

# BAUXITE

## INVESTMENT OPPORTUNITIES

WORLD-CLASS RESOURCE PROVINCE | SECURE INVESTMENT LOCATION  
WORLD-LEADING GEOSCIENTIFIC DATA | GLOBAL MINING SERVICES INDUSTRY

### Western Australia is the second largest producer of bauxite and alumina

Western Australia produced 14 Mt of alumina and 1.8 Mt of bauxite in 2020–21 from two producers – Alcoa and South32. In 2020–21, alumina and bauxite were exported to the UAE, Bahrain, South Africa, Mozambique, China, India, Iceland, the US, Qatar and Argentina.

#### Bauxite mining

Bauxite is a raw product, strip mined from the lateritic profiles of the Darling escarpment. Western Australia produces bauxite from three mining centres:

- Huntly (Alcoa)
- Willowdale (Alcoa)
- Boddington (South32)

The Darling Ranges, located in the southwest of the State is Western Australia's premier bauxite mining location. There is also prospectivity for bauxite in parts of the Kimberley region which remains undeveloped.

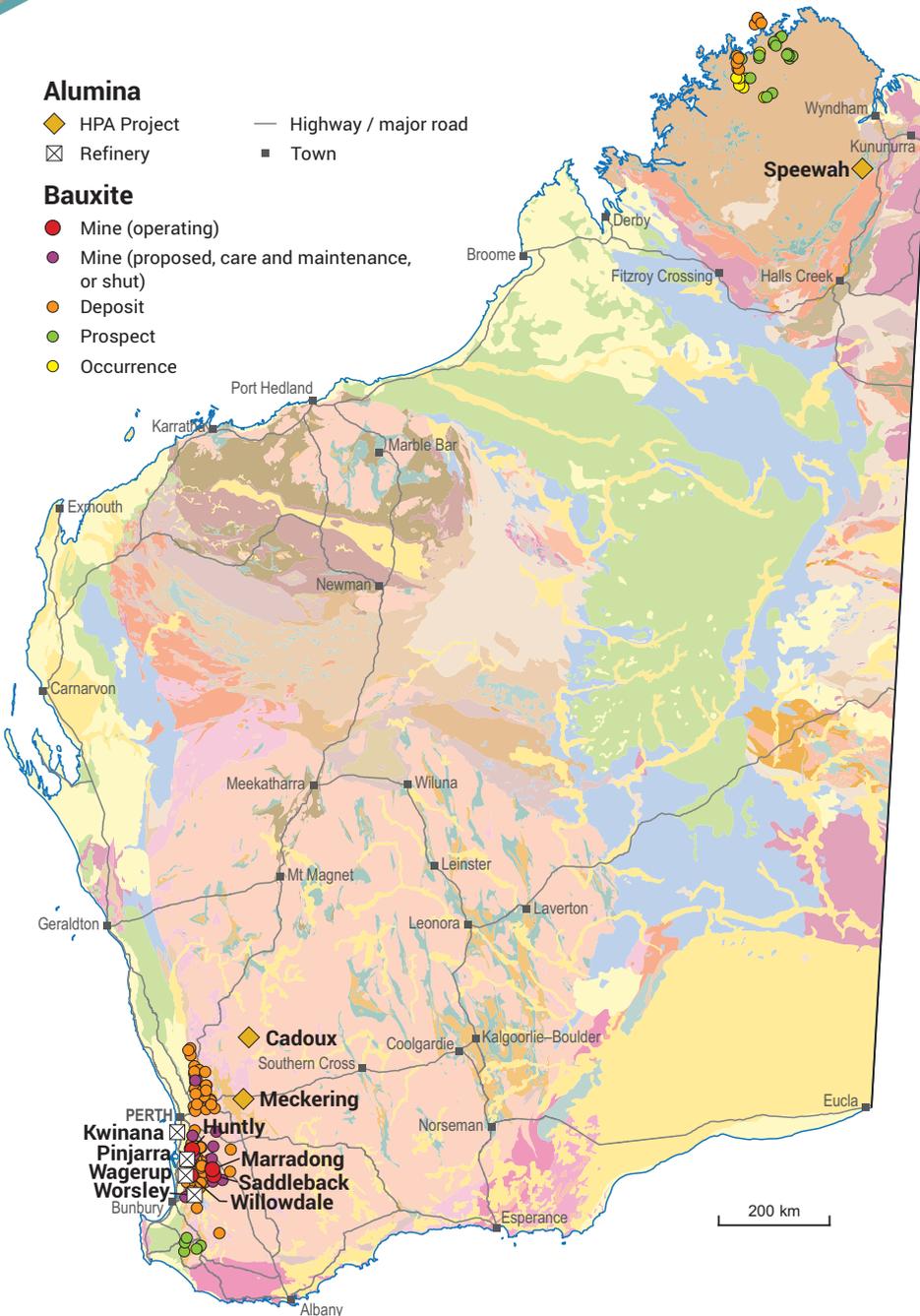
#### Refining bauxite into alumina

Bauxite is processed into alumina via the Bayer process. Four alumina refineries process the bauxite into aluminium oxide  $Al_2O_3$  (alumina):

- Kwinana (Alcoa) – from the Huntly mine
- Pinjarra (Alcoa) – from the Huntly mine
- Wagerup (Alcoa) – from the Willowdale mine
- Worsley\* (South32) – from the Boddington area

\*Worsley Alumina is owned by:  
South32 – 86%  
Japan Alumina Associates Australia – 10%  
Sojitz Alumina – 4%

The State accounts for 69% of Australia's alumina production, and is among the lowest cost producers in the world due to proximity to infrastructure and processing facilities, low reactive silica content, and shallow deposits which are easily accessible



#### Alumina

- ◆ HPA Project
- ⊠ Refinery
- Highway / major road
- Town

#### Bauxite

- Mine (operating)
- Mine (proposed, care and maintenance, or shut)
- Deposit
- Prospect
- Occurrence

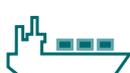
\$5565 m  
Sales value



16 Mt  
Tonnes sold



\$5668 m  
Exports



6840  
Full-time employees



2nd  
Production world ranking



