

For personal use only

# Kathleen Valley Lithium Project

World class scale & economics with  
further upside opportunities  
*plus Moora Highlights*



# Important Information



## CAUTIONARY STATEMENT

**The production targets and forecast financial information referred to in the PFS & DSS are based on Proven Ore Reserves (19.7%), Probable Ore Reserves (69.8%) and Inferred Mineral Resources (10.5%). The Inferred material included in the inventory is 8.28Mt @ 1.36% Li<sub>2</sub>O & 120 ppm Ta<sub>2</sub>O<sub>5</sub>. The Inferred material has been scheduled such that less than 1Mt is mined in the first ten years, with 6.44Mt at the end of the underground mine life and 0.84Mt after year 25 for the open pit.**

**The Inferred material does not have a material effect on the technical and economic viability of the project.**

**There is a low level of geological confidence associated with inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of indicated Mineral Resources or that the production target itself will be realised.**

## FORWARD LOOKING STATEMENTS

This Presentation contains forward-looking statements which are identified by words such as ‘may’, ‘could’, ‘believes’, ‘estimates’, ‘targets’, ‘expects’, or ‘intends’ and other similar words that involve risks and uncertainties. These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions regarding future events and actions that, as at the date of this Presentation, are considered reasonable. Such forward-looking statements are not a guarantee of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, the Directors and the management. The Directors cannot and do not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this Presentation will actually occur and investors are cautioned not to place undue reliance on these forward-looking statements. The Directors have no intention to update or revise forward-looking statements, or to publish prospective financial information in the future, regardless of whether new information, future events or any other factors affect the information contained in this Presentation, except where required by law or the ASX listing rules.

## DISCLAIMER

Whilst care has been exercised in preparing and presenting this presentation, to the maximum extent permitted by law, Lione Resources Limited and its representatives:

- Make no representation, warranty or undertaking, express or implied, as to the adequacy, accuracy, completeness or reasonableness of this Presentation;
- Accept no responsibility or liability as to the adequacy, accuracy, completeness or reasonableness of this Presentation; and
- Accept no responsibility for any errors or omissions from this Presentation.

## COMPETENT PERSON STATEMENT

The Information in this Presentation that relates to Ore Reserves, Production Target and Pre-Feasibility Study (PFS) for the Kathleen Valley Project is extracted from the ASX announcement “Updated Kathleen Valley Pre-Feasibility Study delivers substantial increase in NPV to A\$1.1 billion and mine life to ~40 years” released on 9<sup>th</sup> October 2020 which is available on [www.ltresources.com.au](http://www.ltresources.com.au)

The Information in this Presentation that relates to Mineral Resources for the Kathleen Valley Project is extracted from the ASX announcement “Kathleen Valley confirmed as a world-class lithium deposit as Mineral Resource increases to 156Mt @ 1.4% Li<sub>2</sub>O” released on the 11<sup>th</sup> May 2020 which is available on [www.ltresources.com.au](http://www.ltresources.com.au)

The Information in this Presentation that relates to the Downstream Scoping Study (DSS) is extracted from the ASX announcement “Downstream Scoping Study: Kathleen Valley Lithium-Tantalum Project” released on 22 October 2020 which is available on [www.ltresources.com.au](http://www.ltresources.com.au)

The information in Report that relates to Exploration Results for the Kathleen Valley Project is extracted from the ASX announcement “Kathleen Valley Lithium-Tantalum Project Advancing to the Next Level with Definitive Feasibility Study Underway” released on 11<sup>th</sup> January 2021 which is available on [www.ltresources.com.au](http://www.ltresources.com.au).

The Information in this Presentation that relates to Exploration Results for the Moora Project is extracted from the ASX announcements “Strong gold, PGE, nickel and copper anomalism returned from initial fieldwork completed at 100%-owned Moora Project, WA”, “Further outstanding gold, PGE and nickel results from 100%-owned Moora Project, WA” and “Initial assays of up to 2.5% copper and 1.1g/t gold from maiden drilling program at 100%-owned Moora Project, WA” released on 13<sup>th</sup> May 2020, 13<sup>th</sup> July 2020 and 19<sup>th</sup> January 2021 which are available on [www.ltresources.com.au](http://www.ltresources.com.au)

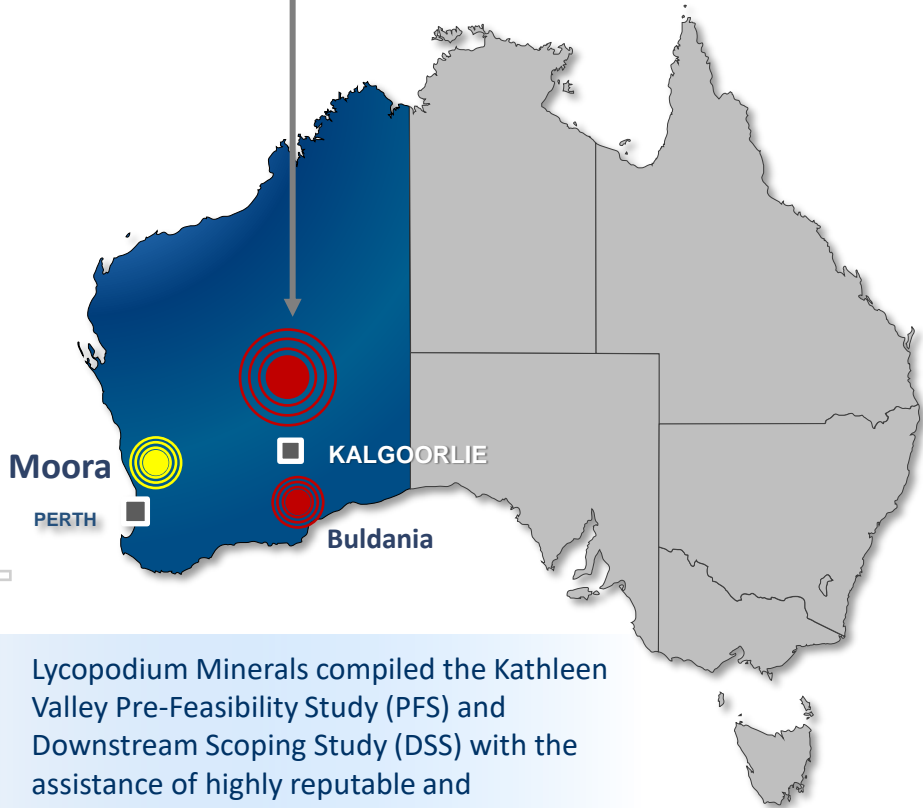
The Information in this Presentation that relates to Mineral Resources for the Buldania Project is extracted from the ASX announcement “Lione Resources announces maiden Mineral Resource Estimate for its 100%-owned Buldania Lithium Project, WA” released on the 8<sup>th</sup> November 2019 which is available on [www.ltresources.com.au](http://www.ltresources.com.au)

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 or production targets or forecast financial information derived from a production target (as applicable) in the relevant market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcements.

# Project Overview



## Kathleen Valley Lithium Project



Lycopodium Minerals compiled the Kathleen Valley Pre-Feasibility Study (PFS) and Downstream Scoping Study (DSS) with the assistance of highly reputable and experienced consultants ensuring high standard studies

### Kathleen Valley (Lithium-Tantalum)



- World-class scale and economics
- 156Mt @ 1.4% Li<sub>2</sub>O and 130ppm Ta<sub>2</sub>O<sub>5</sub>
- ~40 year mine life
- High grade
- Multiple upside opportunities
- DFS due Q4 2021

### Moora (Gold-PGE-Nickel- Copper)



- Emerging mineral province
- Unexplored
- Exceptional early results
- Drilling Q1 2021

### Buldania (Lithium)



- 15Mt @ 1.0% Li<sub>2</sub>O
- Resource upside

### Low Risk Assets



- 100% Ownership
- Established infrastructure
- Investor-friendly jurisdiction
- Highly credentialed management
- Well funded (~\$16M cash)\*

\*Refer Slide 22



# ESGE - Integral to the Future



## Environment

- Commitment to minimise emissions, water usage & ground disturbance



## Social

- Recognition of the Traditional Owners and their connection to country
- Meaningful & mutually beneficial engagement with other local stakeholders



## Governance

- Integration of environment & social benchmarks within corporate governance



## Economic

- A strong ESGE framework = value for ALL stakeholders



# Kathleen Valley Lithium - Tantalum Project

WESTERN AUSTRALIA 100%

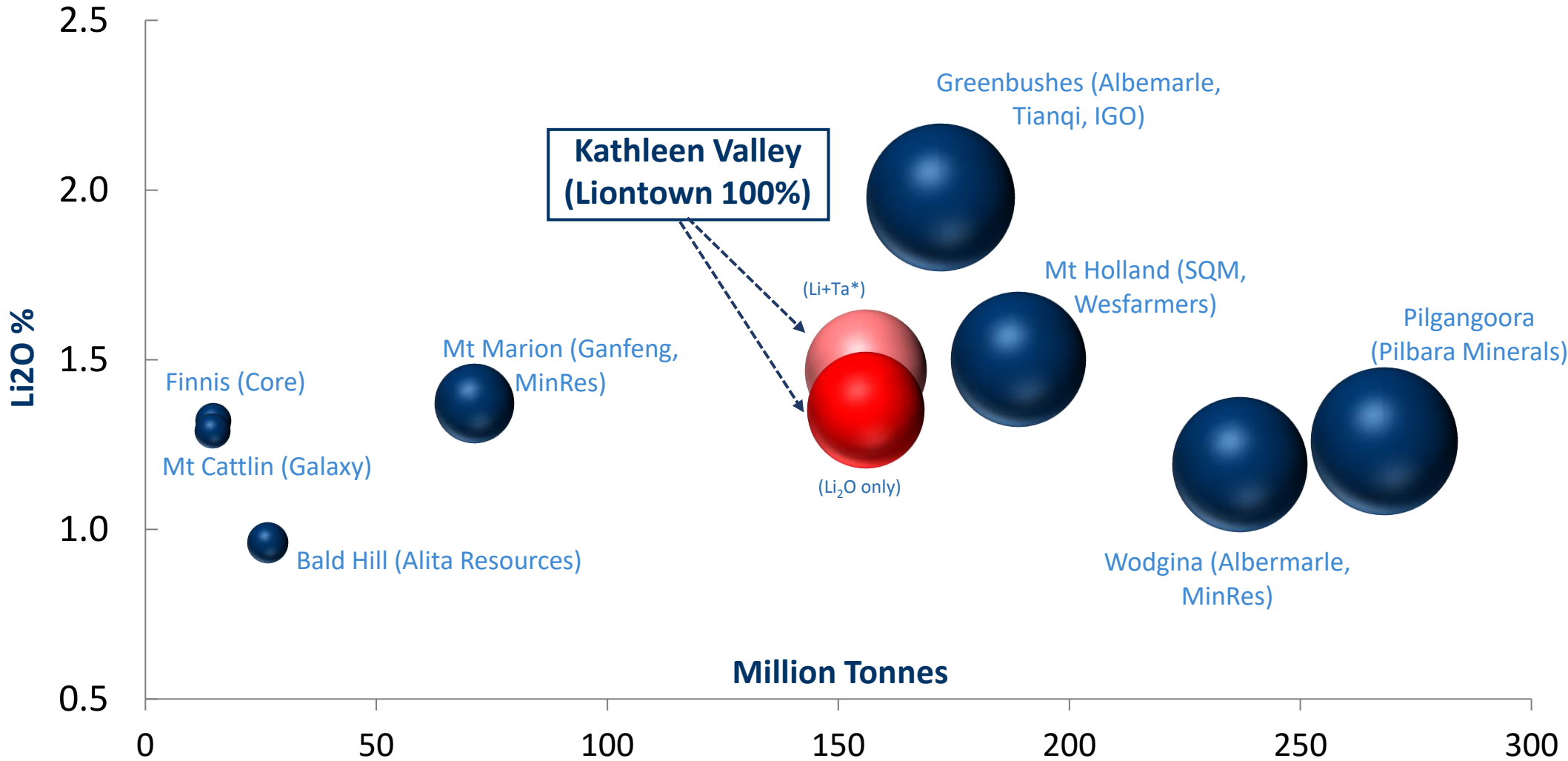




# A Tier 1 Lithium Resource



Australian Hard Rock Lithium Operations and Advanced Projects Tonnes x Grade | Li<sub>2</sub>O Only

