

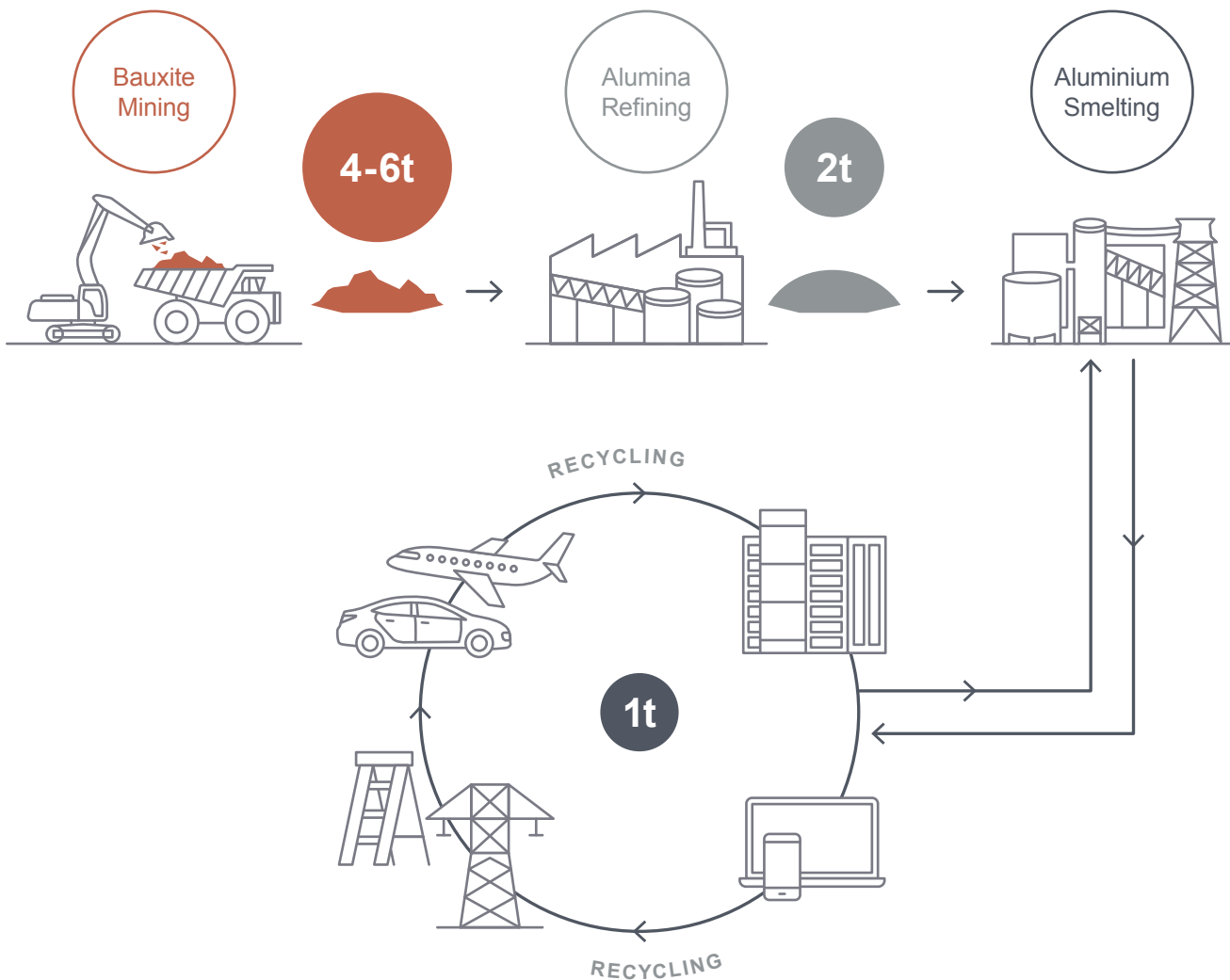


AUSTRALIAN  
ALUMINIUM  
COUNCIL LTD

# Aluminium

A Climate Smart Future Metal

Primary aluminium is made from an ore called bauxite, which is refined to make alumina before being smelted to make aluminium.



