



ASX: ABX

#### **CEO Presentation at Brisbane Mining Conference**

In accordance with the requirements of Listing Rule 3.1 we submit the attached material being presented at the Brisbane Mining Conference being held at the Royal on the Park Hotel, 152 Alice St, Brisbane.

Dr Mark Cooksey, ABx Group's CEO is making the presentation at 11:15am AEST on Wednesday 23 March.

Shareholders and the public are welcome to attend our presentation and visit the ABX booth to meet the company's new CEO.

ASX Release authorised by Mark Cooksey, CEO

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Prices for aluminium fluoride (AIF3) were sourced from Asian Metals, China Customs and verified by comparison with prices from Bloomberg. The price actually achieved will depend upon market conditions at the time of sale.



# **Corporate Overview**

ASX code: **ABX** 

24 Dec 2009 @ \$0.20

223.6m

38.3m

**@ \$0.20** 

\$0.093-\$0.21

570,000

\$40.3m

\$5.8m

2,374

Major Shareholders	Shares	%
Justevian Pty Limited	5.8 m	2.6
Yarraandoo Pty Ltd	5.6 m	2.5
Aftron Pty Ltd	5.4 m	2.4
Top 20 shareholders	57.6 m	25.8
Remainder	166.0 m	74.2

Resources: 130 million tonnes bauxite





# AB x Group

# ABX Group (ASX:ABX) is creating new supplies of strategic minerals and chemicals:

- 1. Discovery of the ideal types of rare earth elements in northern Tasmania
- 2. Aluminium fluoride, essential for aluminium smelting, from recycled waste

and will continue enhancing the value of its bauxite resources for cement, aluminium and fertilisers.

