



# ESSENTIALMETALS

for a sustainable future

## ASX Code: ESS

### Corporate Profile

Shares on issue: 200,817,300  
Cash: \$6.2m (31 Mar 2021)  
Debt: Nil

### KEY PROJECTS

**LITHIUM** Pioneer Dome  
**GOLD** Golden Ridge  
**GOLD** Juglah Dome

### Joint Ventures (ESS %)

1 x lithium project (51%)  
2 x nickel projects (20-25%)\*  
4 x gold projects (25-30%)\*  
\* Free carried to a decision to mine

### Corporate Directory

**Non-Executive Chairman**  
Craig McGown

**Non-Executive Directors**  
Paul Payne  
Warren Hallam

**Managing Director**  
Timothy Spencer

**CFO & Company Secretary**  
Carl Travaglini

**Exploration Manager**  
Andrew Dunn

### Investor Relations

Nicholas Read  
Read Corporate  
t: +61 8 9388 1474  
e: nicholas@readcorporate.com.au

ABN: 44 103 423 981  
t: +61 8 9322 6974  
e: info@essmetals.com.au  
w: essmetals.com.au

Level 3, 46 Ord St  
West Perth, WA 6005  
Australia  
PO Box 1787,  
West Perth, WA 6872  
Australia

14 July 2021

## Essential Metals Limited presenting today at the Noosa Mining & Exploration Conference

Virtual presentation scheduled for 11.40am (AEST) today

Essential Metals Limited (**ASX: ESS**) is pleased to advise that Managing Director, Tim Spencer, will be giving an online presentation at the Noosa Mining & Exploration Conference at 11.40am (AEST-Brisbane) today, 14 July 2021.

All shareholders and investors are invited to view the live-streamed video presentation.

Please use the following link for more information about to register for the Conference and view the presentation online:

<https://www.noosaminingconference.com.au>

Following is a copy of the presentation.

*This ASX release has been approved by the Board of Directors*

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#### For further information:

Tim Spencer, Managing Director  
Essential Metals Limited  
T: +61 8 9322 6974  
E: tims@essmetals.com.au

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Nicholas Read  
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T: +61 8 9388 1474  
E: nicholas@readcorporate.com.au

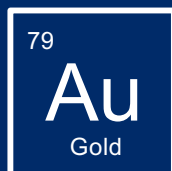
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**ESSENTIALMETALS**

for a sustainable future

ASX: ESS



## Exploring the heart of WA's "lithium corridor"

Drilling to advance the Pioneer Dome Lithium Project

### NOOSA MINING CONFERENCE

14 July 2021

Virtual presentation from Perth, Australia

# Forward looking statements and disclosures

## Forward looking statements

This document may contain “forward-looking statements” and other forward looking information based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward looking information includes, among other things, statements with respect to the Company's business strategy, plan, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations, Mineral Resources and results of exploration. Generally, this forward looking information can be identified by the use of forward- looking terminology such as ‘outlook’, ‘anticipate’, ‘project’, ‘target’, ‘likely’, ‘believe’, ‘estimate’, ‘expect’, ‘intend’, ‘may’, ‘would’, ‘could’, ‘should’, ‘scheduled’, ‘will’, ‘plan’, ‘forecast’, ‘evolve’ and similar expressions. Persons reading this document are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different. Forward looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance or achievements to be materially different from those expressed or implied by such forward looking information. Forward looking information is developed based on assumptions about such risks, uncertainties and other factors, including but not limited to general business, economic, competitive, political and social uncertainties; the actual results of current exploration activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; future commodity prices; possible variations of ore grade or recovery rates; failure of plant, equipment or processes to operate as anticipated; accident, labour disputes and other risks of the mining industry; and delays in obtaining governmental approvals or financing or in the completion of development or construction activities. This list is not exhaustive of the factors that may affect our forward looking information. These and other factors should be considered carefully and readers should not place reliance on such forward looking information. Recipients of this document must make their own investigations and inquiries regarding all assumptions, risks, uncertainties and contingencies which may affect the future operations of the Company and the Company's securities. The Company disclaims any intent or obligations to or revise any forward looking statements whether as a result of new information, estimates, or options, future events or results or otherwise, unless required to do so by law.

## Exploration Results & Competent Person Statement

Mr Andrew Dunn (MAIG), Exploration Manager who is employed full-time by Essential Metals Limited, compiled the technical aspects of this Report. Mr Dunn is eligible to receive equity-based securities in Essential Metals Limited under the Company's employee incentive schemes. Mr Dunn is a member of the Australian Institute of Geoscientists and has sufficient experience that is relevant to the styles of mineralization and types of deposit under consideration and to the activity that is being reported on to qualify as a Competent Person as defined in the 2012 edition of the “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Mr Dunn consents to the inclusion in the report of the matters in the form and context in which it appears.

**Dome North Lithium Mineral Resource:** The information in this presentation that relates to lithium Mineral Resource for the Dome North Lithium Project was extracted from an announcement reported to ASX on 29 September 2020 (JORC 2012) titled “Dome North Lithium Project – Resource upgrade”.

## Dome North Mineral Metallurgical Test Work - Competent Person Statement

The information in this report that relates to metallurgical test work for the Dome North Lithium Project has been reviewed by Mr Joshua Paterson who is a member of the Australasian Institute of Mining and Metallurgy. Mr Paterson is an employee of Primero Ltd and has sufficient experience relevant to the style of processing response and type of deposit under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’. Mr Paterson consents to the inclusion in the report of a summary based upon his information in the form and context in which it appears.

