**Investor Presentation** 

March-April 2023

Providing Material in the U.S. for a Sustainable Planet

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### **Competent Persons Statement**

In respect of Mineral Resources and Ore Reserves referred to in this presentation and previously reported by the Company in accordance with JORC Code 2012, the Company confirms that it is not aware of any new information or data that materially affects the information included in the public report titled "Rhyolite Ridge Ore Reserve Increased 280% to 60 million tonnes" dated 30 April 2020 and released on ASX. Further information regarding the Mineral Resource estimate can be found in that report. All material assumptions and technical parameters underpinning the estimates in the report continue to apply and have not materially changed.

In respect of production targets referred to in this presentation, the Company confirms that it is not aware of any new information or data that materially affects the information included in the public report titled "ioneer Delivers Definitive Feasibility that Confirms Rhyolite Ridge as a World-Class Lithium and Boron Project" dated 30 April 2020. Further information regarding the production estimates can be found in that report. All material assumptions and technical parameters underpinning the estimates in the report continue to apply and have not materially changed.

### No offer of securities

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### **Lithium Carbonate Equivalent**

The formula used for the Lithium Carbonate Equivalent (LCE) values quoted in this presentation is: LCE = (lithium carbonate tonnes produced + lithium hydroxide tonnes produced \* 0.880

### Note

All \$'s in this presentation are US\$'s except where otherwise noted.

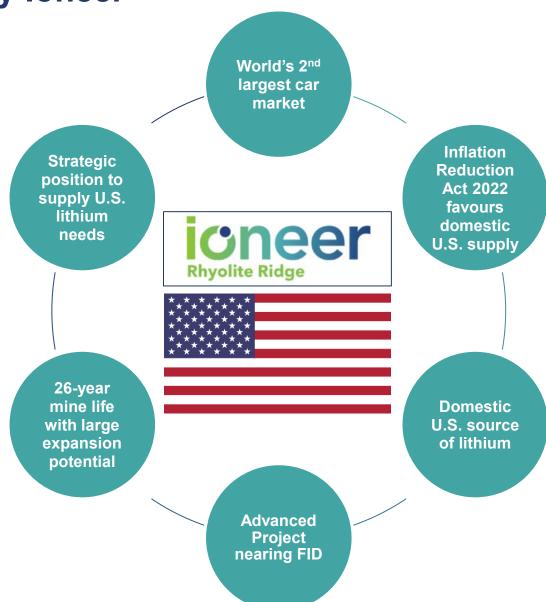


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Why Ioneer

ioneer Investor Presentation





One of two near term projects to address the need for locally sourced U.S. lithium

Positioned to become a cornerstone lithium supplier to the domestic U.S. EV battery supply chain

Ford

Toyota / Panasonic

Nasdaq : IONR

**EcoPro** 

# **Corporate Snapshot**

# ioneer

## **Capital Structure**

(As at March 2023)

SHARES OUTSTANDING	2.10B
PERFORMANCE RIGHTS AND OPTIONS OUTSTANDING	36.3M
CASH BALANCE – 1 Jan 2023	US\$69.4M
SHARE PRICE ASX – 27 Mar 2023	A\$0.27
ADR PRICE NASDAQ (1 ADR = 40 ASX shares)	US\$7.31
MARKET CAPITALISATION	A\$567m (US\$383m)

### **ASX Share Price**



### **Shareholders** (February 2023)

Insider Ownership 5.6%

Top 50 Ownership ~62.0%

Substantial Holders
Contourus Sibonyo Stil

Centaurus Sibanye-Stillwater

12.1% 7.0%

Institutional holders
22.7%
(Excl. Centaurus & SSW)

## Research Coverage



**Loop Capital Markets** 

Source: Source: Company Data, FactSet, Nasdaq, Ipreo and CapIQ





# **Proven, Experienced Team**



## **Board of Directors**



**JAMES D. CALAWAY Executive Chairman FORMER:** Non-exec chairman of Orocobre Ltd **USA** 



**ALAN DAVIES** Non-executive Director **FORMER:** Chief Executive, Energy & Minerals of Rio Tinto AUS



JAMES D. **CALAWAY Executive Chairman** USA

**Management Team** 



**BERNARD ROWE** Managing Director AUS



**BERNARD ROWE Managing Director IONEER:** Managing Director, CEO, Founder AUS



**ROSE McKINNEY-JAMES** Non-executive Director **FORMER:** President and CEO of Corporation for Solar Tech & Renewable Resources **USA** 



