

Huntly and Willowdale current mining operations

Environmental assessment



Greenhouse gases



Alcoa has been operating in Western Australia since 1963. Our Huntly and Willowdale mines send mined bauxite to our Pinjarra and Wagerup refineries where it's refined into alumina, the material used to make aluminium.

Aluminium plays a key role in decarbonisation. It's found in solar panels, wind turbines, electric vehicles, medical equipment and more. We continue to rely on it every day.

The assessment

The Environmental Protection Authority (EPA) is reviewing some of the current mining activities at the Huntly and Willowdale mines to ensure they meet State environmental standards and minimises impacts to the environment, cultural values and surrounding communities.

While the EPA completes its assessment, Alcoa will continue to operate under an exemption granted by the WA Government – maintaining bauxite supply and supporting thousands of local jobs.

EPA environmental objective aims to

minimise environmental harm from climate change by reducing net greenhouse gas emissions as much as practicable.

Key terms

Greenhouse gas emissions (GHG) – Gases released into the atmosphere that contribute to global warming, including carbon dioxide (CO₂) and methane (CH₄).

Carbon sequestration – The process by which forests and vegetation absorb carbon dioxide from the atmosphere.

Proposed activities

The primary sources of emissions for bauxite mining activities include:

Scope 1 emissions – Resulting from the clearing of vegetation and the use of diesel fuel in mining and haulage equipment.

Scope 2 emissions – Indirect emissions from electricity used to support mining operations.

These activities contribute to GHG emissions by:

Releasing CO₂ and other greenhouse gases from fuel combustion.

Changing carbon sequestration due to clearing vegetation and rehabilitation.

Managing impacts

Alcoa has an ambition to achieve net zero greenhouse gas emissions by 2050.

Huntly and Willowdale mines operate under the Safeguard Mechanism, which sets net Scope 1 emissions limits for large facilities.

Initiatives underway to lower emissions at the Huntly and Willowdale operations include:

Reducing diesel fuel consumption

- Lightweight trays for haul trucks at the Huntly mine have increased payload capacity, allowing more material to be transported per trip, reducing fuel use.
- Fuel additives are blended with diesel to improve efficiency, resulting in approximately 5% fuel saving and lower emissions.
- Optimised haul routes help reduce travel distances, further lowering fuel consumption.

Technology development

- Exploring alternative low-emission fuels, such as renewable diesel, to replace conventional fossil fuels.

- Investigating battery-electric and hybrid trucks to reduce reliance on diesel-powered equipment.

Use of carbon credits

- Where emissions cannot be reduced below the Safeguard Mechanism baseline, Alcoa will surrender carbon credits to reduce emissions.

Rehabilitation & carbon sequestration

- Revegetation of mined areas helps absorb carbon dioxide and supports ecosystem recovery after mining activities.



How Alcoa monitors potential impacts

Alcoa reports its GHG emissions annually under the National Pollutant Inventory and National Greenhouse and Energy Reporting Act 2007.

Continuous monitoring supports compliance and drives improvements in emissions reduction strategies.



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