

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

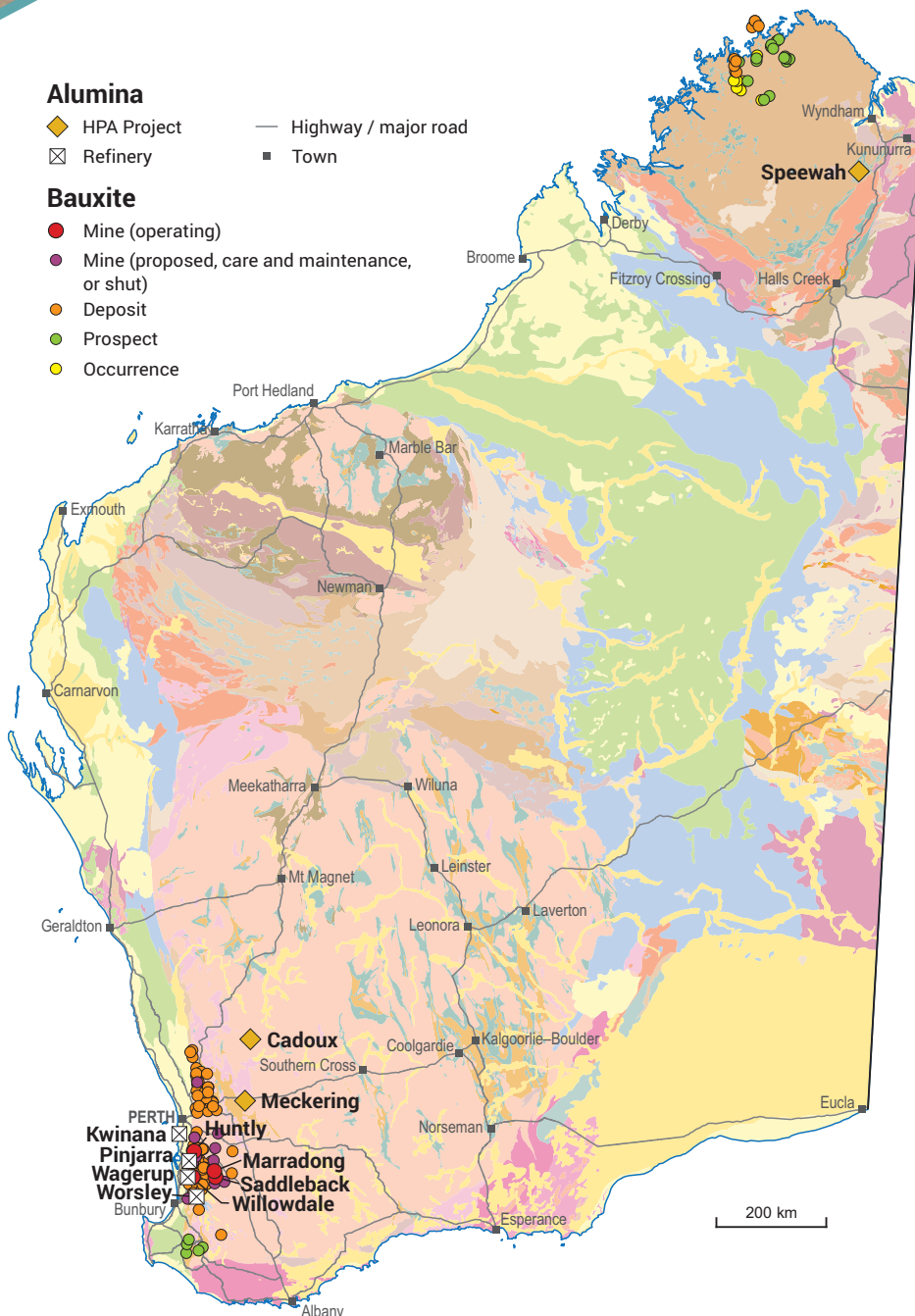
*Worsley Alumina is owned by:

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



\$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



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

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Geological Survey of
Western Australia



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	
TOTAL (t)	14 361 022	1 844 090

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% Al_2O_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, CC-BY-SA-4.0)

For more information



Geological Survey of
Western Australia

www.dmirs.wa.gov.au/gswa

MINEDEX

www.dmirs.wa.gov.au/minedex

GeoVIEW.WA

www.dmirs.wa.gov.au/geoview

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