



(ASX:ABX)



# Fluorine waste recycling: producing industrial chemicals from aluminium smelter waste

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## Delivering materials for a cleaner future

Rare earths: Supplying light and heavy rare earths from Tasmania into Western supply chains



Fluorine waste recycling:  
Producing industrial chemicals  
from aluminium smelter waste



Bauxite: Mining bauxite resources for the aluminium, cement and fertiliser industries



# Investment Proposition

Low-cost hydrogen fluoride production using aluminium smelter bath waste

Will enable hydrogen fluoride production in Australia, to reduce 100% reliance on imports

## Team

Experienced and capable



## Supply shortage

No hydrogen fluoride produced in Australia  
Limited global fluorspar resources



## Chemical process is low risk

Adaptation of existing commercial process



## Strongly increasing demand for fluorine

Batteries



## New fluorine source available at low cost

Aluminium smelter bath waste



## Pathway to production

First mover globally: at pilot plant stage



# Strongly increasing demand for fluorine

## Significant traditional markets

Fluorine chemical	Applications
Aluminium fluoride	Aluminium smelting
HCFC	Refrigerants
Hydrogen fluoride	Metal treatment
PTFE	Wire insulation, bearings

## Rapidly growing demand for renewable energy

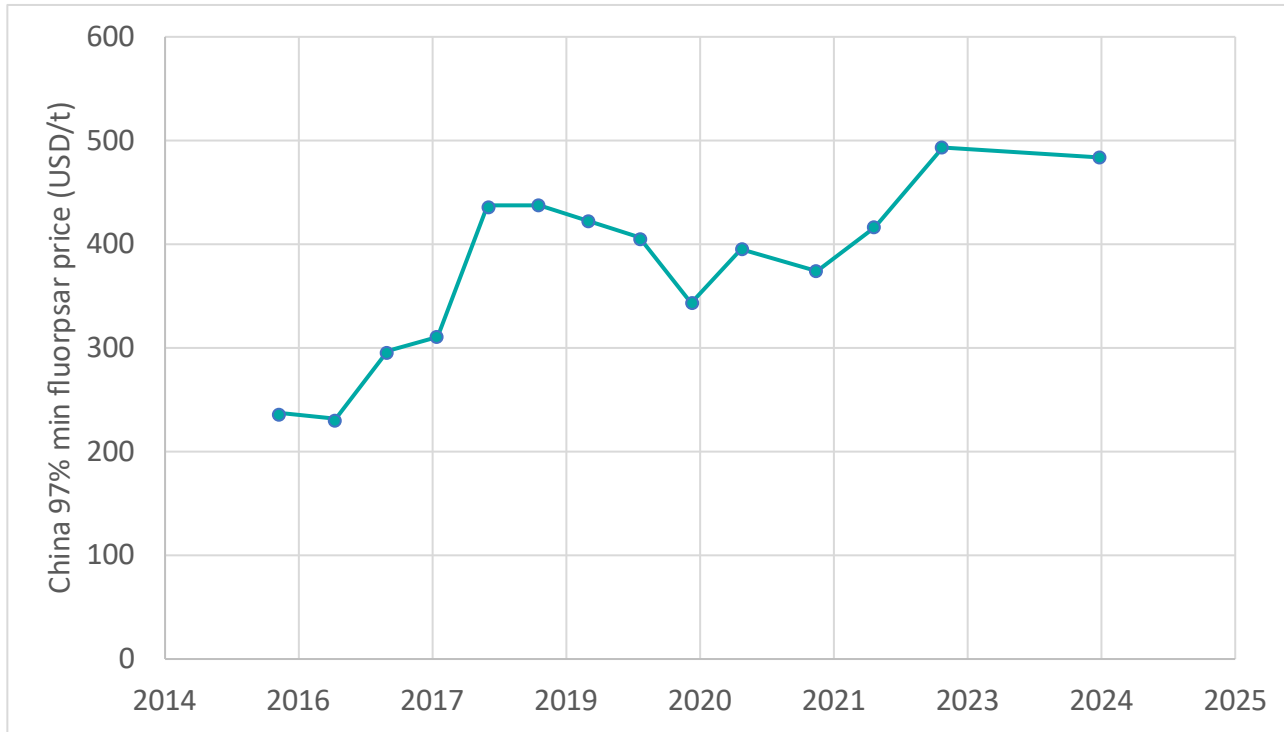
Fluorine chemical	Applications
Lithium hexafluorophosphate	Li-ion batteries (electrolytes)
PVDF	Li-ion batteries (separators and electrodes)
Hydrogen fluoride	Graphite purification