## Reference to previous market announcements

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcements continue to apply and have not materially changed. The company confirms that the form and context in which Exploration Results or Competent Person's findings are presented have not been materially modified from the original market announcements.

This presentation has been approved by the Company's Board of Directors.

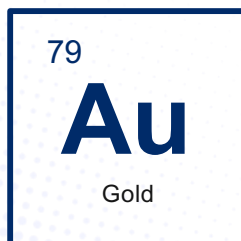
# Our team is active and focused on...

**Three highly prospective 100%-owned projects in easy-to-explore, low-cost locations near Kalgoorlie, Western Australia – a Tier-1 mining jurisdiction**



## **Pioneer Dome Project, Western Australia**

A substantial lithium Mineral Resource already defined – Spodumene, the main 'hard rock' lithium source – in WA's lithium corridor. Drilling about to begin targeting new discoveries.



## **Golden Ridge Project, Western Australia**

Multiple high-tenor gold targets – our goal is to unlock its potential for a large discovery.

## **Juglah Dome Project, Western Australia**

Widespread significant gold-in-soil anomalism indicates 'elephant country'..!



# Corporate Overview

## Capital structure

**200.8M Shares**  
**24.6M Options**

ASX: ESS/ESSO

**A\$25M**

**Market Cap**  
\$0.125/share

**A\$5.5M**

**Cash**

As at 30 June 2021 <sup>(1)</sup>

**Nil**

**Debt**

As at 30 June 2021

(1) unaudited

## Board & Management

### Executive Team

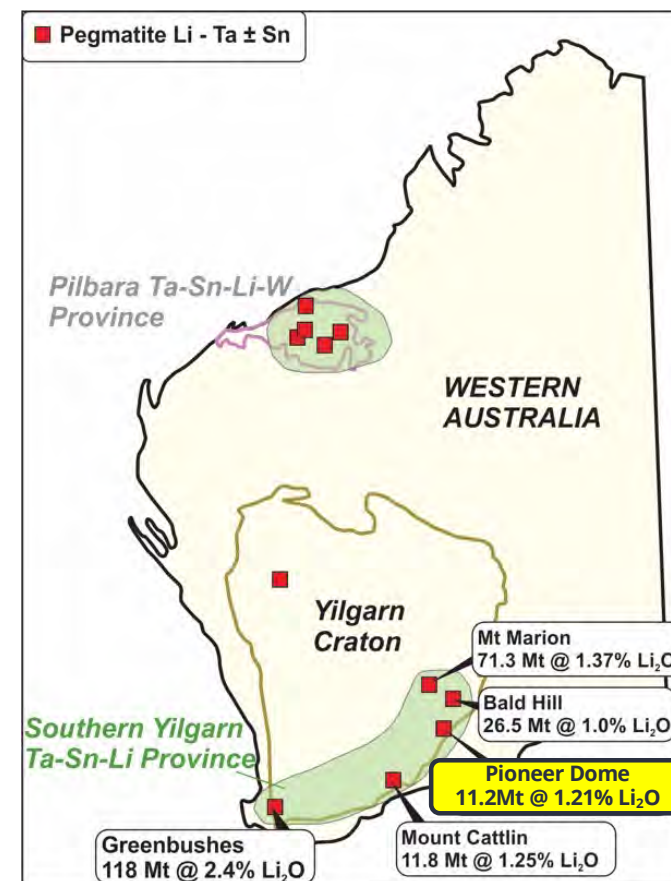
- **Tim Spencer, Managing Director** – 25 years' experience commercial/corporate; project development in Australia, Indonesia, Brazil and Italy
- **Carl Travaglini, CFO & Company Secretary** – 12 years' experience in gold & lithium project developments
- **Andrew Dunn, Exploration Manager** – 17+ years in exploration across WA & NSW

### Non-Executive Directors

- **Craig McGown, Non-Exec Chairman** – 40 years in capital markets; corporate
- **Paul Payne, Non-Exec Director** – 35 years' experience: geologist; exploration, project development; corporate
- **Warren Hallam, Non-Exec Director** – 35 years' experience: metallurgist; management, operations; project development, corporate

# Investment Overview

- A well-funded and active ASX-listed explorer
- Focused on finding and producing essential metals for a sustainable, low-carbon future
- Three highly prospective, 100%-owned projects in easy-to-explore, low-cost locations near Kalgoorlie – a Tier-1 mining jurisdiction
- Exceptional pipeline of resource growth opportunities and exploration targets in the heart of WA's "lithium corridor"
- **High quality lithium Resource: 11.2Mt at 1.21% Li<sub>2</sub>O at Pioneer Dome**
- Exciting gold potential at Golden Ridge and Juglah Dome Projects near Kalgoorlie
- Free-carried exposure to a significant portfolio of nickel and gold exploration projects + 51% interest in a Canadian lithium project



The lithium deposits of the Southern Yilgarn Ta-Sn-Li Province in the context of pegmatite Li-Ta deposits of Western Australia. Modified from Skirrow et al, 2013. Mineral Resources quoted are sourced from Champion, 2018 (Mt Marion, Bald Hill, Mount Cattlin and Greenbushes).

