)
Sustaining Capex	A$m	(30.0)			(5.0)	(5.0)	(5.0)	(5.0)	(5.0)	(5.0)
Total	A$m	(295.0)								
Tax										
Tax rate	%	30%		30%	30%	30%	30%	30%	30%	30%
Tax payable	A$m	(838.4)		(54.4)	(148.0)	(149.0)	(137.2)	(134.0)	(123.0)	(92.8)
Cash flow after tax	A$m	1,956.3	(200.0)	126.9	345.4	347.7	320.1	312.6	287.0	216.6
Discount factor	x	8%	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
NPV post tax	A$m		**1,152.7**	1,444.9	1,433.6	1,202.9	951.4	707.3	451.4	200.5
IRR post tax			112%							

Source: Evolution Capital estimates

TABLE OF CONTENTS

All dollar amounts are in Australian dollars unless otherwise specified.

1. ESS Valuation

Pioneer Dome Project Valuation

We have undertaken a valuation of the Pioneer Dome project using discounted cash flow (DCF) and net present value (NPV).

The key assumptions are as follows:

- Pre-production mineral resource increasing to 12 Mt @ 1.21% Li2O (no change in grade)
- A mineral resource to mining inventory conversion rate of 68%
- Mining inventory of 7.5Mt
- All the mining inventory to be mined via open pit (no underground mining assumed at this time)
- Strip ratios of 11:1, 14:1 and 12:1 for the Cade, Davy and Heller deposit respectively
- Mine planning as included in the financial model (see page 2)
- Treatment plant throughput of 1.2 Mtpa
- Mine life of 7 years
- Metallurgical recovery of 74%
- Capital costs: development capital expenditure of A$265 million, including $250m pre-production (compared to A$89m for the Finniss project, which doesn't include a flotation circuit), plus sustaining capital expenditure of $5m per annum
- Operating costs are derived from the Mt Cattlin restart study dated March 2021. Costs inflated by 10%:
    - Open pit mining cost: A$4.7/tonne mined
    - Processing cost: A$28.9/tonne processed
    - Transport cost: A$51.6/tonne processed
    - General & admin: A$6.2/tonne processed
- Royalty from the WA State Government of 5% on revenues
- Corporate tax of 30%, no tax losses
- Discount rate of 8%
- Various price scenarios with a Base Case using the price forecast from S&P Global Market Intelligence around US3,000/dmt versus current prices in the range of US$4,200/dmt to $5,000/dmt

Table 1.1 summarises the results according to the various spodumene concentrate prices assumed

Table 1.1 – Pioneer Dome Project NPV Valuation

Spodumene Price	Scenario	NPV $_{8\%}$	IRR
US$1,500/t	1	$394m	54%
US$2,500/t (Base Case)	2	$1,153m	112%
~US$3,000 (S&P Global)	3	$1,606m	141%
US$4,000/t	4	$2,291m	186%

Source: Evolution Capital estimates

The valuation is highly leveraged to the lithium price. Doubling the lithium price from U$1,500/t to about $3,000/t multiplies by a factor of 4.1x the NPV of the project.

In all scenarios, the IRR is outstanding, thanks to a relatively low capital expenditure and moderate operating costs compared to high spodumene concentrate pricing.

Essential Metals Sum of the Parts Valuation

From the valuation of the Pioneer Dome project, we derive a valuation for the company by applying a risk factor to the NPV. Typically a risk factor of 30% is applied to projects with Definitive Feasibility Study (DFS) completed and progressing the financing and final permitting stages. For Pioneer Dome, the scoping study is expected before year end and the DFS before end of 2023. In parallel, thanks to surging demand and a high pricing environment, lithium pricing, companies with projects in development are valued at a higher percentage of their NPV. At this time, we have selected a risk factor of 30% to include in the ESS sum of the parts valuation.

Table 1.2 summarises the sum of the parts valuation for Essential Metals Ltd (ASX: ESS).

Table 1.2 – ESS Sum of the Parts Valuation

Asset	Value Range	Preferred	Per Share
Pioneer Dome Lithium Project	$416-$2,313m	$1,175m	
Risked NPV (US$2,500/dmt, 30% risk factor)		$345.8m	$1.09
Gold Projects (ESS 100%) and various JV	$3-$7m	$4.0m	$0.01
Exploration and Evaluation Costs		($20m)	($0.06)
Cash		$10.5m	$0.03
ESSO Options Conversion		$3.1m	$0.01
New Equity (50m shares @ $0.40)		$20.0m	$0.06
Corporate and Financing Costs		($6.6m)	($0.02)
Total		**$356.8m**	$1.12

Source: Evolution Capital estimates

The ESS sum of the parts valuation assumed an equity capital raising of $20 million at $0.40 per share for 50,000,000 additional shares, resulting in 317.2 million shares on issue.

ASX-Listed Market Peers

Table 1.1 summarises some parameters for the selected ASX-listed market peers.

Table 1.1 – ASX-Listed Peer Companies with Project in Australia

Company	Code	Enterprise Value (A$ million)	Key Project(s)	Stage	EV/Resource (A$/t Li_2O)	Resource (t Li_2O)
Core Lithium Ltd	CXO	1,956.4	Finniss, NT	Construction	$7,840/t	249,480
Global Lithium Resources Ltd	GL1	431.6	Marble Bar & Manna, WA	Resource Development	$2,210/t	195,288
Red Dirt Metals Limited	RDT	165.5	Mt Ida, WA	Resource Drilling	n/a	Tba
Essential Metals Limited	ESS	117.2	Pioneer Dome, WA	Resource Development	$870/t	135,520
Lithium Plus Minerals Ltd	LPM	50.6	Bynoe & Arunta, NT	Exploration drilling	n/a	n/a
Charger Metals NL	CHR	26.1	East Pilbara lithium, WA	Exploration	n/a	n/a
EV Resources Limited	EVR	18.2	Bynoe project, NT	Exploration drilling	n/a	n/a

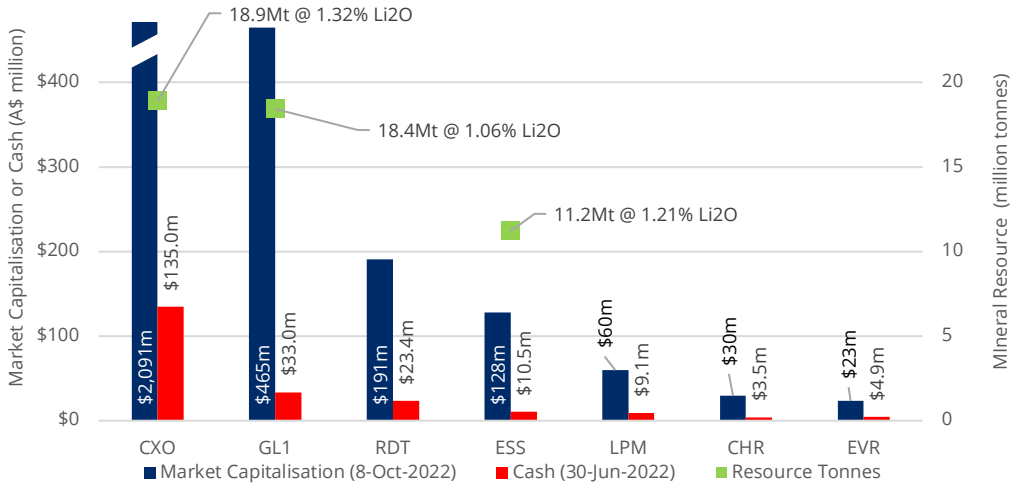
Source: ASX and company announcements. Tba = to be announced

As ESS increases the mineral resource at the Pioneer Dome Lithium Project and progresses its economic evaluation, the closest peers are Global Lithium Resources Ltd (ASX: GL1) and Red Dirt Metals Ltd (ASX: RDT). GL1 has delineated a mineral resource of 18.9 Mt @ 1.32% Li_2O through two projects (Marble Bar 100% GL1 and Manna 80% GL1) and RDT is expected to announce a maiden resource at its Mt Ida project (100% RDT). The average market capitalisation of those two companies amounts to $328m currently. This value supports our sum of the parts target valuation of $357m.