*“From 2025 to 2035, fluorine demand for energy applications will increase from 5% to 22% of total fluorine demand”*

US DOE Critical Minerals Assessment, 2023

# Supply shortage: limited supplies of fluorspar

## Increasing fluorspar prices



Source: Asian Metal

## Government recognition

### Critical Minerals Lists

Fluorspar	USA Europe Japan Canada
Fluorine	Australia

*"In 2035, fluorspar demand will exceed current supply by 40-70%"*

US DOE Critical Minerals Assessment, 2023

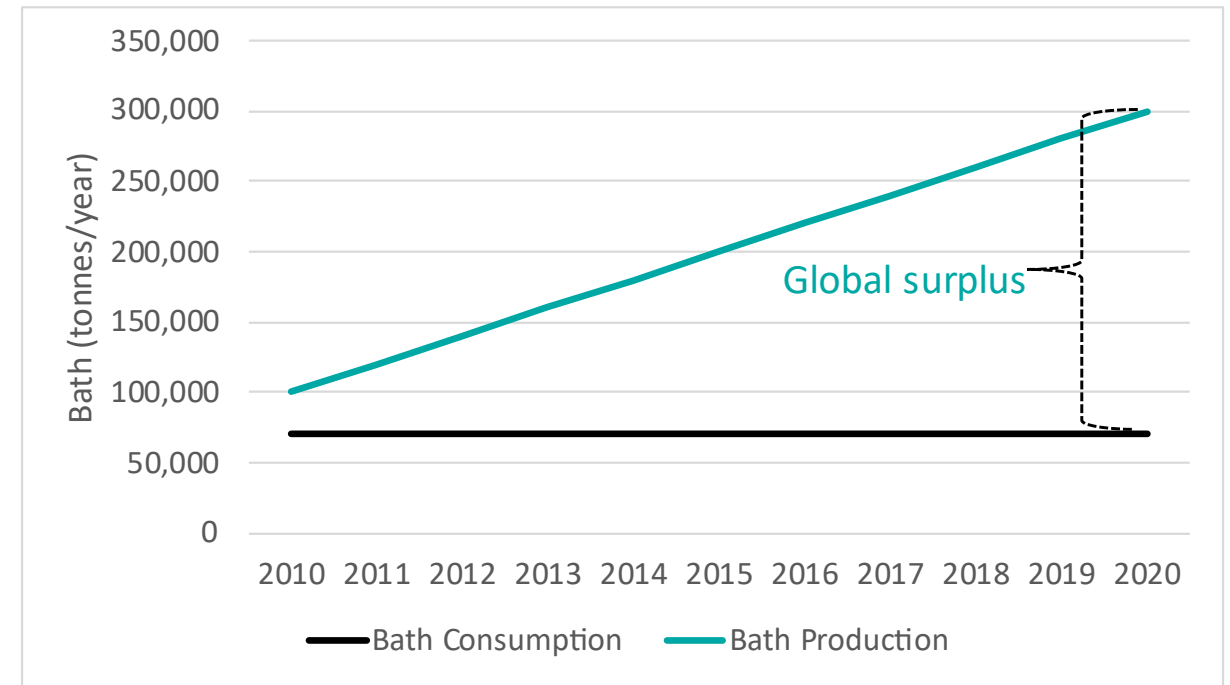
# New fluorine source available: aluminium smelter bath waste

- Fluorine is an essential chemical for aluminium smelting
- 50% of fluorine leaves aluminium smelting process as aluminium smelter bath