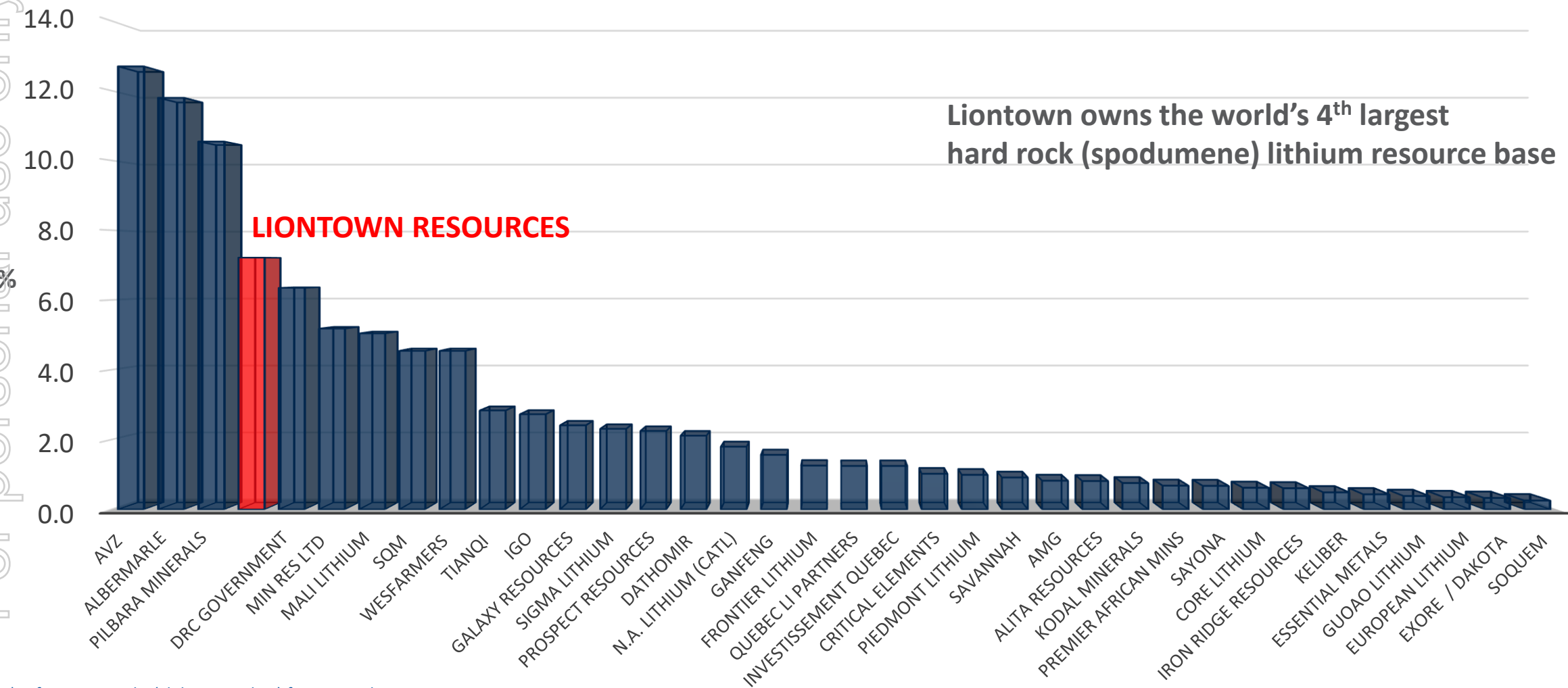


# A Globally Significant Deposit

World Hard Rock Lithium (Spodumene-dominant) Operations and Advanced Projects



% Attributable Resources by Company Ownership



\*Refer to Appendix (Slides 27 and 28) for source data

# October 2020 PFS Key Metrics<sup>1</sup>



Based on May 2020 MRE – 156Mt @ 1.4% Li<sub>2</sub>O and 130ppm Ta<sub>2</sub>O<sub>5</sub>

For personal use only



## Reserve:

71Mt @  
1.4% Li<sub>2</sub>O  
130ppm Ta<sub>2</sub>O<sub>5</sub>



## Mining:

2Mtpa



SC6: 350Ktpa

Ta<sub>2</sub>O<sub>5</sub> (30%):  
430tpa



## Life of Mine

~40 years

A\$

Total Free  
Cash Flow  
+\$4.8B

NPV<sup>2</sup> (Post Tax)

A\$1.12B

IRR

37%

Payback

3 Years

Opex<sup>3</sup> Years 1 - 10

US\$345/dmt (SC6)

Opex<sup>3</sup> Years LOM

US\$377/dmt (SC6)

Ave. SC6 Price (2025-2040)<sup>4</sup>

US\$739/dmt

Capex

A\$325M

(includes \$67M Open Pit Mine Pre-production)

## Total production inventory<sup>1</sup> is

79Mt@ 1.4% Li<sub>2</sub>O  
& 130 ppm Ta<sub>2</sub>O<sub>5</sub>

<sup>1</sup> Refer Cautionary Statement on Slide 2

<sup>2</sup> 8% (real)

<sup>3</sup> Operating costs include all mining, processing, transport, state and private royalties, freight to port, port costs and site administration and overhead costs. Excludes sustaining capital. Royalties total US\$62/dmt Years 1- 10 and US\$67/dmt LOM.

<sup>4</sup> Source: Roskill 2020 report. Refer to Appendix on Slide 29 for full assumptions.



# Resources & Reserves

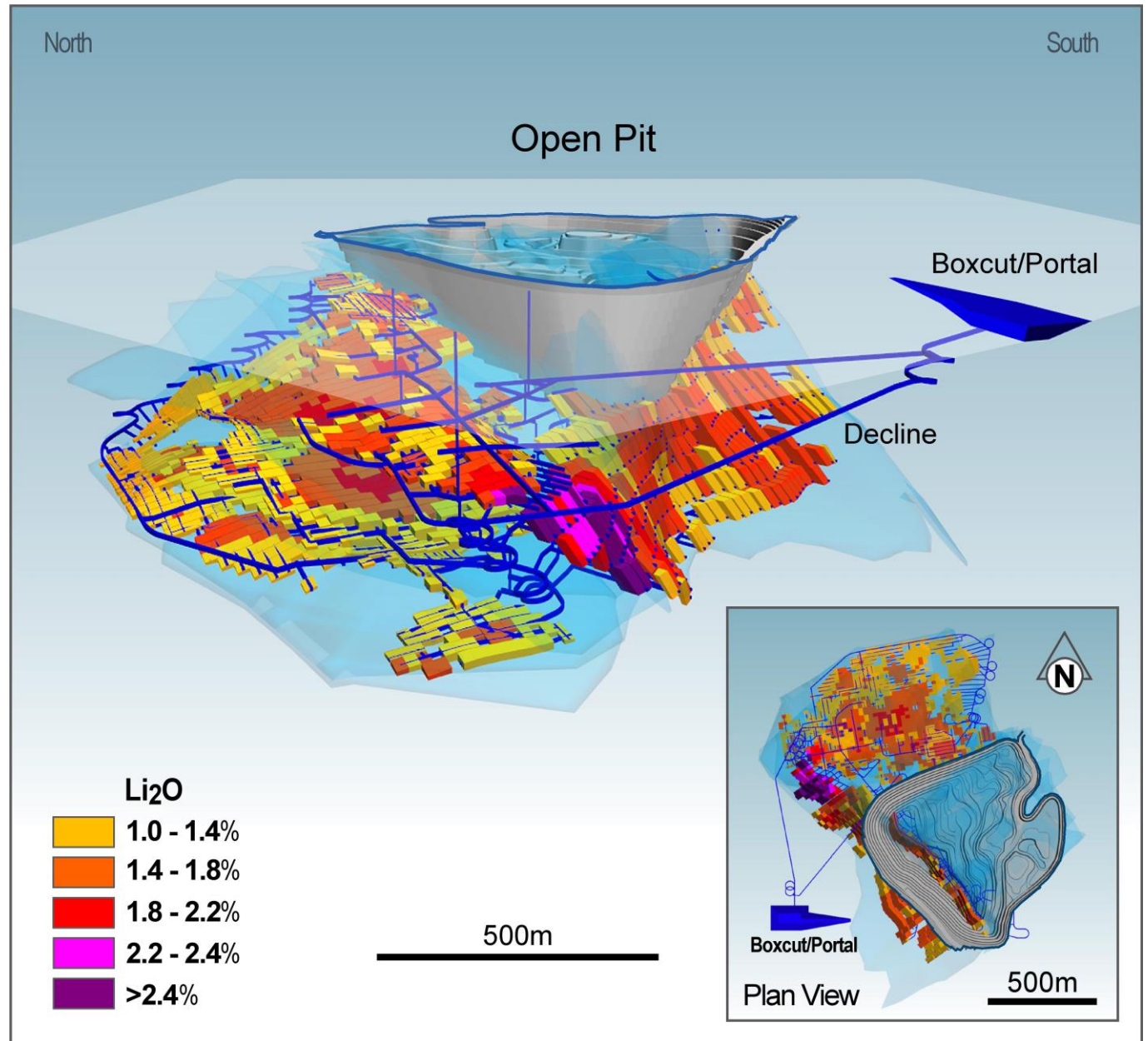
## Mineral Resource Estimate<sup>1</sup> – May 2020

Cut-off Li <sub>2</sub> O%	Resource Category	Million Tonnes	Li <sub>2</sub> O%	Ta <sub>2</sub> O <sub>5</sub> (ppm)
0.55	Measured	20	1.3	140
	Indicated	105	1.4	130
	Inferred	32	1.3	110
<b>TOTAL</b>		<b>156</b>	<b>1.4</b>	<b>130</b>

<sup>1</sup> Inclusive of Ore Reserve

## Ore Reserve – October 2020

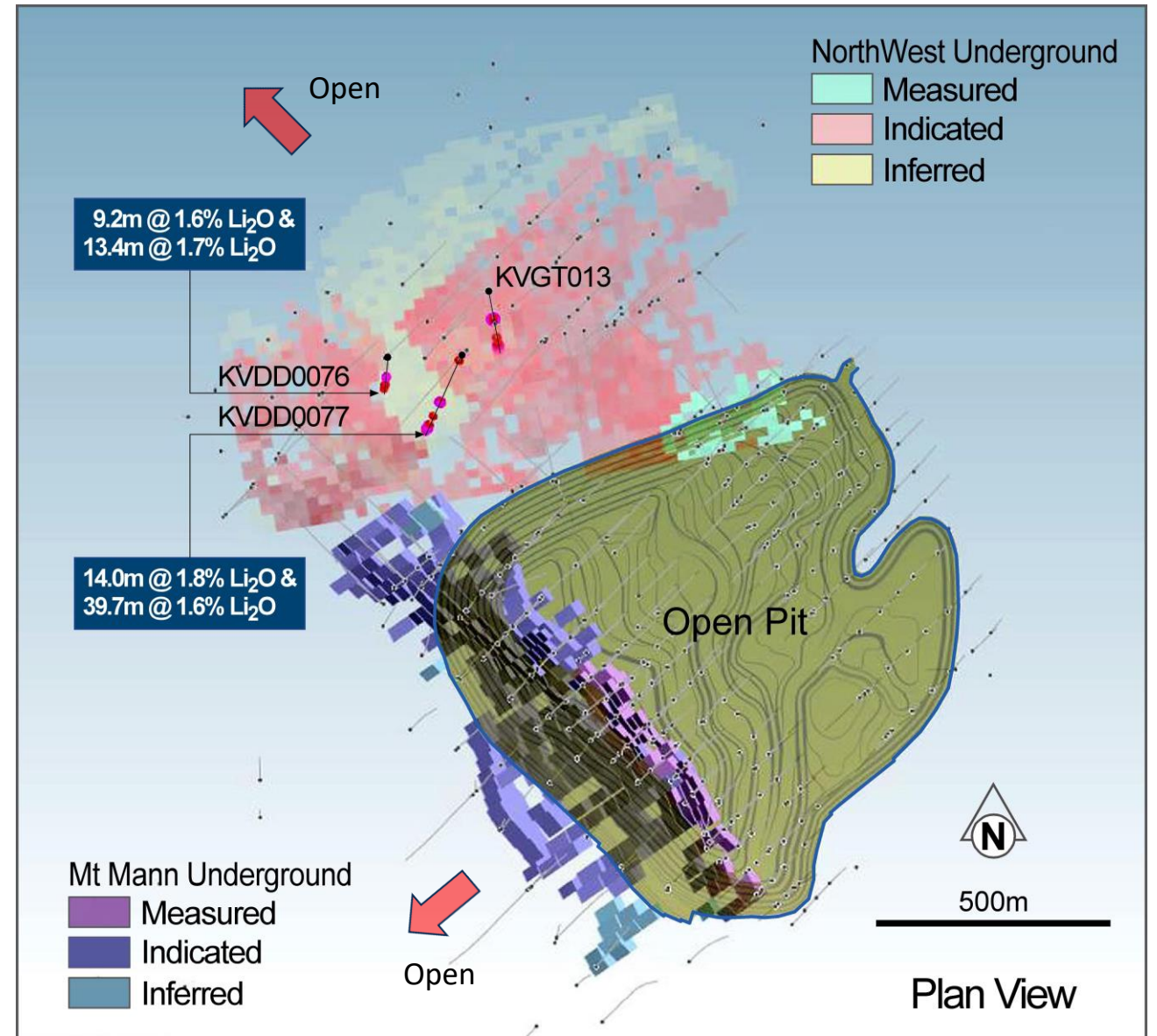
Category		Million Tonnes	Li <sub>2</sub> O%	Ta <sub>2</sub> O <sub>5</sub> (ppm)
Underground	Proven	3.9	1.4	130
	Probable	37.6	1.5	120
	Sub Total	41.5	1.5	120
Open Pit	Proven	11.7	1.2	140
	Probable	17.6	1.2	130
	Sub Total	29.3	1.2	130
<b>TOTAL</b>		<b>70.8</b>	<b>1.4</b>	<b>130</b>



# Upside

PFS is a critical step towards the DFS and maximising future opportunities

- Resource conversion
- Resource expansion
- Throughput increase
- Potential to produce a premium concentrate (>6.5%  $\text{Li}_2\text{O}$ )
- Downstream processing<sup>1</sup>



