

# Capturing Global Growth in the Lithium Market

May 2023





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# Agenda

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& Sustainability

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# Major Global Lithium Chemicals Producer with an Industry-leading Growth Profile

## James Bay (100%)

|         |                       |
|---------|-----------------------|
| Stage   | Engineering           |
| Type    | Hard rock             |
| Product | Spodumene concentrate |

## Olaroz (66.5%)

|         |                         |
|---------|-------------------------|
| Stage   | Operating / Development |
| Type    | Brine                   |
| Product | Carbonate               |

## Sal de Vida (100%)

|         |              |
|---------|--------------|
| Stage   | Construction |
| Type    | Brine        |
| Product | Carbonate    |

## Cauchari (100%)

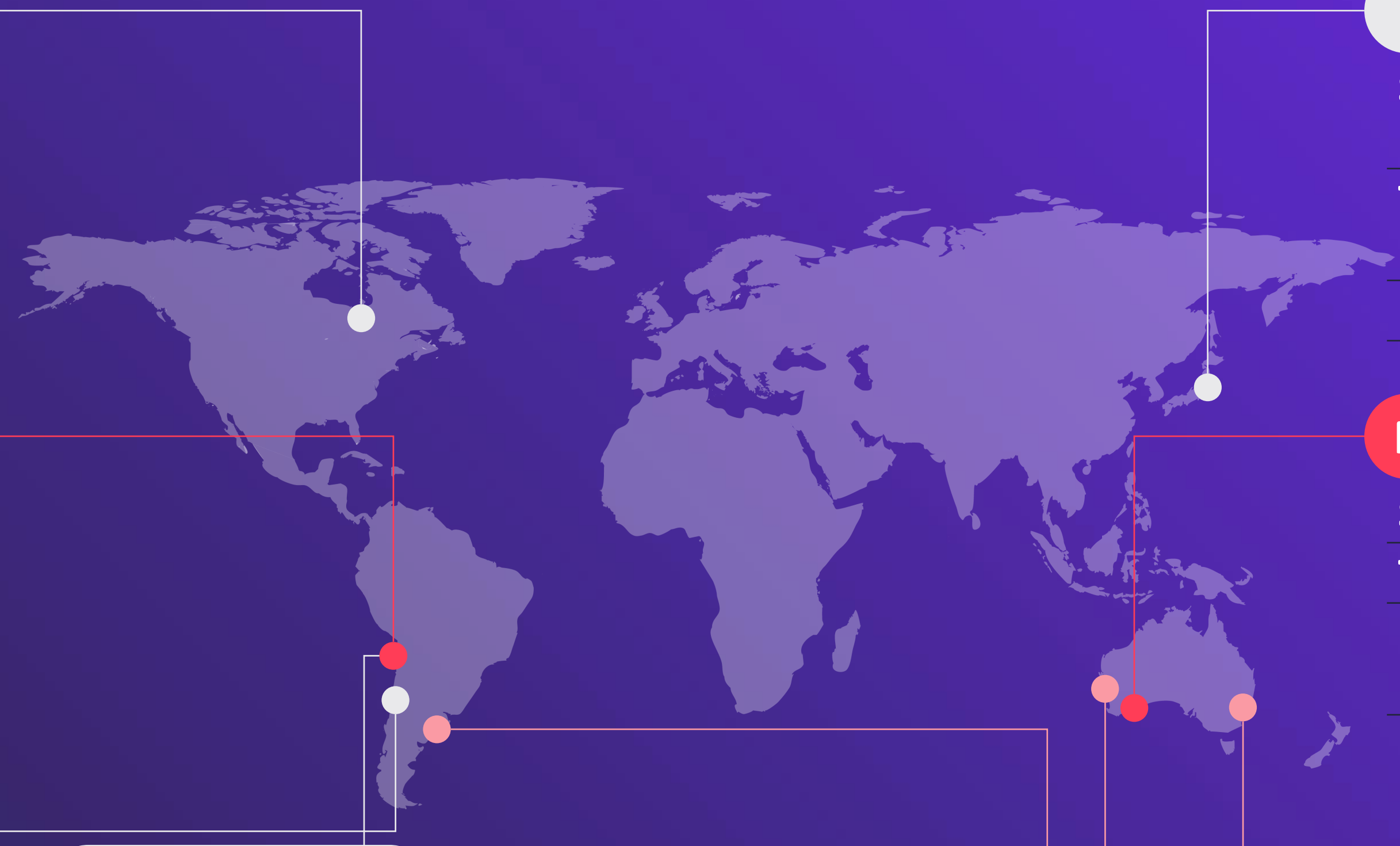
|       |               |
|-------|---------------|
| Stage | Early Studies |
| Type  | Brine         |