# Analogue companies (with Australian hard rock lithium pre-production projects)



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	Essential Metals (ASX:ESS)	Global Lithium Resources (ASX:GL1)	Core Lithium (ASX:CXO)	Liontown Resources (ASX:LTR)
Lithium Resources	11.2Mt @ 1.21% Li <sub>2</sub> O <small>(Refer ASX release 29/09/2020)</small>	10.5Mt @ 1.0% Li <sub>2</sub> O <small>(Refer ASX release 04/05/2021)</small>	14.72Mt @ 1.32% Li <sub>2</sub> O <small>(Refer ASX release 06/11/2018)</small>	156Mt @ 1.46% Li <sub>2</sub> O <small>(Refer ASX release 08/04/2021)</small>
Lithium Reserves	No	No	O/P 1.8Mt @ 1.5% Li <sub>2</sub> O U/G 3.9Mt @ 1.3% Li <sub>2</sub> O Total 5.7Mt @ 1.3% Li <sub>2</sub> O	71Mt at 1.40% Li <sub>2</sub> O
Stage	Advanced exploration	Advanced exploration	Completed DFS	Completed PFS
Met test work	Scoping study level	Not yet	DFS level	PFS level
Process route	Likely dense medium separation &/or flotation	Not known	Dense medium separation (no flotation)	Whole of ore flotation
Offtake(s) in place	No	No	Yes	No
Market Cap <small>(13/07/2021)</small>	\$25M	\$34M	\$264M	\$1,537M
Market Cap multiple to ESS <small>(undiluted)</small>	1	1.4x	11x	61x

**Strong potential to close the value gap as we expand Pioneer Dome and advance our lithium project towards commercialisation.**

# Pioneer Dome Lithium Project

## 453km<sup>2</sup> project tenure in the 'lithium corridor'

- Mt Marion, Bald Hill and Buldania projects are all located within 100km of Pioneer Dome
- The Dome North Lithium Mineral Resource is in the northern area of the tenement holding with 10 extensional targets identified
- Project contains three mineralised pegmatites so far – 11Mt JORC Mineral Resource reported

## Dome North Mineral Resource

Table 2. Mineral Resource by deposit and category: Dome North Lithium Project (0.5% Li<sub>2</sub>O cut-off grade)

Deposit	Classification	Tonnes (Mt)	Li <sub>2</sub> O %	Ta <sub>2</sub> O <sub>5</sub> ppm	Contained Li <sub>2</sub> O (T)	Fe <sub>2</sub> O <sub>3</sub> %
Cade	Indicated	5.4	1.30	33	70,000	0.55
	Inferred	2.8	1.18	33	33,000	0.63
Davy	Inferred	2.3	1.13	53	25,000	0.68
Heller	Inferred	0.7	1.02	76	8,000	0.72
<b>Total</b>	<b>Total</b>	<b>11.2</b>	<b>1.21</b>	<b>40</b>	<b>136,000</b>	<b>0.61</b>

Note: Appropriate rounding applied.

## Tier-1 location

- Perfect location to develop a mining operation
- Flat-lying, lightly wooded land with no environmental or native title complexities
- 10km from a main regional highway that connects the mining centre of Kalgoorlie (150km) and the large dry bulk & container seaport of Esperance (275km)
- Gas pipeline and water pipeline located alongside the main highway
- Unsealed access road connects the Project to the main highway

## Excellent metallurgical characteristics

- Scoping Study level metallurgical test work showed a total lithium oxide (Li<sub>2</sub>O) recovery rate of 74% was achieved using a hybrid Dense Medium Separation (DMS) + flotation flowsheet to produce a 5.6% lithia (Li<sub>2</sub>O) concentrate with 0.7% iron (Fe<sub>2</sub>O<sub>3</sub>) content
- A 'whole of ore' test achieved 66% Li<sub>2</sub>O recovery at a grade of 6.0% Li<sub>2</sub>O and 0.6% Fe<sub>2</sub>O<sub>3</sub>
- Excellent potential for improvement with further refinement of the process techniques

# Dome North Resource – the Catalyst

## WHAT WILL BE THE CATALYST TO TRIGGER DEVELOPMENT STUDIES?

- The grade is excellent, particularly the high grade zones in the Cade Deposit – e.g. 22.2m @ 1.72%  $\text{Li}_2\text{O}$  from 128 metres (PDRCD318)

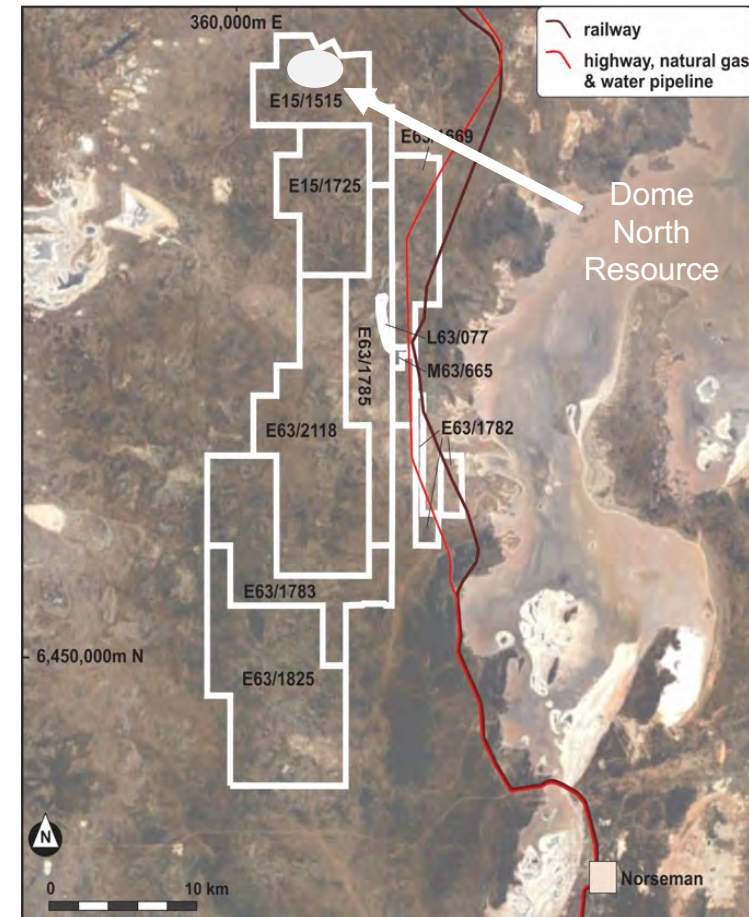
### We need more tonnes...

