

Novelis Aluminum Drives Sustainability

Sustainability is core to Novelis' business. As the world's largest recycler of aluminum and producer of flat-rolled product, we are leveraging aluminum's unique properties to meet the needs of our customers and help them deliver sustainable solutions.

Novelis

Revised December 2016

Creating Value Through Sustainable Partnerships

Novelis continues to develop new products with an even higher percentage of recycled aluminum, further enhancing our sustainability efforts. We pride ourselves on collaborating with automakers to develop products that meet their specific vehicle needs.

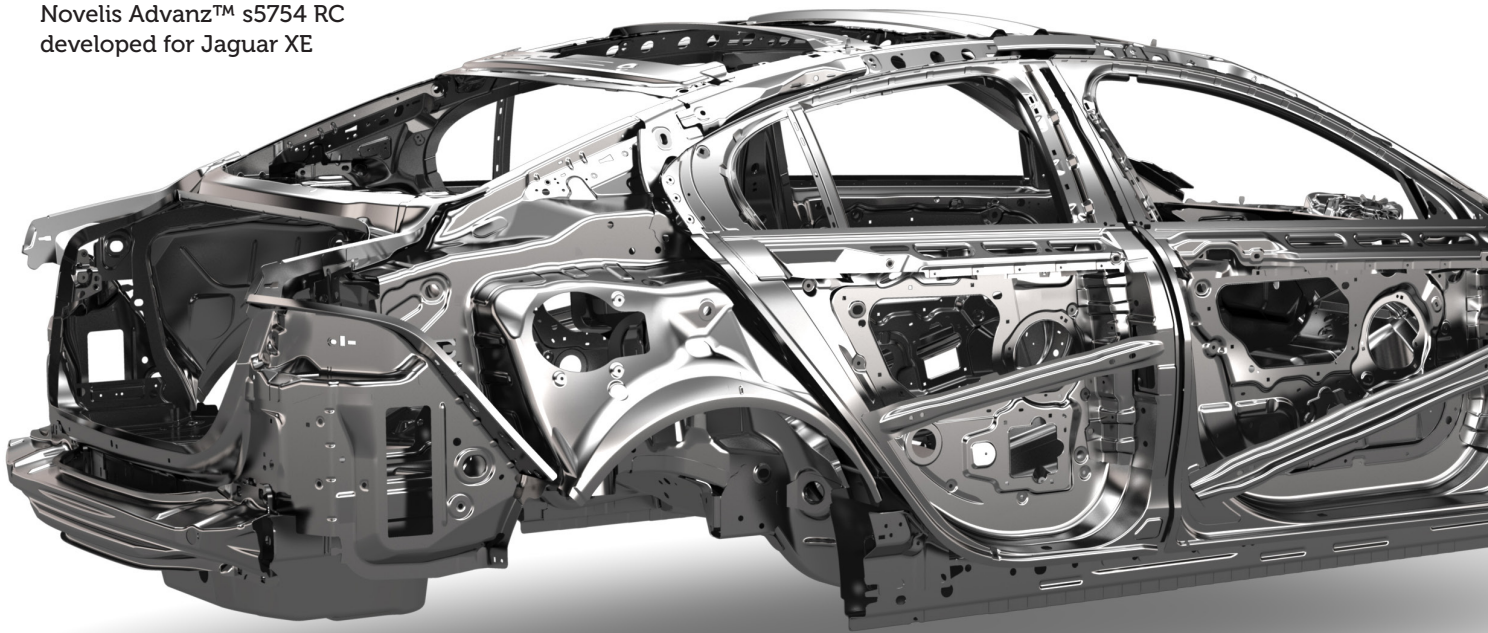
For example, Novelis' Advanz™ s5754 RC contains at least 75% recycled content and was developed in cooperation with Jaguar for use in its XE model.

Today, Advanz™ s5754 RC is an integral part of Jaguar's REALCAR program, an award-winning, multistakeholder initiative established to create a closed-loop vehicle production model that recycles automobiles at the end of their life cycles.

