

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.

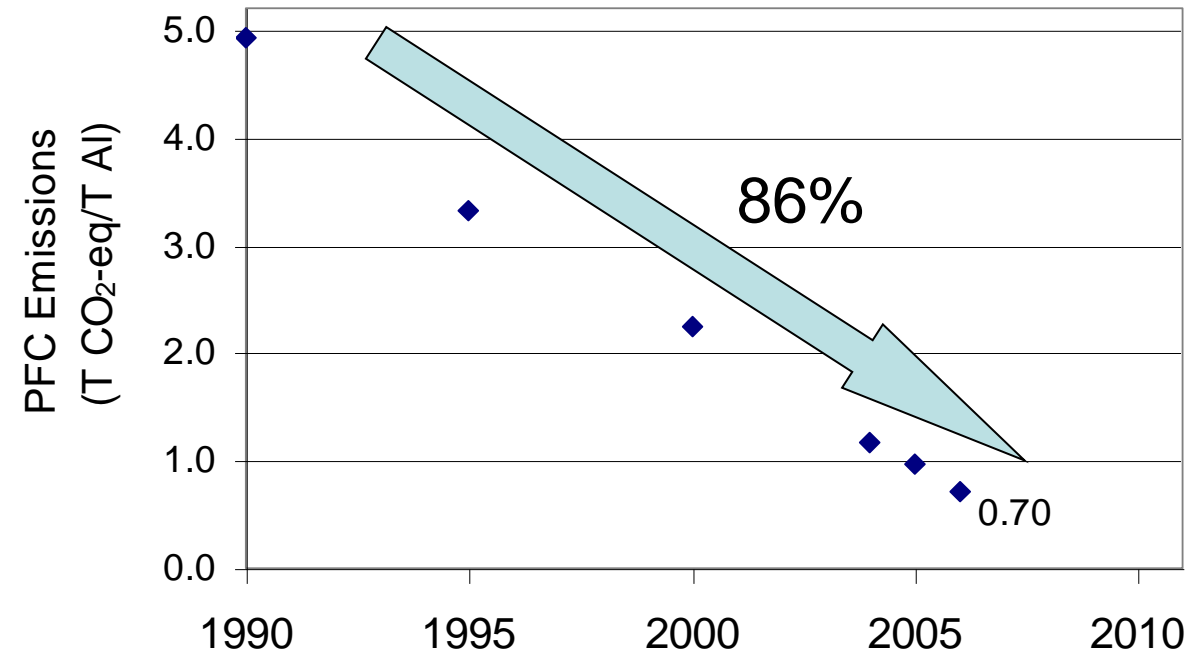
- **Voluntary Objective 8**

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.