- To support a robust business case for a long-life medium-scale sized operation based on DMS+flotation or 'whole of ore' flotation
- Because off-takers want long-term supply security (>10+ years)

## HOW MANY MORE TONNES?

- Independent Investment Research<sup>(1)</sup> states: *"Additional lithium resources need to be delineated to reach a critical mass that would justify development studies - in our view that would be in the order of 15 - 20 Mt at >1%  $\text{Li}_2\text{O}$ "* i.e. => 150,000 – 200,000 tonnes of lithium ( $\text{Li}_2\text{O}$ )
- We currently have a Mineral Resource of 11.2Mt @ 1.21%  $\text{Li}_2\text{O}$  containing 136,000 tonnes of lithium ( $\text{Li}_2\text{O}$ )
- The Cade Deposit by itself comprises 75% of the Resource – 8.2Mt @ 1.26%  $\text{Li}_2\text{O}$  = 103,000 tonnes of lithium
- **DISCOVERING ANOTHER CADE PEGMATITE WILL INCREASE LITHIUM RESOURCES TO >200,000 tonnes of lithium ( $\text{Li}_2\text{O}$ )**

(1) The IIR report is available on the Company's website



The location of the tenements of the Pioneer Dome Lithium Project relative to major infrastructure

**LITHIUM DRILLING PLANNED TO  
COMMENCE THIS MONTH\***

**TARGETING NEW LITHIUM PEGMATITES IN  
PROXIMITY TO THE RESOURCE**

**5,000m air-core (with hammer) programme**

*\* To be confirmed shortly*



# The Cade Deposit

## Mineral Resource

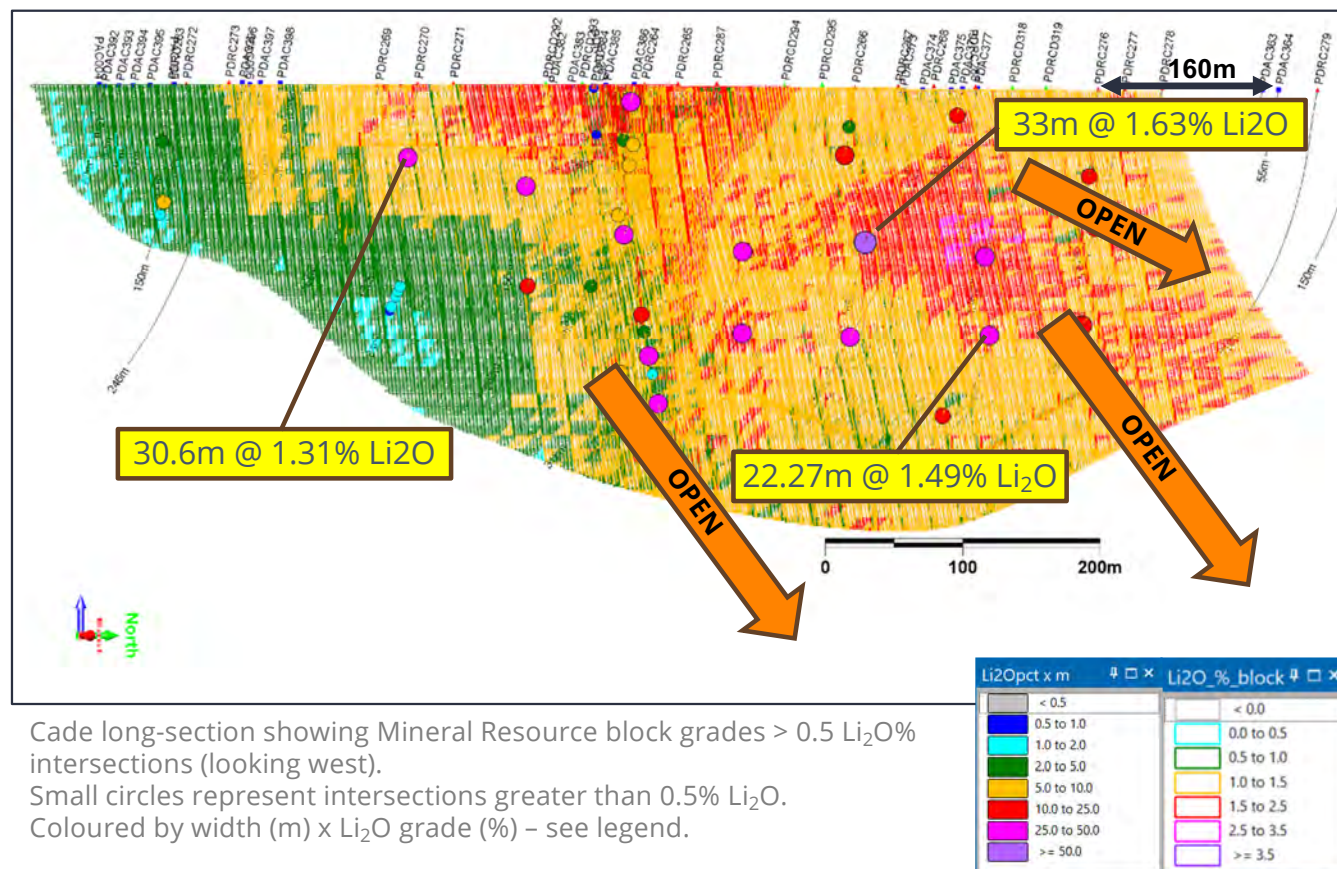
- Cade comprises 76% of Total Resource
- Indicated 5.4Mt @ 1.30% Li<sub>2</sub>O
- Inferred 2.8Mt @ 1.18% Li<sub>2</sub>O