Essential Metals expects to announce an updated mineral resource estimate for the Pioneer Dome project as well as the results of a scoping study before the end

of 2022. This could be an opportunity for a re-rating of the company of it doesn't take place before hand.

Figure 1.1 –ASX-Listed Market Peers



Source: Company announcements, Evolution Capital, S&P Global

2. ESS Strategy

The key elements of ESS strategy are as follows:

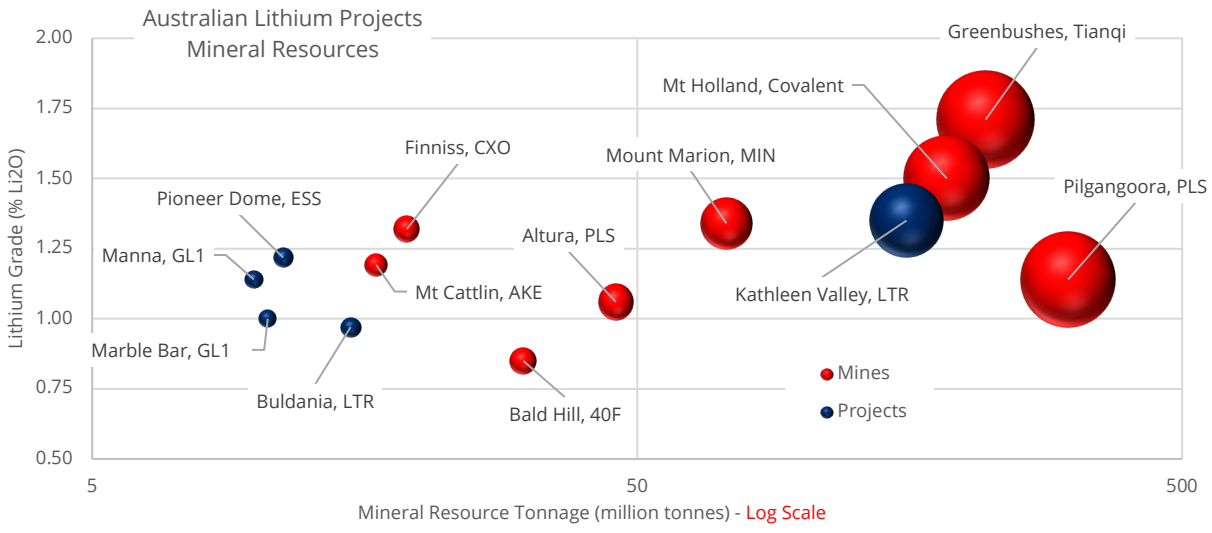
1. Increase mineral resources through extension of Pioneer Dome mineralisation or the discovery of new deposits within the ESS tenements
2. De-risk the project through evaluation and development studies
3. Advance the project toward final investment decision

Essential Metals is well-funded to deliver its exploration and development programs over next 12 months and it is leveraged to exploration success as well as the de-risking of the projects.

3. Pioneer Dome Project Benchmarking

For the purpose of benchmarking the current mineral resource estimate of the Finniss project, we have selected projects and mines in Australia.

Figure 3.1 – Mineral Resource Benchmarking



Source: S&P Global, Evolution Capital

Figure 3.1 summarise the lithium grade and lithium oxide (Li_2O) contained in the mineral resource of projects and mines in Australia.

Pioneer Dome currently appears among the Tier-2 asset based on the mineral resource. One should note that the Finniss project currently in construction (owned and operated by Core Lithium Ltd ASX: CXO with a market capitalisation in excess of $2 billion) reached a final decision to mine with a mineral resource of 14.7 Mt and ore reserve of 7.4 Mt.

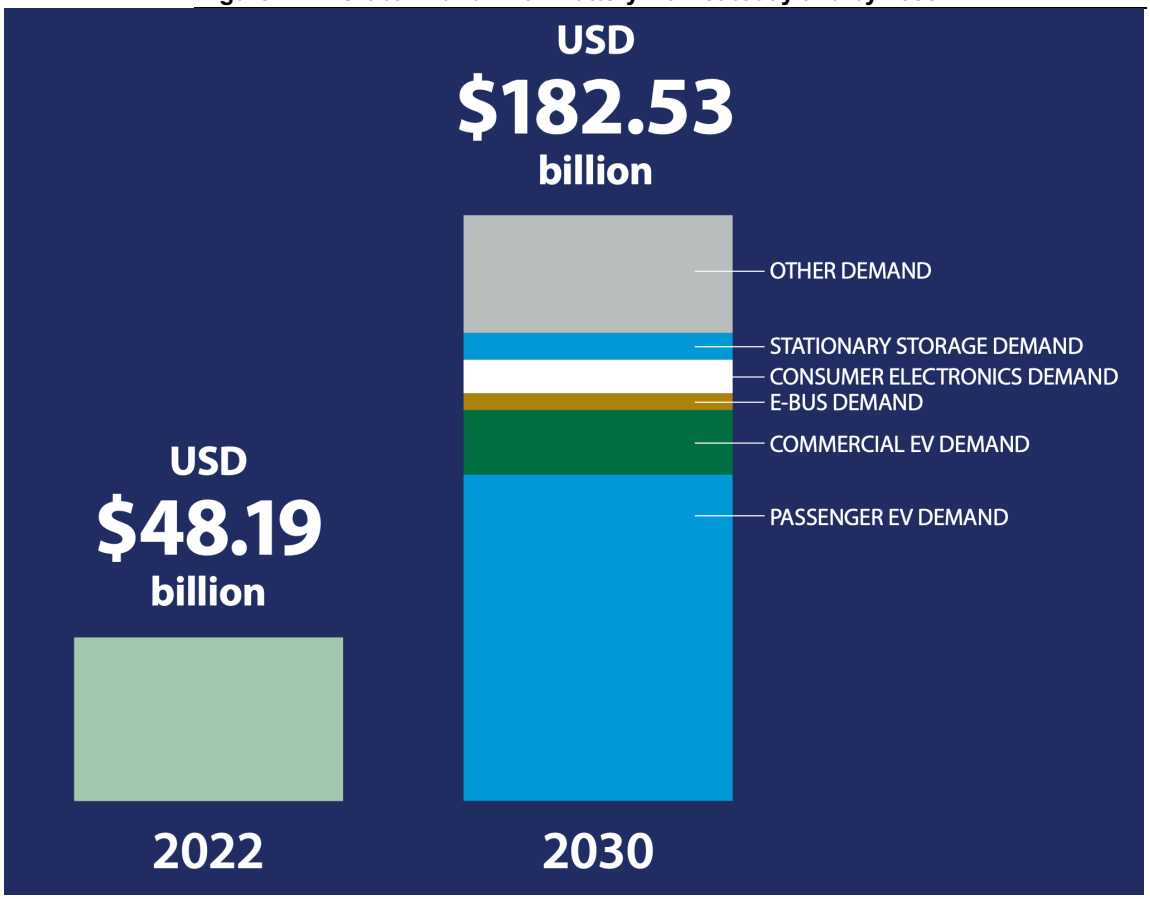
4. Lithium Market Outlook

Overview

After a few hiccups over the last 15 years or so, the lithium demand is now surging and it is difficult to see a downturn in the near future.