Creating new supplies of strategic minerals and chemicals

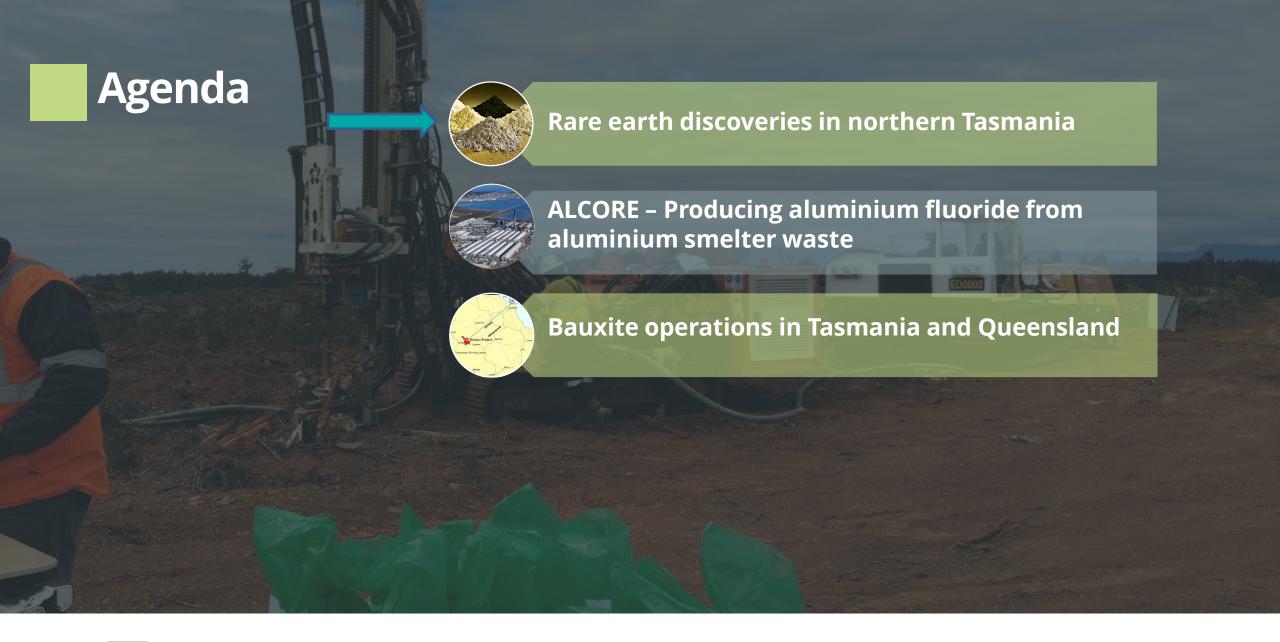
Discoveries of rare earth elements



Aluminium fluoride essential for
aluminium smelting







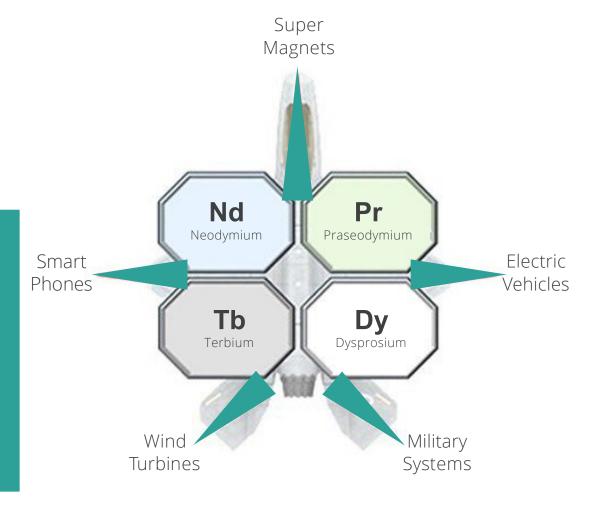


# Supermagnet rare earth elements

- 15+ rare earth elements (REEs) used in wide variety of applications
- Supermagnet REEs essential for electric vehicles, wind turbines, smart phones and military devices

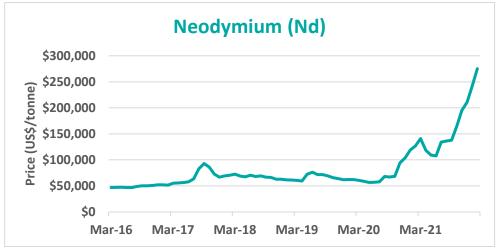
#### **Key Factors:**

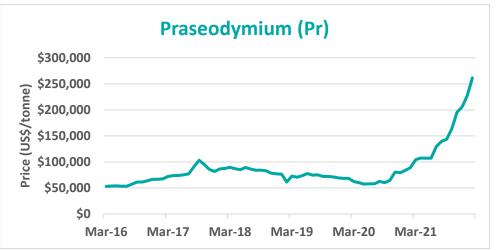
- REE prices can be consistently high because:
  - Mining for single REE is not viable
  - REEs are difficult to substitute
- China dominates REE markets
- Australia emerging fast

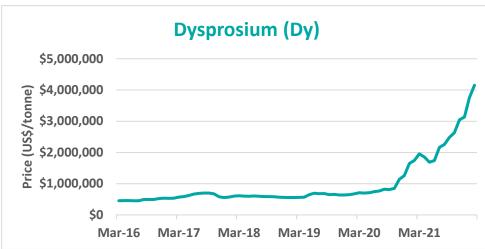


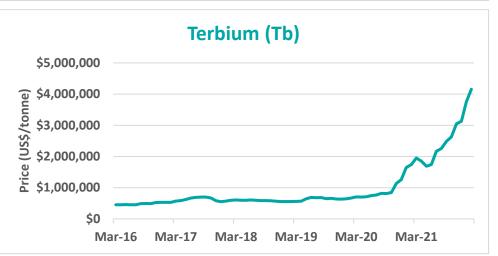


# Supermagnet REE markets very strong









High prices are increasing even further

Source: <a href="https://www.kitco.com/strategic-metals">https://www.kitco.com/strategic-metals</a>