## Naraha (75%)

|         |                           |
|---------|---------------------------|
| Stage   | First production achieved |
| Type    | LiOH conversion facility  |
| Product | Hydroxide                 |

## Mt Cattlin (100%)

|         |                       |
|---------|-----------------------|
| Stage   | Operating             |
| Type    | Hard rock             |
| Product | Spodumene concentrate |



● OPERATING ASSET    ● DEVELOPMENT ASSET    ● OFFICE

|                          |
|--------------------------|
| Brisbane office          |
| Perth office             |
| Buenos Aires head office |

# Highly skilled and experienced management

Strong focus on operational optimisation and execution of fully funded growth projects



Deep technical knowledge and capability with in-country lithium production and process expertise in all key geographies

Proven track record of successfully delivering projects across hard rock, brine and processing

Operational success and learnings applied to development assets

# Leading sustainability practices

Delivering responsible products to accelerate a net zero future



## Safe & Sustainable Operations

**TRIFR reduced 30% PCP**

**82% Participation rate**

Employee Experience Survey deployed across organisation

**Workplace Cultural Assessment completed**

with results communicated back to employees



## Thriving Communities

**Shared Value team**

continued working with local communities to create long-term benefits

**Updated easement and participation agreement**

achieved with Olaroz Chico community in Dec 2022, incorporating Olaroz Stage 2 production successfully

**Local hire and procurement philosophy**

across all operations



## Responsible Products

**Target net-zero by 2035**

Transition of operational scope 1 and 2 emissions.

**30% Solar photovoltaic energy**

Environmental Impact Report approved in Dec 2022 granting permit for construction of Stage 1 Solar Park for Sal de Vida

**44% Hydro power**

James Bay site power target. Hydro-Quebec commenced construction



## FY22 Sustainability Report



Member of Dow Jones Sustainability Indices  
Powered by the S&P Global CSA



# Financial and Operations Update



# Key Highlights

Record results with growth projects to triple production

Focused on operational optimisation and execution of fully funded developments

## Corporate

**Acquired Maria Victoria**

And divested Borax assets

**Record Olaroz  
Production**

**Group TRIFR ↓ to 1.7**

12 MMA for the group

**11,644 tonnes YTD**

Li<sub>2</sub>CO<sub>3</sub> produced from Olaroz

**72,925 dmt YTD**

Spodumene produced from Mt Cattlin

## Financials

**US\$ 874 mil**

Group Revenue  
Year to 31 March

**US\$ 752 mil**

Gross Profit  
Year to 31 March

**86%**

Group Gross Profit Margin

**US\$ 578 mil**

Net cash balance<sup>3</sup>  
~at end of March

**Q4 FY23 Li<sub>2</sub>CO<sub>3</sub> pricing ~US\$42,000/tonne<sup>2</sup>**

## Development

**Olaroz Stage 2**

>98% Completion<sup>1</sup>

First production in June Q

**Naraha Lithium Facility**

First production achieved

**Sal de Vida Stage 1**

First two strings of ponds 90%<sup>1</sup>

EPC contractor mobilising

**James Bay**

Federal Approval for ESIA

1. As at the end of March

2. Excluding Naraha feedstock

3. Net cash includes Naraha cash balances and project loans at 75% interest, and Olaroz cash deposits to secure project borrowings. Related party loans are excluded.