Figures 4.1 summarises very well the market outlook

Figure 4.1 – Global Lithium-Ion Battery Market today and by 2030



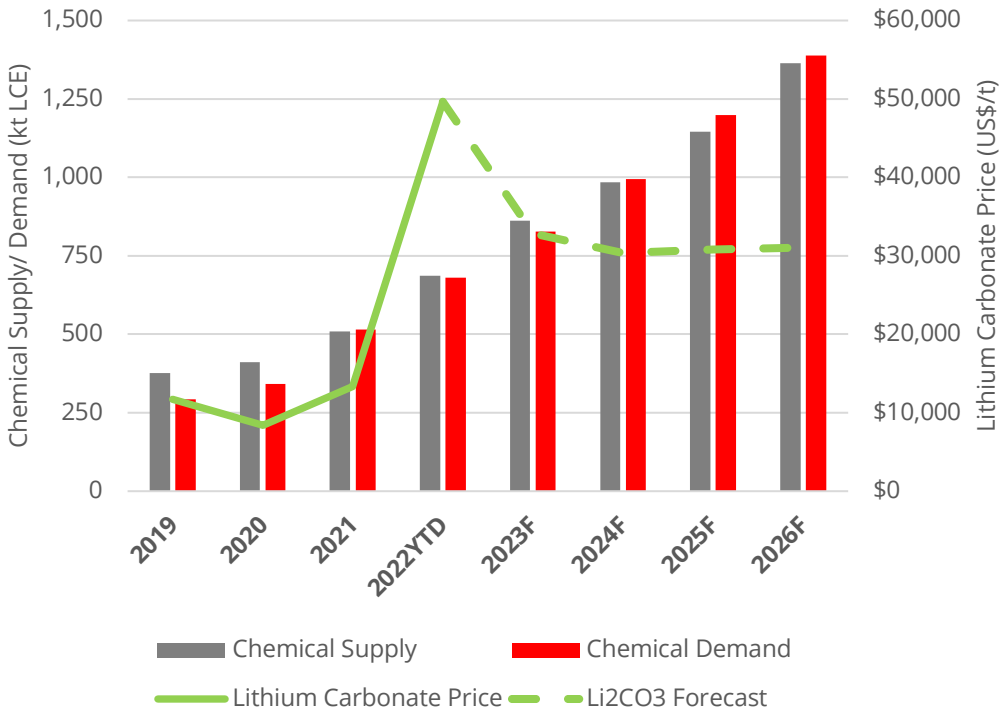
Source: IEA analysis based on S&P Global (2021), visualising the Global Demand for Lithium

According to S&P Global the market is forecast to grow at a CAGR of 18.1% over that period.

Price Forecast

In parallel, S&P Global expects the lithium prices to retrace some of the recent gains and stabilise at a higher level around the US$30,000/t for lithium carbonate.

Figure 4.2 – Lithium Market Supply and Demand and Prices



Source: S&P Global Market Intelligence, as at September 2022

For our valuations, we use spodumene concentrate pricing defined as 10% of the lithium carbonate price, close to the average realised by both Allkem and Pilbara Minerals for their respective shipments over the last year. See Table 4.1.

Table 4.1 - Lithium Product Prices realised by Allkem and Pilbara Minerals

Company	Operation/ Product	Unit	Sep Q	Dec Q	Mar Q	Jun Q	Average
Allkem	**Mt Cattlin**						
	Concentrate shipped	dmt	89,640	38,071	66,011	37,837	
	Revenue	US$m	69.8	60.7	143.8	188.9	
	SC 5.4% CIF	US$/dmt	$779	$1,594	$2,178	$4,992	
	% of Li_2CO_3 Price		8.3%	12.8%	8.0%	12.2%	**10.3%**
	Olaroz						
	Lithium Carbonate	US$/t FOB	$9,341	$12,491	$27,236	$41,033	
	Pilgangoora						
Pilbara	SC 6.0 CIF China	US$/dmt	n/a	$1,775	$2,650	$4,267	
	% of Li_2CO_3 Price				9.7%	10.4%	**10.1%**

Source: Allkem and Pilbara Minerals Quarterly Reports released to the ASX

5. Pioneer Dome Lithium Project

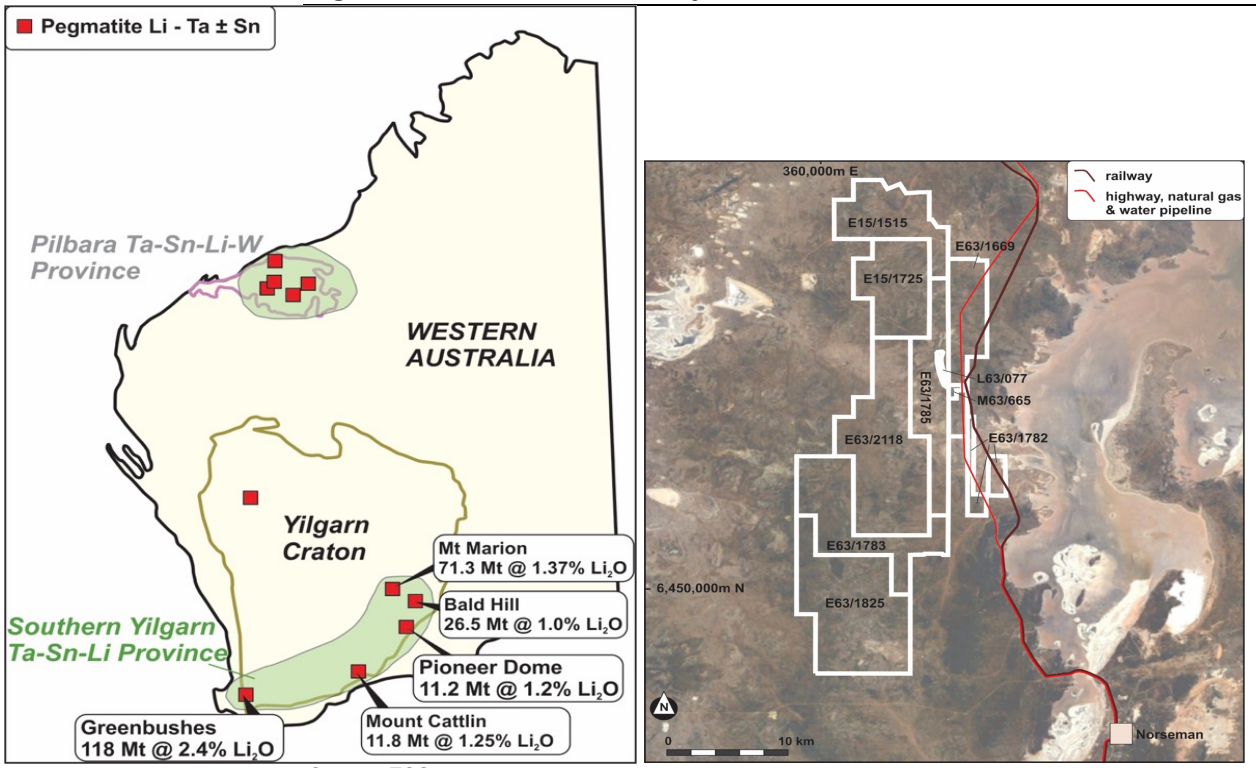
Location

The Pioneer Dome Project (ESS: 100%) is located in the core of Western Australia's lithium corridor in the Eastern Goldfields.