IAN BUCKNELL CFO & Company Secretary **AUS** 



**MATT WEAVER Snr VP Engineering** & Operations **USA** 



**MARGARET WALKER** Non-executive Director **FORMER:** VP Engineering and Technology Centers, Dow Chemical **USA** 



STEPHEN GARDINER Non-executive Director **FORMER:** CFO Oil Search **AUS** 



**CHAD YEFTICH** VP Corporate Development & External Affairs



**YOSHIO NAGAI VP Commercial Sales** & Marketing **JPKR** 

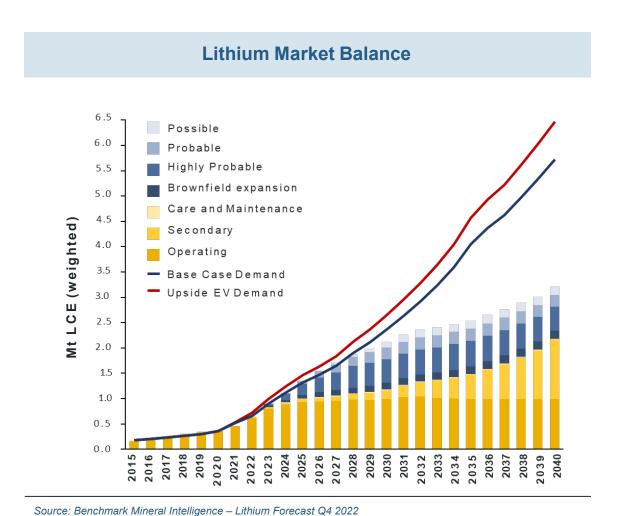


Nasdaq : IONR

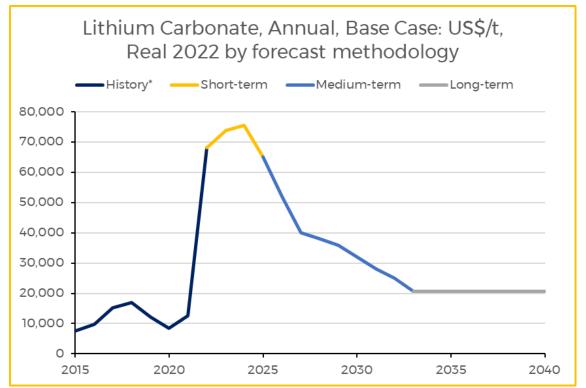
# 1. Why loneer

# Global Lithium Shortage Requires New Projects





### **Lithium Carbonate Price Forecast**



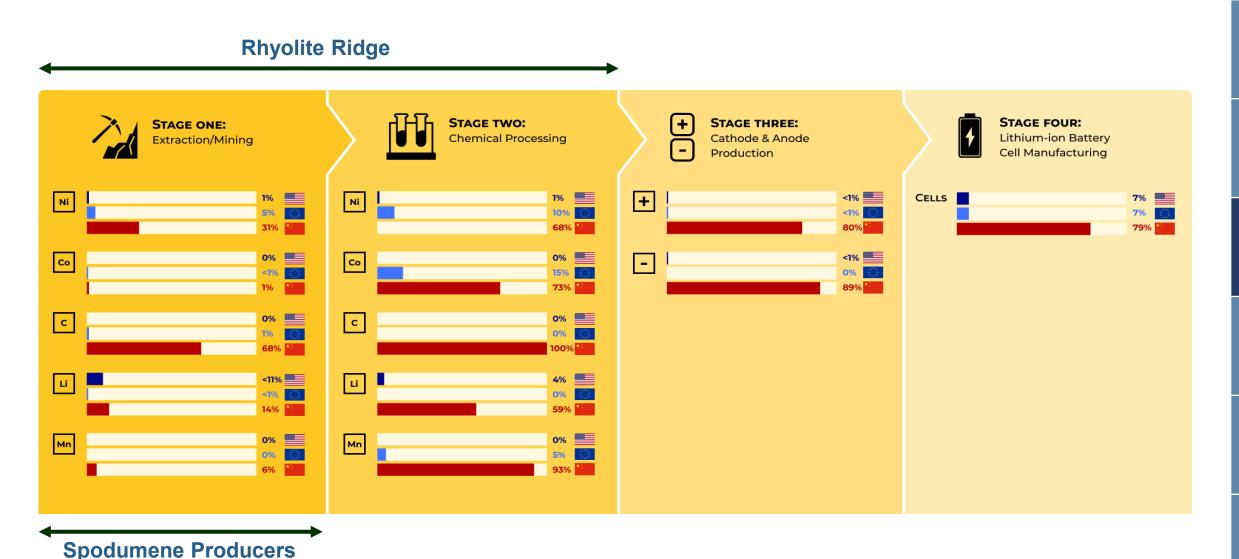
Source: Benchmark Mineral Intelligence - Lithium Forecast Q4 2022

