



AUSTRALIAN **BAUXITE** LIMITED

**ASX ANNOUNCEMENT**

**16 October 2018**

ASX: ABX

## CEO Presentation at Brisbane Resources Round-Up

In accordance with the requirements of Listing Rule 3.1 we submit the attached material is being presented at the 2018 Mining Resources Convention.

Mr Ian Levy, CEO is making the presentation. The public are welcome to attend the presentation.

### **Brisbane – Tuesday 17 October**

Hilton Brisbane Hotel  
190 Elizabeth Street, Brisbane City

The presentation will commence at 4:50pm.

### **For further information please contact:**

Ian Levy, CEO and MD  
Australian Bauxite Limited      Mobile:      +61 (0) 407 189 122

### **About Australian Bauxite Limited**

**ASX Code ABX    Web: [www.australianbauxite.com.au](http://www.australianbauxite.com.au)**

Australian Bauxite Limited (ABx) has its first bauxite mine in Tasmania & holds the core of the Eastern Australian Bauxite Province. ABx's 14 bauxite tenements in Queensland, New South Wales & Tasmania totalled 914 km<sup>2</sup> & were selected for (1) good quality bauxite; (2) near infrastructure connected to export ports; & (3) free of socio-environmental constraints. All tenements are 100% owned, unencumbered & free of third-party royalties. ABx's discovery rate is increasing as knowledge, technology & expertise grows. The Company's bauxite is high quality gibbsite trihydrate (THA) bauxite that can be processed into alumina at low temperature.

ABx has committed a large proportion of its expenditure into Research and Development to find ways to capitalise on the main strengths of its bauxite type, mainly highly clean, free of all deleterious elements and partitioned into layers, nodules, particles and grains of different qualities that can be separated into different product streams using physical, chemical and geophysical methods.

ABx has declared large Mineral Resources at Inverell & Guyra in northern NSW, Taralga in southern NSW, Binjour in central QLD & in Tasmania, confirming that ABx has discovered significant bauxite deposits.

ABx's first mine commenced at Bald Hill near Campbell Town, Tasmania in December 2014 – the first new Australian bauxite mine for more than 35 years.

ABx aspires to identify large bauxite resources in the Eastern Australian Bauxite Province, which is a globally significant bauxite province. ABx has created significant bauxite developments in 3 states - Queensland, New South Wales and Tasmania. Its bauxite deposits are favourably located for direct shipping of bauxite to both local and export customers.

**ABx endorses best practices on agricultural land, strives to leave land and environment better than we find it. We only operate where welcomed.**

### **About ALCORE Limited**

Australian Bauxite Limited (ABx) has incorporated ALCORE Limited as a wholly-owned subsidiary to fund and manage the ALCORE Project, leading to the construction of an ALCORE Production Plant to produce Aluminium Fluoride (AlF<sub>3</sub>) and valuable co-products, using patent (pending) new technology. The ALCORE Technology is designed to convert low grade bauxite worth \$50 per tonne into a suite of valuable products worth more than \$800 per tonne. Site construction works for Stage 1 of the ALCORE project commenced on 1 July as planned at ALCORE's pre-approved Pilot Plant site in Berkeley Vale, Central Coast NSW.

Stage 1 is designed to produce AlF<sub>3</sub> test samples for pre-qualified aluminium smelter customers & then produce Corethane, which is pure hydrocarbon powder refined from low-value coals and has been used to provide thermal and electrical power with low CO<sub>2</sub> emissions when used as a gas-substitute to fuel large gas turbine. Corethane has also been used as a diesel substitute for fuel security purposes and is ideally suited for use as a sulphur-free bunker fuel.

#### **Directors of ABx**

Paul Lennon	Chairman
Ian Levy	CEO & MD
Ken Boundy	Director
Henry Kinstlinger	Company Secretary

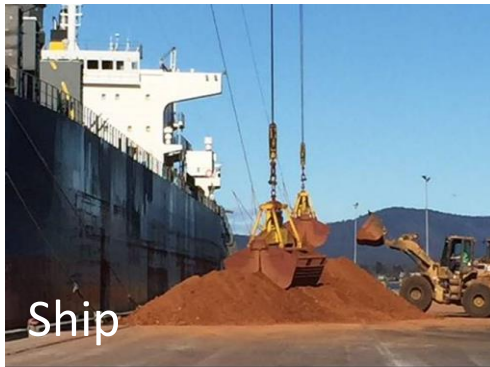
#### **Officers**

Leon Hawker	Chief Operating Officer
Jacob Rebek	Chief Geologist
Paul Glover	Marketing, Exploration & Relationships

