

RioTinto

Decarbonisation update

Gladstone Regional Council

1 August 2023

Our Group commitments



50%

Reduction in Scope 1&2 emissions by 2030

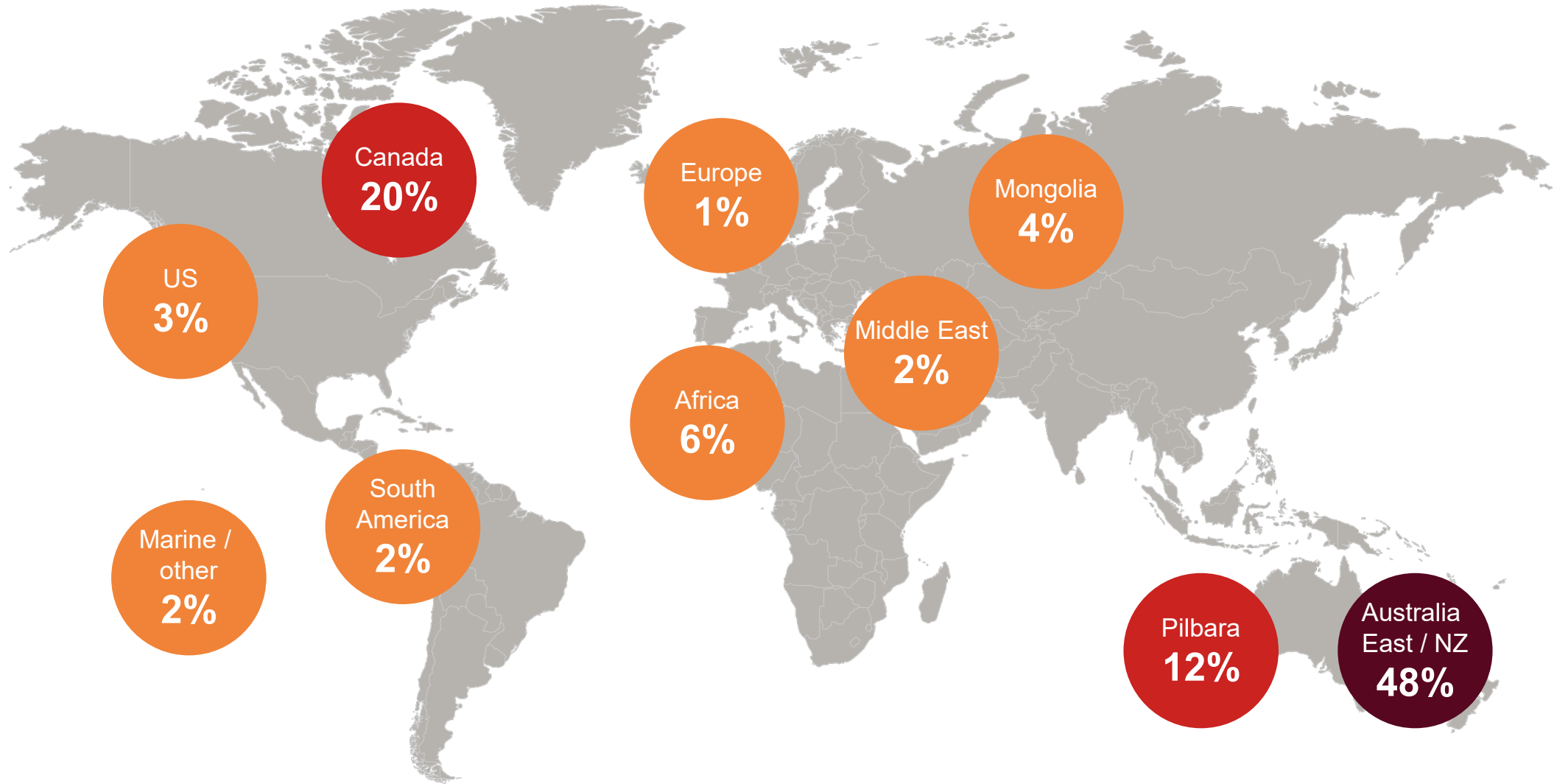
\$7.5B

Direct capital expenditure to lower emissions by 2030

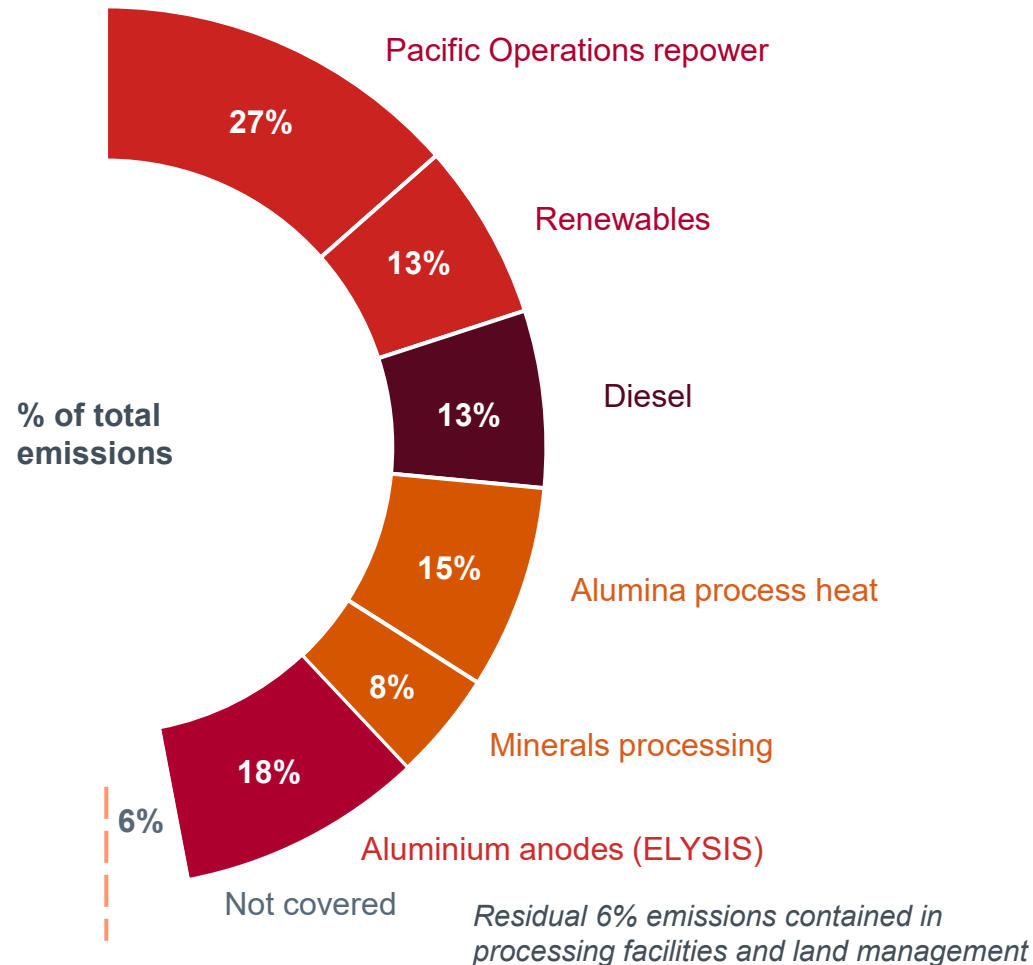
Net zero

Scope 1&2 emissions by 2050

Australia and Canada represent 80% of our emissions*



Our Scope 1 & 2 footprint



Scope 1&2
30.3Mt CO₂

- 80% emissions from processing and producing metals and minerals and 20% from mining operations
- 94% of our Scope 1 & 2 emissions come from six key sources address by six Global Decarbonisation Programs
- Offsets will play a role and we are developing high-integrity nature-based solutions projects

Much of the technology we need to achieve net zero Scope 1&2 emissions does not yet exist

Tackling our emissions in Gladstone

Energy Efficiency

Double digestion + Heat recovery
to reduce the amount of process heat required.
Recover low temp+pressure steam



Electricity

Seeking **4GW**
of wind and solar solutions to
repower BSL
More renewables required both