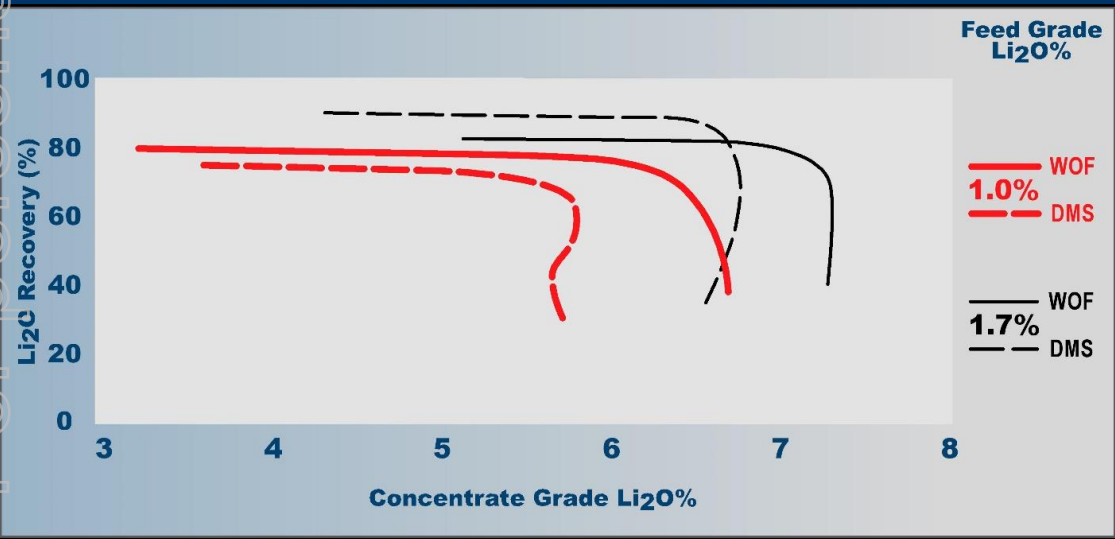
<sup>1</sup> Refer to Appendix (Slide 35) for proposed process flow sheet

# Whole of Ore Float (WOF) Sheet De-Risks Project Execution

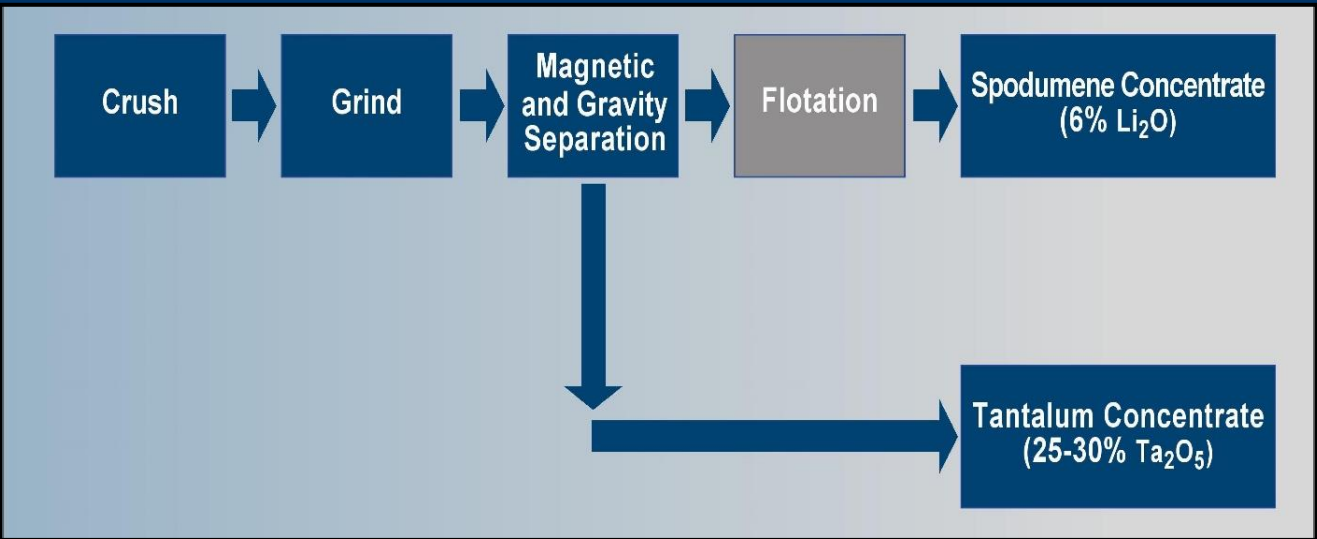


## 2020 Test Work Outcomes

- WOF produces **higher grade concentrate** compared with conventional DMS/Flotation processing
- $\text{Ta}_2\text{O}_5$  recovery of 56% at a concentrate grade of 15%
- Tantalum suitable for upgrade to 30%  $\text{Ta}_2\text{O}_5$  concentrate offsite
- **Magnetic separation reduces iron** by up to 55% in flotation feed



WOF v DMS – Grade and Recovery Relationships



Proposed Simplified Whole Ore Flotation Flowsheet



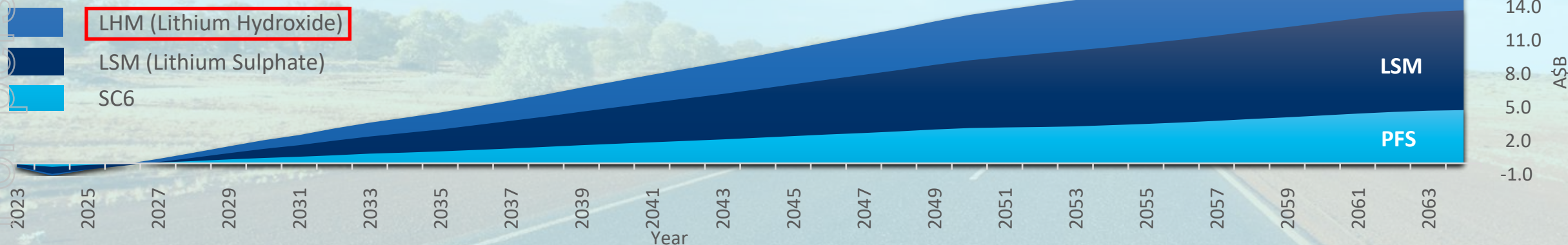
# Downstream Scoping Study Key Metrics<sup>1</sup>

Based on October 2020 PFS

METRIC	LHM	LSM
NPV <sup>(Post Tax/8% real)</sup>	A\$4.8B	A\$3.2B
IRR	41%	35%
LOM Free Cash Flow	A\$19.5B	A\$13.7B
Payback	3 Years	3 Years

METRIC	LHM	LSM
LoM Opex <sup>(2, 6)</sup>	US\$4,744/t	US\$2,649/t
Price (2025 – 2040) <sup>8</sup>	US\$14,079/t	US\$6,991/t
Design Production	58ktpa	88ktpa
Capex <sup>(3, 4, 5, 7)</sup>	A\$1.1B	A\$0.9B

Cumulative net cashflow after tax<sup>1</sup>



<sup>1</sup> Refer Cautionary Statement on Slide 2

<sup>2</sup> Cash operating costs include all mining, processing, downstream refining, transport, state & private royalties, freight to port, port costs and site administration and overhead costs. Excludes sustaining capital.

<sup>3</sup> Integrated Capex for LHM production includes \$325M for the mine/ SC6.0 processing plant (PFS) and \$785M for the downstream refinery

<sup>4</sup> Integrated Capex for LSM production includes \$325M for the mine/ SC6.0 processing plant (PFS) and \$625M for the downstream refinery

<sup>5</sup> SC6.0 plant capital to PFS level +/-25% accuracy, DSS to +/-30% accuracy

<sup>6</sup> PFS included no contingency on SC6.0 operating costs, DSS included no contingency on operating costs

<sup>7</sup> PFS included 15% (\$27M) capital contingency, DSS included 20% (\$135M LHM & \$109M LSM ) contingency on capital costs

<sup>8</sup> LHM Pricing per Roskill price estimates, LSM pricing scaled based on Roskill LHM price estimate (Sept. 2020). Refer to Slide 31 for full assumptions.

# Location and Infrastructure

Well serviced and highly active mining region



Major Ni & Au Mines



Goldfields Highway



Sealed Airstrips



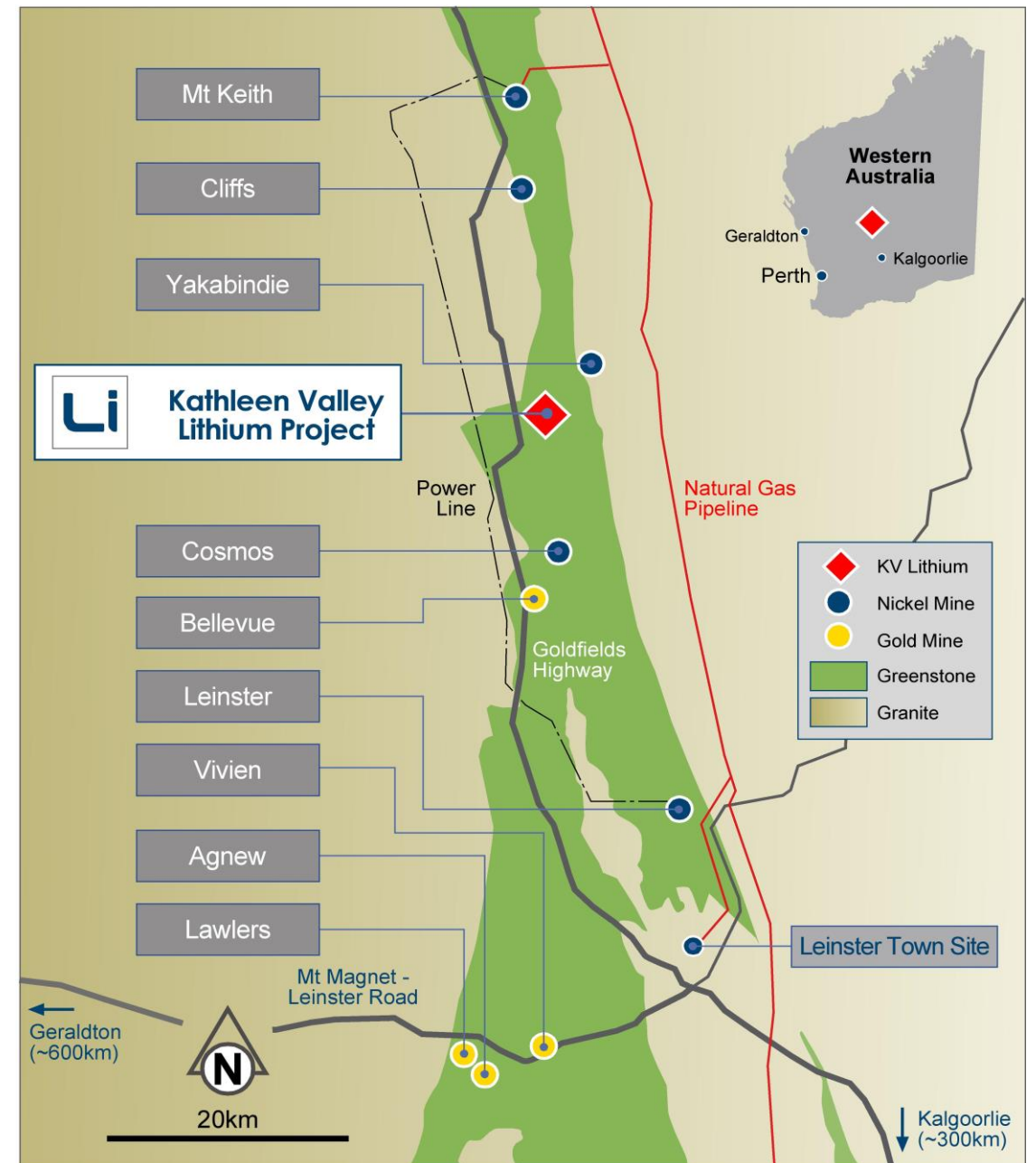
Powerline



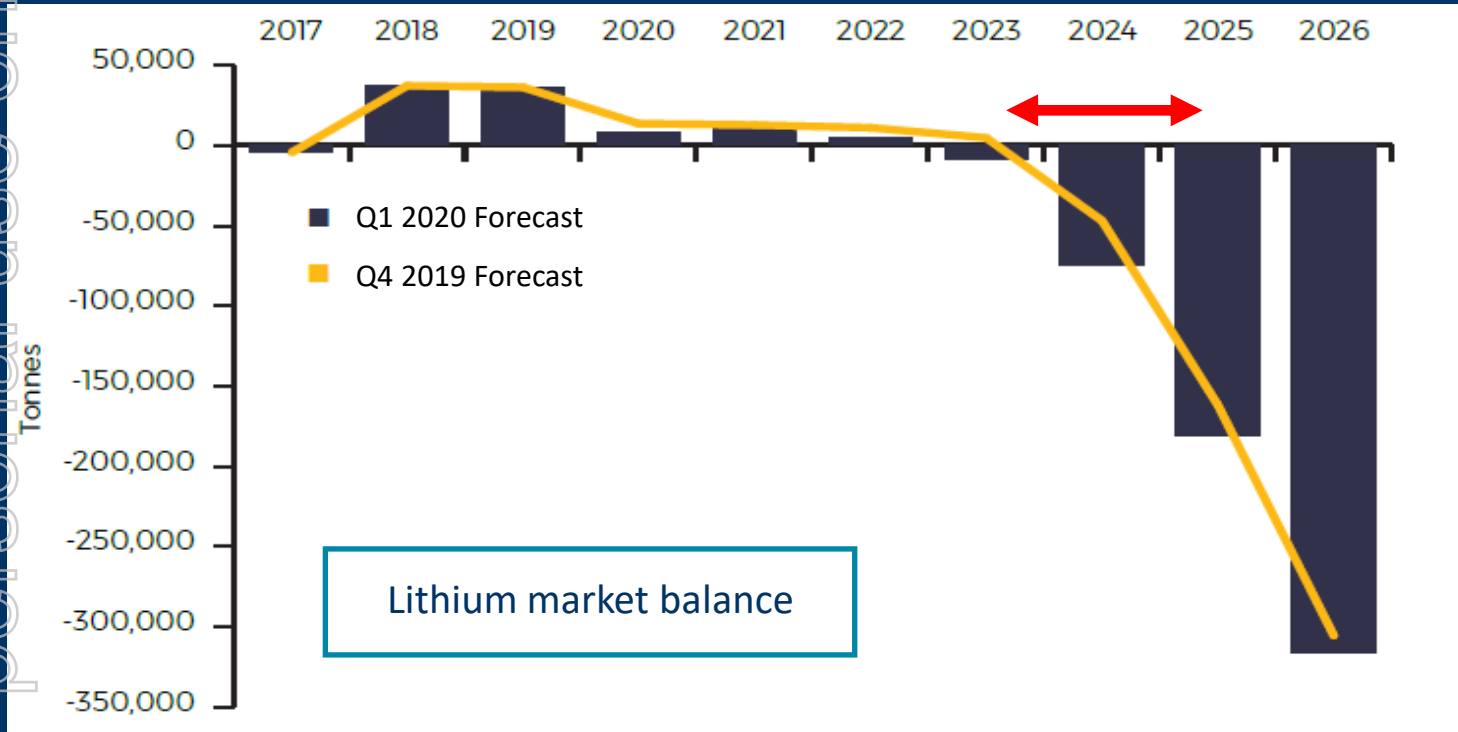
Town of Leinster



Natural Gas Pipeline



# The longer-term fundamentals remain strong



Kathleen Valley **production** is on track to align with the forecast rise in lithium demand