# AUSTRALIAN BAUXITE LIMITED



Mine



Ship



Refine



Generate

**Brisbane Resources Roundup  
17<sup>th</sup> October 2018**

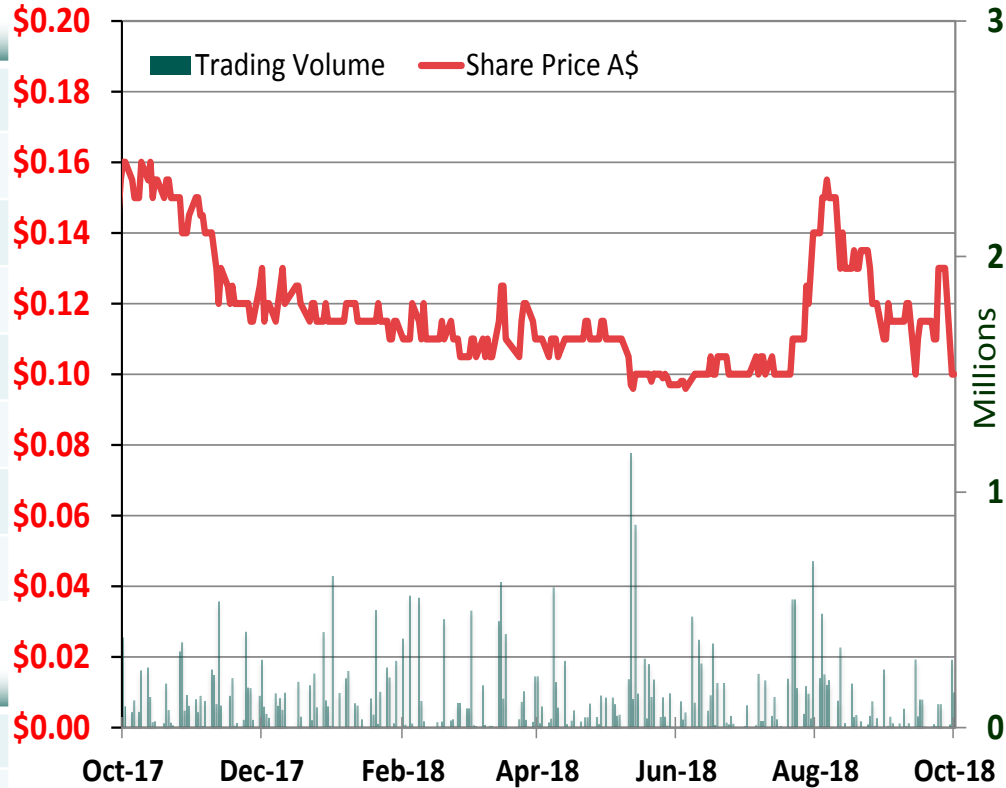
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# Corporate Overview

## ASX code ABX

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Listed	24 Dec 2009 @ \$0.20
Issued shares	146 million
Options	0 million
52 week range	\$0.10 - \$0.16
Average daily volume	125,000
Market cap (@ \$0.10)	\$14.5 million
Cash @ 16 Oct'17	\$2.1 million
Shareholders	2,700



### Board of Directors & Management

Paul Lennon <sup>1</sup>	Chairman
Ian Levy	Managing Director & CEO
Ken Boundy <sup>2</sup>	Non-Executive Director
Henry Kinstlinger	Company Secretary
Leon Hawker	Chief Operating Officer
Paul Glover	Logistics & Exploration
Jacob Rebek <sup>3</sup>	Chief Geologist

<sup>1</sup> Ex-Premier of Tasmania

<sup>2</sup> Investor in Tasmania tourism industry. Holds senior public positions

<sup>3</sup> Ex-CRA-Rio Tinto Chief Geologist. Led discovery team for Century Zinc (1993) and Eastern Australian Bauxite (2006-09)

Major Shareholders	Shares	%
Soul Pattinson	6.8 m	4.7
WSF Pty Ltd	5.6 m	3.9
WSF Pty LtdState One Capital	5.5 m	3.8
Top 20 shareholders	54 m	34.6
Remainder	92 m	65.4