1.65%  
Royalty rate



(2020–21 financial year)  
Totals are for alumina and bauxite



## Alumina and bauxite production in 2020–21

Producer	Alumina (t)	Bauxite (t)
Alcoa of Australia	9 712 870	1 844 090
South32	4 648 152	
<b>TOTAL (t)</b>	<b>14 361 022</b>	<b>1 844 090</b>

### Use of high-purity alumina in electric batteries

High-purity alumina (HPA) is a premium non-metallurgical product containing 99.99% aluminium, and can be used in lithium batteries.

There are three projects currently looking at the viability of producing HPA from clay and kaolin deposits – Cadoux, Meckering and Speewah:

- The Cadoux HPA Project (FYI Resources) has completed a feasibility study, indicating an updated reserve of 3.2 Mt at 24.8%  $\text{Al}_2\text{O}_3$  could support a >25-year mine life. Studies at the Welshpool pilot plant have been completed successfully, with the HPA to be processed at the proposed Kwinana refining facility. FYI Resources and Alcoa are developing an HPA pilot plant which is planned to start production in 2021
- The Speewah Project (King River Resources) is currently assessing the process to recover HPA from magnetite–ilmenite concentrates and waste material
- The Meckering Kaolin Project (Altech Chemicals) is set to become a 4.5 ktpa HPA operation over 30 years



Polished slice of aluminium hydroxide, Kalgoorlie, Western Australia  
(Source: JJ Harrison, [www.jjharrison.com.au](http://www.jjharrison.com.au), CC-BY-SA-4.0)

#### For more information



Geological Survey of  
Western Australia

[www.dmirs.wa.gov.au/gswa](http://www.dmirs.wa.gov.au/gswa)

**MINEDEX**

[www.dmirs.wa.gov.au/minedex](http://www.dmirs.wa.gov.au/minedex)

**GeoVIEW.WA**

[www.dmirs.wa.gov.au/geoview](http://www.dmirs.wa.gov.au/geoview)

#### Contact us

Sarah Sargent

Geological Survey and Resource Strategy Division

Email: [minerals.investors@dmirs.wa.gov.au](mailto:minerals.investors@dmirs.wa.gov.au)

Tel: +61 8 9222 3890



Government of Western Australia  
Department of Mines, Industry Regulation and Safety

December 2021

Geological Survey of  
Western Australia