Source: Benchmark Minerals, Intelligence Special Report, April 2020

## Lithium – “The irreplaceable element in the electric era”

### JANUARY 2020

- EU rules begin – heavily penalising carmakers on CO<sub>2</sub> emissions

### JULY 2020

- Deloitte forecasts EVs to make up a third of new cars sold globally by 2030

### SEPTEMBER 2020

- California moves to ban sale of all ICE vehicles by 2035

### OCTOBER 2020

- UBS predicts total price parity with ICEs by 2024

### NOVEMBER 2020

- UK to ban sale of all ICE vehicles from 2030 – 5 years earlier than previously planned.
- China achieves record EV sales in November

### DECEMBER 2020

- Volkswagen’s full EV ID.3 becomes the second most registered car in Europe

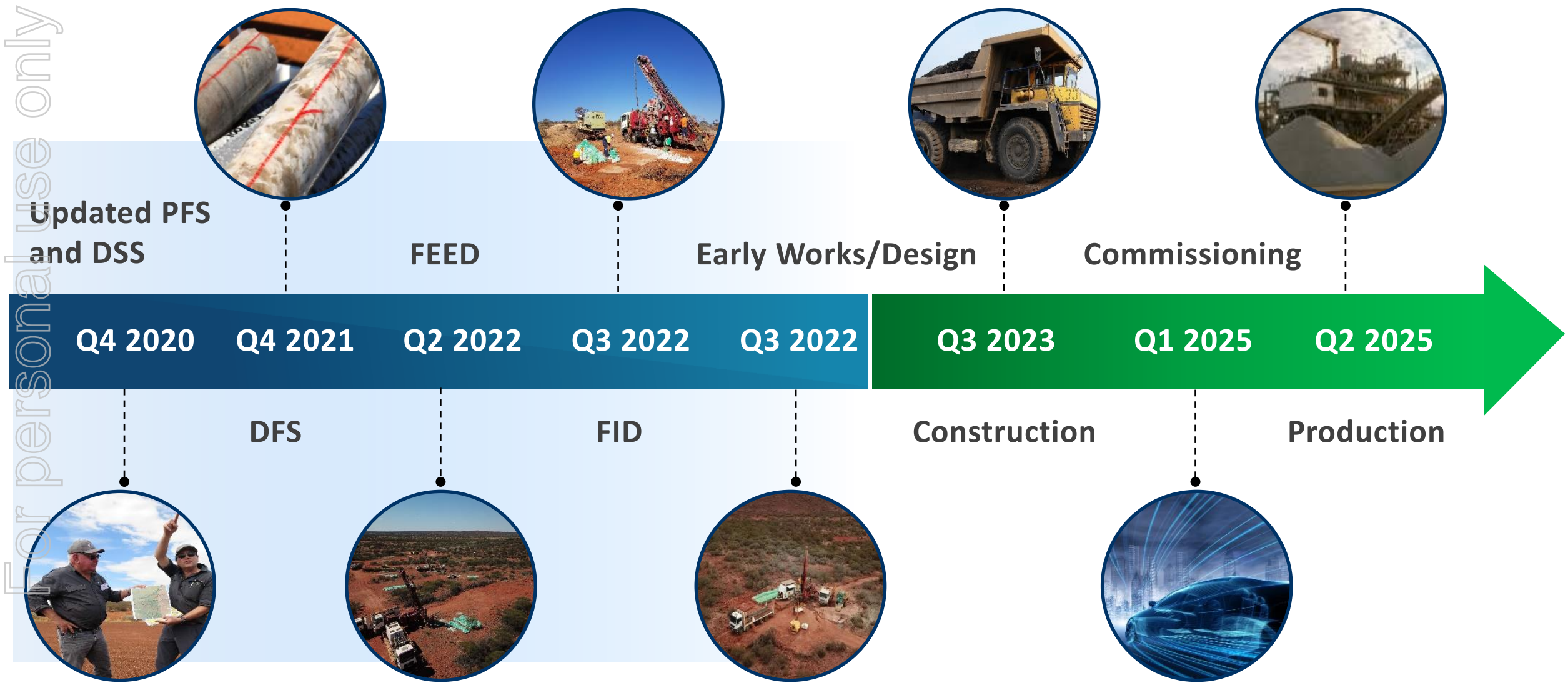
### JANUARY 2021

- Lithium, cobalt, nickel prices rise, as EV upturn and commodity supercycle looms
- President Biden announces plan to replace US federal government’s current fleet of ICE vehicles with electric vehicles



# Timeline

Consistent delivery of results with targets met or exceeded



For personal use only

# Moora Au-PGE-Ni-Cu Project

WESTERN AUSTRALIA 100%





# Project Overview

Moora is located in an emerging precious and base metal mineral province



Same geological terrain as the Julimar Ni-PGE-Cu-Au discovery by Chalice Mines Limited (ASX:CHN)



Project comprises 100% owned tenure (467km<sup>2</sup>) and JV tenure (600km<sup>2</sup>) where LTR can earn up to 51%



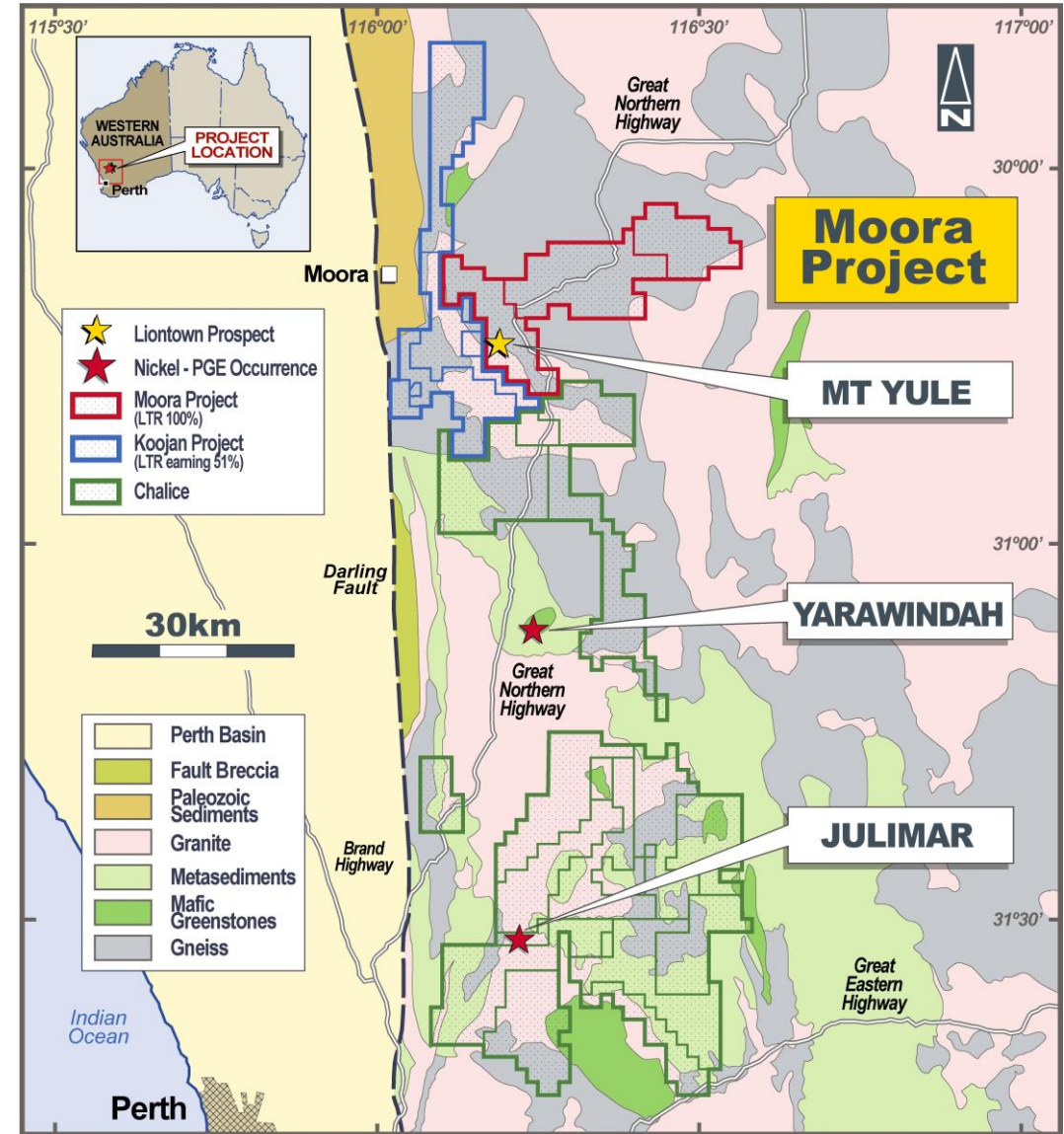
Limited historical surface geochemistry and shallow drilling has recorded strongly anomalous nickel, copper, PGEs & gold



Largely unexplored



>1,000km<sup>2</sup> area – only 150km from Perth





# Prospective Trends Identified

## Julimar Trend

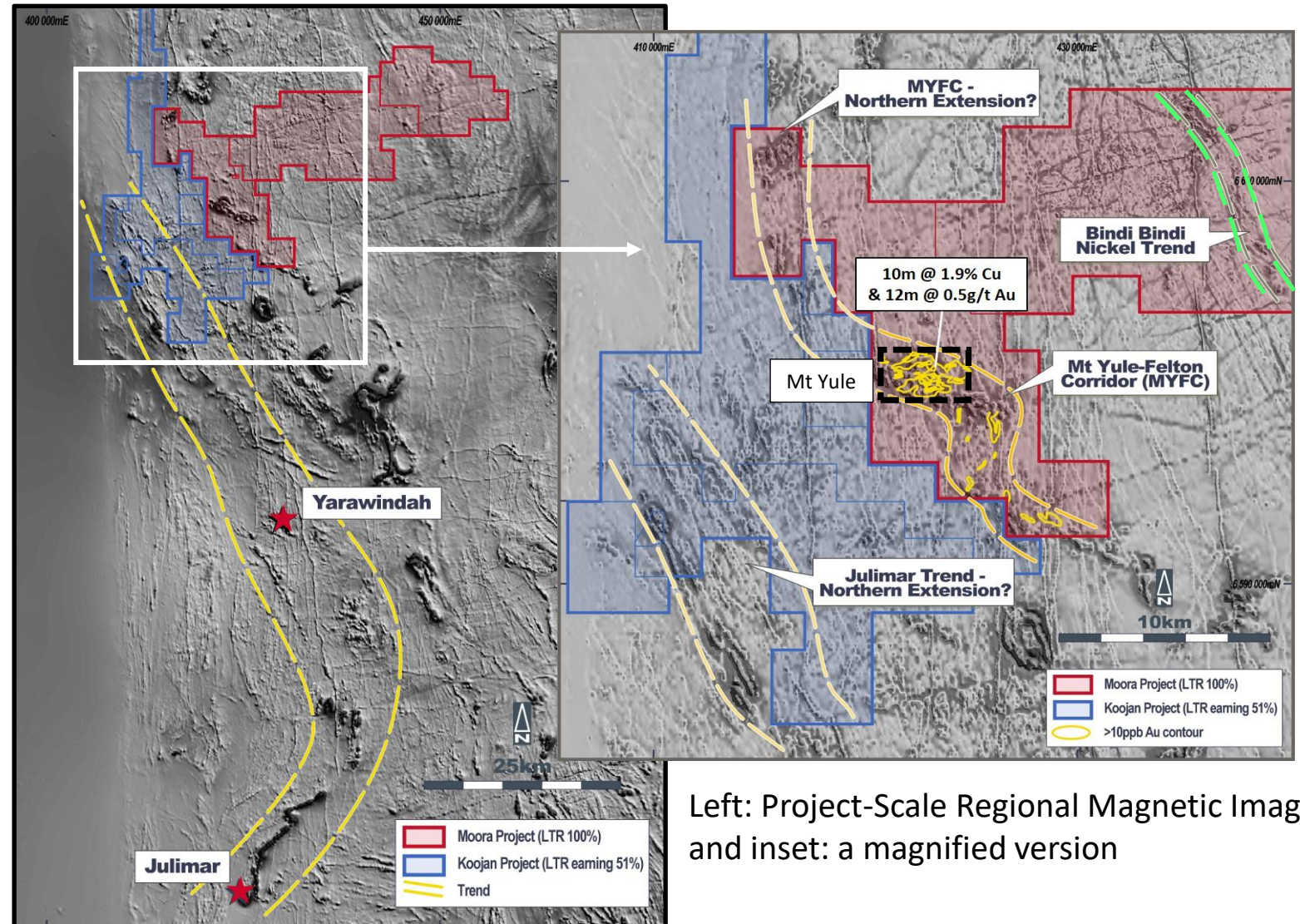
- Defined by northerly extension of regional magnetic data