# Olaroz

|                              |           |                      |             |
|------------------------------|-----------|----------------------|-------------|
| 📍 LOCATION                   | 🏠 STATUS  | ⊕ PRODUCT            | ➡ OWNERSHIP |
| Jujuy Province,<br>Argentina | Operation | Lithium<br>Carbonate | 66.5%       |

Highly profitable brine operation producing technical & battery grade products to a range of tier 1 customers



- High product quality from excellent pond management, high plant reliability and improved energy efficiency
- Strong operating performance continues to mitigate inflationary impacts on costs
- Record FY23 year to date production of 11,644t LCE vs 12,863 in full year FY22
- Record revenue to 31 March of ~US\$460M from sales of 9,756t with a high gross cash margin of 90% (including sale of carbonate by-product)

## Resource Extension

- Resource increased 27% to over 20.7Mt LCE
- Drilling to 1400m has not intersected basement but demonstrated extension of the brine body at depth

# Mt Cattlin

LOCATION

Western  
Australia

STATUS

Operation

PRODUCT

Spodumene  
concentrate

OWNERSHIP

100%

Strong revenue generation and resource extension potential

- Revenue for year to date of ~US\$412M with a high gross cash margin of 77% or US\$318M
- FY23 a transitional year between two pits
- Production of 80,000 - 90,000t is anticipated for the June half with annual production of 114,000 -124,000t

## Resource Extension

- Resource tonnage of 12.8Mt @ 1.3% Li<sub>2</sub>O and 179 ppm Ta<sub>2</sub>O<sub>5</sub><sup>1,2</sup> at 31 December 22
- Studies are underway into mine life extension and a new Reserve will be published around mid year
- 3<sup>rd</sup> phase exploration drilling has commenced testing new areas of mineralisation