# Rare earth elements: the balance problem

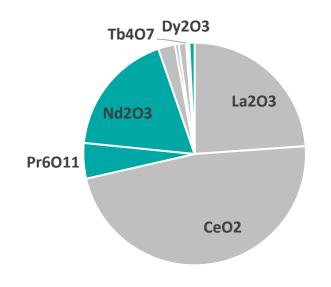
- Demand for REEs for supermagnets leads to a surplus of most other REEs
  - LREE market driven by demand for neodymium (Nd)
  - HREE market driven by demand for dysprosium (Dy)
- Imbalance may grow as demand for supermagnets may grow exponentially due to requirements of electric vehicles and wind turbines

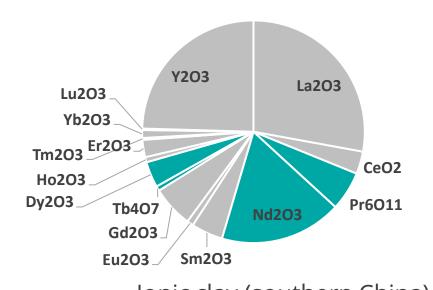
Туре	Light REE (LREE)					Heavy REE (HREE)									
	La	Ce	Pr	Nd	Sm	Eu	Gd	Tb	Dy	Но	Er	Tm	Yb	Lu	Υ
Deficit															
Balanced															
Surplus															

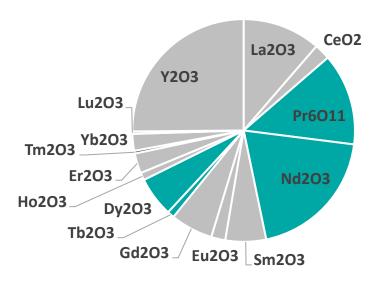


# **Ionic-clay REO deposits**

- Currently only processed in southern China. Significant unregulated production
- Contain much higher proportion of REOs required for supermagnets (Nd, Pr, Dy, Tb)







Mount Weld (Australia)
Source: D.J. Packey and D. Kingsnorth, Resources Policy, 48(2016) 112-116.

Ionic clay (southern China)
Source: D.I. Packey and D. Kingsnorth, Resources Policy, 48(2016) 112-116.

ABx drillhole DL403 (average of 8 to 10m)



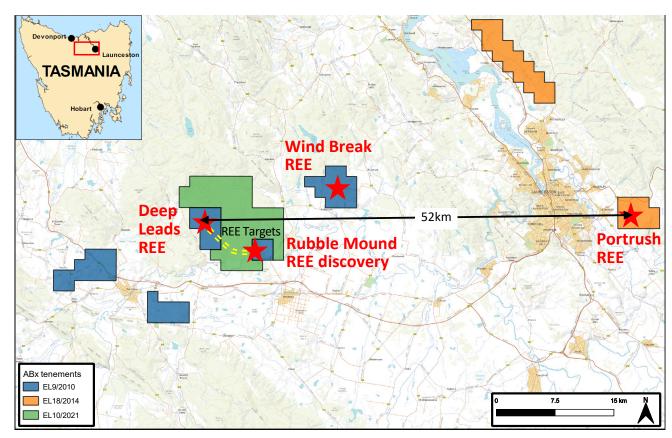
## **ABx rare earth discoveries in Tasmania**