## Mt Yule – Felton Corridor (MYFC)

- Defined by coincident geochemical and geophysical anomalism
- Maiden drill intercepts up to 10m @ 1.9% Cu and 12m @ 0.5g/t Au – associated with elevated Ni & PGEs

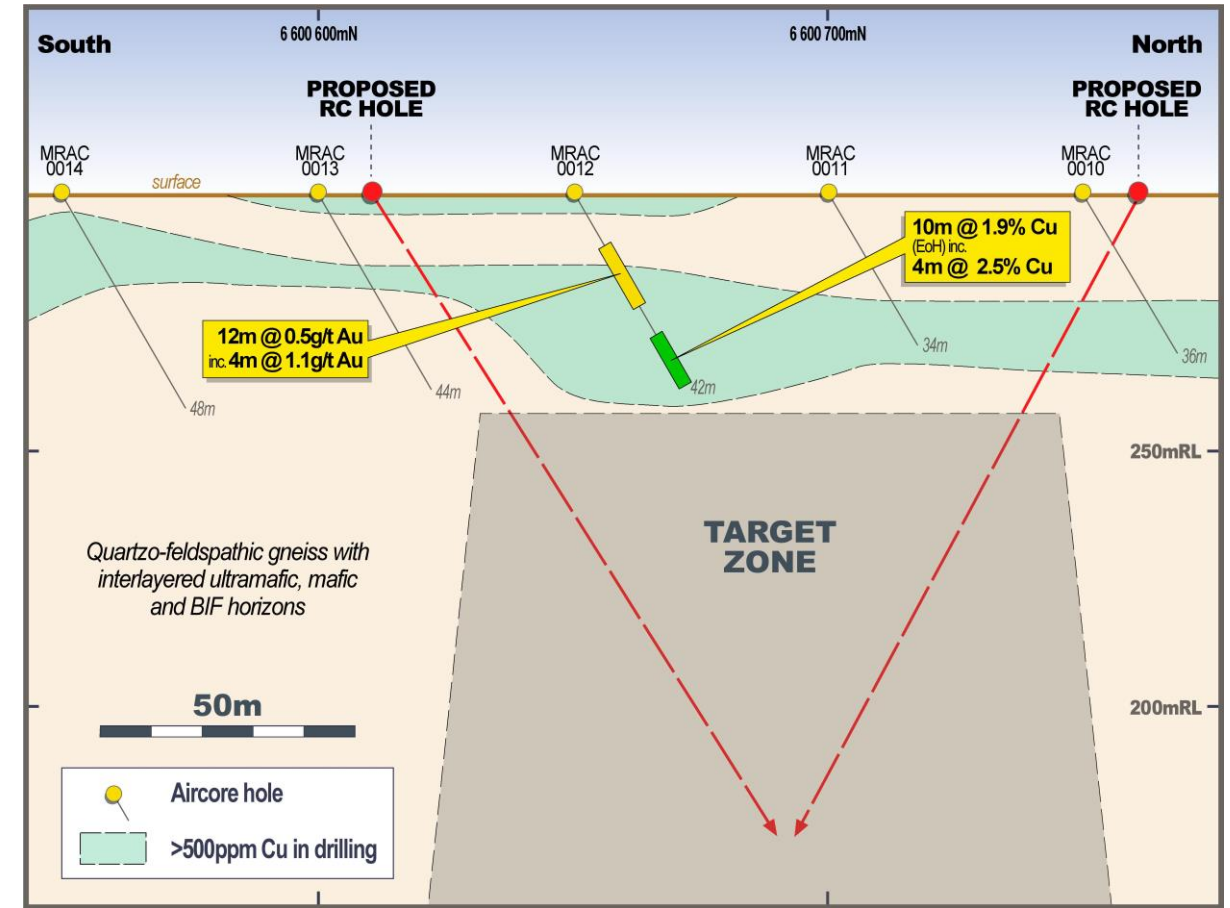
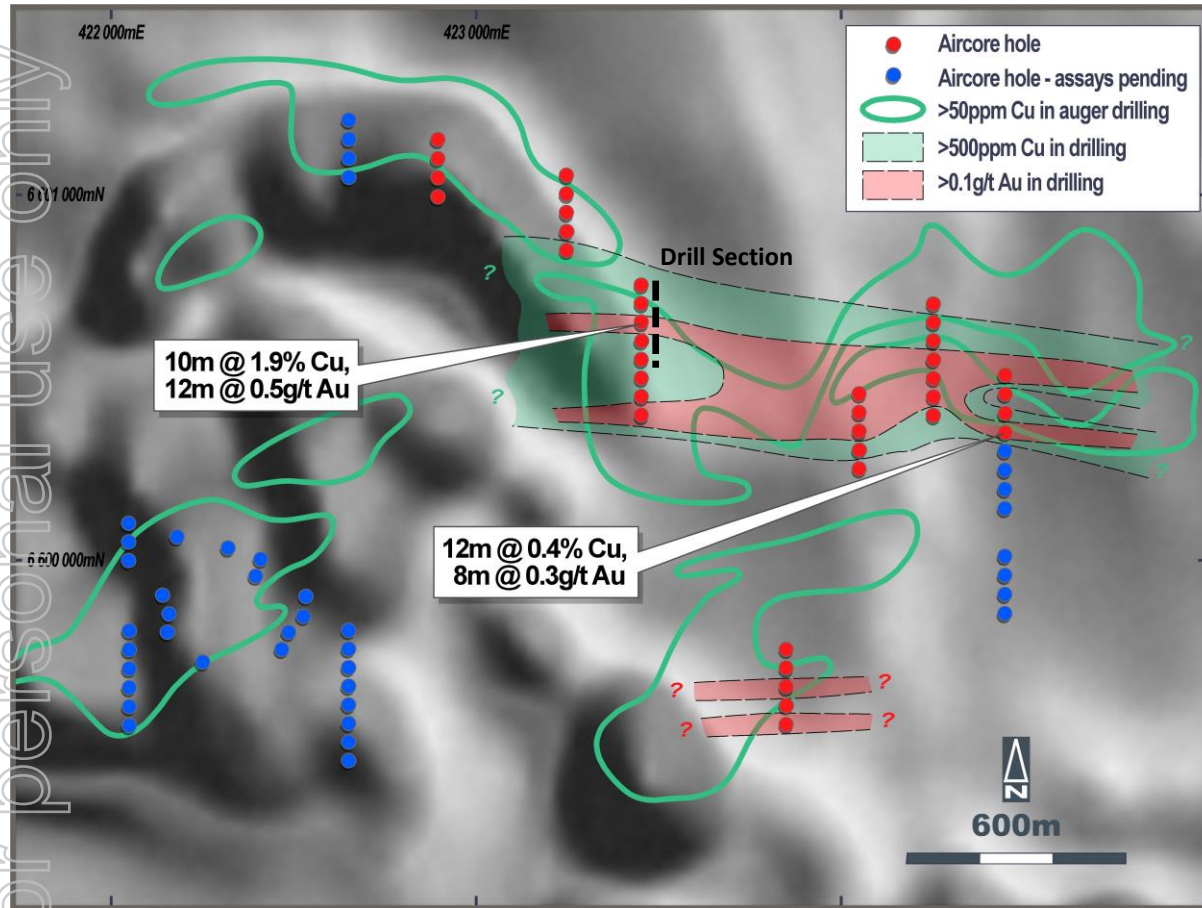
## Bindi Bindi Nickel Trend

- Historic (1968) drill intersections up to 21m @ 0.6% Ni from surface



Left: Project-Scale Regional Magnetic Image and inset: a magnified version

# Mt Yule Prospect



Extensive copper-gold anomalism defined by shallow, wide-spaced aircore drilling with assays up to 2.5% copper & 1.1g/t gold

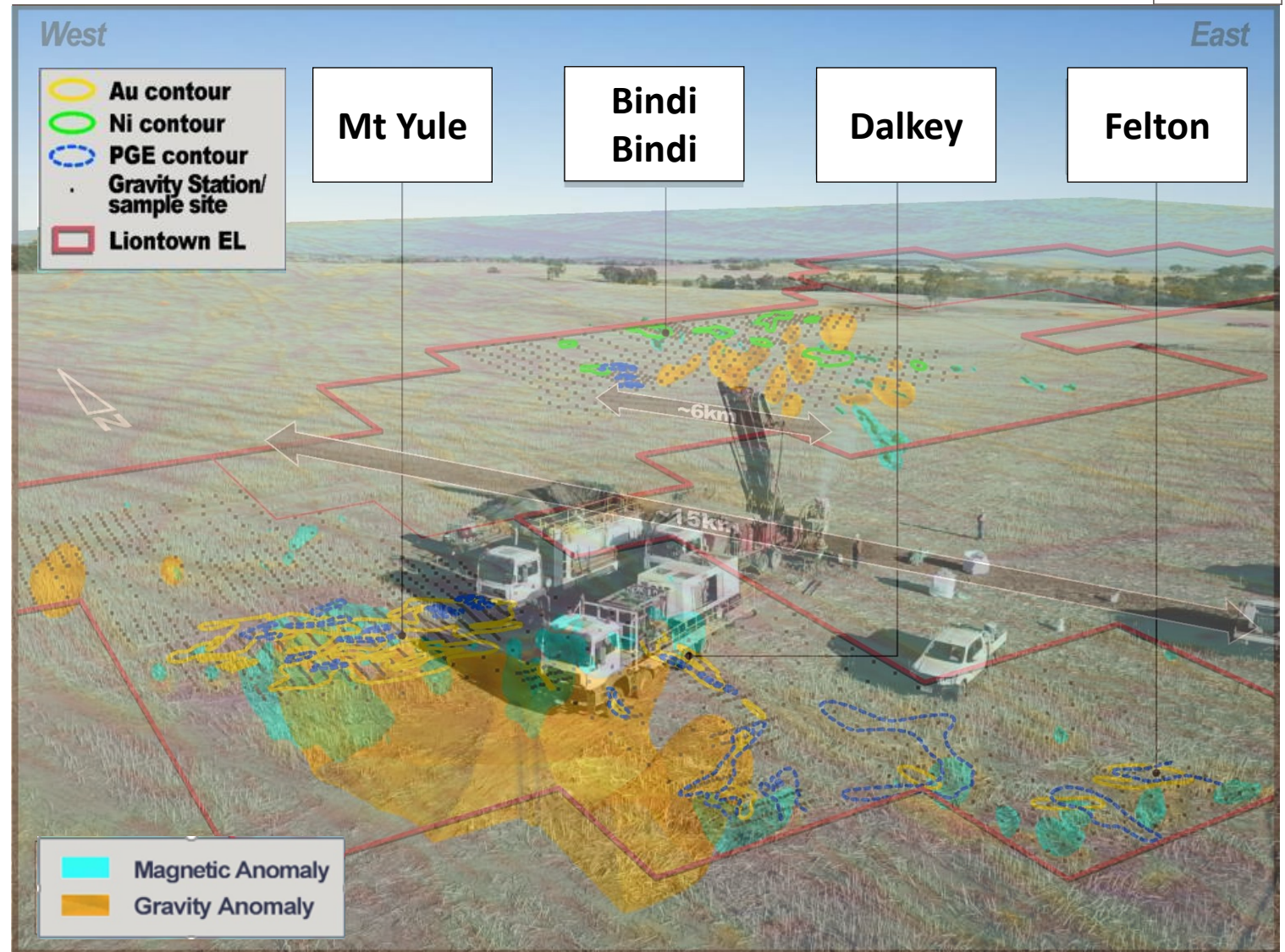


# Moving Forward at Moora

Li

## Next Steps

- Process pending assays - >1,500 samples in the laboratory
- Complete maiden aircore and RC drilling programs
- Extend first pass auger sampling over priority magnetic trends
- Phase 2 drilling





# Investment Case



The only independent “Tier 1” lithium resource in Australia, strengthened by exciting new exploration targets

## Kathleen Valley



156Mt resource/  
40 Year mine life



High grade/Low cost



Safe jurisdiction with  
good infrastructure



Multiple  
opportunities to  
improve economics

## Moora



Au-PGE-Ni-Cu  
Project in an  
emerging mineral  
province



Exceptional early  
results with follow  
up ongoing

**Projects are 100% owned and in a stable, established, investor friendly jurisdiction**

# Leadership and Key Financials



**David Richards**

**Managing Director**

- +35 years (Geologist)
- Discovered multi-million ounce Vera Nancy Gold Deposits



