

IAI MATERIAL FLOW MODEL - 2021 UPDATE

By The International Aluminium Institute (IAI)

The International Aluminium Institute has undertaken its annual Material Flow Model update, looking back at almost 70 years of historical data from mining to product, recycling and trade for nine regions and globally.



Recycled production has now exceeded one-third of total production.

2019 GLOBAL RESULTS

33 million tonnes

Modelled recycled production (excluding alloying elements added at the remelting plant)

64 million tonnes

Primary production: tapped electrolytic metal

95 million tonnes

Reported global semis shipments - **50%** more than in 2010

POST-CONSUMER SCRAP

Since 1990, post-consumer scrap availability from end-of-life products has surpassed pre-consumer scrap.

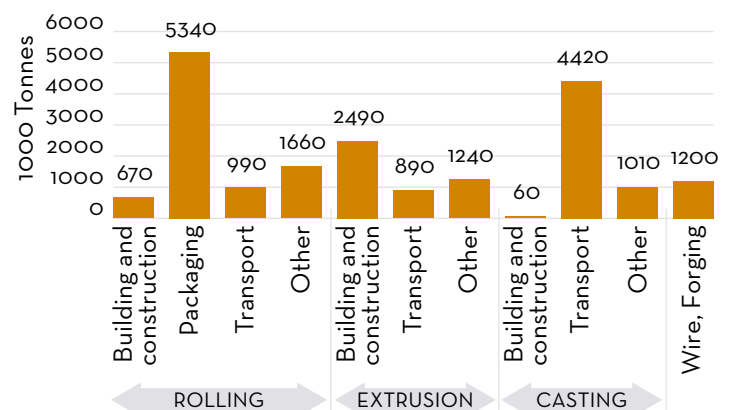
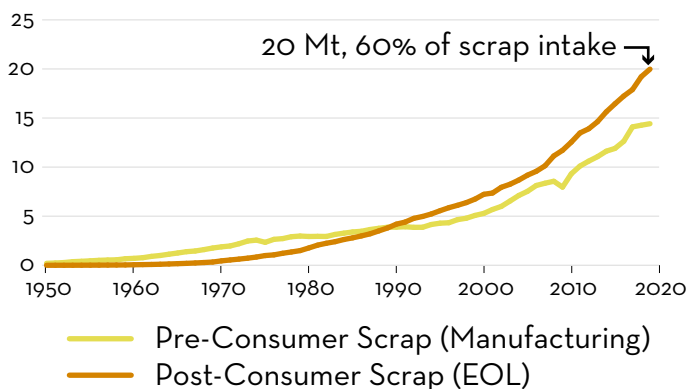
There was a record **20 million tonnes** of post-consumer scrap intake in 2019 - representing about **60%** of scrap intake - equivalent to saving 300 million tonnes of greenhouse gas emissions.

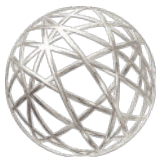
...and **20%** of global sourced material for aluminium production.

Global sourcing (Mt)

The biggest post-consumer scrap intake in 2019 came from used packaging (rolled products).

Global scrap intake (Mt)



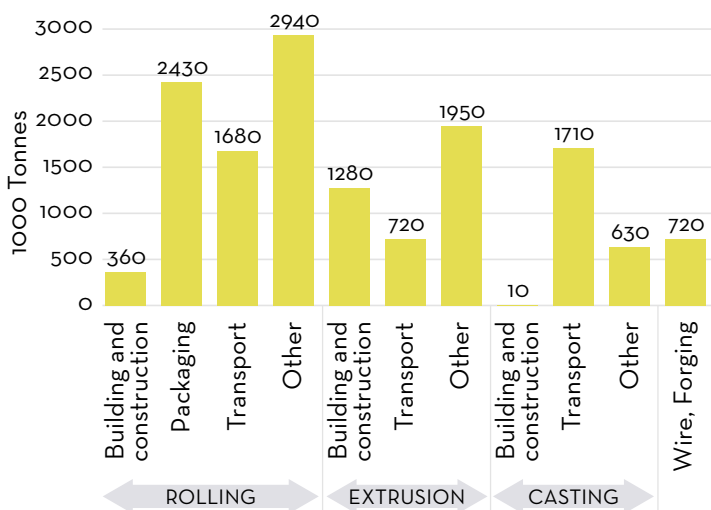


PRE-CONSUMER SCRAP

Pre-consumer scrap – stagnated in 2019 due to flat aluminium consumption from 2018 to 2019.

Of these **14 million tonnes** :

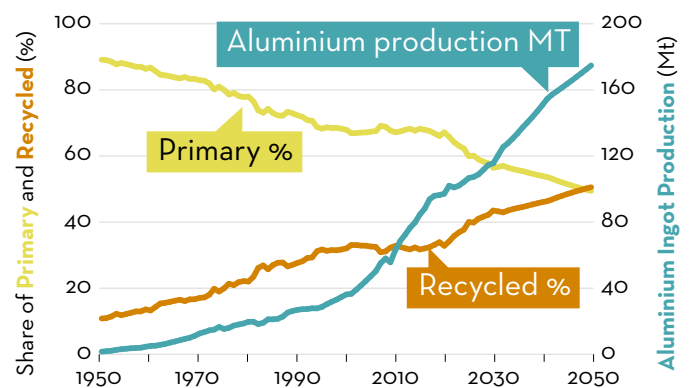
- **51%** was sheet and foil
- **27%** was extrusion scrap
- **16%** was castings



GLOBAL OUTLOOK

80% Global demand for aluminium is expected to increase by **80%** by 2050, due to rapid population and economic growth and the drive for sustainable solutions for a low-carbon society. This demand could be met by a **50/50 balance of recycled and primary metal**, based on 2019 collection rates for end-of-life products.

Share of primary and recycled aluminium



FUTURE SCENARIOS

The 2021 update includes two scenarios with data to 2050.

1 The 2021 IAI REFERENCE SCENARIO – an update to the 2020 IAI Reference Scenario using additional data.

2 The 2021 HIGH DEMAND SCENARIO (based on CM Group), which uses the growth rates based on CM Group aluminium demand research.

The 2020 IAI Reference Scenario (previously Moderate Covid-19 Demand Impact) is being maintained as it is the basis of the Greenhouse Gas Pathways work.

In this update, the industry has dropped its most aggressive COVID-19 forecast in 2021, known as Deeper Covid-19 Demand Impact, as the pandemic had very little impact on the aluminium industry.

Aluminum beverage cans are the most recycled drinks package in the world - with a global weighted average recycling rate of 69%, compared to polyethylene terephthalate (PET) at 43% and glass at 46%.



Source: Resource Recycling Systems

FIND OUT MORE

The International Aluminium Institute's Material Flow Model update has been published on Alucycle. The 2021 update includes a complete historical dataset for 2019, and a 2020 partial dataset, including primary aluminium production, alumina production, inventories, regional semis shipments and trade of bauxite, alumina, aluminium, semis, final products and scrap. Visit **Alucycle**.