

**ALCORE Limited**AlF<sub>3</sub> for Aluminium smelters & Lithium ion batteries**Alcore Appoints Clough Engineering for Design & Construct**

ALCORE Limited ("Alcore") is pleased to announce it has executed a contract with the major Australian engineering firm, Clough Projects Australia Pty Ltd Australia (Clough) to provide the advanced engineering required for the design and construction of the first Alcore Production Plant.

**Why Clough?**

Clough is well known for its commitment to safety and sustainability, whilst optimising productivity and costs at every phase of a project. Clough has been investigating the Core technology for several years and is ready for a smooth entry into the Alcore project.

Founded in 1919 in Perth, Western Australia, Clough is Australia's oldest major engineering firm and its operations have expanded globally to Asia, Africa, Europe, and North America providing engineering, construction, commissioning and operating services. Clough's in-house skills and expertise provides the full spectrum of capabilities needed by Alcore including:

- Concept evaluation & regulatory approvals
- Project feasibility studies
- Design, specialised process engineering, electrical controls & instrumentation
- Construction, process optimisation and debottlenecking



Contract signing by Derek Firth, Alcore Director & Peter Bennet, Clough CEO

Clough has major projects in oil & gas, iron ore, LNG terminals, chemical engineering and has been appointed by the Australian government to the major Snowy Mountains 2.0 pumped hydro project.

**Alcore** is a 90%-owned subsidiary of Australian Bauxite Limited ("ABx") that has the global exclusive rights to the aluminium-related portion of CORE Technology (Patent Application). After 6 months of testwork, Alcore has committed to the best strategy for the first commercial plant called "Refine & Recycle" whereby by-products from aluminium smelters will be converted into Aluminium Fluoride ("AlF<sub>3</sub>") which can be sold back to the smelters as an essential electrolyte for smelting.

This strategy has highest profit and fastest growth potential worldwide. Plants can be replicated adjacent to aluminium smelters throughout the western world that seek higher environmental credits for recycling by-products, reducing emissions, lowering costs and reducing their dependence on imported AlF<sub>3</sub>. Alcore can refine two smelter by-products, one with high aluminium (~85% Al) and the second with high fluorine (~55% F), so that all AlF<sub>3</sub> components are freely available.

Welcoming Clough to this project, Phillip Hall, Alcore's Chief Operating Officer, commented:

"Clough is an ideal engineer for Alcore's transition from the lab research stage to its first commercial plant. Clough's long-term association with this technology augers well for good teamwork.

"Alcore is now fully-resourced on technology, having also appointed Dr Mark Cooksey, a senior CSIRO chemical engineer with over 22 years' experience in the aluminium smelting industry."

**For further information please contact:**

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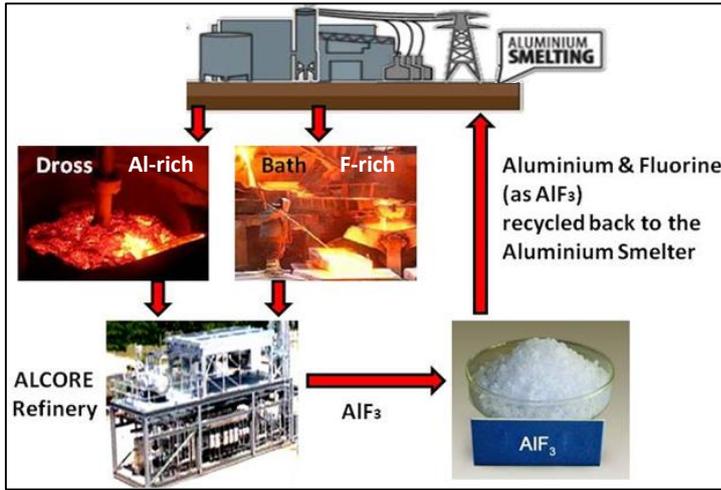


Figure 1

Summary of the ALCORE "Refine & Recycle" Business Strategy

This process has the strong potential to be the simplest and lowest cost method to make  $AlF_3$ . It provides an economically attractive way to utilise the aluminium-rich and fluoride-rich by-products from many aluminium smelters.