Intersections include:

- **33m @ 1.63% Li<sub>2</sub>O** from 72m (PDRCD292)
- **30.6m @ 1.31% Li<sub>2</sub>O** from 72.4m (PDRCD292)
- **22.27m @ 1.49% Li<sub>2</sub>O** from 199m (PDRCD319)

- The deposit is open at depth and along strike with potential for additional mineralisation in parallel pegmatites
- The best part of Cade is hosted in metasediments which comprise a large part of the Dome North area

(Mineral Resource: Refer ASX release 29/09/2020)  
(Drill results: Refer ASX release 04/02/2020)



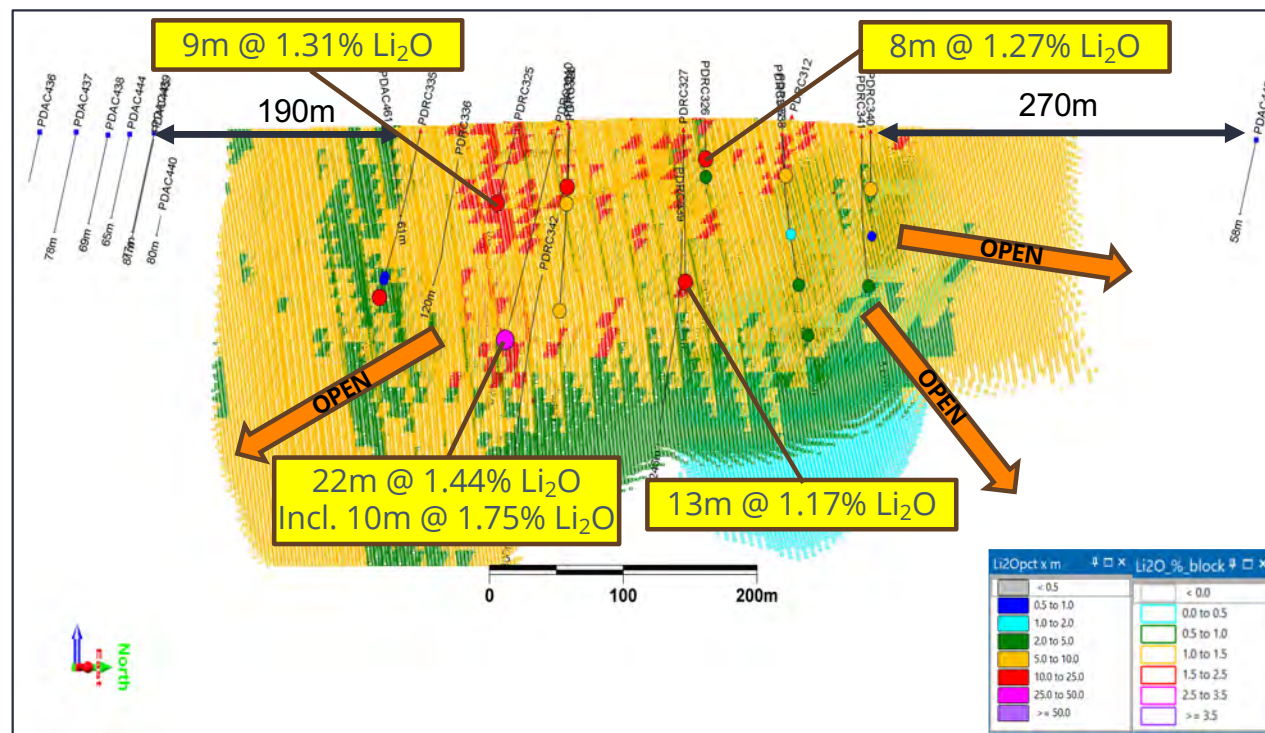


# The Davy Deposit

## Mineral Resource

- Davy comprises 18% of Total Resource
- Inferred 2.3Mt @ 1.13%  $\text{Li}_2\text{O}$
- Resource based on only 15 RC holes
- The Resource is hosted in mafic and ultramafic units with the northern strike potential likely to develop in sediments like Cade
- **Open to the north-east** PDRC340 & PDRC341 with 6m @ 1.05 %  $\text{Li}_2\text{O}$  & 4m @ 0.61 %  $\text{Li}_2\text{O}$
- **270m of untested strike** to next traverse (PDAC446 to PDAC452) to the north-east
- ~240m from PDRC335 (11m @ 1.16 %  $\text{Li}_2\text{O}$  ) to southern section. Need to **test beneath and south of** PDRC335
- The Heller Deposit, approx. 1km west of Davy makes up the remaining 6% of the Resource

(Mineral Resource: Refer ASX release 29/09/2020)  
 (Drill results: Refer ASX release 04/02/2020)