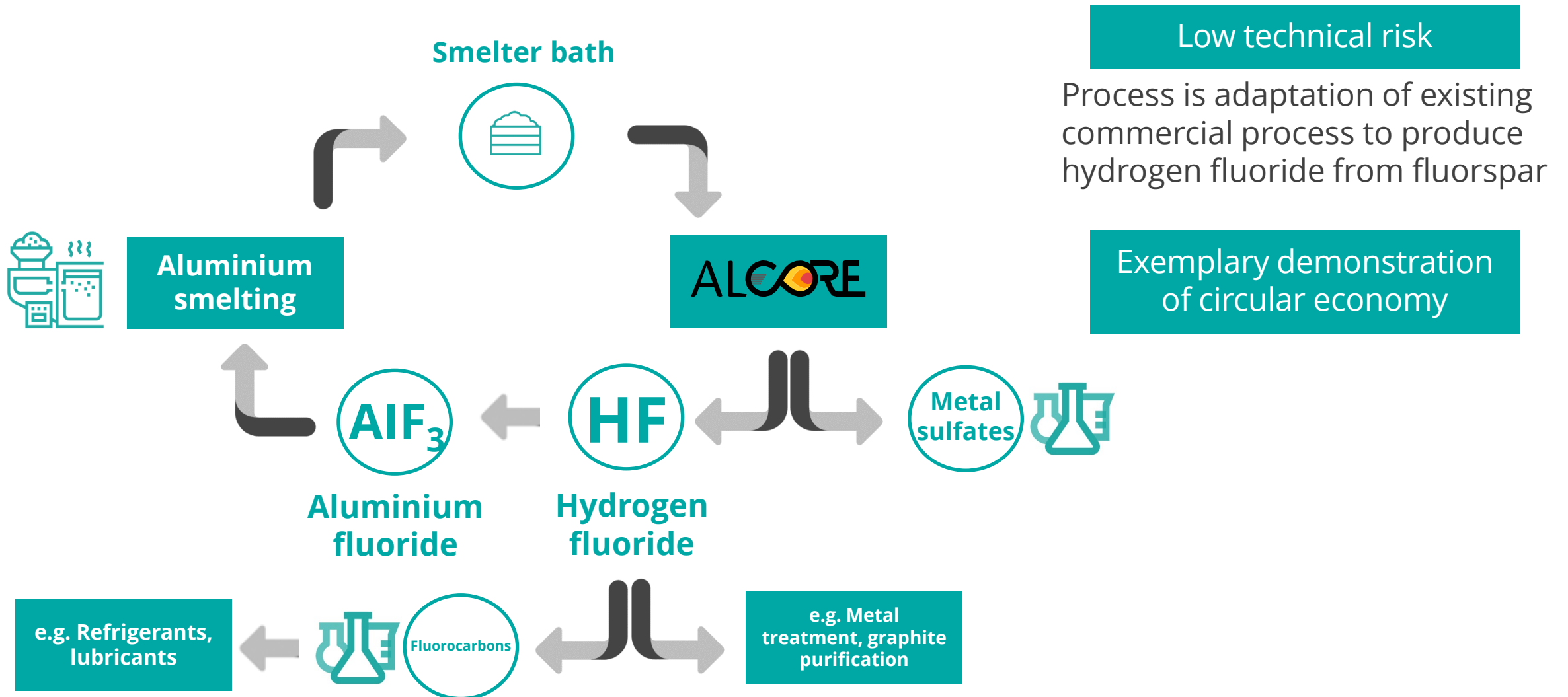
Major fluorine flows in aluminium smelters

## Increasing surplus of aluminium smelter bath



Source: S.J. Lindsay, Bath generation and management, 10th Australasian Aluminium Smelting Technology Conference, 2011

