

# IAI Global Sustainability Initiative

*12 Voluntary objectives covering key environmental, social and economic indicators*

- **Voluntary Objective 1**

*An 80% reduction in Perfluorocarbon (PFC) greenhouse gas emissions per tonne of aluminium produced for the industry as a whole by 2010 versus 1990 levels.*

- **Voluntary Objective 3**

*A 10% reduction in average smelting energy usage by IAI Member Companies per tonne of aluminium produced by 2010 versus 1990.*

- **Voluntary Objective 7**

*The industry will monitor annually aluminium shipments for use in transport in order to track aluminium's contribution through light-weighting to reducing greenhouse gas (GHG) emissions from road, rail and sea transport.*

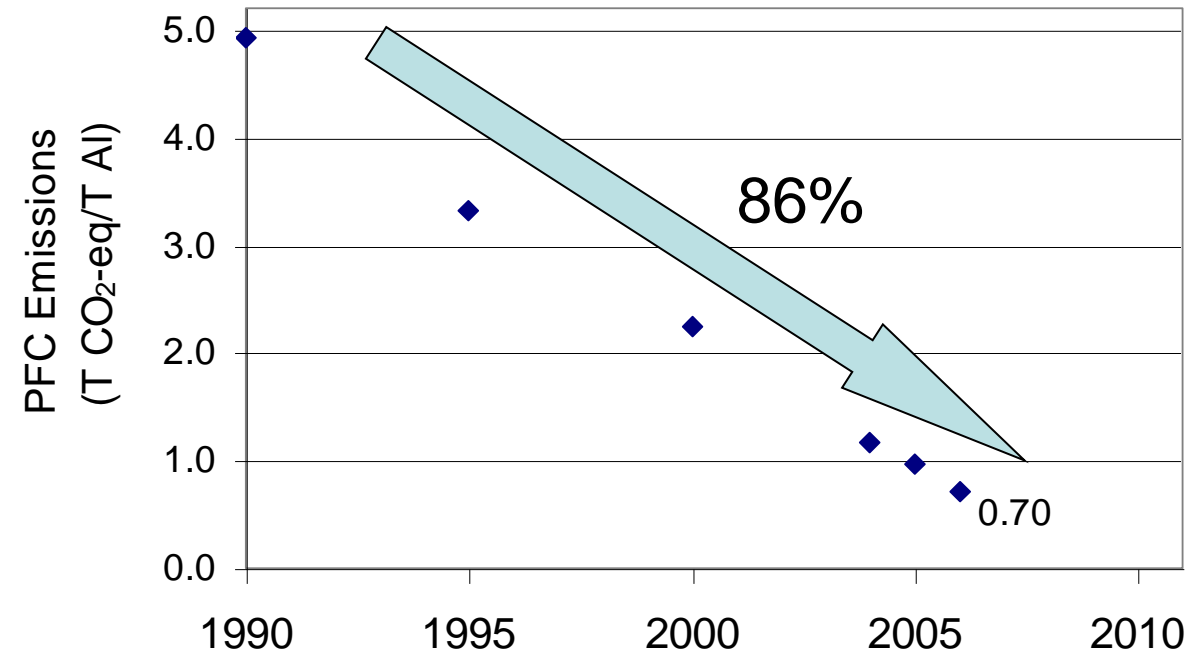
- **Voluntary Objective 8**

*The IAI has developed a mass flow model to identify future recycling flows. The industry will report annually on its global recycling performance.*

- **Voluntary Objective 11**

*The IAI Member Companies will seek to reduce GHG emissions from the production of alumina per tonne of alumina produced.*