Pioneer Dome covers an area of 356km2 and includes eight exploration licences (six granted and two under application), one granted mining lease and one granted miscellaneous licence.

The tenement package is centred ~150km south of Kalgoorlie and 275km north of the deep-water port of Esperance with the Coolgardie-Esperance Highway adjacent to the eastern edge of the Project.

Figure 5.1 – Pioneer Dome Project Location and Tenements



Source: ESS

Regional Geology

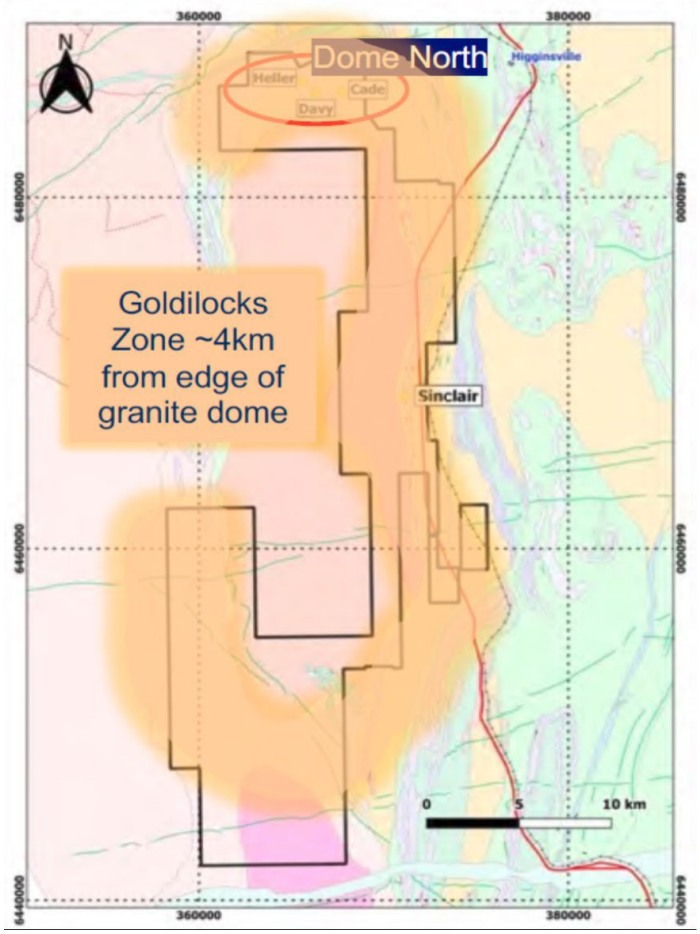
The southern Yilgarn area is recognised as being well endowed with spodumene deposits, including the Bald Hill Mine, the Mt Marion Mine and the Buldania Project, all within 100km of the Pioneer Dome Lithium Project. The world-class Earl Grey deposit and the Mt Cattlin Mine are located further west and south of Pioneer Dome, respectively.

The core intrusive of the Pioneer Dome is a monzogranite - the eastern edge is marked by the 50 Mile Tank Gneiss, an older unit that has been intruded by the granite, and which may represent an inlier of pre-greenstone basement.

Surrounding greenstone units include volcanics of the Kalgoorlie Group (including the Kambalda Komatiite), overlain by volcaniclastics and sediments of the Black Flag Group.

Although Figure 5.1 right shows a later granite directly abutting the southwestern edge of the Pioneer Monzogranite, work completed by Essential has identified probable Black Flag units in the area, with this interpretation supported by the magnetics signature in the area. This has important ramifications for lithium exploration, given that the pegmatites are generally found in the units around and within 4 km of the dome (the "Goldilocks Zone" as shown in Figure 5.2).

Figure 5.2 – Pioneer Dome Project Geology



Source: ESS

The primary mineralisation style is pegmatite hosted lithium, with caesium also being present in the Sinclair area. Pegmatites identified to date form a swarm over a strike length of 15 km within the sediments along the eastern side of the Pioneer Monzogranite, with a second group (Dome North or Pioneer Dome) at the northern end of the intrusive.

Pioneer Dome Project History

Essential commenced lithium exploration in early 2016, with this initially leading to the discovery of several pegmatites along the eastern edge of the Pioneer Dome, including the 2016 discovery of the pollucite hosted caesium mineralisation which was subsequently mined in 2018/2019.

Early work included soil sampling, geological mapping and drilling with subsequent work resulting in the discovery of the Heller, Davy and Cade deposits in the north of the Project area.

The Dome North pegmatites were initially discovered in mid-2019 by geological mapping over geochemically identified target areas, with drilling commencing soon after. The initial Mineral Resource Estimate (“MRE”), for the Cade Deposit, of 8.2 Mt @ 1.23% Li2O was announced to the market on 25 November 2019.

Pioneer Dome Mineral Resource

Table 5.1 summarises the mineral resource for the Pioneer Dome project as announced by Essential Metals on 29th September 2020.

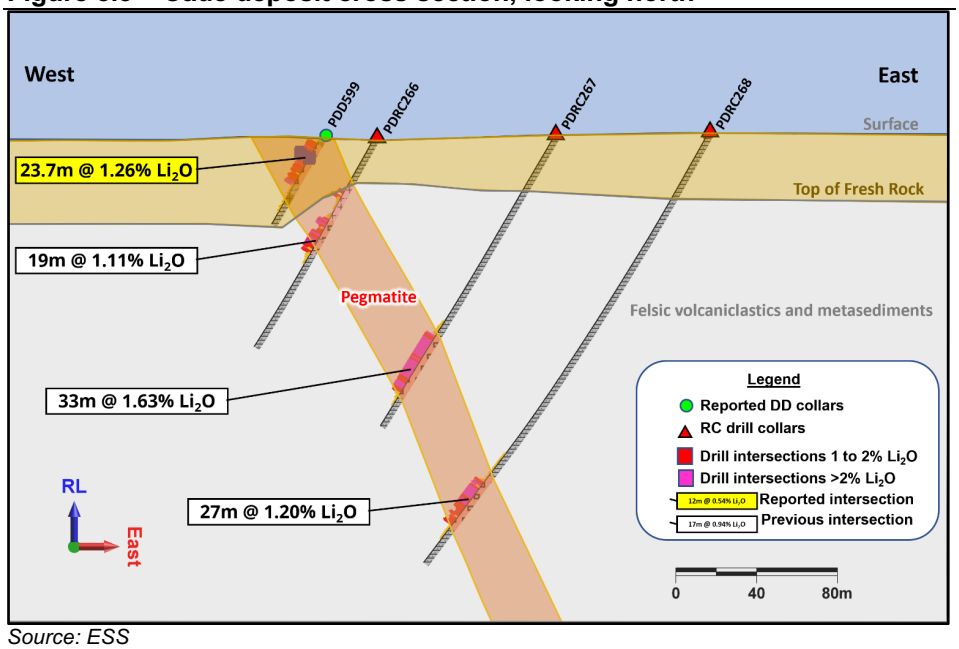
Table 5.1 – Pioneer Dome Mineral Resource

