

## Pathway 3 – Recycling & Resource Efficiency

*Infinite recyclability without loss of properties is one of aluminium's unique benefits.*

Three-quarters (75%) of the more than 1.4 billion tonnes of aluminium ever produced is still in use today and available for recycling and reuse in the future.

The recycling of post-consumer scrap today avoids the need for almost 20 million tonnes of primary aluminium, thus avoiding around 300 million tonnes of CO<sub>2</sub>e every year.

Post-consumer scrap recycling is expected to rise to 60 million tonnes by 2050 under a Business As Usual (BAU) scenario. Under a maximised collection scenario, this type of recycled aluminium could increase to more than 70 million tonnes.

There are high scrap collection rates (above 90%) in the building & construction and automotive segments. However, products like cars tend to have long lifetimes, so scrap availability is constrained significantly by product life.

Aluminium in packaging applications has a much shorter lifetime and a range of recycling rates, depending on the application, local market, consumer behaviour and political conditions.

The global collection rate across all segments is over 70%, with some applications in some regions at near 100%.

Production of recycled aluminium from post-consumer scrap has increased by 70% since 2009, while remelting losses have only increased by 4%. This is testament to the recycling industry's huge technological advances over the last ten years.

Once collected, aluminium is recycled into new products. Producers and consumers (and waste management actors) should ensure that aluminium is brought back into the system at the end of its life. Designers can also help by creating products that make it easy for aluminium components to be efficiently separated, collected and sorted with no loss to value.

Today, around 7 million tonnes of aluminium is lost during the recycling process. This could rise to 17 million tonnes per annum by 2050 if there is no change in current practices. When recycled metal is not retained in the economy, it is replaced by primary aluminium. Primary production today has a greenhouse gas emissions profile on average twenty-five times higher than the recovery of recycled metal.

Near 100% collection rates, improved scrap sorting, elimination of pre-consumer scrap and metal losses could reduce the need for primary aluminium by 20% by 2050. This would deliver an additional reduction of 300 million tonnes of absolute CO<sub>2</sub>e emissions in 2050, an impact at the same magnitude as direct emissions reduction under Pathway 2.

This transformation in aluminium supply requires action from all in the value chain. It would also require policy frameworks that enable circularity and encourage investment in product design and innovations that ensure the efficient recycling of aluminium.