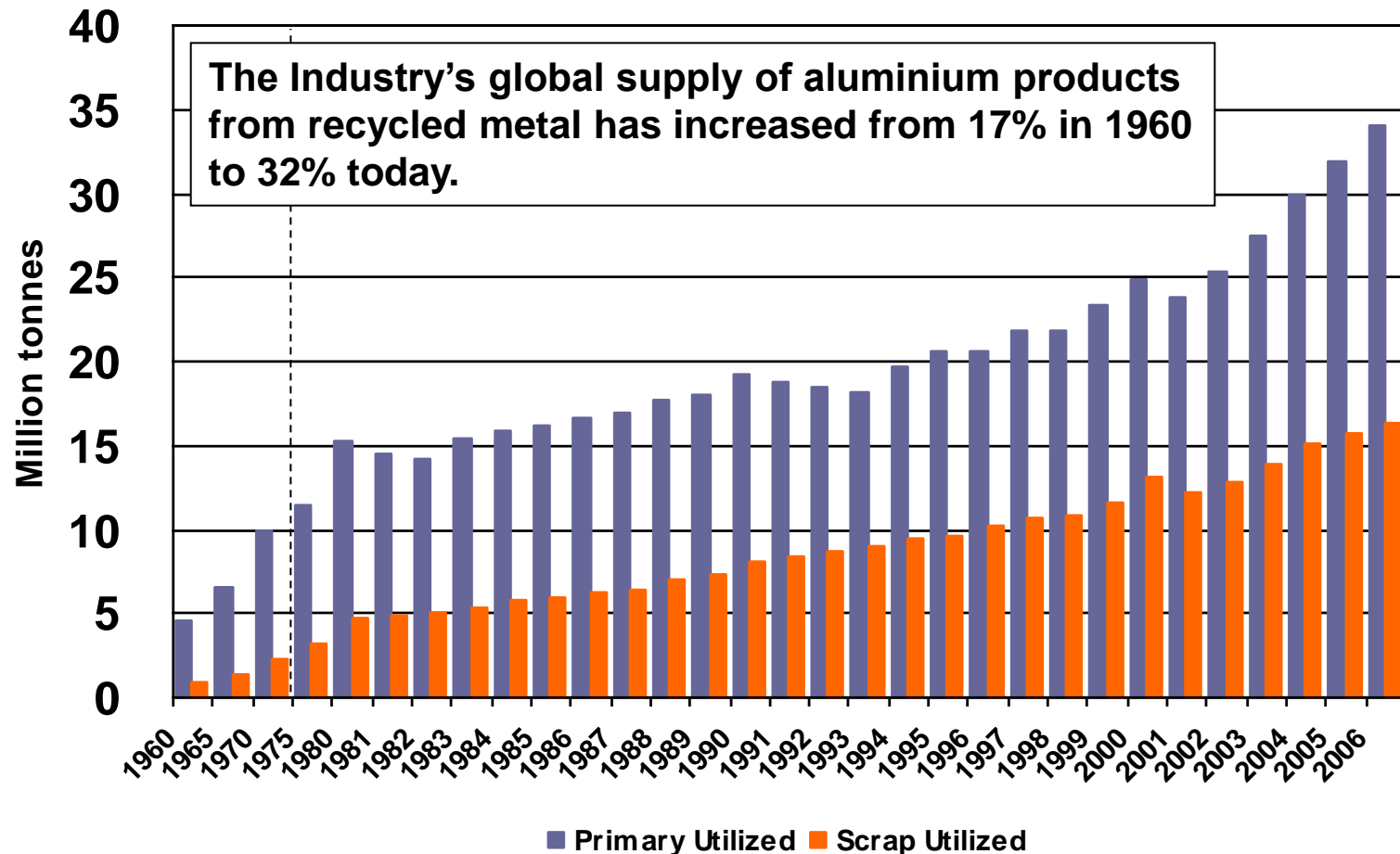




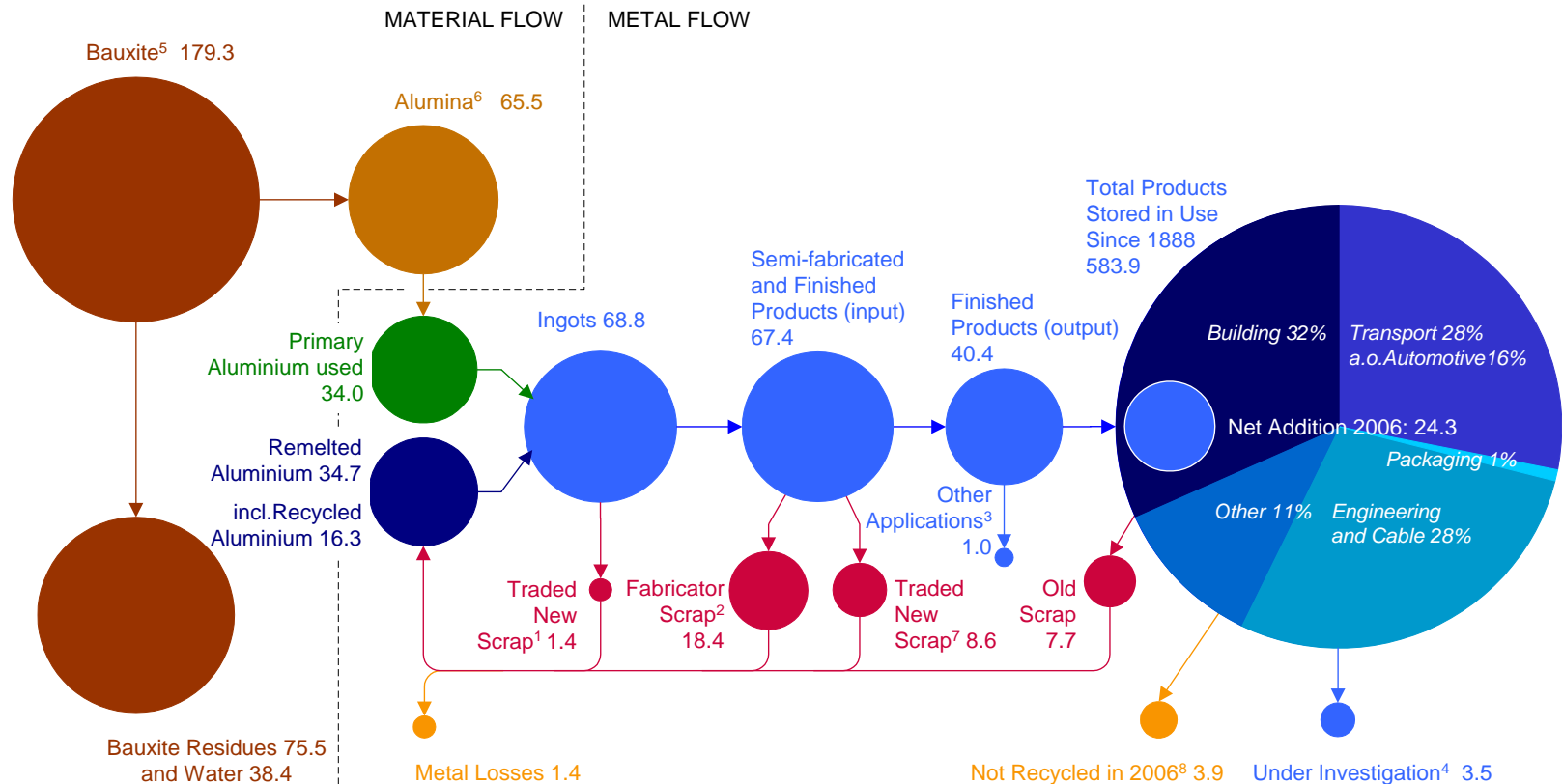
- Perfluorocarbon (PFC) emissions were reduced by 86% per tonne of aluminium between 1990 and 2006.
- This equates to a reduction in total PFC emissions of 75%, despite increasing demand for aluminium.

Total direct greenhouse gas emissions from the aluminium industry have been reduced by over 30% since 1990, while aluminium production has increased by 80% from 20 to 36 million tonnes per annum

# The growing markets for aluminium are supplied by both primary and recycled metal sources



# Global Aluminium Flow, 2006



Values in millions of metric tonnes. Values might not add up due to rounding. Production stocks not shown

1 Aluminium in skimmings; 2 Scrap generated by foundries, rolling mills and extruders. Most is internal scrap and not taken into account in statistics; 3 Such as powder, paste and deoxidation aluminium (metal property is lost) 4 Area of current research to identify final aluminium destination (reuse, recycling or landfilling); 5 Calculated based on IAI LCI report - update 2005. Includes, depending on the ore, between 30% and 50% alumina; 6 Calculated. Includes on a global average 52% aluminium; 7 Scrap generated during the production of finished products from semis; 8 Landfilled, dissipated into other recycling streams, incinerated, incinerated with energy recovery.

# Transport Light-weighting Life Cycle Study

- Full life cycle: Accounts for **production, vehicle use and end-of-life processing**.
- Observes the principles of life cycle assessment per **ISO standard 14044** with regards to energy and greenhouse gas emissions.
- Focuses on **real examples** of the benefits of mass reduction by the use of aluminium components in the transport sector.
- Substitutions by aluminium are made **component by component** in different vehicle series.
- Each component is subjected to **individual life cycle analysis** providing a detailed profile of the energy and greenhouse gas savings.
- For each component a **sensitivity analysis** is applied.
- Life cycle results show that in automotive applications **each kilogram** of aluminium saves depending on the case **between 15 and 20 kg of greenhouse gas emissions**.



# Improving Sustainability

- Available on IAI website [www.world-aluminium.org](http://www.world-aluminium.org)
  - IAI Global Sustainability Initiative (updated annually)
  - Life Cycle Inventory Data Report
  - Aluminium: Pioneering The Global Sectoral Approach
  - Transport and Aluminium

**Thank you for your attention!**