Resources = 137 million tonnes bauxite

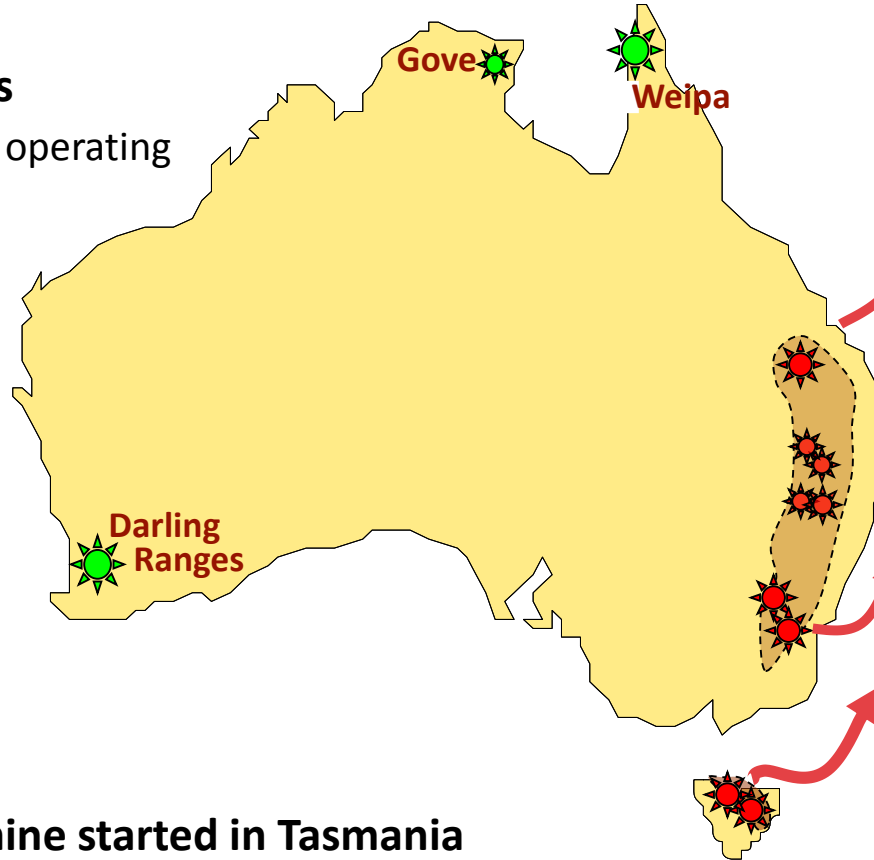


# ABx's first mine in Tasmania. Next project QLD, then NSW

☀ = ABx bauxite deposits

**Total Resources**  
**137 million tonnes**

Targeting \$10 to \$20 operating margins per tonne



**Binjour High Grade Bauxite Project**  
Trial mine & process  
+37Mt resources drilled-out

**Penrose Quarry Refractory Grade Bauxite Discovery**

**Tasmanian Producing Mines.**  
+12Mt resources drilled-out

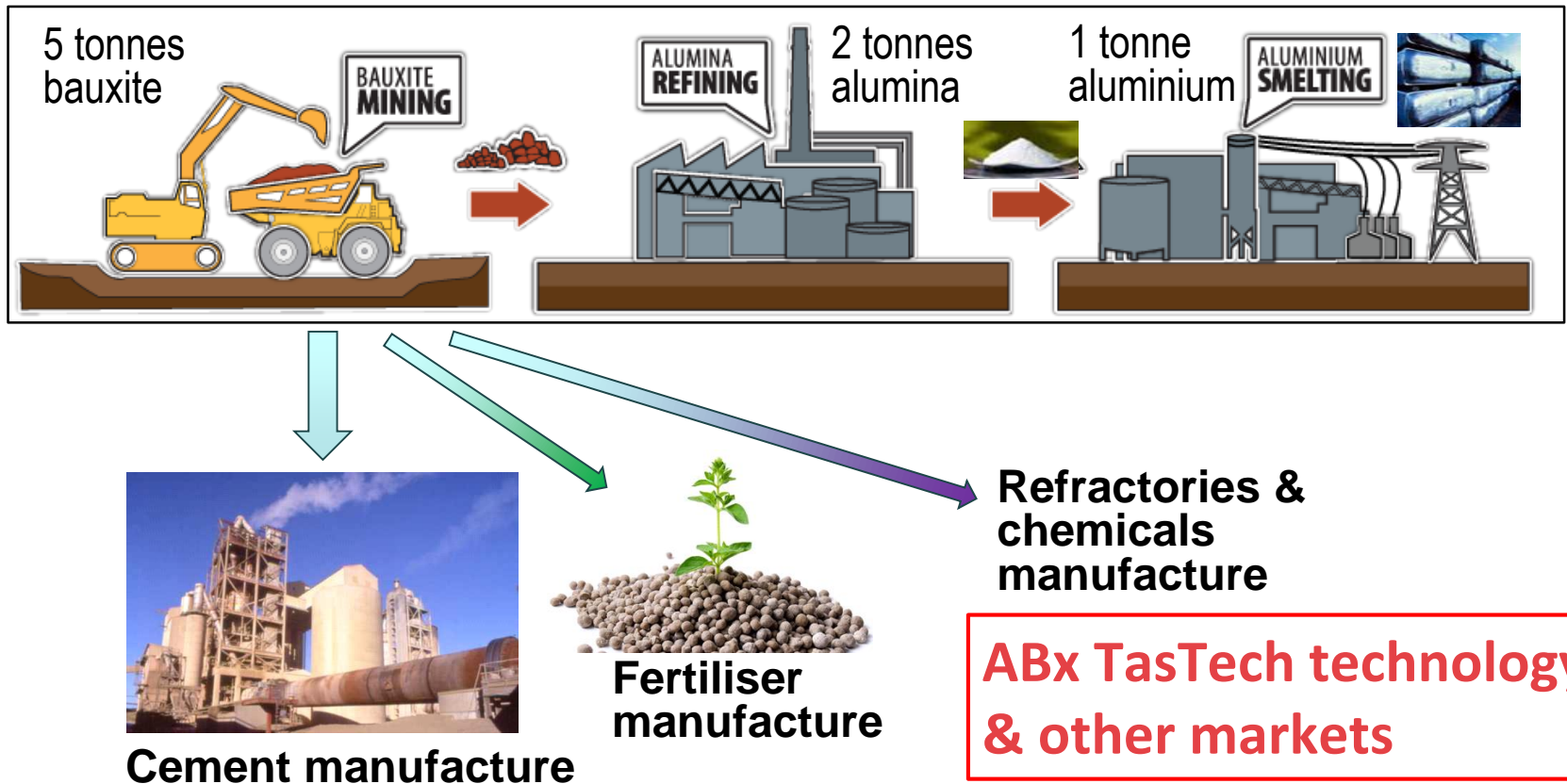
**First mine started in Tasmania**

Strong community & government support  
Good infrastructure. Ports open all year


# Bauxite's main use is for aluminium. "Metallurgical-grade bauxite"

**Past:** Over-supplied 2015 to 2017. Prices fell 40%.

**Today:** Recovering strongly in late 2018 as aluminium demand is growing

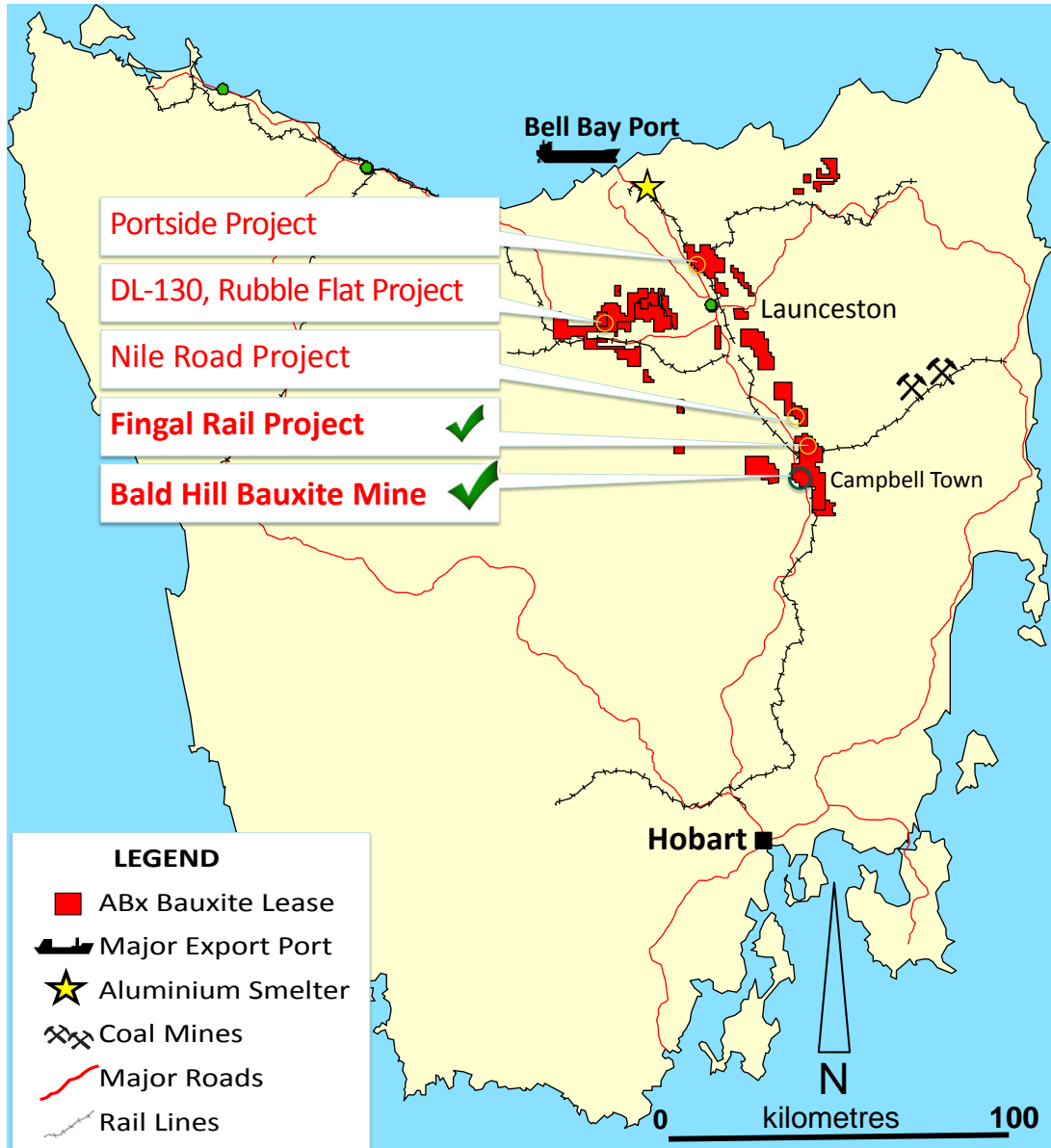


# Bauxite Markets & ABx Strategy

- 1. Metallurgical bauxite for aluminium industry (strong signs of recovery)**
  - + 100 million tonnes pa traded globally
- 2. Cement-grade bauxite demand is a strongly growing market (profitable prices)**
  - 25 million tonnes pa of cement-grade bauxite traded, growing fast
  - ABx's bauxite makes alkali-free, quartz-free, ideal for late-strength cement. Helps cement kilns operate smoothly: *"ABx bauxite is the best favour you can do for yourself & your cement plant"* (customer)
- 3. Fertiliser-grade bauxite to make superphosphate**
  - ABx bauxite used to make granules for superphosphate