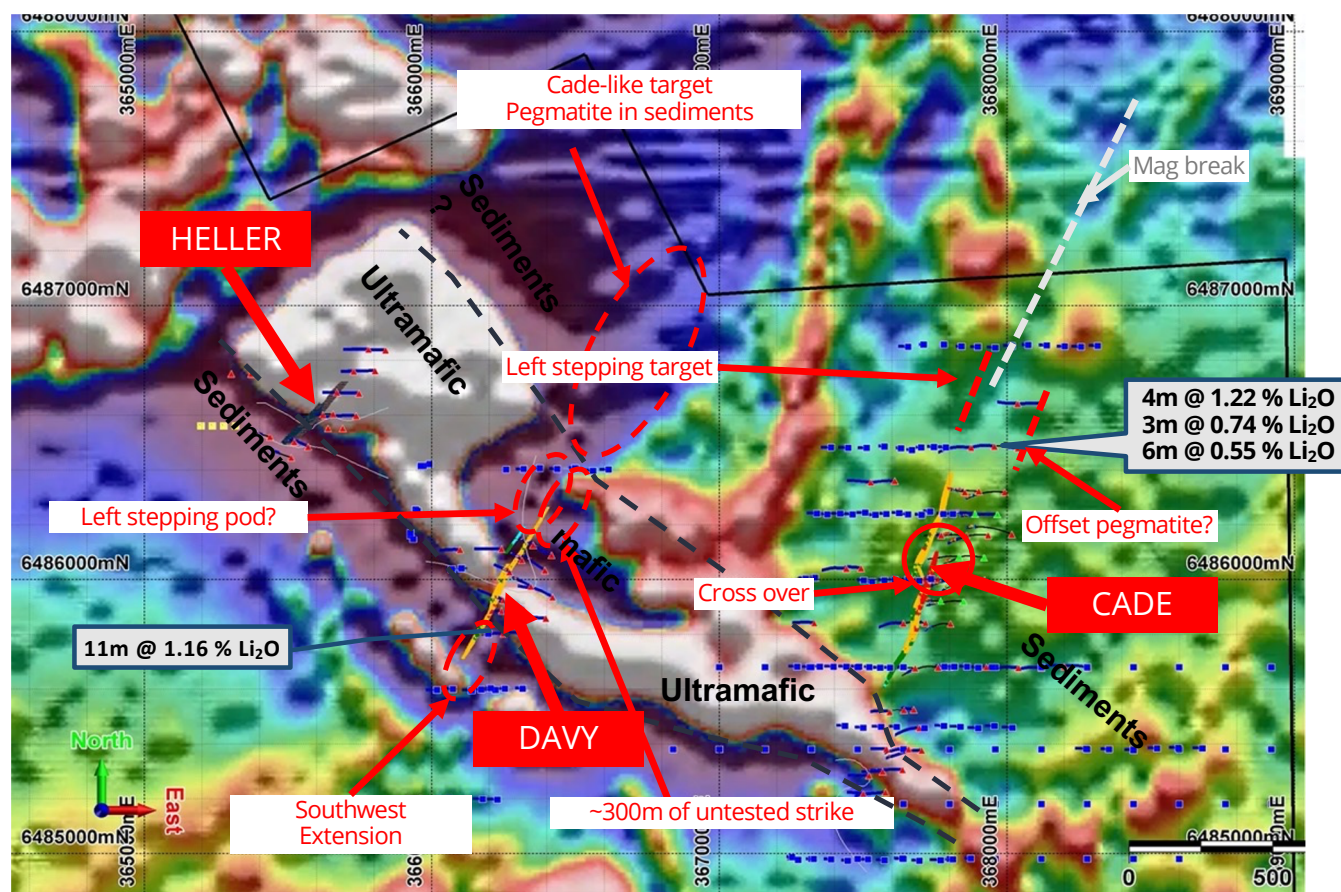
Davy long-section showing Mineral Resource block grades > 0.5  $\text{Li}_2\text{O}$ % intersections (looking west).

Small circles represent intersections greater than 0.5%  $\text{Li}_2\text{O}$ . Coloured by width (m) x  $\text{Li}_2\text{O}$  grade (%) – see legend.

# Dome North – significant exploration upside

## Dome North Resource growth

- Only two drill campaigns completed into three outcropping pegmatites since spodumene was discovered in June 2019, delivering an 11.2Mt Resource
- Only 14,000m drilled thus far – no drilling since February 2020 due to the downturn in lithium sentiment for most of 2020
- 10 extensional targets identified for the two main deposits – Cade and Davy
- Approx. 2km between Heller and Cade so plenty of room for more pegmatite bodies
- **Drilling planned to commence this month**