New Projects take time to develop – Supply shortages expected to continue

# 1. Why loneer

# The Four Stages of Lithium-ion Battery Production





Source: Benchmark Mineral Intelligence

# Forecast U.S. Lithium Market

# ioneer

### Gigafactory capacity (demand)

Forecast	GWh	No. Gigafactories	Demand Est. LCE ktpa
2022 Actual	107	8	
2025 F/C	462	27	396
2030 F/C	1099	33	942

## Forecast domestic supply

Forecast	Supply Est. LCE ktpa
2021 Actual	5
2025 F/C	122*

<sup>\*</sup> Includes Rhyolite Ridge Production

States with current & planned Gigafactories by 2030 (Shaded in blue) **RHYOLITE RIDGE PROJECT** 



"Biden signs Inflation Reduction Act into law" (CNN Politics 16/08/2022)

https://www.cnn.com/2022/08/16/politics

- IRA advantage source for U.S domestic lithium supply
- Strategic location Nevada, a tier one mining jurisdiction
- Close to customer markets World's 2nd largest car market
- Expansion potential

# Rhyolite Ridge is ideally positioned to serve the U.S. EV market

Source: Benchmark Mineral Intelligence Report - Gigafactory Assessment, February 2023

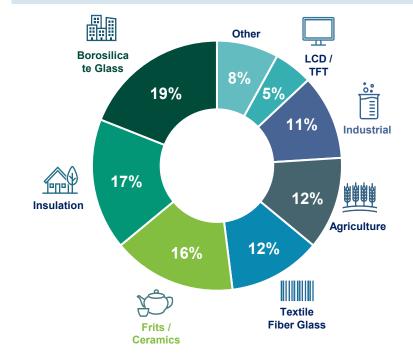
ASX : INR

www.ioneer.com

3. Lithium & Boron

# **Global Borates Market**

### **Demand by End Use**



### The Boric Acid Market

### Demand:

- Increasing demand from agriculture, solar, specialty glass and permanent magnets for EVs
- U.S. world's 2<sup>nd</sup> largest boric acid market (23%) behind China (30%)

### Market:

- Duopoly between Eti Maden (Turkey) and Rio (California)
- Eti (50%) and Rio (30%) of refined borate market

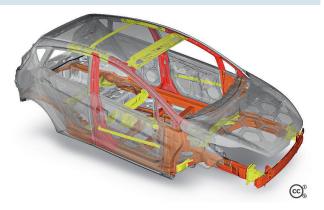
### Reserves:

- 72% of global Reserves are in Turkey

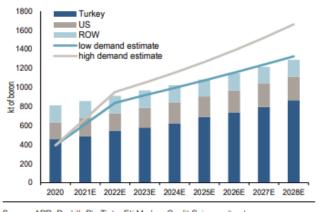
### • Pricing:

- Stable pricing over many decades (US\$600-\$800tpa)
- Forecast CAGR of between 4% and 6%.

### Boron used extensively in EVs



### **Estimated Demand Vs Supply**



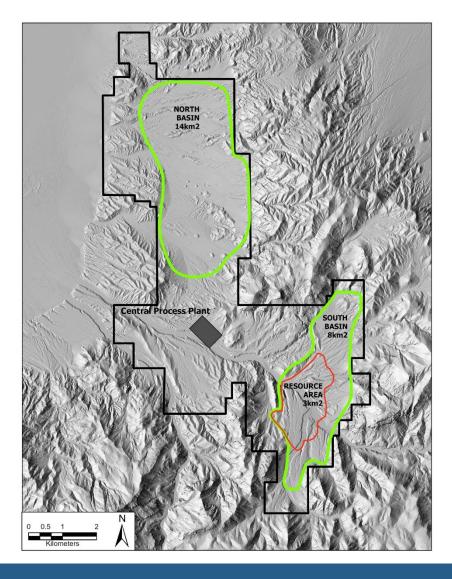
Source: ABR, Roskill, Rio Tinto, Eti Maden, Credit Suisse estimates

# Ioneer's boric acid offtake strategy completed

Notes: Borates demand includes refined chemicals (~80% of demand) such as boric acid and raw mineral products (~20% of demand). Chart inputs are loneer estimates derived from industry research.