1. See ASX release 17 April, 2022  
2. Refer to Appendix for further Resource and Reserve information.

# Project Execution and Growth Strategy

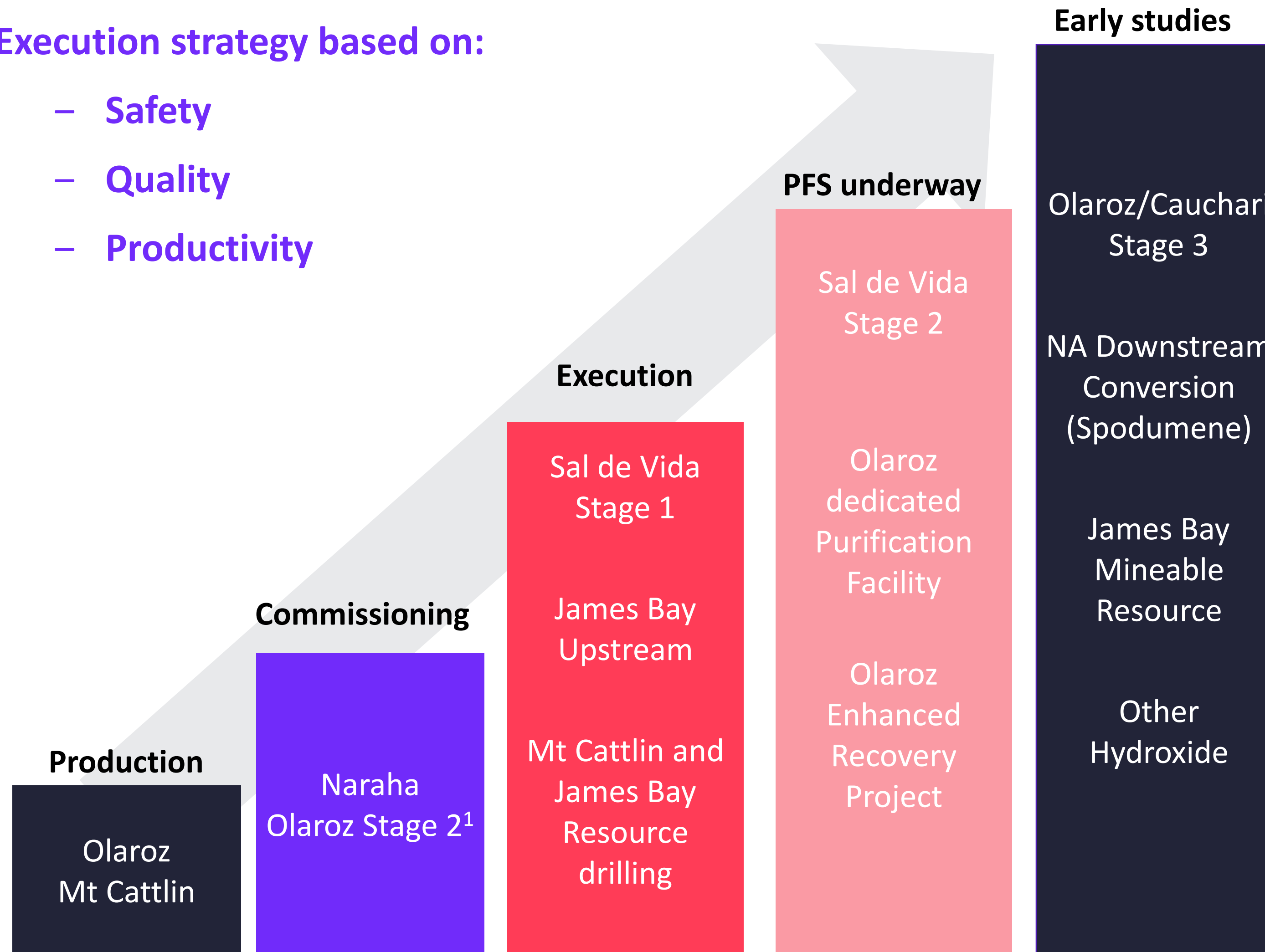


# Focused on growth pipeline and execution

World class assets will triple production

## Execution strategy based on:

- Safety
- Quality
- Productivity



### 1 Optimise

- Productivity, quality, product mix, reduce costs
- Advancing studies on purification facility to increase battery grade product at Olaroz

### 2 Execution and delivery

- Naraha ramp up, delivery of Olaroz 2, SDV Stage 1, James Bay Upstream

### 3 Value added expansion

- Advancing studies on Cauchari/ Olaroz Stage 3 and NA Downstream Conversion (Spodumene)
- Significant combined resource supports multiple developments options
- Recently acquired Maria Victoria

1. Olaroz Stage 2 at >98% completion with finalisation of construction activities

# Olaroz Stage 2



Leveraging knowledge from Olaroz to expand production capacity and provide feedstock to Naraha

## Status update

- Expansion was over 98% completion at end of March and carbonation plant was 94% complete
- All evaporation ponds, lime plants, soda ash handling and infrastructure are complete
- Commissioning and first production expected in Q2 CY23
- New operating staff have been recruited and are being trained in Olaroz Stage 1
- Total CAPEX of US\$425m with competitive capital intensity of US\$17,000/tpa



**25ktpa**

Annual production

**Technical grade LC**

Product quality

**US\$2.67B**

NPV (pre-tax)

**US\$3,206/t LCE**

Operating cost per tonne

Refer to Allkem's ASX announcement dated 4 April 2022 titled 'Olaroz Interim Update and Stage 2 economics' for further details including the material assumptions on which production capacity and operating cost is based.

