

MODELLING FURTHER CONFIRMS COMMERCIAL AIF₃ PLANT VIABILITY

- Alcore's international process engineers have completed process flowsheet modelling for a commercial 10,000 t/y AIF₃ plant using dross as the feedstock.
- Results provide further confidence in the Alcore process and support Alcore's approach to process development.
- Thermodynamic modelling identifies another, potentially more effective, process route for producing AIF₃ from dross – to be further investigated in Q4 2021.
- Accelerating process development with appointment of Dr Xiao Liang as Senior Engineer
- Alcore process is new technology, proprietary to Alcore and will deliver significant economic and environmental benefits.
- Production of AIF₃ is at a projected lower operating cost when using dross in the process – reduced from A\$1,080/t AIF₃ to A\$800/t AIF₃¹

ABx Group (ASX: ABX) (ABx) is pleased to announce that process flowsheet modelling for the commercial production of aluminium fluoride (AIF₃) using aluminium smelter wastes as the feedstock further confirms that the process has attractive economics.

An international process engineering company engaged by ABx's 87%-owned subsidiary ALCORE Limited (Alcore) recently completed the flowsheet modelling for a commercial 10,000 t/y AIF₃ plant. The outputs included mass and energy balances, process flow diagrams and a mechanical equipment list.

Results from the modelling provide further confidence in the Alcore process and support the Alcore approach to the development of the process. The results will assist Alcore to increase the yield of AIF₃ from dross.

Development of all aspects of the Alcore process has continued despite the constraints of COVID-19. For example, Alcore has improved the precipitation process in the laboratory and now produces AIF₃ of comparable particle size to existing commercial AIF₃.

Alcore CEO Dr Mark Cooksey said: *"Process modelling confirms the Alcore process for producing AIF₃ from dross is feasible and attractive because it is substantially lower cost, delivers higher operating margins and recycles waste from the smelting process. Alcore will continue to engage with third party experts to accelerate development and commercialisation of the process."*

¹ Refer to ASX announcement dated 12 April 2021

Potentially More Effective Process Route

Alcore has also used the results of the thermodynamic modelling, combined with laboratory testwork results, to identify another possible process route for producing AlF_3 from dross, which would be even more effective than the route investigated by Alcore to date. This will be further investigated at the Alcore research centre in Q4 2021.

Appointment of Senior Engineer

Development is accelerating and Alcore recently increased its team by appointing Dr Xiao Liang as Senior Engineer, whose duties include supervision of construction of the pilot plant, which is underway and will benefit significantly from the relaxation of COVID-19 restrictions. Dr Liang holds a PhD from the University of Sydney and has worked on technology development projects on the NSW Central Coast for several years before joining Alcore.

Commenting on Dr Liang's appointment, Dr Cooksey said:

"Dr Liang expands our technological skill base at a critical time as we fabricate and operate Alcore's pilot plant."

Aluminium Fluoride from Dross Waste

Dross consists of aluminium oxide, aluminium metal and aluminium nitride, with trace cryolite and other impurities. Most aluminium metal can be physically recovered, but the non-metallic component is sold at a loss and at times cannot be sold. Many smelters have significant stockpiles of dross that represent an ongoing storage cost to satisfy environmental and community standards.

Alcore is investigating dross as a feed material for its AlF_3 production because it is very low cost and increases the recycling of aluminium smelter wastes. Alcore has previously reported the development of a process to produce AlF_3 from 100% dross. This process is new technology, proprietary to Alcore and will deliver significant economic and environmental benefits.

Market for Aluminium Fluoride

AlF_3 is a strategically important mineral that is an essential ingredient for aluminium smelting and is being investigated for advanced lithium-ion batteries. Australian aluminium smelters rely entirely on imported AlF_3 , typically more than 70% from China, but this proportion has reduced by more than 60% in 2021, illustrating the supply risks (see Figure 1).

The commercialisation of Alcore's proprietary technology and development of Australia's first production plant would provide much-needed security of supply for Australasian aluminium smelters.

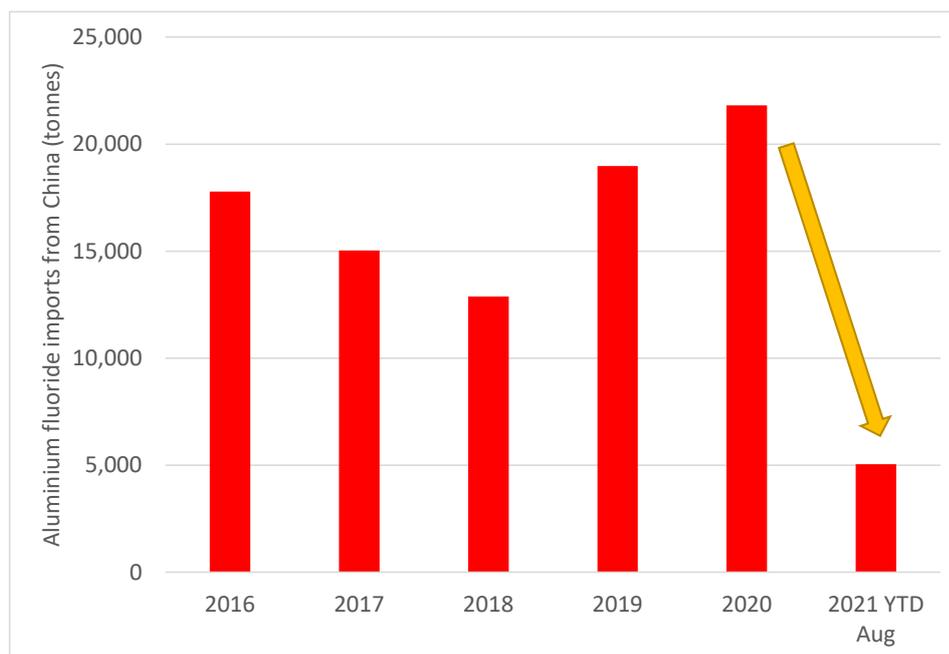


Figure 1
Imports of AlF_3 from China into Australia have contracted substantially in 2021

Source: BACI, CCS

This announcement is authorised by the Board of Australian Bauxite Limited.

For further information please contact:

Mark Cooksey, CEO
ALCORE Limited
Mobile: +61 447 201 536
Email: mcooksey@alcore.net.au

Ian Levy, CEO
ABx Group
Mobile: +61 407 189 122
Email: ilevy@abxgroup.com.au

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