

State-of-the-Art Reactor Commences Operations

Bath pilot batch reactor commissioned at Alcore Technology Centre, approximately 10 times larger than previous reactor

Hydrogen fluoride successfully produced using modified process conditions and tests with standard process conditions underway

Results from tests using standard process conditions expected by December

ABx Group (ASX: ABX) (“ABx” or “the Company”) is pleased to announce its state-of-the-art bath pilot batch reactor has been commissioned and successfully commenced operations at its 83%-owned subsidiary ALCORE’s technology centre located on the NSW Central Coast (Figure 1).

The reactor has been designed for the recovery of fluorine from ‘excess bath’ (an aluminium smelter waste) to produce hydrogen fluoride, with a later-stage commercial plant to further react the hydrogen fluoride to produce aluminium fluoride – a high-value chemical essential for aluminium smelting.



Figure 1: Bath pilot batch reactor (centre) fully commissioned with operations underway

Initial reactor operations have processed excess bath using modified process conditions, selected to provide greater safety and certainty that the reactor will perform as expected.

Pleasingly, the first run successfully demonstrated the potential of the reactor with operations proceeding without issue and hydrogen fluoride produced.

Following the successful production of hydrogen fluoride, the Company undertook a hazard and operability (HAZOP) study, which reviewed all of the processes undertaken throughout the initial operations to ensure the safety and efficacy of the reactor operations.

The HAZOP study was an important precursor to operations using the standard process conditions, which stipulates a specific set of temperature ranges, residence times and amounts of acid¹.

Tests using standard process conditions have commenced, with first results on the reactor performance and bath process yield anticipated in December.

ABx Group Managing Director and CEO Mark Cooksey said:

"The successful commissioning of the reactor and subsequent production of hydrogen fluoride from excess bath is a fantastic result for ALCORE.

"While using modified conditions, these results provide the technical validation required to proceed with further processing activities.

"Processing of bath using our new reactor will provide important data on our ability to produce greater yields, at roughly ten times the scale of our smaller laboratory reactor, where much of our work has been focused to date.

"Results from this new reactor are expected to provide more robust data which will be used to eventually scale-up operations to a continuous pilot plant and first commercial plant".

This announcement is approved for release by the board of directors.

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¹ See ASX announcement 24 October 2022

Media

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About ABx Group Limited

ABx Group (ABX) is a uniquely positioned, high-tech Australian company delivering materials for a cleaner future.

The two current areas of focus are:

- Creation of an ionic adsorption clay rare earth project in northern Tasmania
- Establishment of a plant to produce hydrogen fluoride and aluminium fluoride from recycled industrial waste, via its 83%-owned subsidiary, Alcore

There is also a legacy business:

- Mining and enhancing the value of bauxite resources for cement, aluminium and fertilisers.

We only operate where welcomed and we apply best practices to restore any disturbed land to a better condition than we found it.

Disclaimer Regarding Forward Looking Statements

This ASX announcement (Announcement) contains various forward-looking statements. All statements other than statements of historical fact are forward-looking statements. Forward-looking statements are inherently subject to uncertainties in that they may be affected by a variety of known and unknown risks, variables and factors which could cause actual values or results, performance, or achievements to differ materially from the expectations described in such forward-looking statements.

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