Project Area	Category	Tonnes (Mt)	Grade (% Li_2O)	Tonnes Li_2O
Cade Deposit	Indicated	5.4	1.30	70,000
	Inferred	2.8	1.18	33,000
Davy Deposit	Inferred	2.3	1.13	25,000
Heller Deposit	Inferred	0.7	1.02	8,000
Total		11.2	1.21	136,000

Source: ESS

The Cade Deposit represents around three quarters of the Mineral Resource and includes 5.4Mt @ 1.3% lithium (Li_2O) classified in the 'Indicated' category. The Cade Deposit averages over 20m in thickness with higher grade zones as represented by intersections such as 33m @ 1.63% Li_2O. The Heller and Davy Deposits are generally thinner (averaging around 10m) and are hosted along sheared contacts between basalts and pyroxene dominant ultramafics - these are smaller and of lower average grade than Cade.

Figure 5.3 – Cade deposit cross section, looking north



Source: ESS

Figure 5.3 shows the high-grade nature of the Cade Deposit from surface.

Since the announcement of the mineral resource estimate, work activities have focussed on improving the confidence and quality of the mineral resource in order to advance the project towards development. This have been achieved by firstly drilling the upper portions of the Davy and Cade deposits to determine the extent of weathering and lithium depletion.

A mineral resource estimate update is expected before the end of 2022.

Metallurgy

Two composite samples were prepared from the drill core. The tests conducted on the first composite included:

- Head Assay and X-Ray Diffraction (XRD);
- Crusher work index (CWi) and Abrasion Index (Ai) tests; and
- Size by assay (SxA) and Heavy Liquid Separation (HLS) at a series of different crush sizes

The first composite was noted to include a portion of mineralisation containing petalite, a lithium-bearing mineral that typically requires a different process flowsheet to spodumene. This material was situated towards the edge of the Resource. A second composite was generated from the same drill holes as the first but excluded the 3.7m wide petalite wall zone identified in hole PDRCD318.

The tests conducted on the second composite included:

- Head Assay and X-Ray Diffraction (XRD);
- Size by assay (SxA) and Heavy Liquid Separation (HLS) at a series of different crush sizes; and
- Batch flotation test work on head and DMS mid samples. This work included de-sliming, magnetic

separation and mica pre-flotation steps.

The XRD scan showed that no petalite was detected in the second composite sample, providing evidence that petalite occurrences outside the identified wall zone in hole PDRCD318 may be low. The lithium grades of the two composites were 1.41% Li2O and 1.56% Li2O respectively. The second composite was then used for the dense medium separation (DMS) and flotation test work.

Under the DMS pilot test stage, a concentrate of 5.7% Li2O was achieved. The Secondary DMS floats were then composited with -0.85mm material and used as feed to flotation test work, containing an assayed grade of 1.67% Li2O.

The flotation test work based on the DMS feed included a series of tests with each one preceded by grinding the feed to P80 150µm and de-sliming via screen or cyclone at a cut size of 20 µm before performing the batch flotation tests.

Table 1.1 – Concentrate Summary

Concentrate	Grade (% Li2O)	Grade (% Fe_2O_3)	Global Recovery
T12 Flot Con & DMS Con	5.66	1.3	82%
T15 Flot Con & DMS Con	5.65	0.7	74%

Source: ESS

The T12 test (flotation + DMS) achieved a concentrate of 5.66% Li2O with very high recovery rate of 82% lithia, however the iron content of 1.3% Fe2O3 is considered high in comparison to the 'industry standard' limit of 1% Fe2O3. Test T15 included a 'mica pre-flotation' step to remove paramagnetic gangue minerals. This resulted in a similar concentrate grade of 5.65% Li2O but a much lower iron content of 0.7% Fe2O3 with a reduction in the global lithia recovery rate to 74%.

Ongoing test work should result in improvements to grades and recoveries, however the work completed to date shows that there is the potential to produce a marketable concentrate.

Environmental and Permitting

Steps are being taken to transition the Dome North Resource area to a 'development ready' status. These steps include:

- A flora and fauna study was completed and no material issues were identified;
- A hydrology study has been completed and multiple potential water sources have been identified;
- Additional metallurgical test work, focussed on the upper zone of Cade deposit and on the Davy deposit is planned to be completed by the end of July to complement previous successful test work on Cade;
- A mining agreement is in place with NNTAC, the representative body of the Ngadju people, the custodians of the land on which the project is located; and
- A mining lease application was lodged in September 2022.

Royalties

Royalties apply to the production of spodumene and are payable to the Western Australian State Government. The royalty is applied at a rate of 5% on the revenue realised from the sale of spodumene concentrate.

Tax

Income tax on Australian company profits is currently set at 30%.

Next Steps

During the December 2022 quarter, the Company expects to be able to commence an updated lithium Mineral Resource Estimate, which together with the metallurgical test work results, will underpin a Scoping Study targeted for completion by the end of 2022. This in turn is expected to pave the way for a Feasibility Study commencing in early 2023.

Off-take

The Dome North Lithium Mineral Resource remains the only Australian lithium mineral resource not yet subject to an off-take commitment.

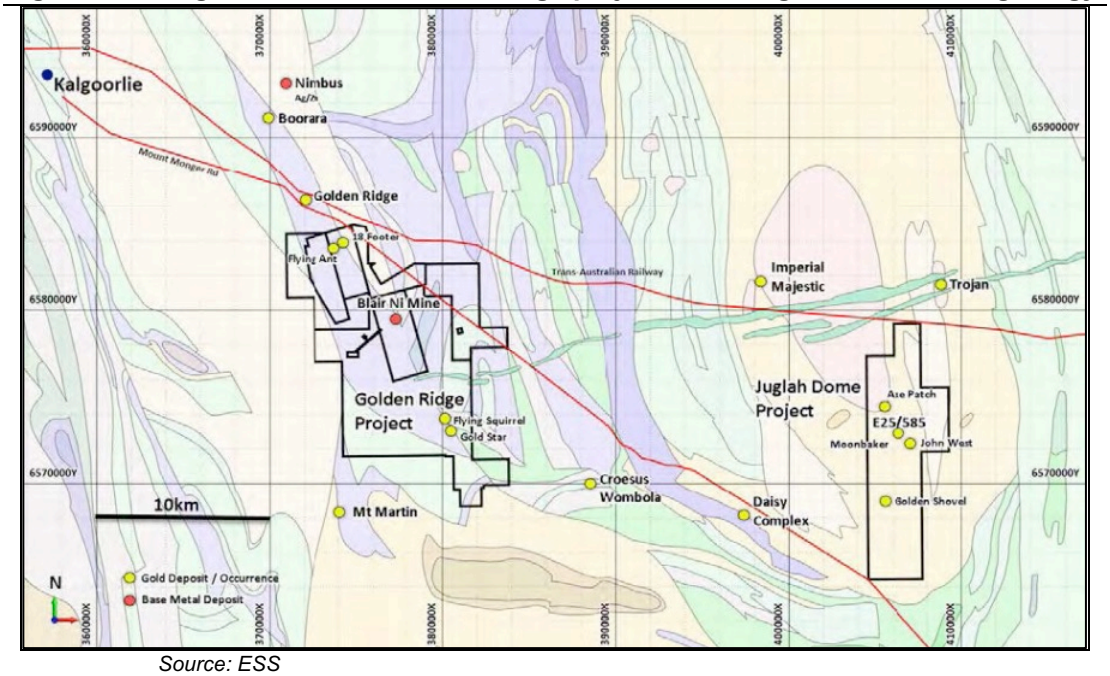
Essential Metals intends to commence discussions with various local and international lithium participants interested in off-take and/or investment at the appropriate time, which is most likely after the mineral resource update and the scoping study results are released.