- 4. Refractory-grade and chemical-grade bauxite for industrial use**
  - Emerging new markets for ABx
- 5. BAUXITE REFINING TO PRODUCE ALUMINIUM FLUORIDE: **
  - Increases the value of its bauxite tenfold, capitalising on the clean chemistry of ABx bauxite and the hydro-electricity and skills in Tasmania.



# Mines & transport in Tasmania ideally located



# Simple Production

## Bald Hill Mine Tasmania



RETURNS TO GRAZING IN 3 YEARS

## Bauxite types ready for blending



## Blending to customer's specifications



## Bauxite product ready for trucking





# Simple Delivery to Port



Truckloading at Bald Hill Mine



Trucking from mine to Bell Bay Port



Delivery to Bell Bay Port Stockpile



Stockpile at Bell Bay Port

**Delivered 2 weeks ahead of schedule: sold extra 5,000 tonnes**

# ALCORE

## Maximum value enhancement



Low grade bauxite



$\text{AlF}_3$  electrolyte for Aluminium Smelters

Low grade coal (black or brown)



Refinery module design example



$\text{AlF}_3$  electrolyte for Lithium-ion batteries



**Corethane** for electricity, heat, gas or diesel substitute & industrial use

Fluorosilic Acid "FSA"

A by-product from fertiliser plants, used to fluoridate drinking water



# ALCORE Refining Co-products



**Bauxite &/or coal ash** =  $36\% \text{Al}_2\text{O}_3 + \text{Fe}_2\text{O}_3 + \text{SiO}_2 + \text{TiO}_2$

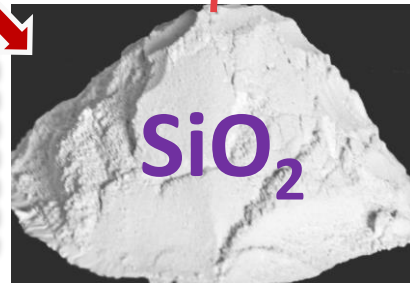
**Reagents:** 2 Fluorine acids & water (mainly "FSA" a waste acid from fertiliser plants and used for water fluoridation).