**Tim Goyder**

**Chairman**

- +40 years (Mining Entrepreneur)
- Chairman Chalice Mines



**Craig Williams**

**Non-Executive Director**

- +40 years (Geologist)
- Founder and CEO of Equinox Minerals



**Anthony Cipriano**

**Non-Executive Director**

- +30 years (Chartered Accountant)
- Former Senior Partner at Deloitte



**Steven Chadwick**

**Non-Executive Director**

- +40years (Metallurgist)
- Director of Lycopodium Limited

## Corporate Snapshot

**ASX CODE: LTR**

Shares on Issue	~1,809M (01 Feb 2021)
Market Capitalisation	~\$742M (at \$0.41cps on 28 Jan 2021)
Major Shareholder	Tim Goyder ~18%
Top 20 Shareholders	~44% (01 Feb 2021)
Cash	~\$16.4M (31 Dec 2020)
Research Coverage	Bell Potter/Bridge Street Capital



**Adam Smits**

**Chief Operating Officer**

- +20 years (Mechanical Engineer)
- Former COO Nzuri Copper



**Craig Hasson**

**CFO & Co. Secretary**

- +15 years (Chartered Accountant)
- Commercial & Financial experience



**Jamie Day**

**Exploration Manager**

- +20 years (Geologist)
- Former Senior Geologist for Independence Group

# Thank You

For more information visit [www.ltresources.com.au](http://www.ltresources.com.au)

[@LiontownRes](https://twitter.com/LiontownRes)



[liontown-resources-limited](http://liontown-resources-limited)





## APPENDIX 1



Kathleen Valley Project  
Additional Information



# Peer Comparison Information – Mineral Resource Estimates



Company	Project	Stage	Measured Mt	Indicated Mt	Inferred Mt	Global MRE Mt	MRE Li2O Grade %	Information Source
Liontown Resources	Kathleen Valley	Development	20.0	105.0	32.0	156.0	1.35	ASX Release 11/5/2020
	Buldanía	Scoping	0.0	9.1	5.9	14.9	0.97	ASX Release 8/11/2019
Pilbara Minerals	Pilgangoora	Operating	18.3	113.8	90.4	222.5	1.26	2020 Annual Report
	Pilgangoora (Altura)	Operating	7.4	34.2	4.1	45.7	1.06	2019 Ann Rep, 9/10/2019 ASX release
SQM(50%)/Wesfarmers(50%)	Mt Holland	Development	66.0	106.0	17.0	189.0	1.50	ASX Release 19/3/2018 (Kidman Resources)
Albermarle (49%)/Tianqi (26%)/IGO (25%)	Greenbushes (excl tailings)	Operating	0.2	163.1	8.9	172.2	1.98	IGO acquisition presentation and ASX release 9/12/20
Alita Resources	Bald Hill	Operating (C+M)	0.0	14.4	12.1	26.5	1.00	ASX Release 6/6/2018 (Alliance Minerals Assets)
Ganfeng(50%)/MinRes Ltd(50%)	Mt Marion	Operating	0.0	22.7	48.7	71.3	1.37	ASX Release 31/10/2018 (Mineral Resources)
Core Lithium	Finnis	Development	3.2	4.4	7.1	14.7	1.32	2020 Ann Rep, 23/6/2020 Presentation
Albermarle(60%)/Min Res Ltd(40%)	Wodgina (excl tailings)	Operating (C & M)	0.0	177.0	59.9	236.9	1.19	ASX Release 23/10/2018 (Mineral Resources)
Galaxy Resources	Mt Cattlin (100%)	Operating	1.0	9.2	4.4	14.6	1.29	ASX Release 11/3/2020

# Kathleen Valley



## Lithium Equivalency (Li<sub>2</sub>O + Ta<sub>2</sub>O<sub>5</sub>) Parameters

Inputs				Outputs	LI2O%
Tantalite (Ta2O5) \$/lb	69.9	(B2)	US\$ (Roskill 2025 – 2040 average price adjusted to FOB)	Ta2O5 =	0.107 (F4)
Spodumene \$/tonne	739	(B3)	US\$ (Roskill 2025 – 2040 average price, adjusted to FOB)		
Tantalite recovery	50%	(B4)	Per LTR testwork inc off site losses ie 90% of 56%		
Spodumene Recovery	76%	(B5)	Per LTR testwork		
Ta2O5 Grade	30%	(B6)		Equiv Li2O grade = (Li2O% +Ta2O5)	1.5%
Li2O Grade	6%	(B7)			
Grade Ta2O5 in resource	130	(B9)	ppm ( per resource)		
Grade Li2O in resource	1.35%	(B10)	(per resource)		
F4=B9*((B2)/(B3/B7))*(B4/B5)*2204*0.0001					
Equiv Li2O grade (Li2O% + Ta2O5%) = F4/(100+B10)					



# Peer Comparison Information

## Global Attributable Hard Rock (Spodumene) Resources

Company	Project (Ownership%)	Status	Source	Global MRE (Mt)	Li2O%	%Global Resources
AVZ	Manono (60%)	DFS	May 2019 Resource Update, sourced from 21/4/2020 ASX release	240.0	1.7	12.7
Albermarle	Kings Mountain (100%)	Operating (C & M)	<a href="https://en.wikipedia.org/wiki/Kings_Mountain_Mine">https://en.wikipedia.org/wiki/Kings_Mountain_Mine</a> , <a href="https://www.albemarle.com/businesses/lithium/resources--recycling/lithium-resources">https://www.albemarle.com/businesses/lithium/resources--recycling/lithium-resources</a>	45.6	0.7	11.8
	Greenbushes (49%)	Operating	IGO acquisition presentation 9/12/20	84.4	2.0	
	Wodgina (60%)	Operating (C & M)	ASX Release 23/10/2018 (Mineral Resources)	142.2	1.2	
Pilbara Minerals	Pilgangoora (100%)	Operating	2020 Annual Report	222.5	1.3	10.5
	Pilgangoora Altura (100%)	Operating	9/10/2019 ASX release (Altura)	45.7	1.1	
	<b>Kathleen Valley (100%)</b>	<b>PFS</b>	<b>ASX Release 11/5/2020</b>	<b>156.0</b>	<b>1.4</b>	<b>7.2</b>
	<b>Buldanía (100%)</b>	<b>Exploration</b>	<b>ASX Release 8/11/2019</b>	<b>14.9</b>	<b>1.0</b>	
DRC Government	Manono (30%)	DFS	May 2019 Resource Update, sourced from 21/4/2020 ASX release	120.0	1.7	6.3
Min Res Ltd	Mt Marion (50%)	Operating	ASX Release 31/10/2018 (Mineral Resources)	35.7	1.4	5.2
	Wodgina (40%)	Operating (C & M)	ASX Release 23/10/2018 (Mineral Resources)	94.8	1.2	
Mali Lithium	Goulamina (100%)	Exploration	ASX Release 8/7/2020	108.5	1.5	5.0
SQM	Mt Holland (50%)	Pre-Development	ASX Release 19/3/2018 (Kidman Resources)	94.5	1.5	4.5
Wesfarmers	Mt Holland (50%)	Pre-Development	ASX Release 19/3/2018 (Kidman Resources)	94.5	1.5	4.5
Tianqi	Greenbushes (26%)	Operating	IGO acquisition presentation 9/12/20	44.8	2.0	2.8
IGO	Greenbushes (25%)	Operating	IGO acquisition presentation 9/12/20	43.1	2.0	2.7
Galaxy Resources	James Bay (100%)	Exploration	ASX Release 11/3/2020	40.3	1.4	2.4
	Mt Cattlin (100%)	Operating	ASX Release 11/3/2020	14.6	1.3	
Sigma Lithium	Grota de Cirilo (100%)	Development	SEDAR Announcement Jan 10th 2019	52.4	1.4	2.3
Prospect Resources	Arcadia (87%)	Exploration	ASX Release 20/11/2019, DFS Nov 2019, Presentation Feb 2020	63.2	1.1	2.3
Dathomir	Manono (10%)	DFS	May 2019 Resource Update, sourced from 21/4/2020 ASX release	40.0	1.7	2.1

# Peer Comparison Information

Global Attributable  
Hard Rock  
(Spodumene)  
Resources (continued)

Company	Project (Ownership%)	Status	Source	Global MRE (Mt)	Li2O%	%Global Resources
Ganfeng	Mt Marion (50%)	Operating	ASX Release 31/10/2018 (Mineral Resources)	35.7	1.4	1.6
Frontier Lithium	PAK & SPARK (100%)	Exploration	NI43-101 March 19 2020 (Frontier Lithium)	25.8	1.5	1.3
Quebec Li Partners	Whabouchi (50%)	Development	Nemaska May 31 2019 NI43-101	27.8	1.4	1.2
Investissement Quebec	Whabouchi (50%)	Development	Nemaska May 31 2019 NI43-101	27.8	1.4	1.2
Critical Elements	Rose (100%)	DFS	Critical Elements Nov 29, 2017 NI43-101, 2019 Ann Rep	34.7	0.9	1.0
Piedmont Lithium	Core & Central (100%)	Exploration	ASX Release 25/6/2019	27.9	1.1	1.0
Savannah	Mina Do Barosso et al (100%)	Exploration	May 2019 Resource Announcement	27.0	1.1	0.9
AMG	Mibra (100%)	Operating	3rd April 2017 AMG release	24.5	1.1	0.8
Alita Resources	Bald Hill (100%)	Operating (C & M)	ASX Release 6/6/2018 (Alliance Minerals Assets)	26.5	1.0	0.8
Kodal Minerals	Bougouni (100%)	Exploration	August 27 2020 Corp Presentation	21.3	1.1	0.8
Premier African Mins	Zulu (100%)	Exploration	13/11/2017 Scoping Study by Bara Resources	20.1	1.1	0.7
Sayona	Authier (100%)	DFS	ASX Release 24 /9/2018	20.9	1.0	0.7
Core Lithium	Bynoe (100%)	Exploration	2020 Ann Rep, 23/6/2020 Presentation	14.7	1.3	0.6
Iron Ridge Resources	Ewoyaa-Abonko-Kaampakrom (100%)	Exploration	AIM Release 28/1/2020	14.5	1.3	0.6
Keliber	Ostrobothnia (100%)	DFS	Company releases 30/9/2019 and 5/12/2019	14.2	1.1	0.5
Essential Metals	Cade (100%)	Exploration	ASX Release 29/9/2020	11.2	1.2	0.4
GuoAo Lithium	Moblan (60%)	Exploration	ASX Release 31/5/2011 (Perilya)	8.6	1.4	0.4
European Lithium	Wolfsberg (100%)	Exploration	ASX Release 3/7/2017	11.0	1.0	0.4
Exore / Dakota	Sepeda (100%)	Exploration	Dakota Minerals ASX Release 20/2/2017	10.3	1.0	0.3
SOQUEM	Moblan (40%)	Exploration	ASX Release 31/5/2011 (Perilya)	5.7	1.4	0.3

# 2020 PFS v 2019 PFS



## Key Parameters And Assumptions

General and Economic	2020 PFS <sup>1</sup>	2019 PFS
Discount rate (real, post-tax)	8%	8%
SC6.0 (US\$ per tonne FOB Geraldton)	US\$739/t <sup>4</sup>	US\$690/dmt FOB SC6.0
Tantalum 30% conc. (US\$ per lb FOB Fremantle)	US\$69.9/lb <sup>5</sup>	n/a
Exchange rate – AUD/USD	0.72	0.72
Mining and Production		
Average LOM strip ratio (Open Pit)	8.4:1	7.7:1
Processing rate	2Mtpa	2 Mtpa
Life-of-Mine Production Target (49Mt UG & 30Mt OP)	79 Mt ore	50.4 Mt ore
Li <sub>2</sub> O & Ta <sub>2</sub> O <sub>5</sub> grades (diluted) years 1-10	1.5%/120 ppm	1.10%/NA
LOM average Li <sub>2</sub> O & Ta <sub>2</sub> O <sub>5</sub> grades (diluted)	1.4%/130ppm	1.18%/NA
LOM average Li <sub>2</sub> O recovery <sup>2</sup>	76%	76%
Overall Ta <sub>2</sub> O <sub>5</sub> recovery (% including offsite upgrade losses of ~6%)	50%	0%
SC6.0 grade	6%	6.1%
Ta <sub>2</sub> O <sub>5</sub> Concentrate final grade	30%	NA
Moisture content of SC6.0	9%	9%
Avg annual Tonnes of SC6.0	350ktpa	NA
Avg annual Tonnes of 30% Ta <sub>2</sub> O <sub>5</sub> concentrate	430tpa	NA

Cost Assumptions	2020 PFS <sup>1</sup>	2019 PFS
LOM avg open pit mining costs <sup>3</sup> (\$/dmt ore processed)	A\$43	A\$35.12
LOM avg U/G mining costs (\$/dmt ore processed)	A\$55	NA
LOM average processing cost (\$/dmt ore processed)	A\$20	A\$18.20
Logistics and transport (\$/ wmt conc. inc Port Charges)	A\$65/wmt	A\$77.26
General and admin (\$/dmt ore processed inc. mining)	A\$6.0	A\$4.71
Western Australia State royalty	5%	5%
Private royalties (does not apply to MLA M36/696)	3% gross sales & A\$0.5/t ore mined	3% gross sales & A\$0.5/t ore mined
Corporate tax rate	30%	30%
Estimated opening tax losses	A\$35M	\$30m

<sup>1</sup> Refer Cautionary Statement on Slide 2

<sup>2</sup> Based on testwork derived grade recovery relationship for PFS mine plan grades of Li<sub>2</sub>O (inclusive Ta<sub>2</sub>O<sub>5</sub> extraction Li<sub>2</sub>O losses)

<sup>3</sup> Includes ROM rehandle

<sup>4</sup> Per Roskill September 2020 Report for avg arms length prices (2025-2040), adjusted to FOB. \$US795/t FOB for 2041-2064.