# Process is low risk



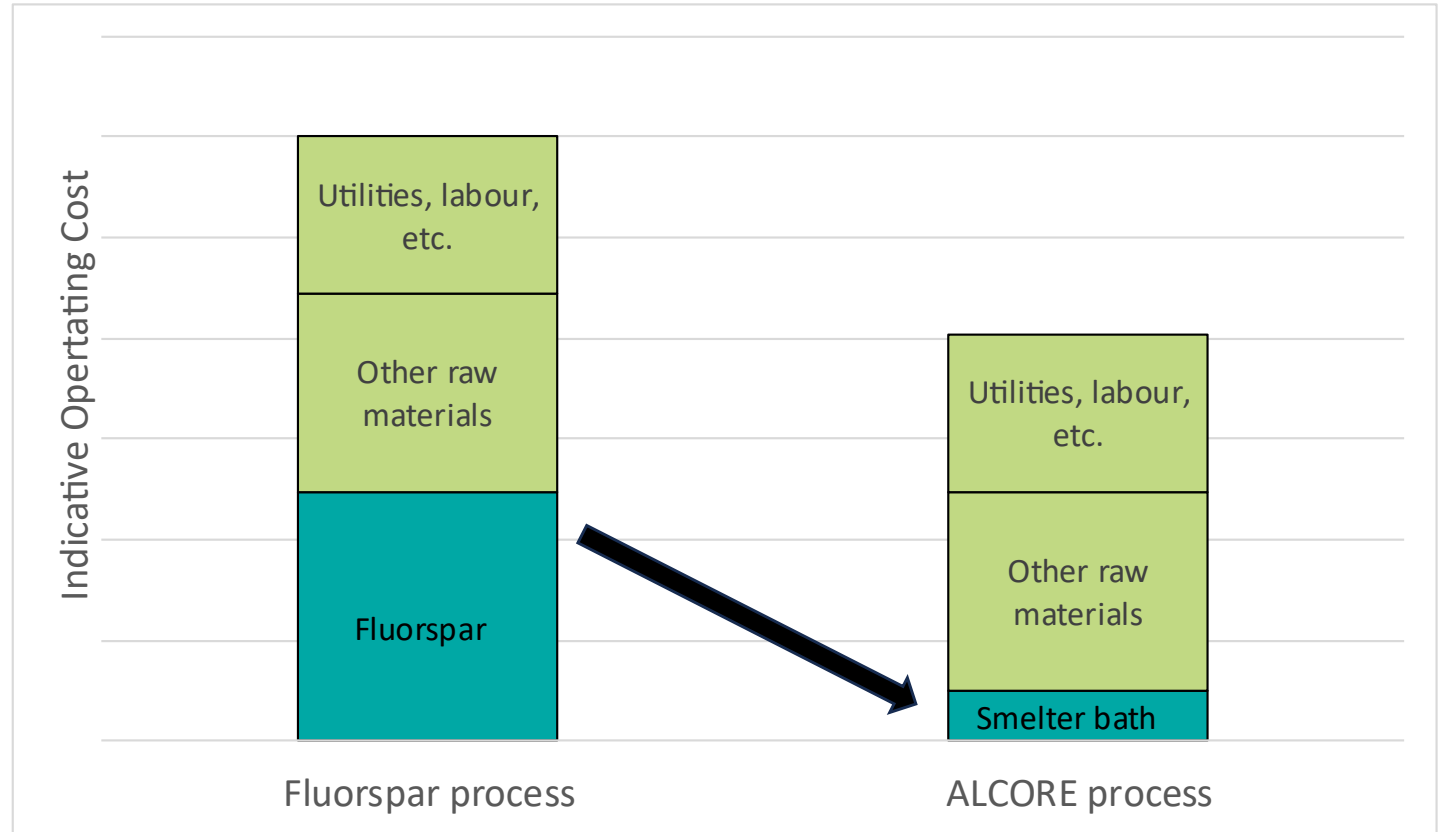


# Significant cost advantage of replacing fluorspar with bath

A rare opportunity that is financially, strategically and environmentally attractive

- ALCORE process produces same hydrogen fluoride product using a much lower cost feed material
- Aluminium smelter bath is a good quality material (low impurities)