STATUS  
**Commissioning/  
Construction**

OWNERSHIP  
**66.65%**

# Naraha



## Battery grade hydroxide as part of product diversification strategy

### Status update

- First production achieved in late October 2022 with good product quality
- First sales of hydroxide production have been completed
- Ramp up activities progressing using Olaroz technical grade lithium carbonate as feedstock
- Focus during the ramp up period is to increase quality and volumes to nameplate capacity



**10ktpa**

Annual production

**Primary grade  
Lithium carbonate**

Feedstock from Olaroz

**Battery grade  
Lithium hydroxide**

⊕ Product quality

📍 LOCATION  
**Naraha, Japan**

🏗️ STATUS  
**Commissioning/  
Ramp up**

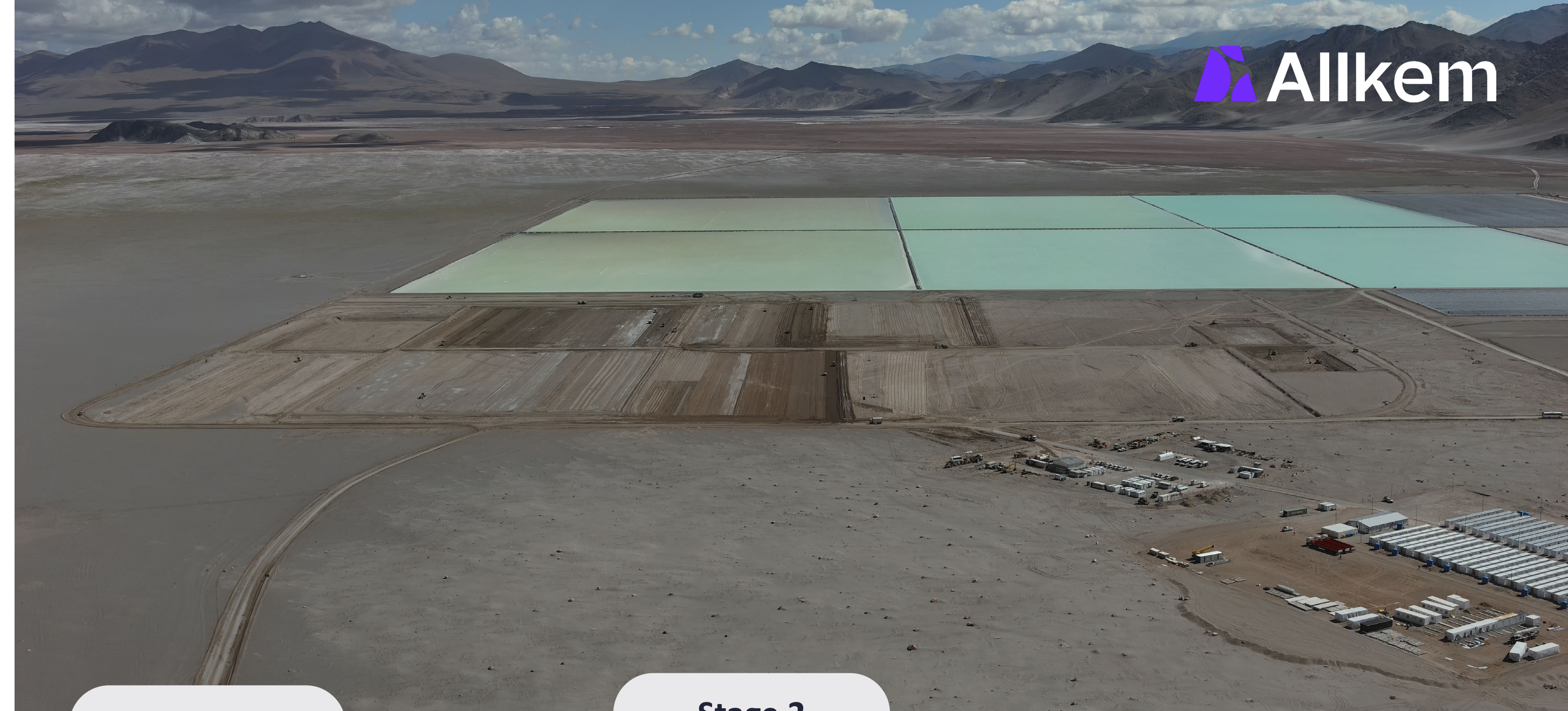
👉 ECONOMIC INTEREST  
**75%**

# Sal de Vida

## Tier 1 brine operation under construction

### Status update

- Leveraging development and operational experience from Olaroz
- The first two strings of evaporation ponds are over >90% complete
- Wells and brine systems and a 30% solar energy solution on site are well advanced
- EPC contractor for the processing plant mobilising to site
- Schedule review is underway
- Stage 2 development to occur sequentially



### Stage 1

**15ktpa<sup>1</sup>**

Production Capacity

**US\$271 M**

CAPEX

**6.85 Mt LCE<sup>2</sup>**

Brine Resource Estimate

**40 years**

Project Life

### Stage 2

**30ktpa**

Production Capacity

**US\$523 M**

CAPEX

**1.74 Mt LCE<sup>2</sup>**

Brine Reserve Estimate



LOCATION

**Catamarca Province,  
Argentina**



STATUS

**Stage 1 Construction**



PRODUCT

**Lithium Carbonate  
80% Battery  
20% Technical**



OWNERSHIP

**100%**

Refer to Allkem's ASX announcement dated 4 April 2022 titled 'Sal de Vida capacity increased to 45ktpa in two stage' for further details including the material assumptions underpinning production capacity.

1. Permitting for expansion from 11.4ktpa to 15ktpa approved.

2. Refer to Appendix for Resource & Reserves Table and "Sal de Vida capacity increased to 45ktpa in two stage" released on 4 April 2022.

# James Bay



## Developing a competitive hard-rock operation utilising renewable energy

### Status update

- Detailed engineering was 65% complete and the process plant engineering was at 79% at the end of March