## Process

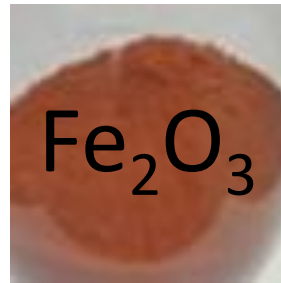
1. All minerals except hydrocarbon dissolved by reagents
2. Hydrocarbon floats-off. We call this "Corethane"
3. Metal fluorides form from dissolved minerals
4. Fluorides are sold or precipitated as oxide products and the Fluorine-based acids recovered if needed
5. Co-products are all in saleable pure forms



> US\$800/t of bauxite



Pure Silica Fume  
US\$350 to \$3,000/t



Iron Oxide Pigment  
~US\$600/t



$\text{TiO}_2$  Pigment or  $\text{TiF}_4$   
~US\$1,800/t



Aluminium Fluoride  
~US\$1,500/t

# Why Invest in ALCORE?

11

**This Australian CORE technology has operated successfully before**

1. In Japan 1981-86 producing 200,000 tonnes of Corethane for US Military tests
  2. In Cooma NSW 2001-07 refining graphite & other ores, including bauxite
- ALCORE helped patent CORE technology in June 2017 and develop  $\text{AlF}_3$  processing

**ALCORE Technology is a low-cost, low risk application of the CORE Process**

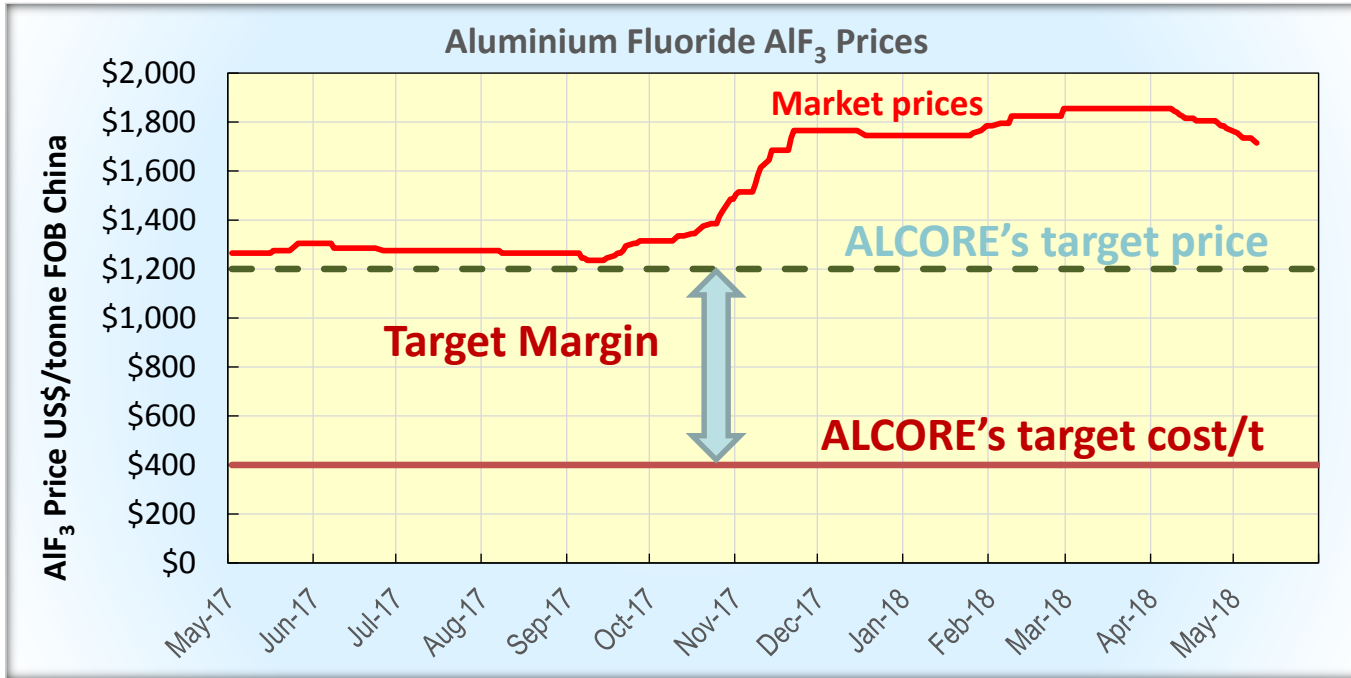
- **Low-cost** refining bauxite (cost  $\sim$ US\$50/t) with waste acid from fertiliser plants
- Traditional  $\text{AlF}_3$  produced from expensive alumina ( $\sim$ US\$450/t) &/or aluminium hydroxide ( $\sim$ US\$600/t)
- **Low-risk** due to low pressure & low temperature process

**Timing is right: Strong market growth**

- **Aluminium Fluoride** ( $\text{AlF}_3$ ) prices have risen from  $\sim$ US\$880 to  $\sim$ US\$1,800 per tonne
- **Silica fume** (amorphous  $\text{SiO}_2$ ) cement-concrete demand strong (US\$300-US\$3,000/t)
- **TiO<sub>2</sub> pigment** market strong (US\$1,800/t) & **TiF<sub>4</sub> for electronics** (US\$10,000/t)
- **Corethane** co-product allows ALCORE to operate off-grid & increase fuel security



# AlF<sub>3</sub> markets are very strong



## Prices strong

AlF<sub>3</sub> prices positive trend since 2012.