<sup>5</sup> Per Roskill September 2020 Report for avg arms length prices (2025-2040), adjusted to FOB. \$US65/lb FOB for 2041-2064.



# PFS – Operating & Capital Summary<sup>1</sup>



Life of Mine Financials	
	(A\$B)
Revenues (lithium)	14.7
Operating costs <sup>2</sup>	5.9
Capital expenditure	
- pre-production	0.3
- sustaining	0.4
Royalties	1.3
Corporate tax	2.0
Life of Mine Free Cash flow	4.8

<sup>1</sup> Refer Cautionary Statement on Slide 2

<sup>2</sup> Net of tantalum credits

Capital Costs Summary	
Main Area	Capital (A\$M)
Treatment Plant	84.8
Reagents & Plant Services	16.0
Infrastructure – general	53.3
Mining Infrastructure	2.0
Construction Indirects	23.8
<b>Subtotal</b>	<b>179.9</b>
Management Costs	23.0
Owners Project Costs	19.8
Mining Pre-production (U/G & open pit)	67.1
Owners Pre-production	8.5
<b>Subtotal</b>	<b>298.3</b>
Contingency	26.8
<b>Project Total</b>	<b>325.1</b>

# 2020 Downstream Scoping Study (DSS)



## Key Parameters And Assumptions<sup>1</sup>

General and Economic	LHM	LSM
Discount rate (real, post-tax)	8%	8%
Ave. Price (US\$/t FOB Fremantle 2025-2040)	US\$14,079/t <sup>5</sup>	US\$6,991/t <sup>6</sup>
Tantalum 30% conc. (US\$/lb FOB Fremantle)	US\$69.9/lb <sup>7</sup>	US\$69.9/lb <sup>7</sup>
Exchange rate – AUD/USD	0.72	0.72
Downstream Integrated Refinery		
Number of processing trains	2	2
Recovery Li (%)	90	90
Calcination temperature (°C)	1,100	1,100
Sulphuric Acid Addition (mol/mol)	1.25 (H <sub>2</sub> SO <sub>4</sub> :Li <sub>2</sub> O)	1.25 (H <sub>2</sub> SO <sub>4</sub> :Li <sub>2</sub> O)
Acid Roast Temperature (°C)	250	250
Acid Leaching Residence Time (minutes)	120	120
Lithium Sulphate Crystalliser Stages (per train)	2	2
Design Production	58ktpa	88ktpa

Cost Assumptions	LHM	LSM
LOM avg operating cost (US\$/dmt SC6) <sup>2</sup>	US\$310	US\$310
LOM avg operating costs inc. SC6 costs <sup>3</sup>	US\$4,744	US\$2,649
LOM average processing upgrade cost LSM to LHM	NA	US\$1,509/t LHM
Transport costs (A\$/t to Fremantle)	A\$86	A\$86
Western Australia State royalty <sup>4</sup>	5%	5%
Private royalties <sup>4</sup> (does not apply to MLA M36/696)	3% gross sales & A\$0.5/t ore mined	3% gross sales & A\$0.5/t ore mined
Corporate tax rate	30%	30%
Estimated opening tax losses	A\$35M	\$30m

<sup>1</sup> Refer Cautionary Statement on Slide 2

<sup>2</sup> Excludes royalties

<sup>3</sup> Includes royalties

<sup>4</sup> Based on spodumene feedstock market value for gross sales

<sup>5</sup> Per Roskill September 2020 Report for avg China Spot Prices (2025-2040), adjusted to FOB. \$US15,512/t FOB for 2041-2064.

<sup>6</sup> LTR assumed prices based on 50% factored Roskill LHM prices (2025-2040), adjusted to FOB. \$US7,707/t FOB for 2041-2064.

<sup>7</sup> Per Roskill September 2020 Report for avg arms length prices (2025-2040), adjusted to FOB. \$US65/lb FOB for 2041-2064.



# DSS – Cash Flows



Integrated Life of Mine Financials <sup>1</sup>		
	LHM (A\$B)	LSM (A\$B)
Revenues (lithium)	43.2	32.6
Operating costs <sup>2, 4</sup>	(12.5)	(10.4)
Capital expenditure		
- pre-production	(1.1)	(0.9)
- sustaining	(0.4)	(0.4)
Royalties (All)	(1.3)	(1.3)
Corporate tax	(8.4)	(5.9)
Life of Mine Free Cash flow	19.5	13.7

<sup>1</sup> Refer Cautionary Statement on Slide 2

<sup>2</sup> Net of tantalum credits

<sup>3</sup> SC6.0 plant capital to PFS level +/-25% accuracy, DSS to +/-30% accuracy

<sup>4</sup> PFS included no contingency on SC6.0 operating costs, DSS included no contingency on operating costs

<sup>5</sup> PFS included 15% (\$27M) capital contingency, DSS included 20% (\$135M LHM & \$109M LSM ) contingency on capital costs

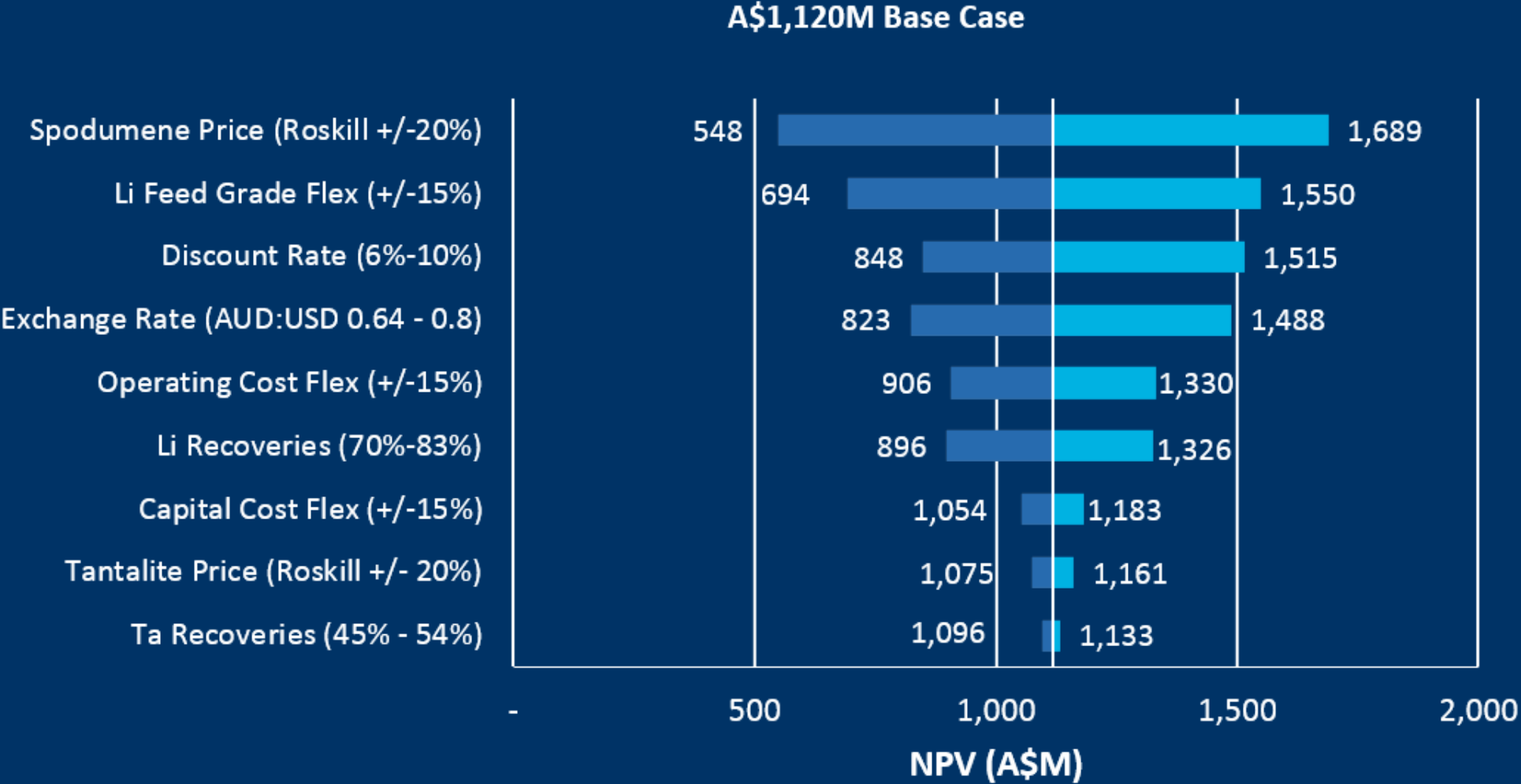
## Capital Costs Summary<sup>3</sup>

Main Area	LHM (A\$M)	LSM (A\$M)
WOF Plant & Mine Dev.	298	298
<b>DSS Refinery and Infrastructure</b>		
Plant site/Earthworks	7.1	7.1
Treatment Plant	377.2	292.3
Reagents/Plant Services	37.2	30.5
Plant Buildings	6.5	6.5
Camp Expansion	12.6	11.8
Distributable	69.6	55.1
Preproduction Costs and Spares	39.8	32.5
Mobile Equipment	5.0	5.0
<b>Subtotal</b>	<b>853.0</b>	<b>738.8</b>
EPCM Management Costs (DSS)	76.5	60.5
Owners Costs (DSS)	19.1	15.1
<b>Subtotal</b>	<b>948.6</b>	<b>814.4</b>
Contingency (DSS+PFS) <sup>5</sup>	161.5	135.6
<b>Project Total</b>	<b>1,110.1</b>	<b>950.0</b>

# NPV Sensitivity Analysis (PFS)<sup>1</sup>



For personal use only



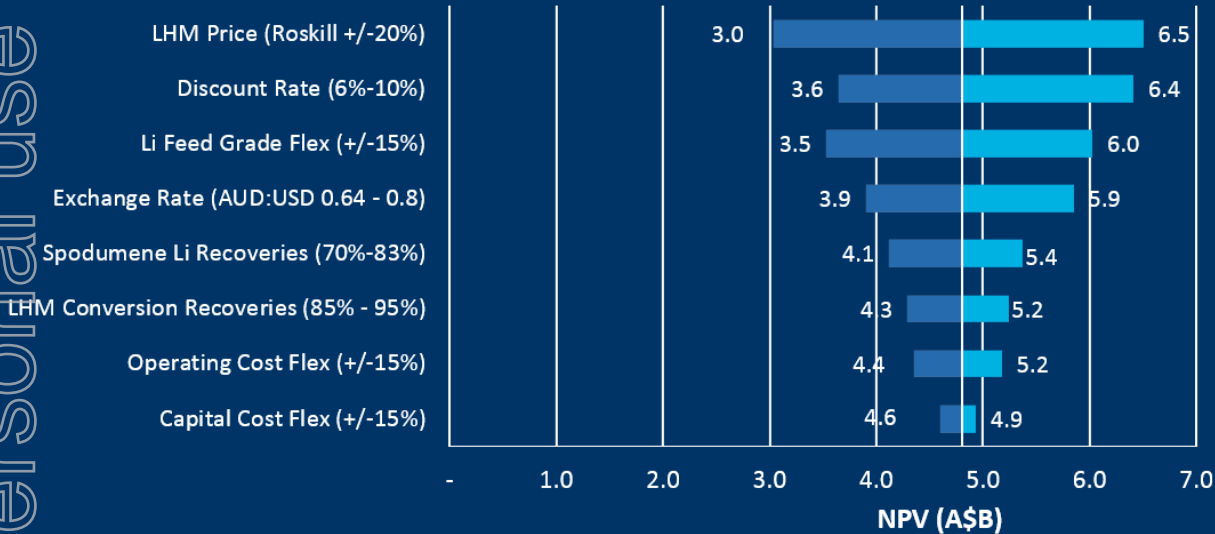
<sup>1</sup> Refer Cautionary Statement on Slide 2