refineries



Steam

Electrification
of boilers to replace coal and
gas in steam generation.
Thermal storage for firming
and generation

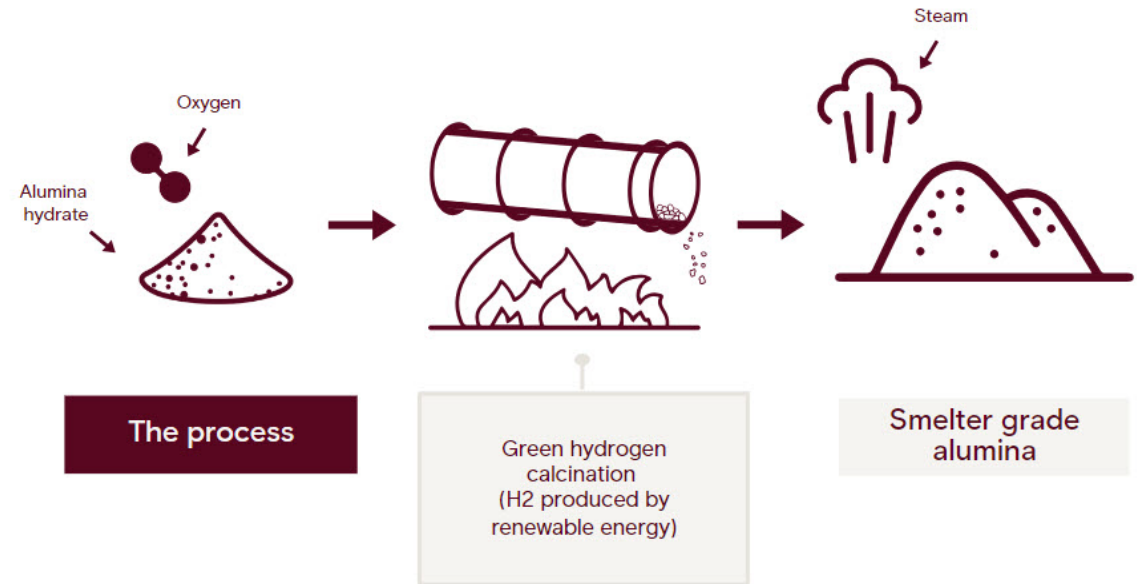
Calcination

Hydrogen
use in the alumina
calcination process
Pilot plant with Sumitomo
and ARENA



Hydrogen calcination pilot

- In a \$111 million partnership with Sumitomo Corporation and ARENA, we're building a first-of-a-kind hydrogen pilot plant and retrofitting equipment Yarwun alumina refinery.
- We will:
 - Test hydrogen to replace fossil fuels as a heat source in the calcination process
 - Build an electrolyser (owned and operated by Sumitomo) producing 250 tonnes of hydrogen pa
 - Produce ~6,000 tonnes of alumina pa and reduce Yarwun's CO2e emissions by ~ 3,000 tonnes pa
- Construction starts in 2024, and the hydrogen plant and calciner expected to be in operation by 2025.
- Full implementation of this technology at Yarwun has potential to reduce emissions by 500,000 tonnes pa – the equivalent of taking about 109,000 internal combustion engine cars off the road.



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