#### Tick all the boxes

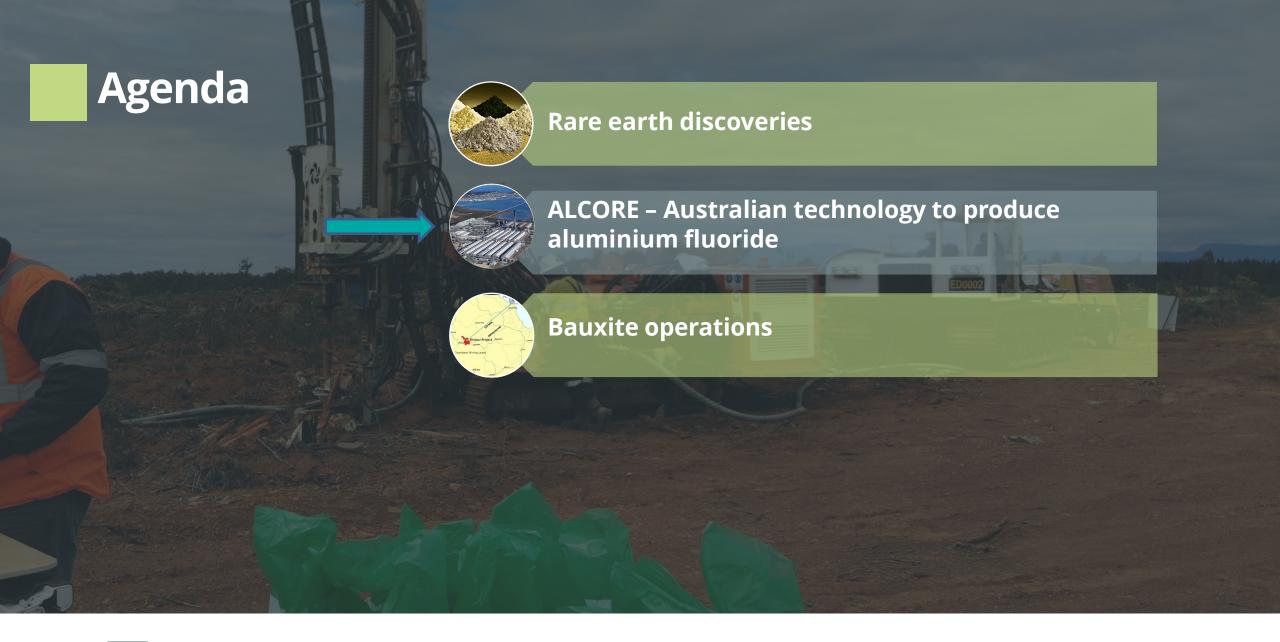
- ✓ 'Water soluble' ionic-clay type of rare earth oxide (REO) deposit
  - ✓ Richer in supermagnet REOs
  - ✓ Can be developed quickly at low cost
- ✓ Shallow depth, typically 6-16 metres from surface
- ✓ Very low levels of radioactive elements (thorium and uranium)

#### **Next steps**

- Extended drilling campaign
- Metallurgical testing
- Further exploration





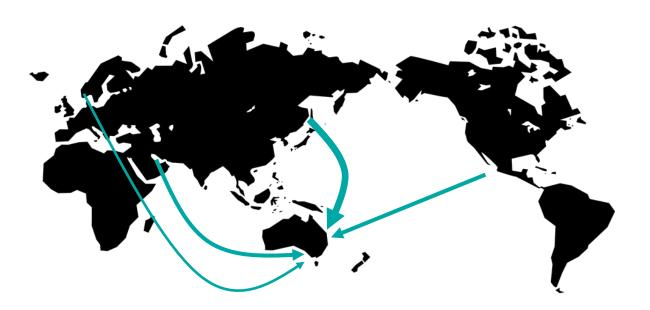




## Aluminium fluoride from aluminium smelter waste

#### Aluminium fluoride: essential for aluminium smelting

- 1.2 million tonnes produced globally per year worth US\$1.5 billion (US\$1,000-1,800 per tonne)
- 50% produced in China, mainly for Chinese smelters
- Australia imports 100% of requirements, mostly from China



- Traditionally produced from high-cost aluminium hydroxide and fluorspar
- Achievable specification product purity risk is low
- Mature market dozens of customers globally