Bauxite is the primary ore from which aluminium is extracted. Alumina refineries process bauxite ore to produce aluminium oxide or alumina, by dissolving the bauxite in a caustic solution at high temperature and pressure; and then precipitating the dissolved pure alumina.

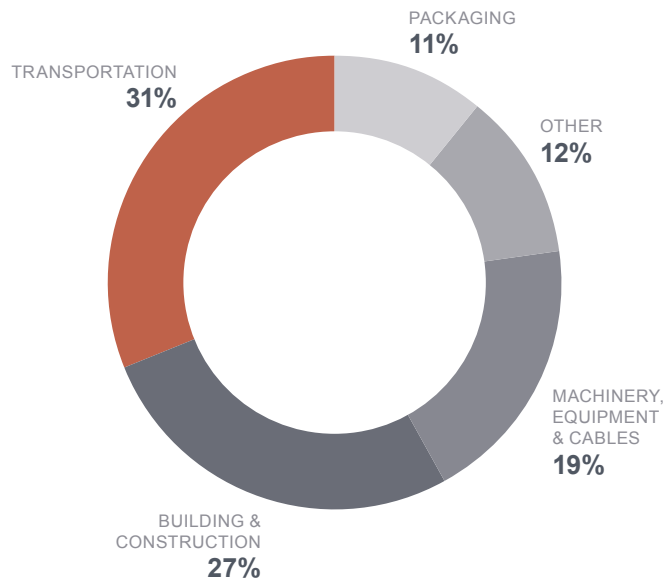
Aluminium smelters then use an electrolytic process to extract aluminium metal from alumina. Aluminium can be formed into a variety of products by extruding, rolling or casting.

# Aluminium – strong, lightweight and infinitely recyclable.

Construction, transport and electronics are just some of the ways it can be used. We often think of the aluminium drink can, but in fact that's only a fraction of the world's aluminium usage.

Aluminium is lightweight and strong enabling use in the aviation, aerospace, shipping and rail industries. For example, 2kg of steel in a car can be replaced by 1kg of aluminium. Aluminium use in cars will increase to about 250kg per car by 2025 and every 100kg of aluminium used in a car can save 2 tonnes carbon dioxide over the life of a vehicle.

Interior aluminium has an infinite life. Aluminium is used in cables and wires because of its conductivity and light weight, particularly in overhead applications.



## Aluminium use is highly correlated with GDP, so as countries urbanise their per capita use increases.

Today, global demand for aluminium is about 103 million tonnes. 66 million tonnes, or 64%, of which was met by primary aluminium (produced from bauxite/alumina) and 37 million tonnes, or 36%, from recycled aluminium.

The International Aluminium Institute's (IAI) modelling predicts a growth rate of 2% per annum. This means that even with an increased recycling rates, recycled aluminium will only meet around 50% of global demand by 2050. This means that 90 million tonnes per annum of primary aluminium will be required in 2050, a 40% increase on today's primary aluminium production rates.

Meeting the continued and increasing demand for primary aluminium, will require the additional mining of at least 100Mt of bauxite and production of 50Mt of alumina, above today's production rates. This is good news for Australian bauxite, Australian alumina and Australian aluminium producers.

## Recycling aluminium uses only 5% of the energy of producing primary aluminium.

Aluminium can be recycled endlessly and about 75% of all aluminium ever produced is still in use today. Recycled aluminium will be a key part of meeting increased demand over time, but long product lives (e.g., transport and buildings) and increasing demand mean that primary aluminium is still needed.

## Aluminium is a central part of the global energy transition.

The World Bank's 2020 report "Mineral Intensity of the Clean Energy Transition" found the demand for aluminium is expected to be critical across both renewable energy generation and storage technologies. Electric vehicle (EV) demand will add to this trend with an estimated average aluminium content of 250kg of aluminium every EV.