- Hydro-Quebec has completed the installation of the power line to site
- Federal approval for ESIA has been obtained and provincial approval is advanced
- Construction to commence once permits are secured
- 29,000 meters of resource extension drilling has been completed and a mineral resource update is underway



**321ktpa**

Annual production

**US\$1.42B<sup>1</sup>**

NPV (pre-tax)

**US\$286M**

CAPEX

**US\$ 333/t**

OPEX

**40.3Mt at 1.4% Li<sub>2</sub>O<sup>2</sup>**

Mineral resource Estimate

**37.2Mt at 1.3% Li<sub>2</sub>O<sup>2</sup>**

Ore Reserve

**19 years**

Project Life



LOCATION

**Quebec, Canada**



STATUS

**Design**



PRODUCT

**Spodumene concentrate**



OWNERSHIP

**100%**

Refer to Allkem's ASX announcement dated 21 December 2021 titled 'James Bay Feasibility Study Results' for further details including the material assumptions on which production capacity is based.

1. Based on average selling price of 5.6% spodumene concentrate US\$1,000/t

2. Refer to Appendix for Resource & Reserves Table and 'James Bay Feasibility Study Results' on 21 December 2021



# Continuous improvement projects

Optimising operations by maintaining competitive costs and improving product quality



## Dedicated Purification Facility

- Additional purification capacity required at lower altitude to supply increasing demand for high quality battery grade
- Enables Olaroz Stage 1 to become a dedicated technical grade facility and increase technical grade production by approximately 30-40%

## Enhanced Brine Recovery Project

- Targeting 95% recovery (from the current 75%) and is applicable to both Stage 1 and 2
- Pilot tests with two alternative technologies completed



# Downstream Market Strategy

Balanced product portfolio of battery grade carbonate and hydroxide conversion capacity



- World class lithium assets to deliver a range of in-demand lithium chemicals
- Naraha is a blueprint for delivering additional hydroxide capacity to high value markets such as US, Japan, South Korea and Europe
- The IRA creates opportunities for Allkem to consider more significant involvement in the North American EV supply chain

