Aluminium Production

- Perfluorocarbons (PFC) emissions intensity reduced by 86% per tonne of aluminium from 4.9 to 0.7 tonnes CO₂e between 1990 & 2008.
- Total PFC emissions (t CO₂e) reduced by 70% over the same period, despite 100% growth in production.
- Total Direct GHG emissions from all processes (t CO₂e) remained constant between 1990 and 2008.
- GHG intensity per tonne of semi-fabricated product, including savings from recycling, reduced by 22% between 1990 and 2008.
- Energy efficiency of aluminium refining process improved by 5% between 2006 and 2007.
- Electrical power efficiency of IAI-surveyed smelters improved by 4%, 1990 to 2010.
- Achievement of a balanced land use outcome in the bauxite mining sector with annual area reha...
Only 30% of land is dis-
mined for mining bauxite 
every year, equivalent to 
the size of Manhattan 
Island.

Fuel combustion for heat 
and steam represent the 
bulk of Bayer Process emis-
sions, with 10% from indi-
direct sources.

Transport-related emissions 
from transportation of bauxite 
and transport of aluminium 
industry materials can have a 
significant impact on global 
GHG emissions.

Recycling avoids the proc-
esse emissions associated 
with primary production.

Approximately 75% of all 
aluminium ever produced is 
still in productive use, hav-
ing been through countless 
loops of its lifecycle.

Recycling requires only 5% of 
the energy required for pri-
mary aluminium production.

Recycling avoids the proc-
esse emissions associated 
with primary production.

18 million tonnes of alu-
ninium are recycled from 
scrap annually.

Approximately 75% of al-
uminium ingots are recycled and reformed into semi-fab-
ricated products - sheet for 
aircraft, foil for packaging, 
elements for cars and buses.

This has been driven by a re-
duction in the emissions of 
perfluorocarbons (PFCs) 
by 86% per tonne aluminium 
between 1990 and 2008.

The bulk of Scope 3 emissions 
are around 800kg per 
tonne of product.

Each process has a different 
energy and emissions profile,

GHG emissions potentially 
saved through aluminium 
vehicle lightweighting 
applications in 2008: 
800 million tonnes CO₂.