# **Rhyolite Ridge Lithium-Boron Project**

- 100% interest in two sedimentary basins with lithium-boron mineralisation
- ~5km apart with a total prospective area covering approx.
   22km²
- South Basin only 3km<sup>2</sup> drilled to date
- Mineral Resource<sup>1</sup> of 146.5Mt containing 1.2Mt of lithium carbonate and 11.9Mt of boric acid - exclusively high boron layers
- Mineral Reserve<sup>1</sup> of 60.0Mt containing 0.6Mt of lithium carbonate and 5.3Mt of boric acid
- Potential to produce substantially more over time expanding focus to evaluate future growth options



A unique world class deposit with multi-generational scale potential

<sup>1.</sup> See Company announcement titled "ioneer delivers DFS that confirms Rhyolite Ridge as a world-class lithium-boron Project" dated 30 April 2020

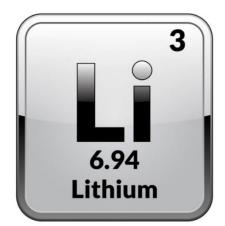
# **Rhyolite Ridge Lithium-Boron Project Economics**



# **INR**

### Fact Sheet<sup>1</sup>

Location	Nevada, USA
Project Stage	Bankable Feasibility Study (April, 2020)
Products	Lithium Carbonate, Boric Acid
Mine Plan	64Mt (2.5Mtpa x 26 years)
Production	Li 22,000 tpa B 174,400 tpa
Binding Offtakes	80% of Li production
All in sustaining cash cost	US\$2,510/t of LCE
EBITDA	US\$288M (LOM)
After-tax NPV <sub>8</sub>	US\$1.265B
After-tax IRR	20.8%
Price assumptions	Li Carb – US\$11,740/t Boric Acid – US\$710/t
Mine Life	26 years





## **Producing Two Products**





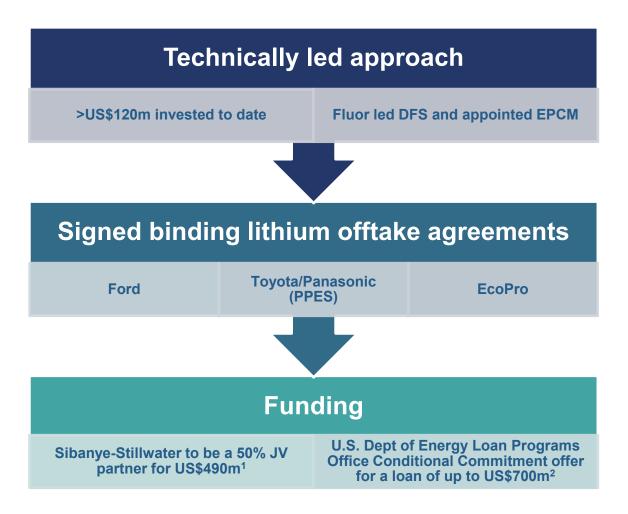
- 1. See Company announcement titled "ioneer delivers DFS that confirms Rhyolite Ridge as a world-class lithium-boron Project" dated 30 April 2020
- 2. See Company announcement titled "Rhyolite Ridge Ore Reserve Increased 280% to 60 million tonnes" dated 30 April 2020.

# **2020 DFS Confirmed Projects Compelling Economics**

# **Best in Class Partners**







<sup>1</sup>Subject to closing conditions as outlined in the 16 September 2021 announcement "Sibanye-Stillwater to Invest US\$490 Million to Advance Rhyolite Ridge to Production" <sup>2</sup>Subject to closing conditions as outlined in the 16 January 2023 announcement "U.S. Department of Energy Offers Conditional Commitment for a loan of up to US\$700 Million"

. Why lone

2. Corporat Overview

s. Lithium & Boron

# Positioned to be a Cornerstone Supplier to the U.S. EV Market

COMPLETE

NEAR COMPLETE

ON TRACK

ONTRACK

To sign binding offtakes that support debt

2

To be fully funded

To be construction ready in engineering

4

To be fully permitted

Binding offtake agreements in place:

- Boric Acid
- Lithium

Conditional Commitments in place:

Equity - Sibanye-Stillwater

Debt - US Dept of Energy

PFS, Pilot Plant and DFS Complete

Key contracts awarded

Air and Water Permits
Awarded

NEPA Process for Federal permit underway

The white hill at Rhyolite Ridge, showing the Searlesite ore body at surface

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# **Commitment to Sustainability**