## James Bay Downstream

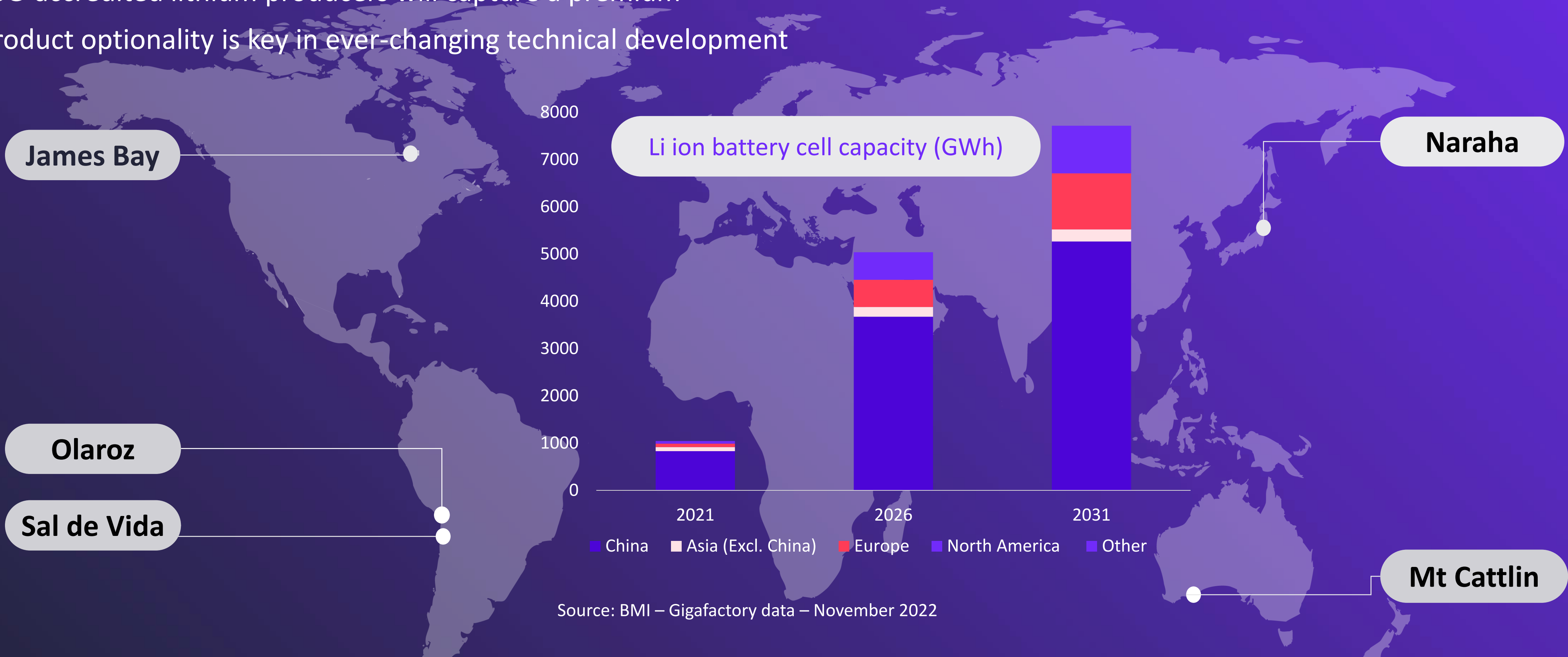
- Study underway to build a conversion plant in North America
- Assessing plant location and considering proximity to rail, permitting and low waste disposal costs
- Capacity will be linked to James Bay spodumene production



# Competitive Advantage for Producers offering Scale and Optionality

Allkem is uniquely positioned to capture global growth

- EV supply chain will be across Asia, Europe and North America
- Localisation of battery materials becoming strategic
- ESG-accredited lithium producers will capture a premium
- Product optionality is key in ever-changing technical development