6. Juglah Dome Gold Project (ESS: 100%)

Location, Tenure and Infrastructure

Juglah Dome comprises of a single ~50 km^2 tenement highly prospective for gold mineralisation located ~60 km ESE of Kalgoorlie (Figure 6), is readily accessible from the Mt Monger haul road and the Trans-Australian Railway service road. Exploration by previous owners identified multiple gold targets using soil geochemistry and drilling. The Project lies in a similar geological setting to that which hosts the Majestic and Imperial Deposits located 10km to the north-west and the Daisy Complex to the west, which forms part of Silver Lake Resources Limited's Mt Monger Operations (Figure 7.1).

Figure 7.1 – Juglah Dome and Golden Ridge projects showing tenements and geology



Source: ESS

Geology and Mineralisation

The project is located within the Kurnalpi Terrane and includes a lower sequence of chert, intermediate to felsic volcanics and volcaniclastics, overlain by basalts. The sequence has been folded and intruded by the Juglah Monzogranite, which forms the core of the NW-trending Bulong anticline, of which the project is at the southern end (Figure 6).

Mineralisation is largely related to NNW to NW trending shear zones, and also NNE-NE cross structures. It is also generally hosted within felsic porphyry dykes and felsic volcanics. The axis of the anticline is also a control on mineralisation, with the Moonbaker, John West and Axe Patch prospects occurring along this NW trend.

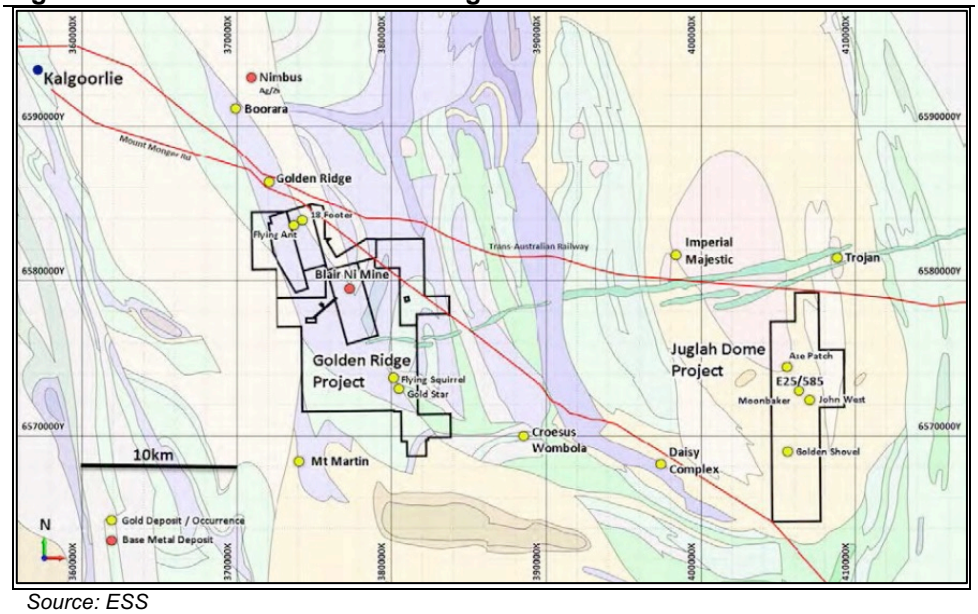
In June 2022 Essential announced the completion of a RC drill campaign carried out on wide spaced sections up to 240m apart to test along strike to the south of previous drilling conducted in 2020, which returned an intercept of 8m @ 2.18g/t Au from 34m (hole ID 20GDRC034) in the southern-most RC drill hole of that drill programme.

Initial assay results were returned from either three metre composite samples or one metre rig mounted cone splits (where visual proxies of gold mineralisation in the felsic porphyry units were observed). The one metre splits from anomalous three metre composites samples were submitted for further gold analysis. The most significant gold intersections from this (March 2022) drilling included (refer ASX announcement dated 30 June 2022):

- 5m @ 1.08g/t Au from 35m (22GSRC002)
- 12m @ 0.95g/t Au from 30m (22GSRC013) – three metre composites
- 8m @ 1.49g/t Au from 75m including 1m @ 7.30g/t Au (22GSRC014)
- •3m @ 0.73g/t Au from 57m (22GSRC003)

Gold anomalism and felsic porphyry units were intersected on every drill line. Mineralisation generally occurs within the felsic porphyry units or at the sheared margins associated with feldspar-pyrite alteration and quartz veining. The strongest gold mineralisation was returned on the section 6,568,340N in holes 22GSRC013 and 22GSRC014 (Figure 7.2). The RC section spacing was 160m to the north and south of these holes with anomalous mineralisation intersected on the adjacent sections.

Figure 7.2 – Cross section containing holes 22GSRC0013 and 22GSRC0014



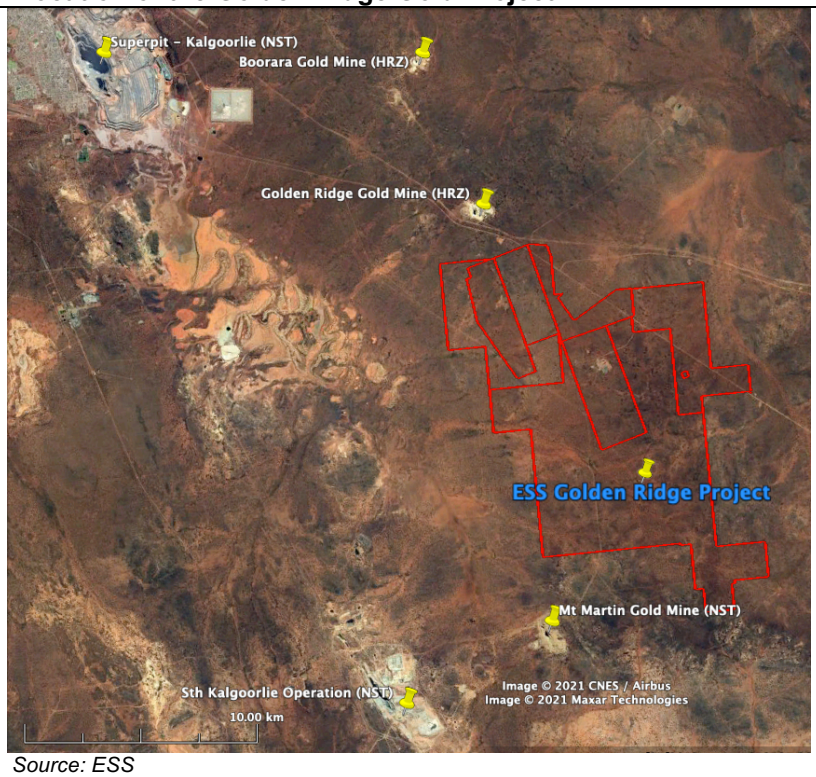
Source: ESS

7. Golden Ridge Gold Project (ESS: 100%)

Location, Tenure and Infrastructure

The Golden Ridge Project is located 20km southeast of Kalgoorlie and is highly prospective for gold and nickel mineralisation. The project lies within the well-endowed Menzies-Boorara Shear Zone that hosts the New Boddington, Paddington, Boorara and Golden Ridge Deposits (the latter two are owned by Horizon Minerals Limited – ASX: HRZ). Exploration at the Project by previous owners had identified multiple highly prospective gold and nickel targets. Golden Ridge comprises four MLs, three ELs and one L for a total area of 145 km^2.