## **Designed to minimise impact on the environment**

**Low Emissions** 

**Low Water Usage** 

**Small Mine Footprint** 

**Efficient Equipment** 

**Commitment to Sustainability** 









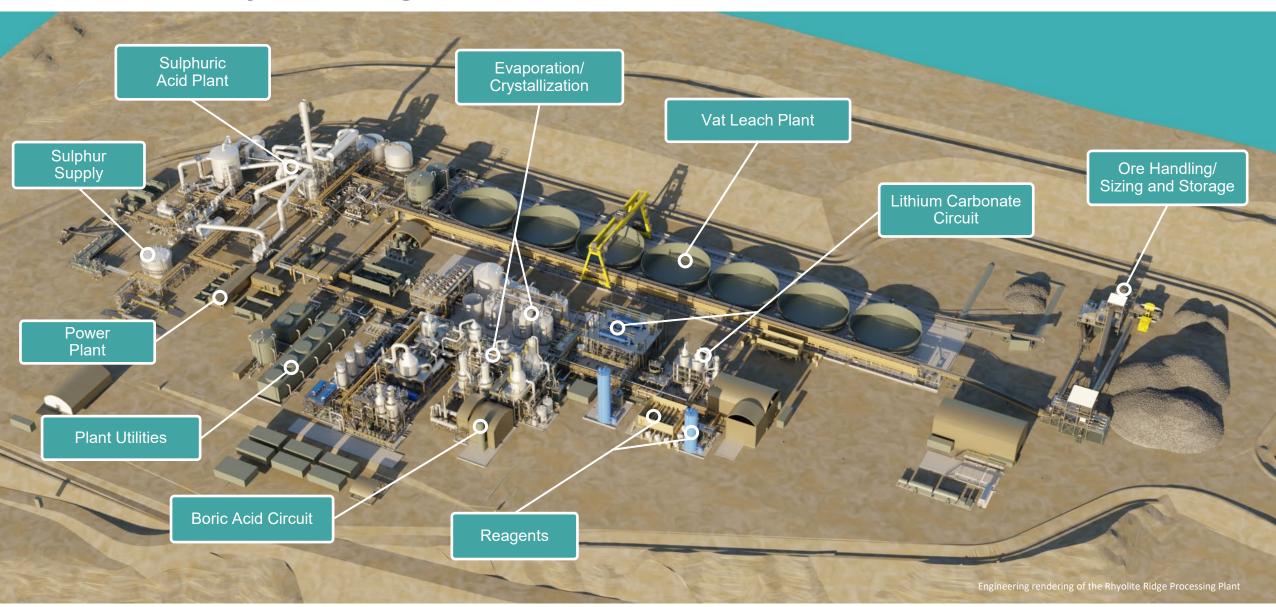


- Majority of on-site power from CO<sup>2</sup>-free energy production, low greenhouse gas emissions.
- Mobile equipment meets Tier 4 EPA standards
- Project design implements best-in-class water utilization while recycling the majority of water usage.
- Expected to use 30x less water per tonne than existing U.S. production
- No evaporation ponds or tailings dam
- Generating all power on-site.
- Automation of mine haulage equipment
- All baseline studies for EIS completed over 2 years.
- Ongoing commitment to the environment and the protection and conservation of Tiehm's buckwheat
- Implementation of TSM<sup>1</sup> ESG program