Creating a major global lithium chemicals company

Thank you

Connect:

[info@allkem.co](mailto:info@allkem.co)



ASX|TSX : AKE



# Questions



## Competent Person statements

### Olaroz

Any information in this announcement that relates to Olaroz Project Mineral Resources is extracted from the report entitled “Olaroz resource increases 27% to 20.7 million tonnes LCE” released on 27 March 2023 which is available to view on [www.allkem.co](http://www.allkem.co) and [www.asx.com.au](http://www.asx.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 Mineral Resources estimates in the relevant market announcement 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 announcement.

Any information in this announcement relating to Olaroz scientific or technical information, production targets or forecast financial information derived from a production target is extracted from the ASX Announcement entitled “Olaroz resource upgraded 2.5x to 16.1 million tonnes LCE” released on 4 April 2022 which is available to view on [www.allkem.co](http://www.allkem.co) and [www.asx.com.au](http://www.asx.com.au). The Company confirms that all the material assumptions underpinning the scientific or technical information, production targets or the forecast financial information derived from a production target in the original market announcement continue to apply and have not materially changed.

### Cauchari

Any information in this release that relates to Cauchari Project Mineral Resources and Ore Reserves is extracted from the release entitled “Cauchari JORC Resource increases to 4.8 million tonnes Measured + Indicated and 1.5 million tonnes Inferred LCE” released on 7 March 2019 which is available to view on [www.allkem.co](http://www.allkem.co) and [www.asx.com.au](http://www.asx.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 Mineral Resource and Ore Reserve estimates in the relevant market announcement 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 announcement.

### Sal de Vida

Any information in this announcement that relates to Sal de Vida Project Exploration Results, Mineral Resources & Ore Reserves is extracted from the report entitled “Sal de Vida capacity increased to 45ktpa in two stages” released on 4 April 2022 which is available to view on [www.allkem.co](http://www.allkem.co) and [www.asx.com.au](http://www.asx.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 Mineral Resources and Ore Reserves estimates in the relevant market announcement 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 announcement.

Any information in this announcement relating to Sal de Vida scientific or technical information, production targets or forecast financial information derived from a production target is extracted from the ASX Announcement entitled “Sal de Vida capacity increased to 45ktpa in two stages” released on 4 April 2022 which is available to view on [www.allkem.co](http://www.allkem.co) and [www.asx.com.au](http://www.asx.com.au). The Company confirms that all the material assumptions underpinning the scientific or technical information, production targets or the forecast financial information derived from a production target in the original market announcement continue to apply and have not materially changed.

### Mt Cattlin

Any information in this announcement that relates to Mt Cattlin’s Mineral Resources and Reserves is extracted from the report entitled “Mt Cattlin Resource Update with Higher Grade” released on 17 April 2022 which is available to view on [www.allkem.co](http://www.allkem.co) and [www.asx.com.au](http://www.asx.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 Mineral Resources estimates in the relevant market announcement 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 announcement.

### James Bay

Any information in this announcement that relates to James Bay Mineral Resources & Ore Reserves is extracted from the report entitled “James Bay Lithium Project Feasibility Study & Maiden Ore Reserve” released on 21 December 2021 which is available to view on [www.allkem.co](http://www.allkem.co) and [www.asx.com.au](http://www.asx.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 Mineral Resources and Ore Reserves estimates in the relevant market announcement 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 announcement.

Any information in this announcement relating to James Bay scientific or technical information, production targets or forecast financial information derived from a production target is extracted from the ASX Announcement entitled “James Bay Lithium Project Feasibility Study & Maiden Ore Reserve” released on 21 December 2021 which is available to view on [www.allkem.co](http://www.allkem.co) and [www.asx.com.au](http://www.asx.com.au). The Company confirms that all the material assumptions underpinning the scientific or technical information, production targets or the forecast financial information derived from a production target in the original market announcement continue to apply and have not materially changed.