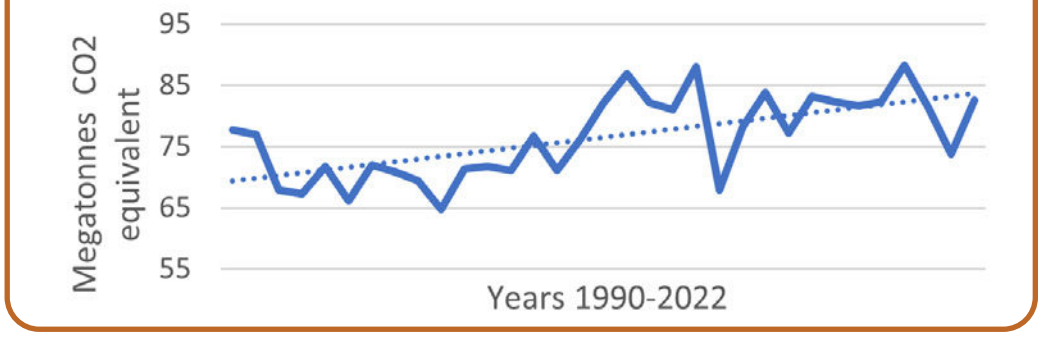
Greenhouse Gas Emissions

In respect to Alcoa's Proposed mining expansion

Carbon Dioxide (CO_2) is a major Greenhouse Gas (GHG) that contributes to global warming and climate change. GHG emissions **in 2021/22 increased by 8% on 2004-2005 levels[2].** The average temperature has risen by 10◦C, and rainfall has fallen by around 20%. Alcoa acknowledges that, since 1973, WA's climate has become warmer and drier due to increased GHG emissions.

In 2020, Alcoa released **4.7 million tonnes CO2 into the air making it the 4th most polluting company in WA.** These emissions come from the 3 refineries – Pinjarra, Wagerup and Kwinana, and from the electricity generated to supply Pinjarra refinery with steam. The **Pinjarra refinery released 2 million tonnes of CO2 into the air–** the 7th highest polluting facility in WA[1].

WA Greenhouse Gas Emissions 1990 – 2022



OUR CONCERNS

1. **Alumina refining is WA's second most carbon polluting industry,** emitting almost twice the volume of carbon dioxide than coal-fired power stations in the State. From 2004 to 2019, the WA bauxite/ alumina industry emissions showed little or no sign of decreasing[3].

2. **CO_2 is released directly from burning fossil fuels** (gas, coal) and **indirectly through clearing** of forests.

3. **Trees take in CO_2 as part of photosynthesis to grow.** In this way they store carbon, taking it out of the atmosphere and reducing CO_2 levels. **Carbon is better stored in older, mature forest** than in young forest. However, **Carbon stores are being lost through clearing of the Jarrah forest.** Clearing mature forest and replacing it with young trees means an overall loss of carbon stored in the forest **Increasing the rate of mining means a greater loss of stored carbon.**

Photo Kingsbury Drive Jarrahdale

4. **Young regrowth forest store less carbon than old growth forests[4].** This means that the forest can't keep up with storing carbon. Storing carbon is critical to reducing the levels of GHGs in the atmosphere. It takes up to **150 years** for forest regrowth to recover the lost carbon from clearing.

5. **The Northern Jarrah Forest is at risk** of collapse or transitioning to a new type of forest as a result of climate change (IPCC's Sixth Assessment Report). This risk can be substantially reduced by avoiding and reducing the clearing and forest degradation that bauxite mining causes.

For these reasons the DDFD believes that Alcoa's mining proposal for expansion of mine sites (Holyoake, Myara and O'Neil) and Pinjarra refinery should be rejected by the EPA.

Have your say by signing on to WA Forest Alliance's submission with a quick and simple form or find out more about writing your own at endforestmining.org.au/alcoa.
The comment period is now open and closes on 21 August 2025.

1. Peter Milne April 6th 2021 Boiling Cold.
2. ABC report 16 April 2023/ https://www.dcceew.gov.au/climate-change/publications/national-greenhouse-acounts-2022/state and-territory-greenhouse-gas-inventories
3. Climate Analytics 2022.
4. Roxburgh, S.H., Wood, S.W., Mackey, B.G, Woldendorp, P., Gibbons,P. (2006) Assessing the carbon sequestration potential of managed forests: a case study from temperate Australia. Journal of Applied Ecology 43:6, 1149 – 1159
5. Keith et al (2014) Managing temperate forests for carbon storage: impacts of logging versus forest protection on carbon stocks, Ecosphere - June 2014 v Volume 5(6) v Article 75