Figure 8.1 – Location of the Golden Ridge Gold Project



Source: ESS

Geology and Mineralisation

Golden Ridge straddles the Boorara Shear Zone ("BSZ"), as well as the Ockerburry Fault Zone, which forms the boundary between the Kalgoorlie and Kurnalpi Terranes. The BSZ is an elongate NNW trending zone, that extends from Menzies in the north to south of Golden Ridge, and is the host for several gold deposits, including Paddington/

Broad Arrow and Golden Ridge. The total in-situ resource at the 1985 commencement of mining at Paddington was 8.4 Mt @ 3.2 g/t Au for 860,000 oz of contained gold. The Paddington mill is still operating, treating material from other deposits in the region.

Horizon Minerals owns and operates the Boorara Gold Project immediately along strike to the NNW of the Golden Ridge tenements, with this including the 448 koz Boorara deposit, with total resources of 19.02 Mt @ 1.66 g/t gold for 1.02 Moz of contained gold.

The gold occurrences are largely concentrated in interpreted younger volcanic and sedimentary units in the northern part of the tenement package, in between the Mount Monger Fault and Boorora Shear Zone.

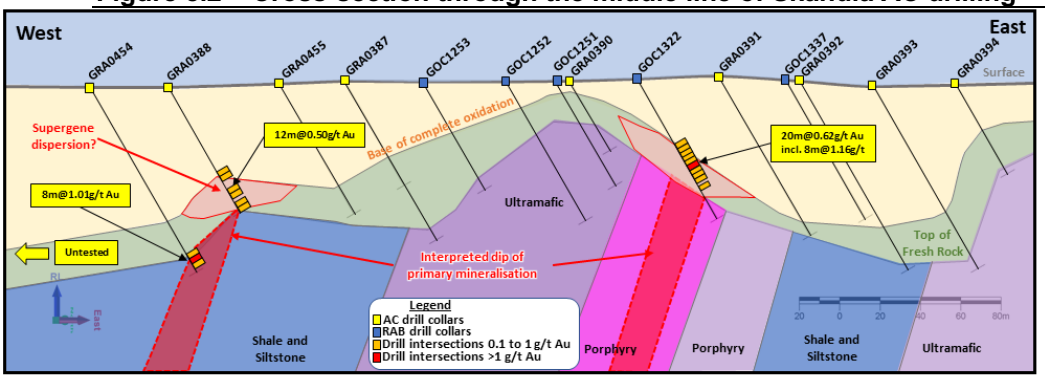
In July 2021 Essential announced that it had received all assays from a 92-hole/6,080m Air-Core drill programme across three prospects (Skandia, Maximus

and AC75). The most significant results from this drilling include (refer ASX release dated 8 July 2021):

Skandia (25 AC holes) results include:

- 8m @ 1.01 g/t Au from 96m including 3m @ 2.45g/t Au (hole GRA0454); and
- 12m @ 0.50 g/t Au from 60m (hole GRA0388)

Figure 8.2 – Cross-section through the middle line of Skandia AC drilling



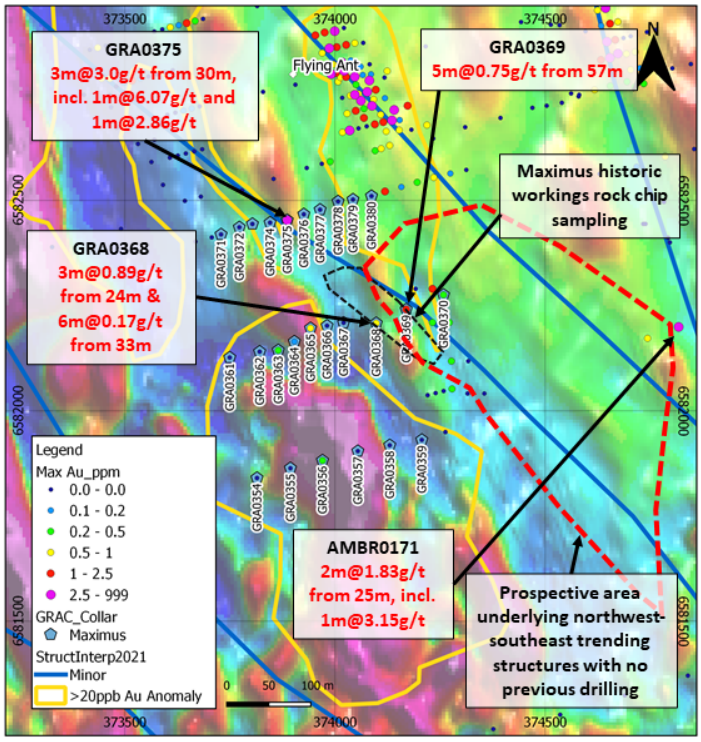
Source: ESS. Cross-sections shows the interpreted mineralised primary structures, supergene dispersion and bedrock lithologies. Note: west of section is prospective untested sediment.

Results from the drilling programme are encouraging and suggest potential for significant gold mineralisation, especially to the west and along the interpreted strike of mineralisation intersected in GRA0454. This area is 3km south and along strike of the Golden Ridge Gold Deposit (ASX: HRZ) and coincident with a large >20ppb Au soil anomaly with peak values to 174ppb Au.

Maximus (26 AC holes) results include:

- 3m @ 3.0 g/t Au from 30m including 1m @ 6.07g/t Au (hole GRA0375);
- 5m @ 0.75 g/t Au from 57m (hole GRA0369); and
- 3m @ 0.89g/t Au from 24m and 6m @ 0.17g/t Au from 33m (hole GRA0368)

Figure 8.3 – Location of Maximus AC drilling



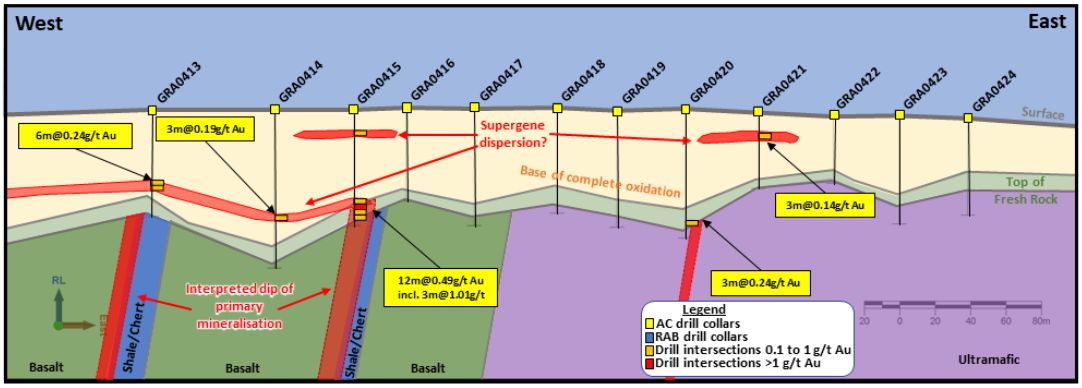
Source: ESS. Maximus AC drilling (blue pentagons), maximum Au (ppm) from drilling (coloured as per the legend) and area of >20ppb Au-in-soil anomalism (yellow polygon), prospective area to the northeast of AC drilling (red dashed shape), interpreted northwest trending structures (blue lines) and area of Maximus workings (black dashed outline).