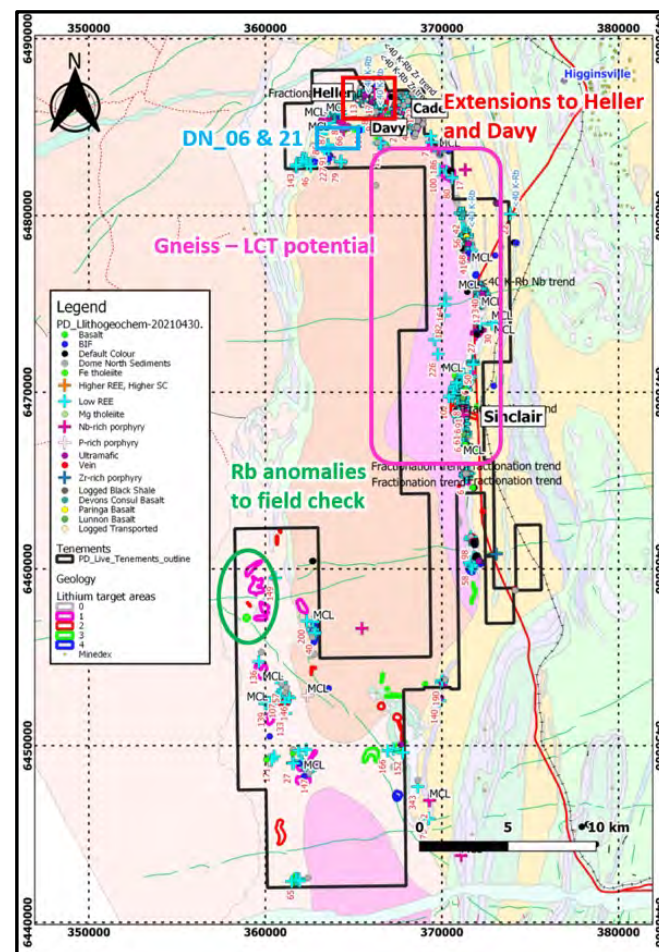
Dome North Mineral Resource extension targets



# Stepping out – significant exploration upside

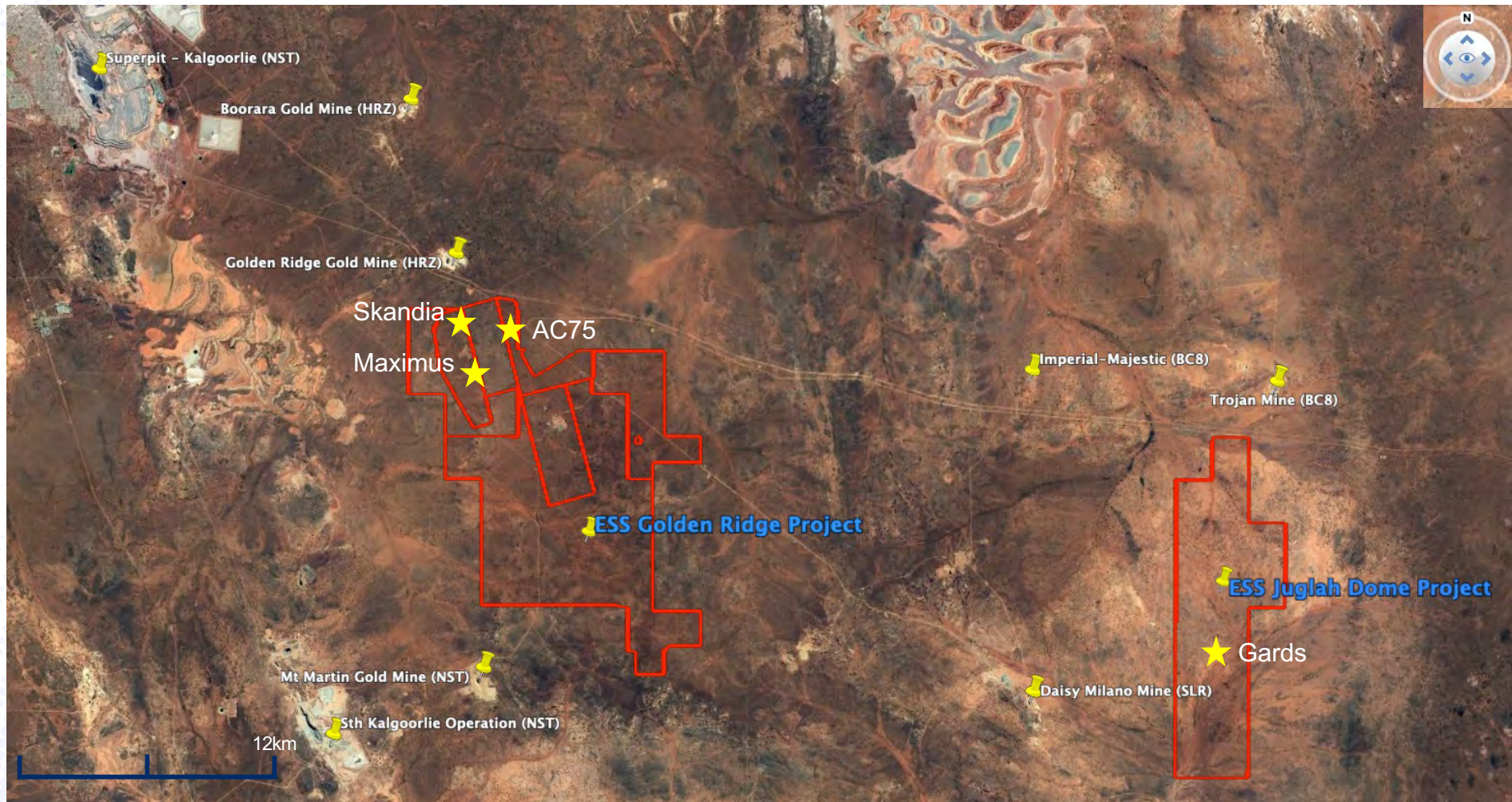
- **The Project footprint is very large...453km**
- **Two new pegmatites targets (DN06 & DN21)** to the south-west of the Resource will be drill tested to understand their zonation and fractionation...
- **Gneiss is nice!...**
  - The world-class Greenbushes pegmatites intrude in structures near the contact of the granofels (quartz-feldspar-biotite gneiss) and the amphibolite
  - The Gneiss zones at Pioneer Dome are being assessed with geochemistry programmes underway to identify targets areas
- **The southern tenements ...pathfinder elements such as rubidium indicate zones of fractionation...need more field work**