<sup>1</sup> Towards Sustainable Mining

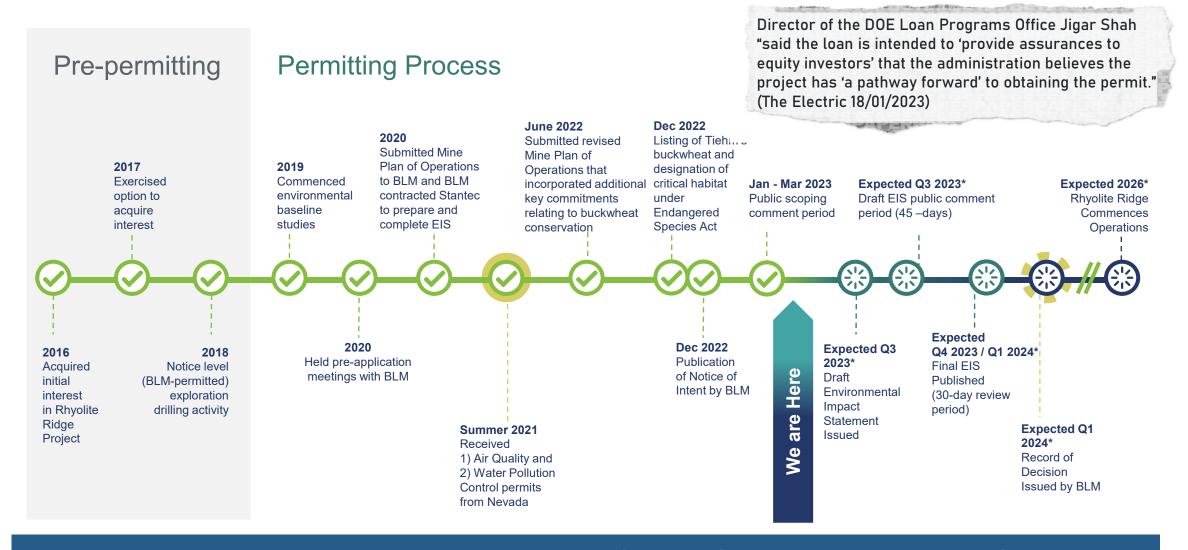
# **Proposed Rhyolite Ridge Process Plant**





# **Permitting (NEPA) Process**





Next key permitting milestone is the publishing of the Draft Environmental Impact Statement

<sup>\*</sup> All future dates subject to change without notice

# **Compelling Opportunities for Organic Growth**

Burgeoning

**Demand from** 

**OEMs** 



**Driven by...** 

A unique opportunity – Inflation **Reduction Act** (IRA) requiring **U.S.** battery materials

**Sheer quality** and scale of opportunity within existing portfolio

Limited number of U.S. projects that can respond

2. Corporate Overview

# **Key Growth Opportunities**

## Four areas aimed at increasing lithium production:

Within initial mine plan footprint

# 1. High boron-lithium

- Current 26-year mine plan based on only 41% of Resource
- B5 and L6 zones

## 2. Low boron-lithium

- M5, S5 and L6 zones
- Already in mine plan for stockpiling
- Evaluation of processing options is underway

# 3. North Basin

- 4x larger than South Basin footprint
- Leach tests in progress
- Well defined by gravity and historic drilling

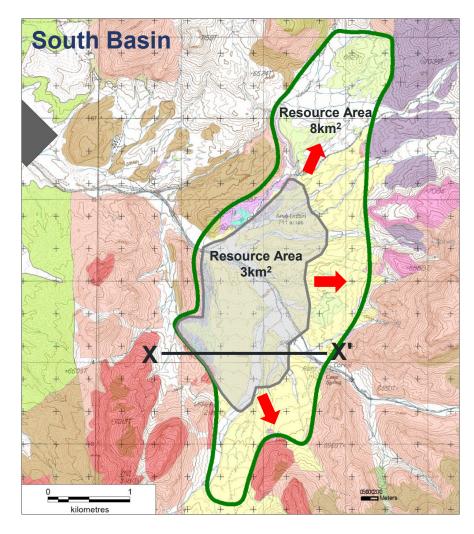
# 4. Other Projects

- Non-Rhyolite Ridge
- Existing tenements
- Lithium and Boron

**Long Term Near Term Medium Term** 

# Significant growth opportunities



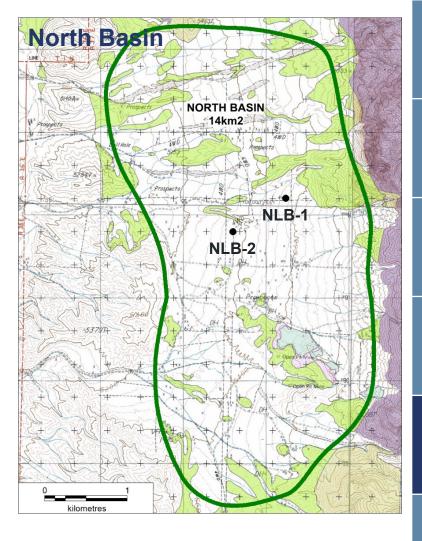


### South Basin

- Over 2x larger than footprint of current 146.5Mt Mineral Resource containing 1.2Mt LCE
- Mineralisation is open to north, south and east
- Mineral Resource update due March quarter 2023

### **North Basin**

- Over 4x larger footprint than South Basin Resource
- US Borax (Rio) drilled >50 holes 1980-90s
- 2 holes drilled by INR in 2016<sup>1</sup>
- Leach tests in progress



