

## Aluminum Industry Life-Cycle Assessment Report Briefing January 2014

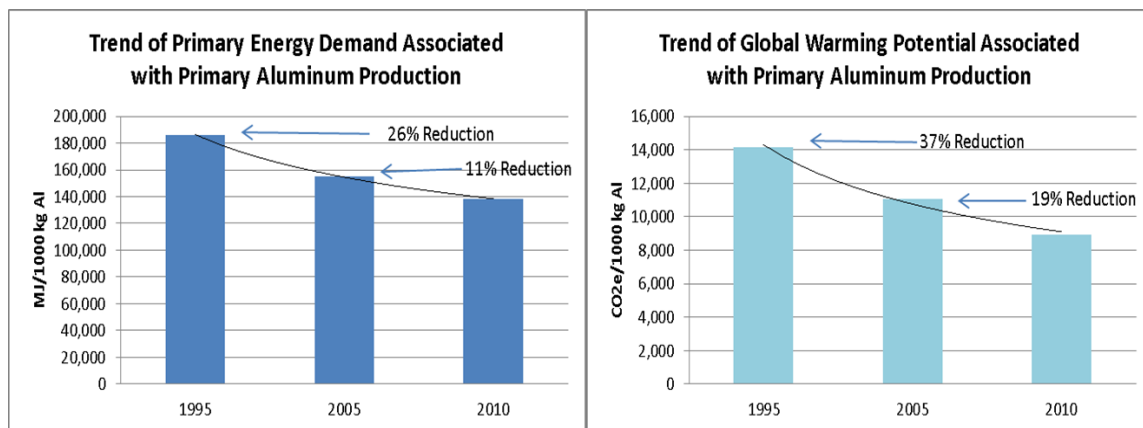
**The aluminum industry in the U.S. and Canada has achieved significant sustainability gains over the past two decades.**

Energy needed to produce a single metric ton of aluminum has declined:

- 26 percent since 1995
- 11 percent since 2005

The industry's carbon footprint has dropped even more dramatically, declining:

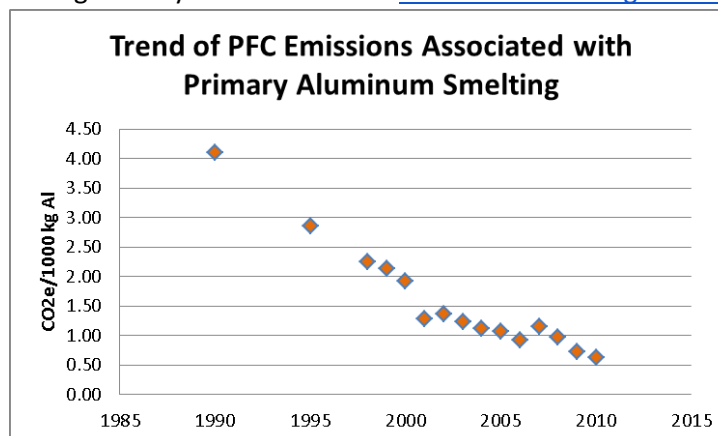
- 37 percent since 1995
- 19 percent since 2005



The reduction in energy use by primary aluminum producers over the past two decades has led to a steady decline in the industry's carbon footprint.

**A voluntary effort beginning in the 1990s has reduced aluminum industry emissions of perfluorocarbons (PFC), a greenhouse gas, by nearly 85 percent.**

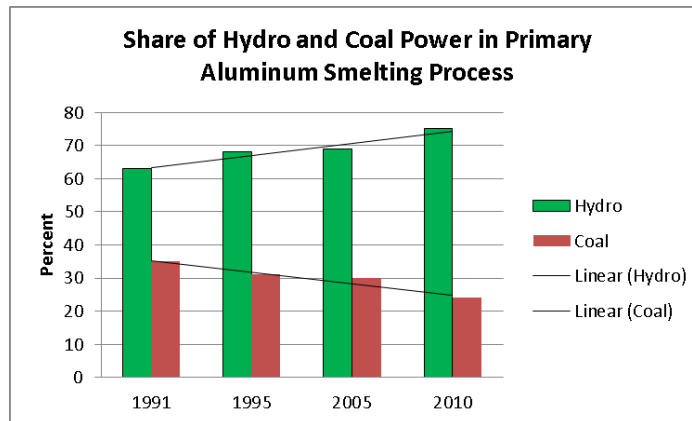
- A reduction in PFC emissions in the primary aluminum production process is a key driver of the industry's improved environmental performance.
- In 1992, the aluminum industry entered into a voluntary partnership with the Environmental Protection Agency (EPA) to help realize these gains.
- These efforts were recognized by the EPA with the [2001 Climate Change Protection Award](#).



PFC emissions, a greenhouse gas associated with primary aluminum production, have declined dramatically since the early 1990s thanks to voluntary efforts by the industry in partnership with the EPA.

**Technological advances in the aluminum production process are the primary drivers of these environmental improvements. Advances include:**

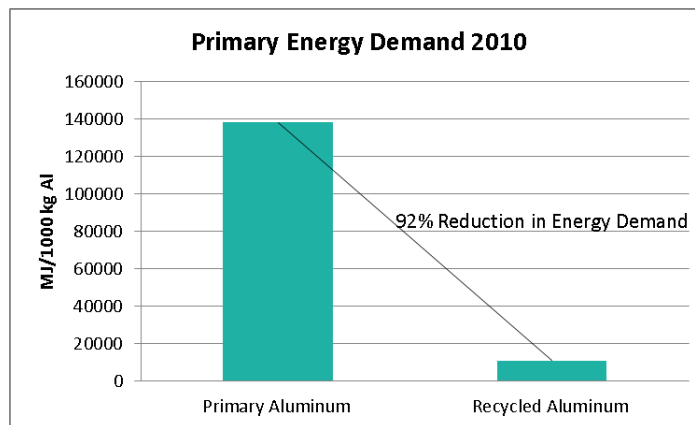
- Increased use of computerized process controls to lower electric power use.
- The gradual phase-out of older facilities relying on older, more energy intensive production processes.
- Expanded industry reliance on renewable hydropower to reduce energy consumption for production facilities.



The share of hydropower consumption for aluminum production has risen from 63 percent in 1991 to 75 percent today. At the same time, less than a quarter of all production capacities today rely on coal-fired power versus 35 percent in 1991.

**Increased use and recycling of aluminum continues to be the best way to improve energy efficiency and offset the environmental impact of aluminum production.**

- Aluminum can improve the fuel efficiency of vehicles through light-weighting, increase energy efficiency in buildings and limit carbon footprint of consumer goods like beverage containers.
- Additionally, producing recycled aluminum reduces energy demand by 92 percent compared to making primary aluminum.
- This means that a 10 percent increase in end-of-life recycling rates decreases primary energy demand and greenhouse gas emissions by 15 percent.
- Aluminum is an ideal material for recycling because the metal can be recycled over and over again without any loss in quality.



It takes just 8 percent of the energy to produce recycled vs. new aluminum.

**These findings come from a multi-year life-cycle assessment (LCA) study released by the Aluminum Association examining the environmental impact of modern aluminum production.**

- The study was peer reviewed by a third-party expert to ensure conformance with International Organization for Standardization (ISO) standards.
- 25 companies, representing most of the industry in the U.S. and Canada, participated in the survey.
- It is believed to be one of the most robust LCA reports ever released by an industry trade group.
- To learn more, please visit [www.aluminum.org/LCAReport](http://www.aluminum.org/LCAReport).