LCT targets (coloured polygons as per legend), lithogeochemical classification (see legend), 100k interpreted geology and lesser explorer gneiss (magenta polygon)





# Two Exciting Gold Projects near Kalgoorlie



# Golden Ridge & Juglah Dome

## GOLDEN RIDGE

Multiple high tenor gold targets – with potential for a large discovery

- Project straddles the Boorara Domain between the Menzies - Boorara Shear Zone (MBSZ) and the Mt Monger Fault. The MBSZ hosts six major gold mines including Paddington, Boorara and the Golden Ridge Gold Mine
- Significant historical intersections from Flying Ant and 18-Footer prospects include:
  - **9m@3.87g/t Au** from 26m incl. 2m @ 13.95g/t Au (GOD0094) - Flying Ant
  - **21m@2.5g/t Au** from 59m incl. 9m @ 3.98g/t Au (GOC0288) - Flying Ant
  - **9m@2.44g/t Au** from 65m incl. 4m @ 4.11g/t Au (AMRC026) - 18-Footer
  - **7m@2.81g/t Au** from Surface incl. 3m @ 4.27g/t Au (GOC0264) - 18-Footer
- The recently completed 6,000m air-core programme confirmed gold mineralisation at the Skandia, Maximus and AC75 prospects and identified prospective underexplored areas

## JUGLAH DOME

The Gards porphyry now has 1.1km of strike and is still open to the south

- **A very good address...**the Juglah Dome tenement is surrounded by Black Cat Syndicate Limited (ASX:BC8) to the north and west and Silverlake Resources Limited (ASX:SLR) to the west and south
- Best results returned at the Gards prospect included:
  - **8m @ 2.18 g/t Au** from 34m including 1m @ 6.69g/t Au (20GDRC034);
  - **3m @ 2.06 g/t Au** from 90m including 1m @ 5.63g/t Au (20GDRC033); and
  - **6m @ 0.83 g/t Au** from 53m (20GDRC026)
- The recently completed air-core programme extended the strike length of Gards to over 1km and it is still open to the south

(Refer ASX announcement dated 10 February 2021)

# Our partnered projects

## Mavis Lake Lithium Joint Venture – ESS has a 51% interest with ability to increase to 80%

- 51% interest in the Mavis Lake Project in Canada with **International Lithium Corporation** (TSXV:ILC)\*

ESS also has multiple nickel and gold JV partnerships where the partner is obliged to provide funding and management with ESS free-carried up a decision to mine.

### Nickel Joint Ventures

- 25% free-carried interest the Blair – Golden Ridge Project Farmin/Joint Venture with **Crest Investment Group**\*\*
- 20% free-carried interest (nickel only) in the Wattle Dam and Larkinvile projects with **Maximus Resources Ltd** (ASX:MXR)

### Gold Joint Ventures

- 25% free-carried interest in the Acra Joint Venture with **Northern Star Resources Ltd** (ASX:NST)
- 30% free-carried interest in the Kangan Joint Venture with **Novo Resources Corp.** (TSXV:NVO)
- 25% free-carried interest in the Balagundi Farmin/Joint Venture with **Black Cat Syndicate Ltd** (ASX:BC8)\*\*\*
- 25% free-carried interest in the Larkinvile Joint Venture with **Maximus Resources Ltd** (ASX:MXR)

#### Notes

All 'free-carried' periods are to the making of a Decision to Mine or an equivalent.

\* ESS has earned its 51% interest, is the manager of the JV and has no near-medium term expenditure obligations. ESS can increase its interest to 80% by expending a further C\$7M by 2026.

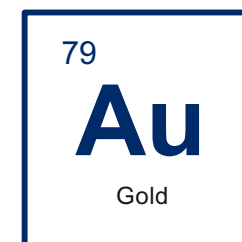
\*\* ESS holds 100% of the Blair – Golden Ridge Project which is subject to a conditional farmin/joint venture agreement – refer ASX release dated 9 February 2021.

\*\*\* ESS holds 100% of the Balagundi Gold Project with Black Cat Syndicate currently in the farmin stage of earning a 75% interest.



# Key Takeaways

- Funding in place – **\$5.5M cash on hand**
- **Experienced Board and management team** with proven discovery and development expertise
- Projects located in **WA's premier mineral** and mining districts
- Strong focus on finding **essential metals** for a **low-carbon future**
- **Quality lithium project in the heart of WA's lithium corridor** with significant initial Mineral Resources with a high level of growth and upside potential
- **Drilling to start this month to find more lithium at Pioneer Dome**
- Potential for **value uplift** as lithium Resource advances towards development
- **Exciting gold** exploration projects near WA's gold capital, Kalgoorlie
- **Valuable** investment and joint venture portfolio
- Focused explorer with **proven ability in making discoveries**





# Thank you

## For further information:

Tim Spencer, Managing Director

Essential Metals Limited

T: +61 8 9322 6974

E: [tims@essmetals.com.au](mailto:tims@essmetals.com.au)

## Essential Metals Limited (ASX:ESS)

E: [info@essmetals.com.au](mailto:info@essmetals.com.au)

T: +61 (0)8 9322 6974

A: Level 3, 46 Ord Street, West Perth, WA 6005 Australia

## Investor Relations

Nicholas Read

Read Corporate

T: +61 8 9388 1474

E: [nicholas@readcorporate.com.au](mailto:nicholas@readcorporate.com.au)