Tapped bath': aluminium smelter bath waste

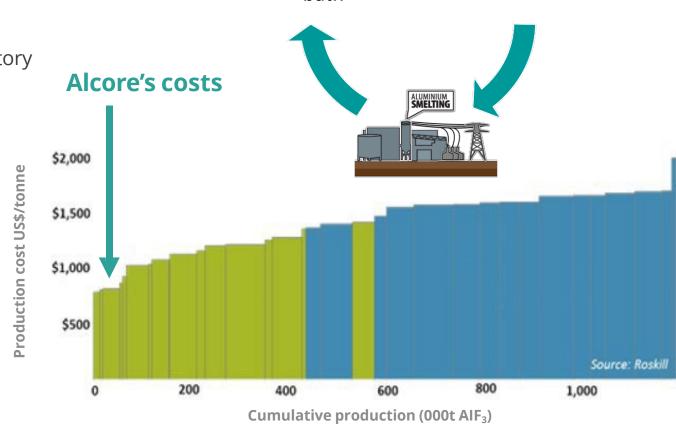
- Fluorine is lost from smelter in 'tapped bath'
- Only attractive market is new smelter construction
- Market for tapped bath has moved into oversupply
- Tapped bath is a low-cost source of fluorine



# ALEORE process to produce aluminium fluoride

- ABx's 87%-owned refining technology subsidiary
- Developing processes to produce aluminium fluoride using:
  - Fluorine from tapped bath
  - Aluminium from dross or bauxite
- Critical steps have been demonstrated in laboratory
- Commenced pilot plant program





Aluminium

smelter

bath

Aluminum

fluoride



## **ALEGRE Commercialisation**

- Rigorous scale-up to reduce technical risk
- First aluminium fluoride plant planned for Bell Bay, Tasmania, near existing hydro-powered aluminium smelter
- Ultimate production up to 60,000 t/y
- Potential expansion into other markets, including fluorine chemicals







#### **ESTABLISHMENT**

Alcore created. ✓ High technology laboratory constructed. ✓ PHASE 2 2019-21

#### PROOF OF CONCEPT

Demonstrate novel chemistry for transforming industrial waste into valuable chemicals.

PHASE 3 2021-22

#### PILOTING

Establish pilot plant facility. Finalise commercial plant design. PHASE 4 2022-23

#### COMMERCIAL

Construct commercial plant. Commence production. PHASE 5 2024 -

#### GROWTH

Increase production.
Commence exports.
Utilise additional industrial wastes in process.







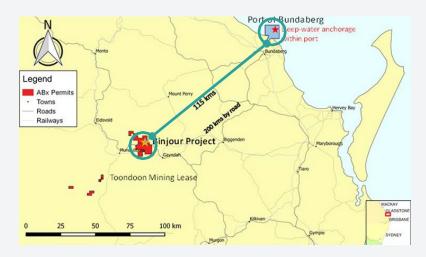
# **ABx Bauxite Operations**

# Fingal Rail project Northern Tasmania Nile Road Project Fingal Rail Project Fingal Rail Project Camribell Town Bald Hill First mine started at Bald Hill Major road capacity Rail capacity delivers direct to export port

- Mining lease application for Fingal Rail project for cement & fertiliser bauxite for 15 years
- Trial bulk sample is being delivered to customers now
- Bauxite production at DL130 Project may accelerate development of the Deep Leads REE discovery

### **Sunrise Bauxite project**

Queensland



- 50:50 joint venture with Alumin Pty Ltd, an Australian special purpose vehicle company associated with our strategic marketing partner, Rawmin India
- Mining lease application is on the large Binjour deposit, 115km west of Bundaberg Port.
- Alumin will contribute up to \$18m (for 49.9% equity), which is anticipated to fund mine and port development

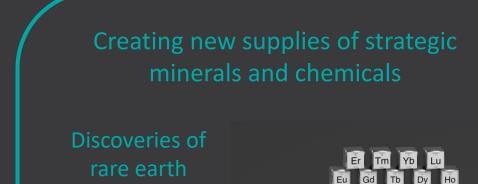


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Aluminium fluoride - essential for aluminium smelting







# Thank you

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