1. See Company announcement titled "Quarterly Activities Report, March Quarter, 2017" dated 28 April 2017

# Why loneer

. Corporate Overview

# **North Basin Vs South Basin**



	South DFS Project	South Expansion	North	
Total prospective area	3 km <sup>2</sup>	8 km <sup>2</sup>	14 km <sup>2</sup>	
Drilling	— .	noles 85m)	2 holes – INR (394m)	
Typical Lithium range	1,500 - 2	1,100 — 1,500ppm		
Typical Boron range	High: 0.1 Low: 0.1	High: 0.1 – 0.5% Low: 0.01 – 0.05%		
Acid Leachable	Yes	Yes		
JORC Ore Reserve <sup>1</sup>	Ore Reserve <sup>1</sup> 60Mt 0.6Mt LCE		???	
JORC Mineral Resource <sup>1</sup>	146.5Mt 1.2Mt LCE	???		
Net Present Value <sup>1</sup> (Based on 64Mt)	US\$1.265 billion (April 2020, 8% real)	??	???	

### **South Basin**

- Current DFS a 'starter pit' for mine
- Multiple mineralised zones not in current Reserve and Resource estimate
- Resource update due April 2023
- Extension potential Open in three directions

### **North Basin**

- Drilling to define Resource
- Medium grade lithium, lower grade Boron
- Mineralisation open in all directions
- From surface, low strip ratio

# Both basins offer significant potential for resource growth and mine life expansion

1. See Company announcement titled "Ioneer delivers DFS that confirms Rhyolite Ridge as a world-class lithium-boron Project" dated 30 April 2020



# Why loneer



THE RIGHT PRODUCTS Lithium carbonate and boric acid



### THE RIGHT LOCATION

Positioned to serve the U.S. EV battery supply chain



## **AN EXPERIENCED TEAM**

With a proven track record



### **EXPANSION POTENTIAL**

Resource update, Phase 2 and 3 expansions



### THIRD PARTY VALIDATION

U.S. DOE, Sibanye-Stillwater, Ford Motor, PPES, EcoPro



# **CLEAR PATH TO PRODUCTION**

With significant organic growth potential



Plug in to the Future

# **Contact Information**







Nasdaq : IONR

Appendix

Providing Material for a Sustainable & Thriving Planet

# **US Department of Energy – Loan Programs Office**



# **Conditional Commitment**

### **Key Terms**

Amount	Up to US\$700m
Term	Approx. 10 years
Interest Rate	Applicable U.S. Treasury rates
Rate Type	Fixed from date of advancement
Purpose	Develop Rhyolite Ridge Li- B Project

# Highlights

- Proposed loan of up to US\$700 million to develop the Rhyolite Ridge Project through the DOE Loan Programs Office's (LPO) Advanced Technology Vehicles Manufacturing (ATVM) program
- A term of approximately 10 years
- Interest rate fixed from the date of each advance for the term of the loan at applicable U.S. Treasury rates.
- Reflects continued strong and dedicated support under the Biden Administration to develop a U.S. domestic EV supply chain
- Financial close of the loan is conditional on several achievements including a positive Record of Decision and Final Investment Decision

"New Conditional Commitment: **Rhyolite Ridge** is a major step towards bolstering domestic lithium production for clean energy technologies, and LPO is excited to further develop an environmentally responsible U.S. supply chain for critical materials." - *Jigar Shah*, *Director of the DOE LPO 13/1/2023* 

https://twitter.com/JigarShahDC/Status/1613901652649738247



<sup>\*</sup> See Company announcement titled "U.S Department of Energy Offers Conditional Commitment for a loan of Up to US \$700m for the Rhyolite Ridge Project" dated 16 January 2023

A conditional commitment is offered by DOE prior to issuing a loan and indicates that DOE expects to support the Rhyolite Ridge Project, subject to the satisfaction of certain conditions including fulfilling remaining legal, contractual, and financial requirements.