Recent price jump due to Lithium ion battery demand and very strong growth in aluminium production

Graph data: Asian Metals



## Tonnes: AlF<sub>3</sub> is Aluminium index-linked

Aluminium production is growing at record rates and many new smelters in construction

**Past:** AlF<sub>3</sub> demand = 1.5% - 3% of Aluminium tonnes

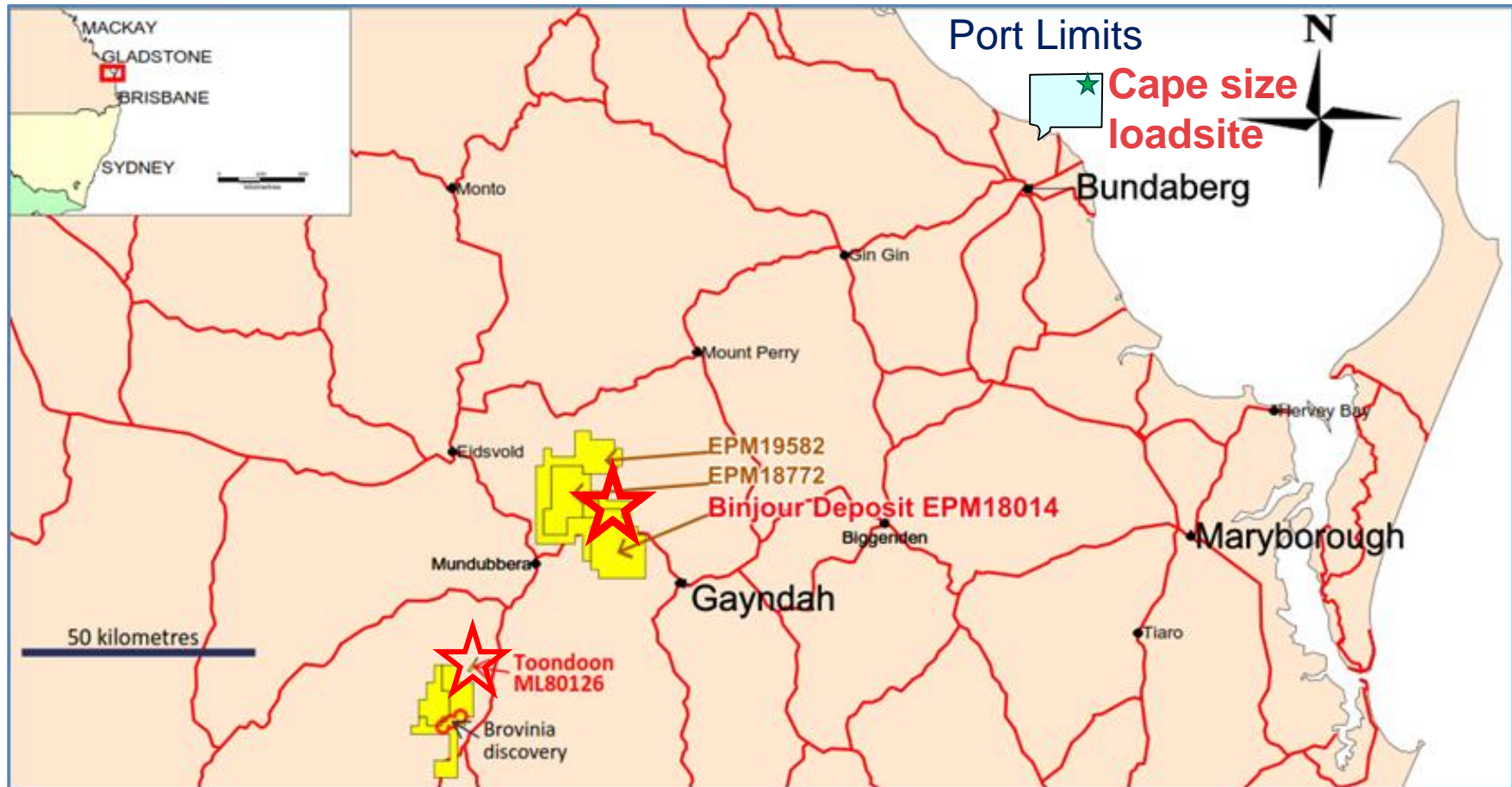
**Now:** AlF<sub>3</sub> demand growing faster than aluminium due to new markets like Lithium ion battery usage