# NPV Sensitivity Analysis (DSS)<sup>1</sup>

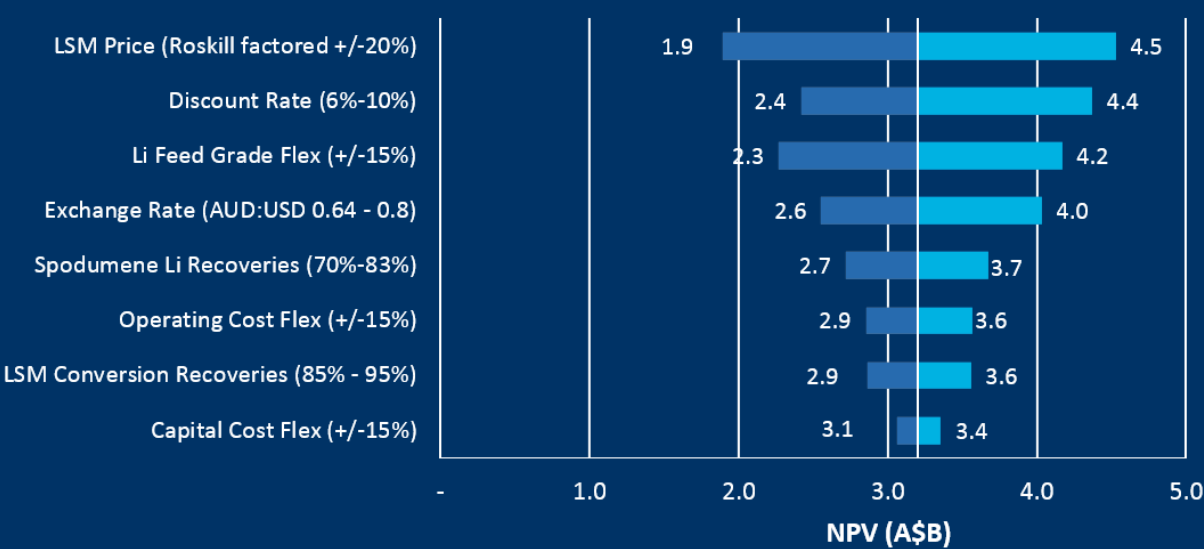


For personal use only

LHM A\$4.8B Base Case



LSM A\$3.2B Base Case



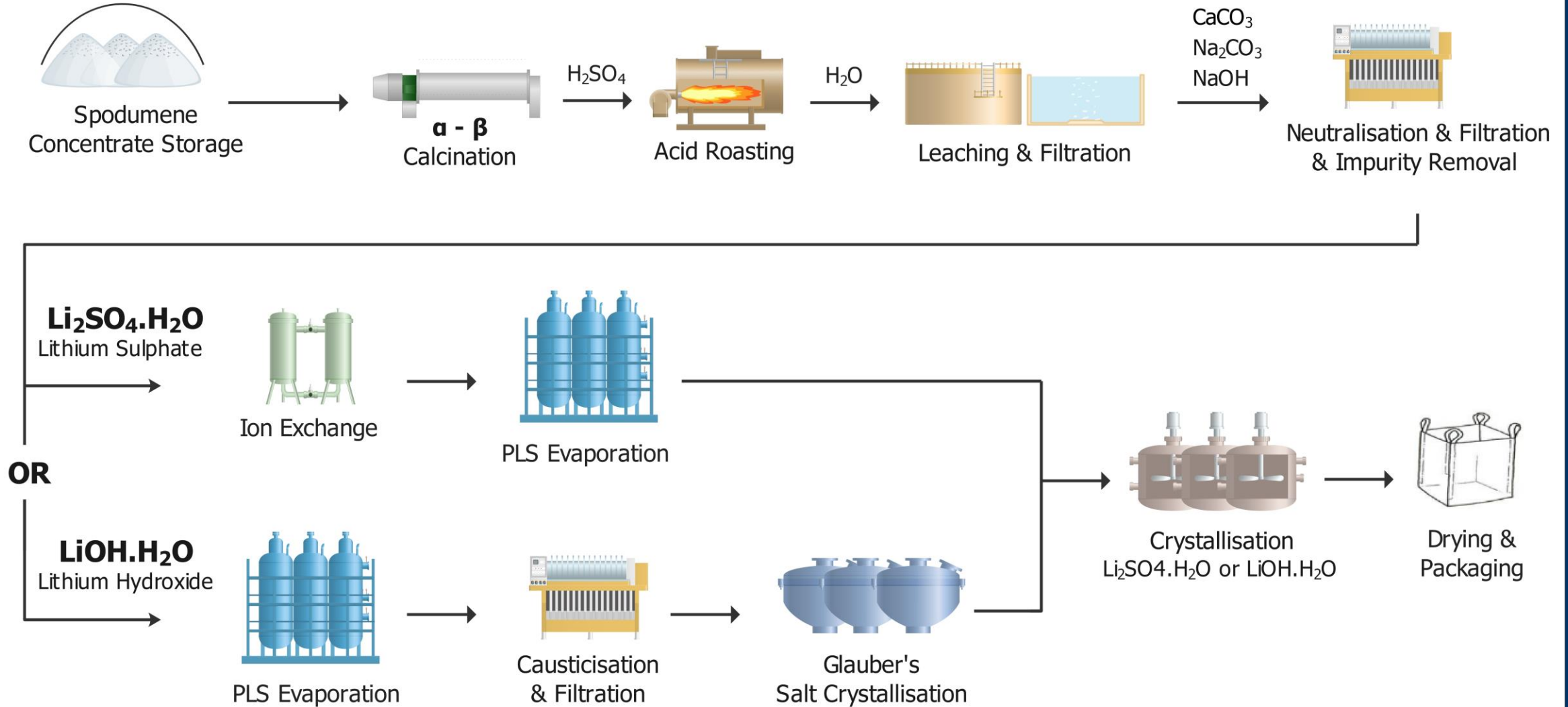
<sup>1</sup> Refer Cautionary Statement on Slide 2



# DSS | Refinery Flow Sheet



For personal use only



## APPENDIX 2



Buldania Lithium Project  
(Liontown 100%)



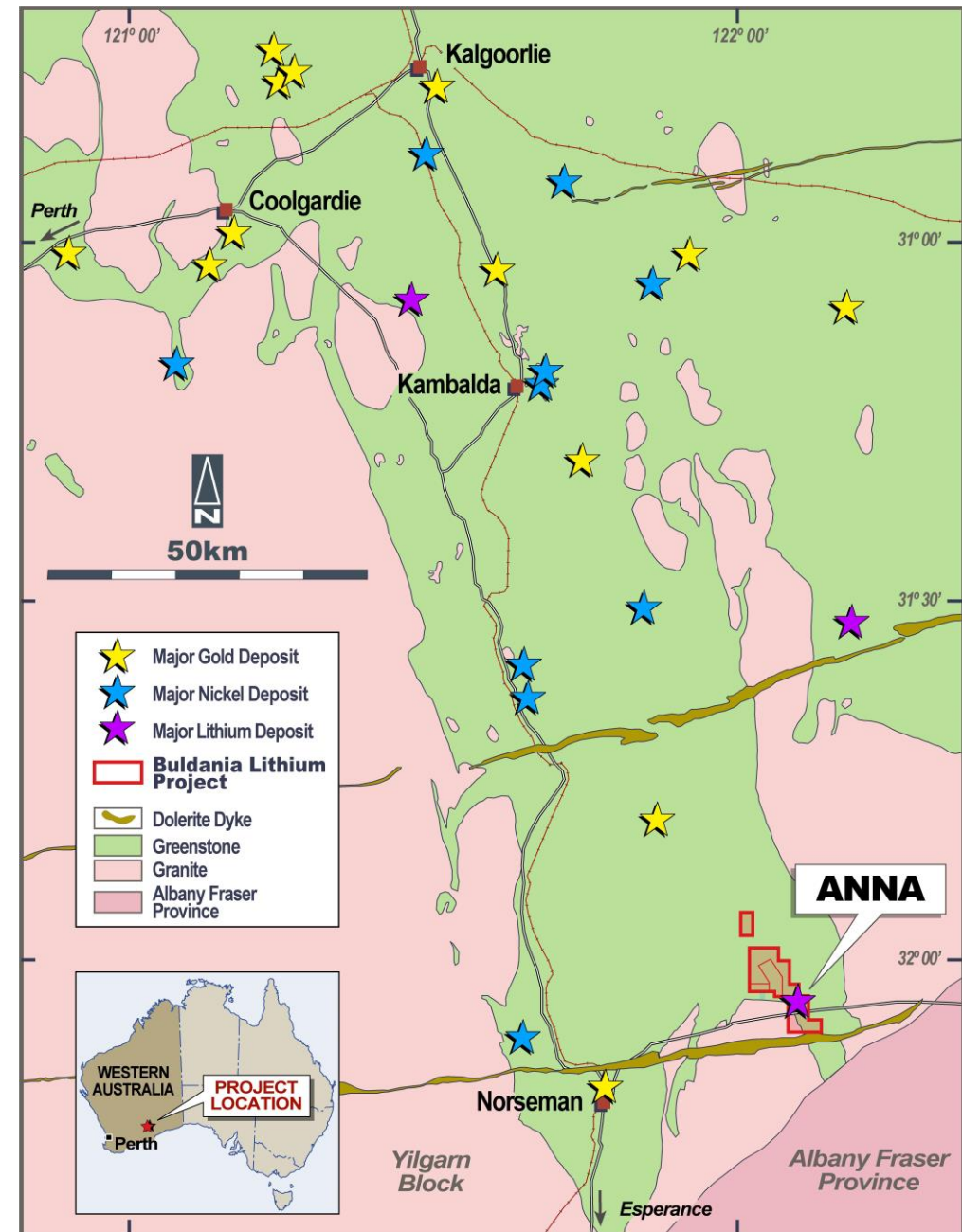
# Project Overview

Buldania is Located in a Lithium-Rich Mineral Province

- 1 Outcropping, fresh, spodumene-related mineralization
- 2 Mineralisation at Anna extends to the SE under shallow cover – strike length >1.4km and open
- 3 Similar geology to the Mt Marion and Bald Hill lithium deposits (71Mt<sup>1</sup> and 26Mt<sup>2</sup> respectively)
- 4 Good infrastructure – located on Eyre Highway ~30km east of Kalgoorlie-Esperance railway
- 5 Liontown has 100% of the lithium and related metal rights
- 6 Mining Lease Application lodged over Anna deposit

1. Mt Marion – Refer to Peer Comparison table – slide 27

2. Bald Hill source: <http://www.allianceminerals.com.au/projects/>

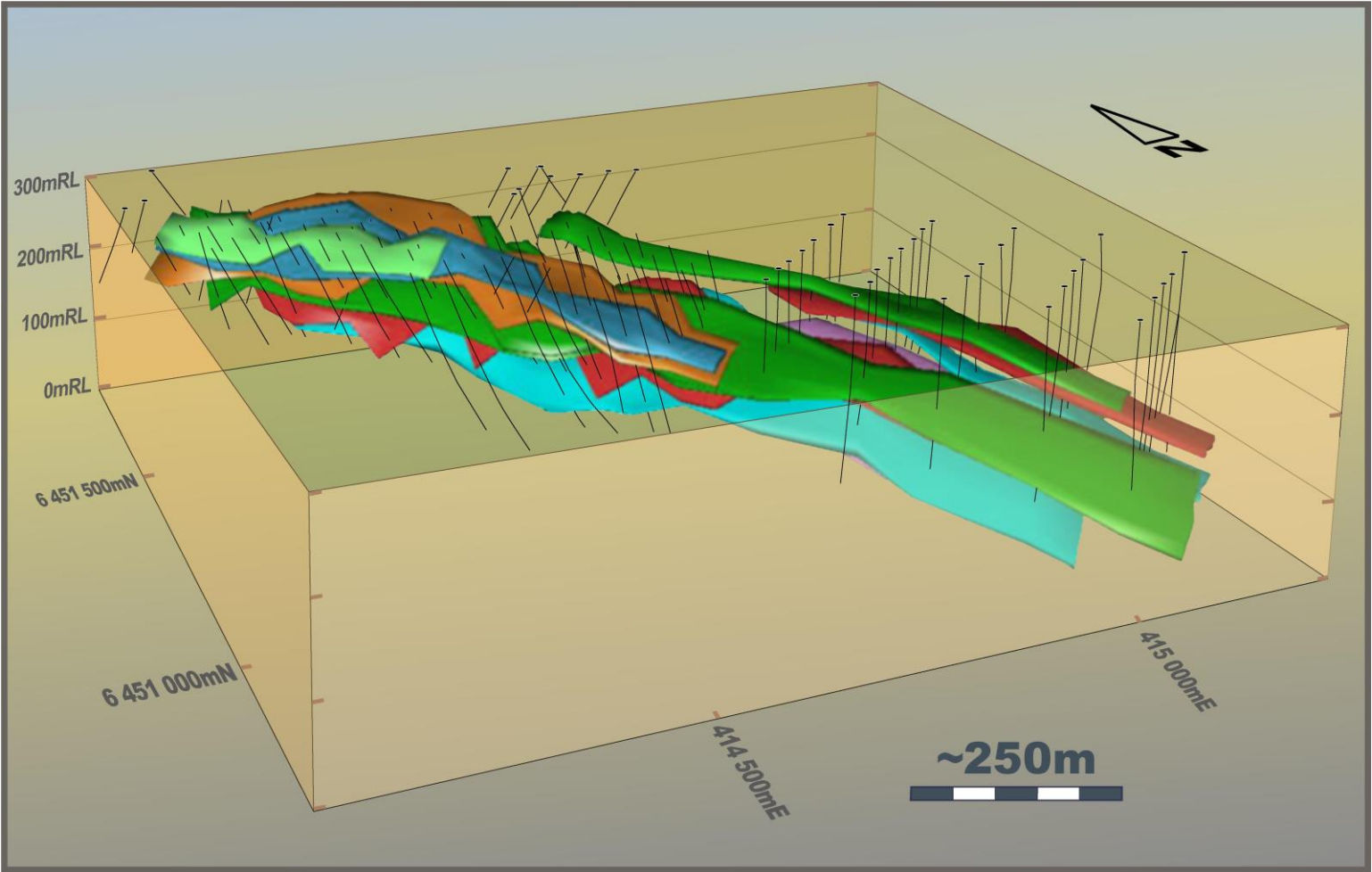




# Resource

Maiden Mineral Resource Estimate  
14.9Mt @ 1.0% Li<sub>2</sub>O

The completion of the MRE  
complements Lontown's  
flagship Kathleen Valley  
Lithium Project





For personal use only

Level 2, 1292 Hay St  
West Perth WA 6005

+61 8 9322 7431

info@ltresources.com.au

www.ltresources.com.au



[@LiontownRes](#)



[liontown-resources-limited](#)