# Resources & Reserves



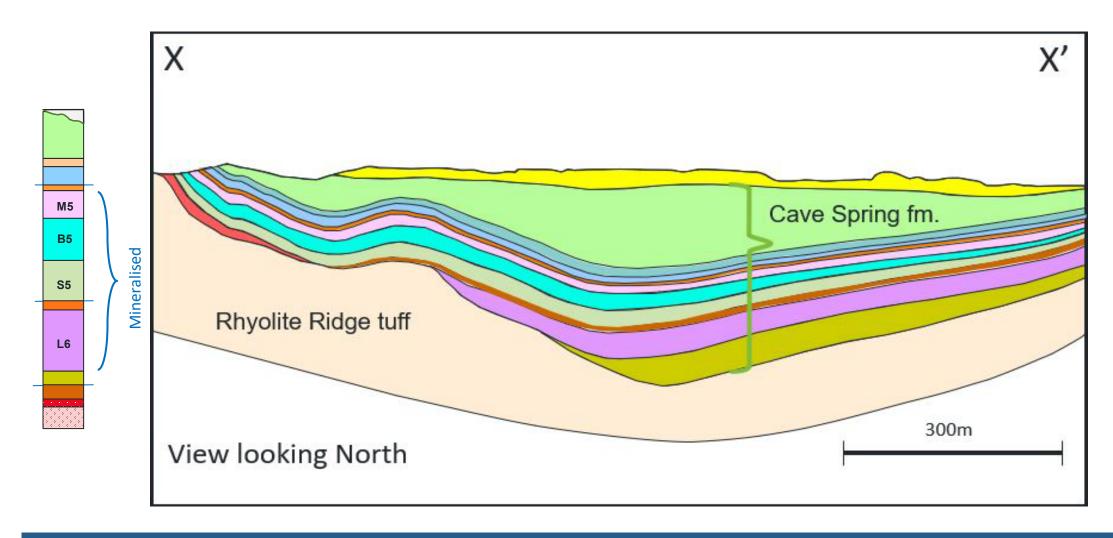
	Metric Tonnes (Mt)	Li Grade (ppm)	B Grade (ppm)	Equivalent Grade Li <sub>2</sub> Co <sub>3</sub> (%)	Equivalent Grade H <sub>3</sub> BO <sub>3</sub> (%)	Equivalent contained Tonnes Li <sub>2</sub> Co <sub>3</sub> (kt)	Equivalent contained Tonnes H <sub>3</sub> BO <sub>3</sub> (kt)
Mineral Resources							
Measured Resource	39.0	1,700	14,550	0.9	8.3	360	3,240
Indicated Resource	88.0	1,550	14,150	0.8	8.1	730	7,110
Measured & Indicated Resource	127.0	1,600	14,270	0.8	8.2	1,090	10,350
Inferred Resource	19.5	1,600	13,800	0.9	7.9	170	1,530
Total Mineral Resource	146.5	1,600	14,200	0.9	8.1	1,250	11,890
Ore Reserves							
Proved Reserves	29.0	1,900	16,250	1.0	9.3	290	2,700
Probable Reserve	31.5	1,700	14,650	0.9	8.4	280	2,620
Total Proved and Probable Ore Reserve	60.0	1,800	15,400	1.0	8.8	580	5,310

- Approximately half of the Ore Reserve is classified as Proved
- Ore Reserve provides 94% of tonnes in current 26-year mine plan
- Total Mineral Resource of 146.5 mt containing a total of 1.2 mt of lithium carbonate and 11.9 mt of boric acid

Source: For further information on Resources and Reserves see ASX release titled Rhyolite Ridge Ore Reserve Increased 280% to 60 million tonnes dated 30 April 2020. Note, totals may differ due to rounding. Mineral Resources include Ore Reserves

# **Growth Opportunity in Proposed Permitting Footprint**





All four mineralised layers provide upside and optionality

# History of Ioneer's Ownership of Rhyolite & Development Schedule



# Timing of permitting key driver to development time line

2016 2017	2018	2019	2020	2021	2022	2023	2024
leac extra	Boric A Rel  ater	ease of PFS  Complete exploration drilling  Maiden Reserve  Start Pilot Plan  LiCO Pilot	<ul> <li>Reserves &amp; Resources upgrade</li> <li>Complete DFS</li> <li>Complete E Sales &amp; Distribution</li> <li>Final Opera deem by BL</li> <li>produced at Plant</li> <li>BA – Binding offtake</li> </ul>	First Li o signed w EcoPro Innovation	<ul> <li>US Listir Nasdaq</li> <li>Nasdaq</li> <li>Li offf with FPES Pana</li> <li>/ with Sibanye-</li> </ul>	<ul> <li>Receipt of conditional loan commitment fro US Department Energy</li> <li>and on</li> <li>takes signed</li> <li>Ford Motor and</li> <li>(Toyota/sonic JV)</li> <li>NOI Published</li> </ul>	m Decision

Note: All future dates and times are indicative and subject to change.