Potential for significant profit margin

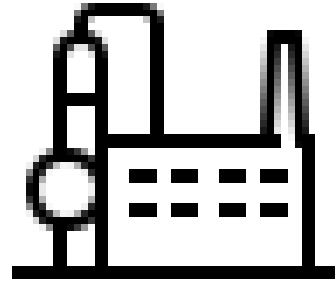
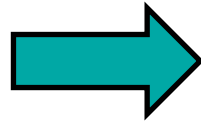


# Vision for fluorine recycling business



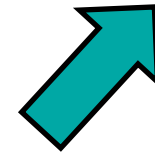
## Demonstration

Demonstrate chemical process for recycling aluminum smelter waste



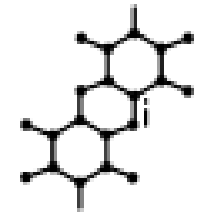
## Production

Construct plant to produce hydrogen fluoride and aluminium fluoride from aluminium smelter waste



## Expansion

Recycle smelter waste from the global aluminium industry



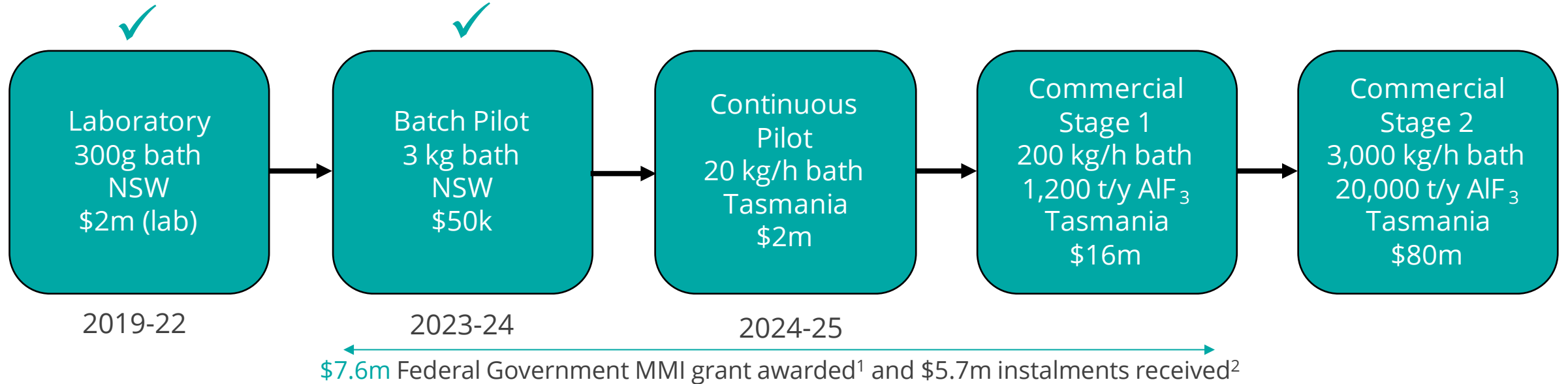
## Diversification

Enable Australian fluorochemical industry



# Pathway to production: Project development

ALCORE has first mover advantage



Critical process steps demonstrated<sup>3</sup>



Achieved target fluorine recovery<sup>4</sup>

- At facility leased from Rio Tinto at reduced rate<sup>5</sup>
- \$1m conditional loan from Tasmanian Government<sup>6</sup>
- Orders placed for all key equipment<sup>7</sup>
- Produce saleable hydrogen fluoride for evaluation by customers
- Determine design and operating parameters for commercial plant