Graph Data: World Aluminium

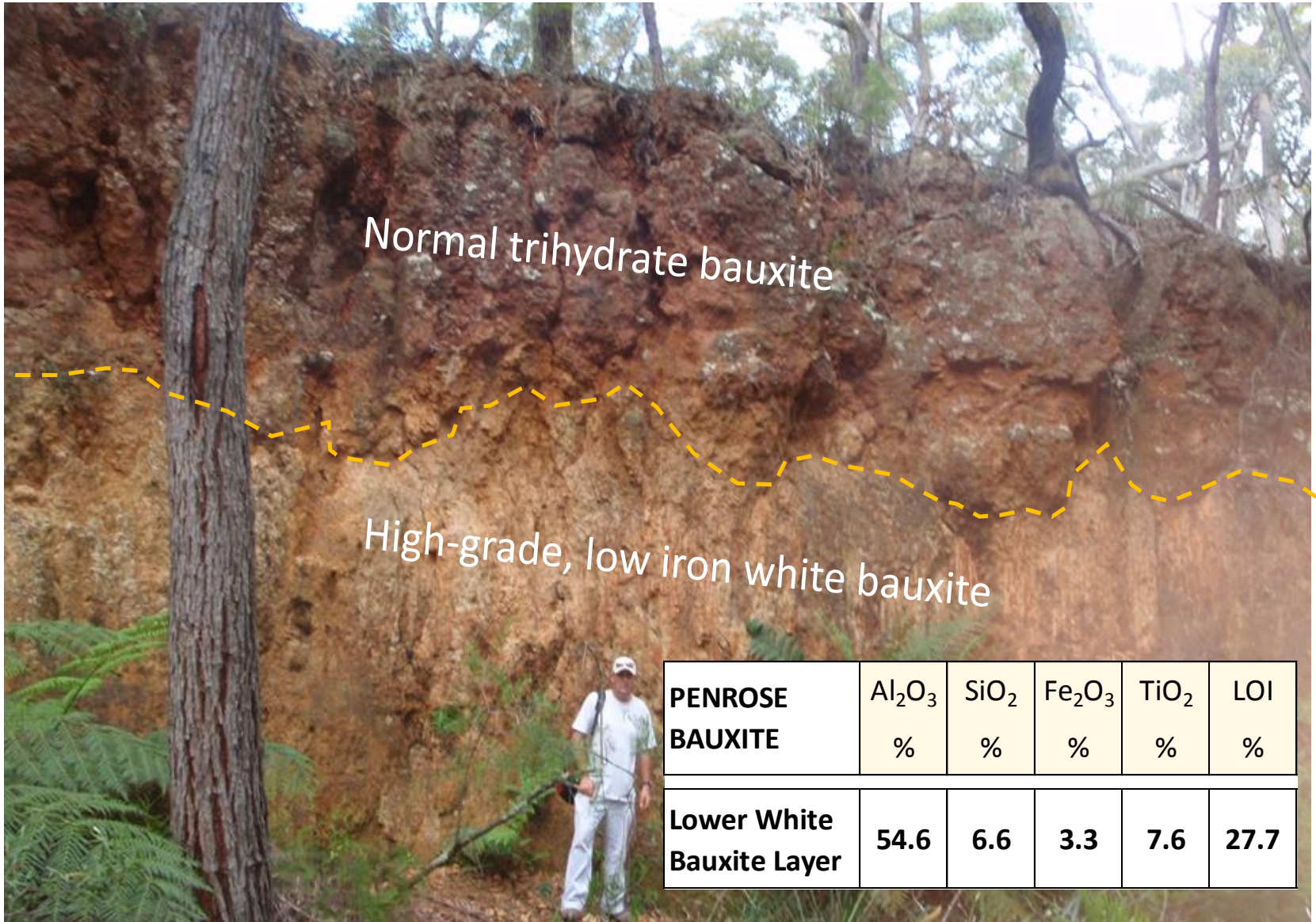
# Binjour Project, Queensland: Biggest/Best Deposit

Largest, highest grade new trihydrate gibbsite bauxite project in Pacific Basin  
37 million tonnes @ +44% Al<sub>2</sub>O<sub>3</sub> defined to date & new discoveries found

**Trial Mining & Processing soon. Negotiations with Governments, banks, customers, consultants & contractors are in progress for early start-up**



# Penrose Quarry Discovery, NSW: Refractory Grade



Normal trihydrate bauxite

High-grade, low iron white bauxite

<b>PENROSE BAUXITE</b>	$\text{Al}_2\text{O}_3$ %	$\text{SiO}_2$ %	$\text{Fe}_2\text{O}_3$ %	$\text{TiO}_2$ %	LOI %
<b>Lower White Bauxite Layer</b>	<b>54.6</b>	<b>6.6</b>	<b>3.3</b>	<b>7.6</b>	<b>27.7</b>



## Forward Looking Statement

Whilst based on information from sources considered reliable, Australian Bauxite Limited (**ABx**), its directors, employees and consultants do not represent, warrant or guarantee, expressly or impliedly, that the information in this document and presentation is complete or accurate. To the maximum extent permitted by law, ABx disclaims any responsibility to inform any recipient of this document and presentation of any matter that subsequently comes to its notice, which may affect any of the information contained in this document and presentation.

## Competent Person Statement

Information herein relating to Exploration Results, Mineral Resources and Exploration Targets is based on information compiled by Ian Levy BSc, MSc, who is a Fellow of the Australasian Institute of Mining and Metallurgy and a Fellow of the Australian Institute of Geoscientists. Mr Levy is employed by ABx as Chief Executive Officer. Mr Levy has more than five years experience relevant to the style of mineralisation and type of deposit being reported and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the JORC Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. This report is issued with the prior written consent of the Competent Person as to the form and context in which it appears.

The information in this report relating to Mineral Resources was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012 on the basis that the information has not materially changed since it was last reported.

## Direct Shipping Ore

In this presentation all references to direct shipping ore (DSO) refers to the company's exploration objective of defining DSO grade mineralisation. The potential quantity and grade of exploration targets is conceptual in nature, there has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.