The anomalous zones intersected correlate with intervals of massive or brecciated quartz veining hosted in siltstone or adjacent ultramafic or within ferruginous upper saprolite. An interpreted north-west south-east trending structure is coincident with anomalous intercepts and importantly there has been no previous drilling over the 1km long strike length of this structure to the south-east.

AC75 (41 AC holes) results include:

- 2m @ 0.49 g/t Au from 51m including 3m @ 1.01 g/t Au (hole GRA0415); and
- 9m @ 0.26 g/t Au from 54m (hole GRA0451)

Figure 8.4 – Cross-section through the southern line of AC75 AC drilling



Source: ESS. Includes the interpreted mineralised primary structures, supergene dispersion and bedrock lithologies.

Drilling intersected basalt and ultramafic lithologies with minor bands of chert and shale. The mineralisation intersected correlates with a roughly north-south oriented band of weakly brecciated shale and chert, interpreted as a narrow interflow sedimentary unit. Further interpretive work is required to determine the future exploration activities, if warranted.

8. Joint Venture Interests

Gold

The Acra Project is near Kalgoorlie. Northern Star Resources Limited (ASX: NST) has earned a 75% Project Interest and continues to fully fund exploration programmes until approval of a Mining Proposal by DMIRS is received with Essential Metals holding a 25% interest.

The Kangan Project is in the West Pilbara and part of a joint venture with Novo Resources Corp (TSX.NVO), who will fund 100% of gold exploration programmes until a decision to mine is made, with Essential Metals holding a 30% interest.

The Balagundi Project is subject to a farmin & JV agreement where Black Cat Syndicate Limited (ASX: BC8) is earning a 75% interest in the Project located at Bulong, near Kalgoorlie. Black Cat will then fully fund gold exploration programmes until a decision to mine is made, with Essential Metals retaining a 25% interest.

Essential Metals holds a 25% free-carried interest (20% for nickel rights) in the Larkinville Project near Kambalda, WA, with Maximus Resources Ltd (ASX: MXR).

Nickel

The nickel mineral rights on the Blair-Golden Ridge Project, which includes the suspended Blair Nickel Sulphide Mine, are subject to a farmin/joint venture with Crest Investment Group (renamed Australian Nickel Company Limited)

("ANCO"), a nickel exploration specialist which is earning up to a 75% interest. The Company will retain a 25% free-carried interest up to a decision to mine.

Essential Metals holds a 20% free-carried interest (nickel only) in the Wattle Dam Project near Kambalda, WA, with Maximus Resources Ltd (ASX: MXR).

9. Directors & Management Team

Directors and management have substantial experience leaving the company in very capable hands.

Craig McGown, Chairman

Mr McGown is an investment banker with over 35 years of experience consulting to companies in Australia and internationally, particularly in the natural resources sector. He holds a Bachelor of Commerce degree and is an executive director of the corporate advisory business New Holland Capital Pty Ltd. Mr McGown has had extensive experience in the corporate finance sector, including mergers and acquisitions, capital raisings in both domestic and international financial markets, asset acquisitions and asset disposals, initial public offerings and corporate restructurings. Mr McGown is also currently Non-Executive Chairman of Sipa Resources Limited.

Timothy Spencer, Managing Director

Mr Spencer has over 25 years' experience in the resources sector and precious metals markets, working in various executive, accounting, treasury and finance roles including with three mining companies as an executive director and/or Chief Financial Officer and Company Secretary as well as with a large gold refining and trading enterprise. He joined Essential Metals in October 2017, and prior to his appointment as Managing Director has served in the roles of Chief Financial Officer, Company Secretary, and CEO.

Paul Payne, Non-Executive Director

Mr Payne is an experienced geologist with a strong technical background as well as senior executive and board experience across a range of commodities in both Australia and internationally. Mr Payne's experience includes the role of founding Managing Director of Dacian Gold Limited where he was instrumental in the major initial gold discoveries at its Mount Morgans project. Mr Payne is currently non-executive director of a number of ASX listed resource companies and continues to provide expert technical services to the resources industry through his consultancy PayneGeo.

Warren Hallam, Non-Executive Director

Mr Hallam is a Metallurgist, a Mineral Economist and holds a Graduate Diploma in Business. He has over 35 years of technical and commercial experience across numerous commodities and businesses within the resources industry including with top-tier mining companies Western Mining Corporation, Metals X Limited, Westgold Resources and is currently Chairman of ASX listed Nelson Resources.

Mr Hallam was a member of the senior leadership team at Metals X (both as Executive Director and Managing Director) and played a critical role in the development of Metals X as a leading global tin producer and top-10 gold producer. Mr Hallam also held a range of senior operation, strategic and business development roles with diversified ASX-100 resource company Western Mining Corporation.

Carl Travaglini, Chief Financial Officer and Company Secretary

Mr Travaglini is a Chartered Accountant and Chartered Company Secretary. Before joining Essential Metals, Mr Travaglini worked for a number of WA based lithium and gold producers and explorers.

Andrew Dunn, Exploration Manager

Andrew has over 17 years of experience in brownfield and grassroots exploration, as well as exposure to the mine environment throughout his career with both Gold Fields and Millennium Minerals. His geological expertise spans a variety of commodities, including gold and copper.

10. Investment Risks

ESS is exposed to a number of risks including:

- **Geological risk**: the actual characteristics of an ore deposit may differ significantly from initial interpretations.
- **Resource risk:** all resource estimates are expressions of judgement based on knowledge, experience and industry practice. Estimates, which were valid when originally calculated may alter significantly when new information or techniques become available. In addition, by their very nature, resource estimates are imprecise and depend to some extent on interpretations, which may prove to be inaccurate.
- **Commodity price risk:** the revenues ESS will derive mainly through the sale of lithium concentrate exposing the potential income to metal price risk. The price of lithium fluctuate and is affected by many factors beyond the control of ESS. Such factors include supply and demand fluctuations, technological advancements and macro-economic factors.
- **Exchange Rate risk:** The revenue ESS derives from the sale of metal products exposes the potential income to exchange rate risk. International prices of lithium are denominated in United States dollars, whereas the financial reporting currency of ESS is the Australian dollar, exposing the company to the fluctuations and volatility of the rate of exchange between the USD and the AUD as determined by international markets**.**
- **Mining risk:** A reduction in mine production would result in reduced revenue.
- **Processing risks:** A reduction in plant throughput would result in reduced revenue. In all processing plants, some metal is lost rather than reporting to the valuable product. If the recovery of metal is less than forecast, then revenue will be reduced.
- **Operational cost risk:** an increase in operating costs will reduce the profitability and free cash generation of the project.
- **Management and labour risk**: an experienced and skilled management team is essential to the successful development and operation of mining projects.

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