First plant planned for Bell Bay, Tasmania

<sup>1</sup>ABX ASX Announcement, 29 April 2022

<sup>2</sup>ABX ASX Announcement, 28 June 2023

<sup>3</sup>ABX ASX Announcement, 24 October 2022

<sup>4</sup>ABX ASX Announcement, 4 June 2024

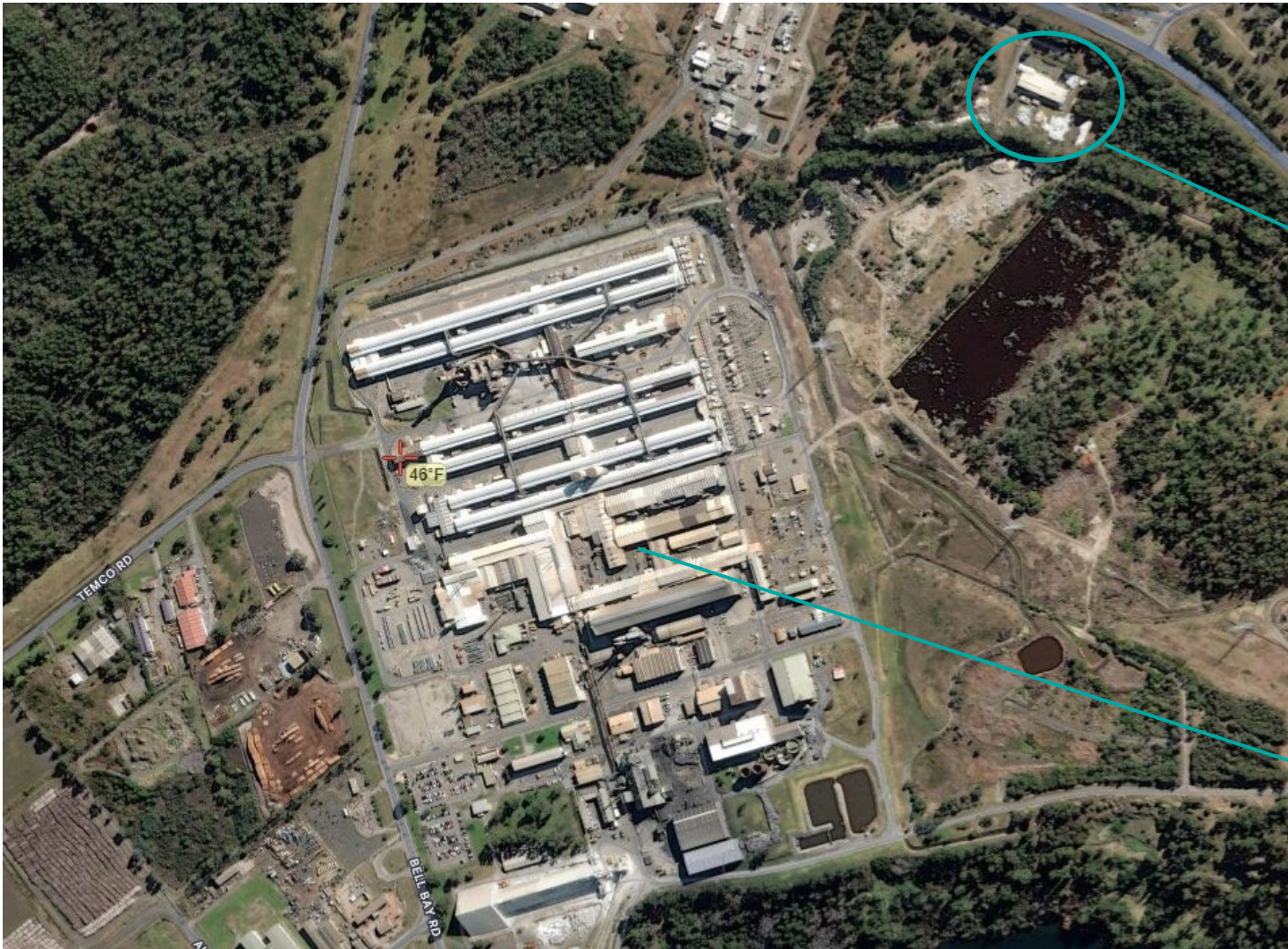
<sup>5</sup>ABX ASX Announcement, 19 December 2024

<sup>6</sup>ABX ASX Announcement, 15 January 2025

<sup>7</sup>ABX ASX Announcement, 9 April 2025



# Pilot plant location



ALCORE pilot plant

Bell Bay aluminium smelter



# Pilot plant facility



- Orders placed for all key equipment. Most of the specialised equipment is being fabricated by overseas suppliers
- Site preparation commenced
- Expected that equipment will be delivered late 2025 / early 2026



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