# ABx JORC-Compliant Mineral Resources

Region	Resource Category	Million Tonnes	Thickness (m)	Al <sub>2</sub> O <sub>3</sub>	SiO <sub>2</sub>	A/S	Fe <sub>2</sub> O <sub>3</sub>	TiO <sub>2</sub>	LOI	Al <sub>2</sub> O <sub>3</sub> Avl	Rx SiO <sub>2</sub>	Avl/Rx	% Lab	O'Burden	Int.Waste
				%	%	ratio	%	%	%	@ 143°C %	%	ratio	Yield	(m)	(m)
CAMPBELL TOWN AREA TASMANIA <sup>7</sup>	Inferred	1.3	3.0	42.6	3.5	12	25.4	3.5	24.6	36.7	3.0	12	50	2.1	0.1
	Indicated	1.4	3.2	42.5	3.2	14	26.4	3.0	24.5	36.2	2.8	14	55	1.8	0.1
	Total	2.7	3.1	42.5	3.3	13	25.9	3.3	24.5	36.5	2.9	13	52	2.0	0.1
Fingal Rail Cement-Grade Bauxite <sup>8</sup>	Inferred	2.4	3.3	30.9	19.5	-	35.4	3.9	16.7	-	-	-	-	1.9	0.1
	Indicated	3.9	3.8	31.1	19.0	-	35.2	4.0	16.9	-	-	-	-	1.7	0.1
	Total	6.3	3.6	31.0	19.2	-	35.3	4.0	16.8	-	-	-	-	1.8	0.1
DL-130 AREA TAS <sup>1</sup>	Inferred	5.7	3.8	44.1	4.3	10	22.8	3.1	25.0	37.6	3.2	12	55	1.5	0.1
	Total Tas	14.7	3.6	38.2	10.5	n.a.	28.7	3.5	21.4	n.a.	n.a.	n.a.	54	1.7	0.1
BINJOUR QLD <sup>2</sup> DSO, Screen & Cement	Inferred	14.2	4.3	40.7	7.3	6	24.7	4.3	22.1	32.3	6.7	5	80	8.5	0.3
	Indicated	22.8	4.0	33.5	19.2	2	24.9	4.2	16.8	15.8	17.4	1	63	6.6	0.3
	Total	37.0	4.1	44.1	3.6	12	23.1	3.7	24.6	39.0	3.0	13	61	8.9	0.3
TOONDOON QLD <sup>3</sup>	Inferred	3.5	4.9	40.2	7.2	6	25.3	4.9	21.7	32.8	5.2	6	67	1.5	0.0
TARALGA S. NSW <sup>4</sup> PDM-DSO*	Inferred	9.9	3.1	40.4	5.7	7	24.6	4.1	22.2	35.2	1.9	18	54	0.1	0.2
	Indicated	10.2	3.7	41.3	5.3	8	25.9	4.0	22.9	36.1	1.9	19	55	0.7	0.4
	Total	20.1	5.6	40.8	5.5	7	25.3	4.0	22.6	35.7	1.9	19	55	0.5	0.3
	Inferred	7.6	2.5	37.0	6.0	6	38.4	3.5	13.3	22.1*	1.3	17	72	0.2	0.1
	Indicated	10.3	3.1	37.6	3.9	10	40.4	3.7	13.5	22.4*	1.1	20	71	0.7	0.4
	Total	17.8	5.8	37.3	4.8	8	39.6	3.6	13.5	22.3*	1.2	18	72	0.5	0.3
	Total Taralga	37.9	5.7	39.2	5.2	8	32.0	3.8	18.3	35.4	1.6	23	63	0.5	0.3
INVERELL N. NSW <sup>5</sup>	Inferred	17.5	4.7	39.8	4.8	8	27.7	4.3	22.2	31.0	4.2	7	61	2.3	
	Indicated	20.5	4.8	40.6	4.7	9	26.9	4.1	22.5	32.0	4.0	8	60	2.4	
	Total	38.0	4.8	40.2	4.7	9	27.3	4.2	22.4	31.6	4.1	8	61	2.4	
GUYRA N. NSW <sup>6</sup>	Inferred	2.3	4.2	41.4	3.6	12	26.2	3.3	24.6	35.0	2.8	13	56	3.4	
	Indicated	3.8	5.9	43.1	2.6	16	27.3	3.9	24.5	37.4	2.0	18	61	4.4	
	Total	6.0	5.3	42.5	3.0	14	26.9	3.7	24.5	36.5	2.3	16	59	4.0	

**GRAND TOTAL ALL AREAS 137.1**

\* PDM is Al<sub>2</sub>O<sub>3</sub> spinel. Al<sub>2</sub>O<sub>3</sub> Avl at 225°C is >35%

**Explanations:** All resources 100% owned & unencumbered. Resource tonnage estimates are quoted as in-situ, pre-mined tonnages. All assaying done at NATA-registered ALS Laboratories, Brisbane. **Chemical definitions:** Leach conditions to measure available alumina "Al<sub>2</sub>O<sub>3</sub> Avl" & reactive silica "Rx SiO<sub>2</sub>" is 1g leached in 10ml of 90gpl NaOH at 143°C for 30 minutes. LOI = loss on ignition at 1000°C. "Avl/Rx" ratio is (Al<sub>2</sub>O<sub>3</sub> Avl)/(Rx SiO<sub>2</sub>) and "A/S" ratio is Al<sub>2</sub>O<sub>3</sub>/SiO<sub>2</sub>. Values above 6 are good, above 10 are excellent. Tonnage is for bauxite in-situ. **Lab Yield** is for drill dust samples screened by ALS lab at 0.26mm. Production yields are not directly related and are typically between 60% and 75%. Tonnages requiring no upgrade will have 100% yield. **Resource estimates exclude** large tonnages of potential extensions, overburden & interburden detrital bauxite and underlying transitional bauxite mineralisation. Production will clarify these materials.

Information in this table relates to Mineral Resources previously reported via ASX announcements according to the JORC Code (see Competent Person Statement) as follows:

- <sup>1</sup> Maiden Tasmania Resource 08/11/2012
- <sup>2</sup> Binjour Resource announced 18/06/2018
- <sup>3</sup> QLD Mine Lease 80126 Resource, 03/12/2012
- <sup>4</sup> Goulburn Taralga Resource, 31/05/2012
- <sup>5</sup> Inverell Resource, 08/05/2012
- <sup>6</sup> Guyra Resource, 15/08/2011
- <sup>7</sup> Resources for 1st Tasmanian mine, 24/03/2015
- <sup>8</sup> Resource Fingal Rail Project, Tas 25/08/2016

# Good Landholder Relations

ABX endorses best practices on agricultural land to leave land and environment better than we find it. We only operate where we are welcomed

