

BEYOND 2 DEGREES THE OUTLOOK FOR THE ALUMINIUM SECTOR

The International Aluminium Institute has released the aluminium sector's decarbonisation dataset in line with the International Energy Agency's Beyond 2 Degrees Scenario (B2DS) findings.

This factsheet looks at key statistics in the areas of mining, refining, smelting and recycling – comparing 2018 figures with the greenhouse gas budget assigned to the aluminium sector under B2DS by 2050.

ALUMINIUM SECTOR

77%

Under a B2DS, the aluminium sector needs to reduce its emissions by around 77%. At the same time, the IAI predicts demand for aluminium products will grow by 81% by 2050.

Huge investment in technology and a commitment from all in the value chain will be required to simultaneously reduce emissions while increasing demand.



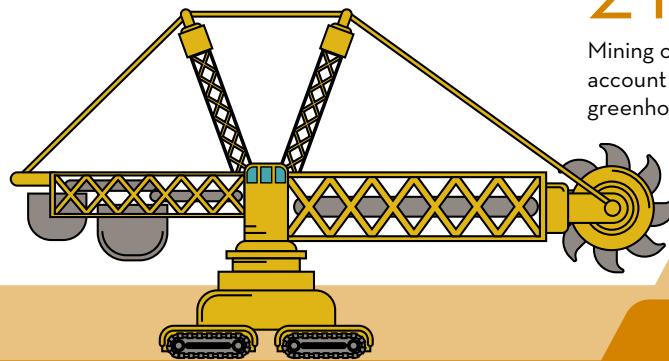
MINING

3 million

Mining of bauxite accounted for 3 million tonnes of greenhouse gas emissions in 2018. This figure is made up of thermal energy and electricity-related emissions.

2 million

Mining of bauxite in line with the B2DS may account for as much as 2 million tonnes of greenhouse gas emissions in the year 2050.



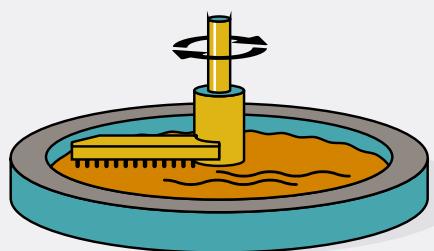
REFINING

171 million

Alumina refining accounted for 171 million tonnes of greenhouse gas emissions in 2018.

90 million

The refining of alumina in line with the B2DS is likely to account for 90 million tonnes of greenhouse gas emissions in 2050.





SMELTING

823 million

In 2018, smelting of aluminium accounted for 823 million tonnes of total greenhouse gas emissions and, with a share of 75%, represents by far the largest source of emissions by the aluminium sector.

670 million

In 2018, smelting of aluminium accounted for 670 million tonnes of electricity-related emissions.



90 million

Smelting of aluminium in line with the B2DS could account for 90 million tonnes of greenhouse gas emissions in 2050.

8 million

Under a B2DS, electricity-related emissions from primary aluminium smelting will be 8 million tonnes in 2050 – a decrease of more than 98%.

RECYCLING

19 million

Recycling of aluminium accounted for almost 19 million tonnes of greenhouse gas emissions in 2018. 15.6 million tonnes of this were made up of thermal energy, while 3.1 million tonnes were from electricity-related emissions.

21 million

Recycling of aluminium in line with the B2DS will account for 21 million tonnes of greenhouse gas emissions in 2050, marking a 2 million tonne rise from 2018.



183+%

Between 2018 and 2050, recycling will increase by 183%. This will see a rise in greenhouse gas emissions.

-60%

The greenhouse gas emissions from recycled aluminium could decrease by 60% per tonne by 2050, similar to other thermal-energy-heavy processes such as refining and semis fabrication.

EMISSIONS REDUCTION

1.1 billion

The aluminium sector was responsible for 1.1 billion tonnes of CO₂e emissions in 2018, of which 317 million tonnes were direct emissions (process and thermal energy).



250 million

Under B2DS, total CO₂e emissions across the aluminium sector could decrease to 250 million tonnes, of which 191 million tonnes would be direct emissions (process and thermal energy).