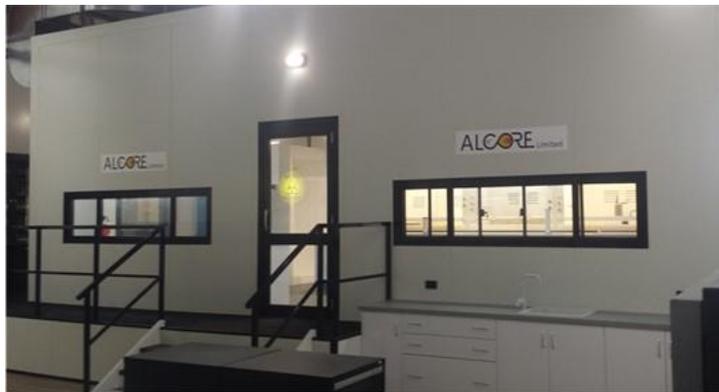


Figure 2

The \$2.5 million ALCORE Laboratory built inside the ALCORE Research Centre

The Core Lab is a climate-controlled laboratory constructed inside the ALCORE Research Centre for the refining of bauxite and its components to produce test samples of  $AlF_3$  and co-products. It will become a research centre for testing its technology on many ores.



Figure 3: Preparation & Analytical Lab, XRF & furnaces



Figure 4: ALCORE test lab, fume cabinets with hi-tech scrubbers, showers, microscopes & Draeger air monitor (wall)



Figure 5: Exterior support systems

- a) Air purification and atmosphere control
- b) Liquids processing & neutralisation plant
- c) Duplicated secure LPG gas supply
- d) Gas-fired Standby-Backup Generator

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ASX: ABX

ALCORE Limited

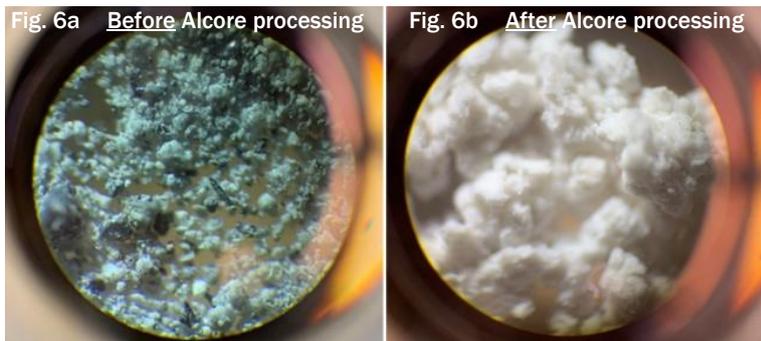


Figure 6

Microscope images showing aluminium smelter by-product in raw form & processed form, refined into an  $\text{AlF}_3$  product

The reaction took less than 5 minutes to completion, demonstrating the power of the “brew” reagents used by Alcore



Figure 7: Corethane demonstration unit

Alcore refining has reduced the ash content of Hunter Valley coal (Ulan D seam) from 28.5% to 0.3% (see latest ABx Quarterly Report). Alcore engineers have constructed a Corethane combustion demonstration unit to compare gas and Corethane by burning in two Bunsen Burners, one burning LPG gas and the other burning Corethane so as to compare the two flames against the white background panel. It shows that both flames equally emit zero soot, smoke or un-burnt particulates.

The main difference is the cost – Corethane costs are much lower than the cost of gas.

#### About Australian Bauxite Limited & Alcore

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 12 bauxite tenements in Queensland, New South Wales & Tasmania totalled 719 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. 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 in northern NSW, southern NSW, Binjour in central QLD & in Tasmania where 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 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 domestic 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 manage the ALCORE Project leading to the construction of an ALCORE Production Plant to produce Aluminium Fluoride ( $\text{AlF}_3$ ) and valuable co-products, using patent (pending) new technology. ALCORE is planning to convert low grade bauxite worth \$50 per tonne into a suite of valuable products worth more than \$800 per tonne. 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  $\text{AlF}_3$  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  $\text{CO}_2$  emissions when used as a gas-substitute to fuel large gas turbines. 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

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