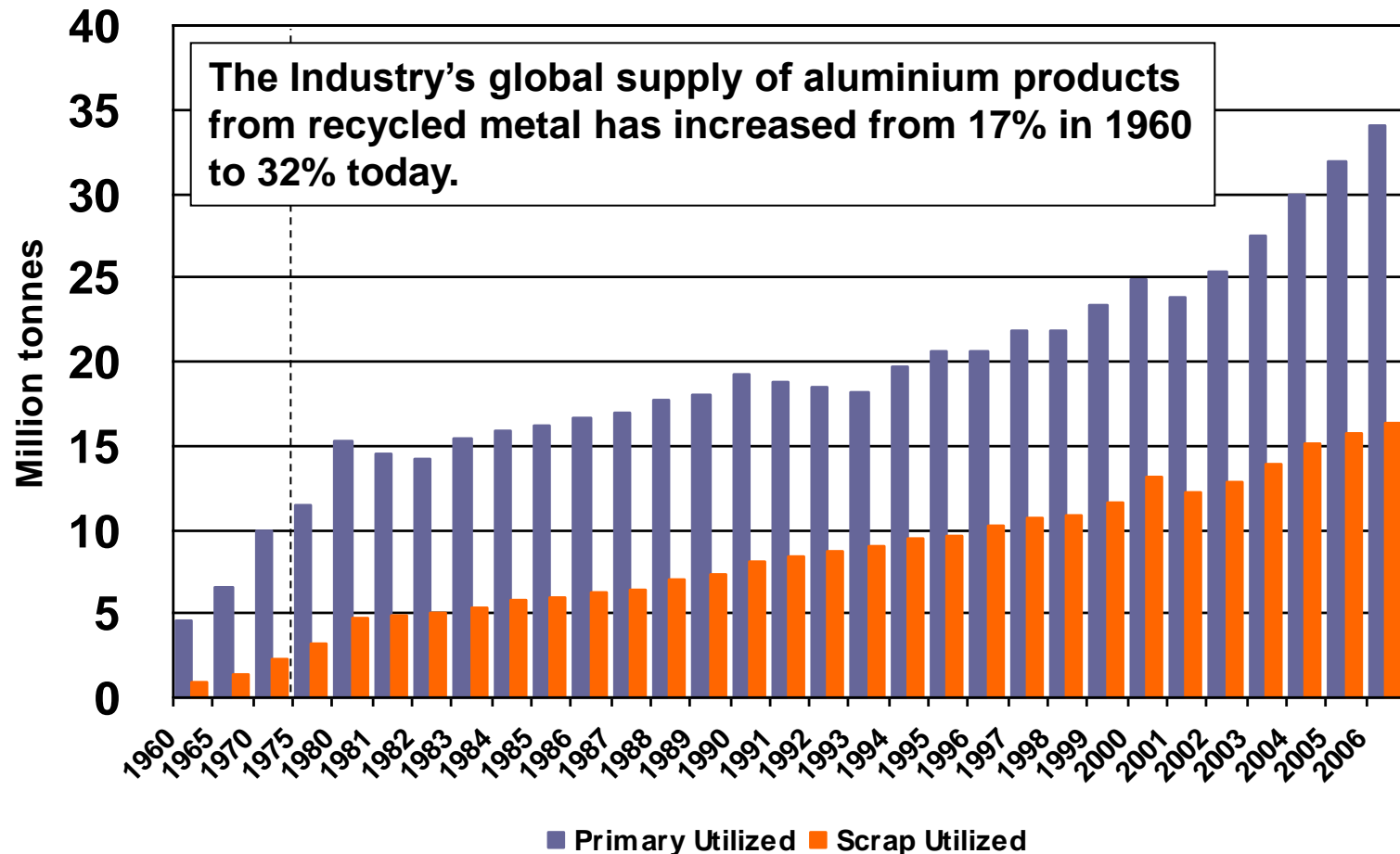




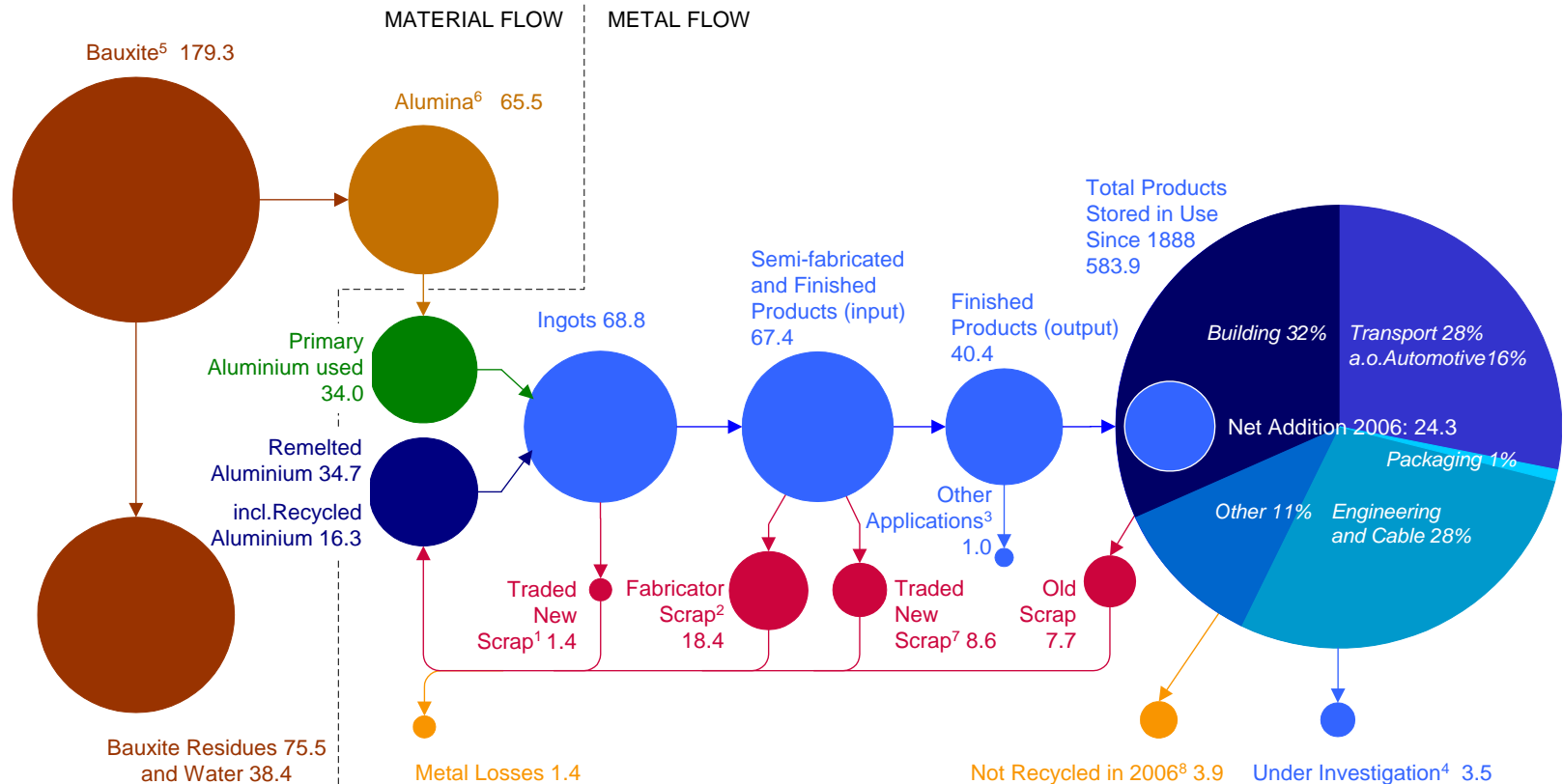
- Perfluorocarbon (PFC) emissions were reduced by 86% per tonne of aluminium between 1990 and 2006.
- This equates to a reduction in total PFC emissions of 75%, despite increasing demand for aluminium.

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
 - 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!