Novelis and JLR won the prestigious European Aluminium Award for their work in automotive aluminum innovation and closed-loop recycling system.*

* ALUMINIUM 2016

Novelis Advanz™ s5754 RC
developed for Jaguar XE



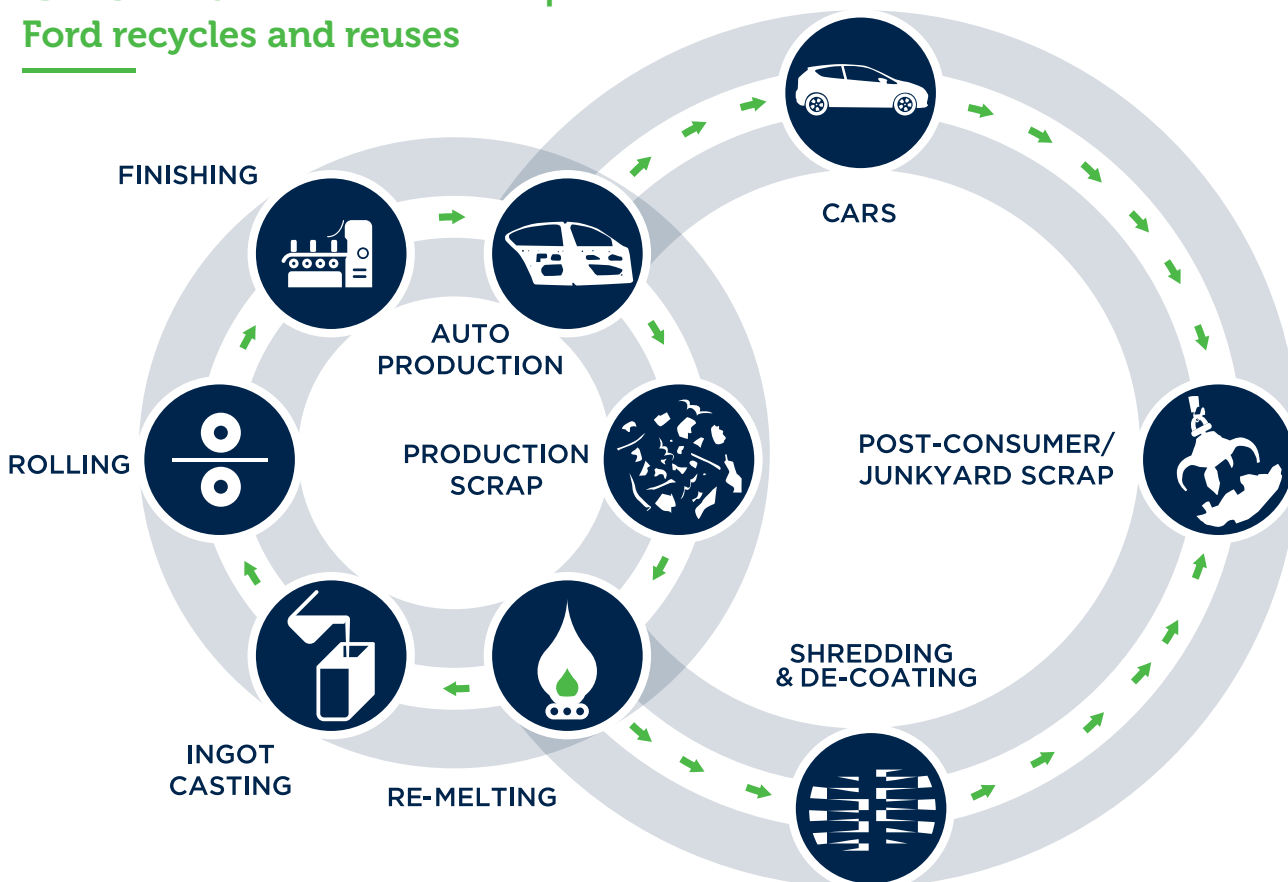
Creating Sustainable Value Through Closed-Loop Programs

Closed-loop recycling allows us to take back as much of our customers' aluminum scrap as possible, turning it directly back into the same product again. Closing the loop preserves the value of the alloy, reduces recycling and transportation costs, minimizes environmental impact and establishes a secure supply chain.

Through our collaboration with Jaguar Land Rover and transport partners, Novelis established the **first** closed-loop system with a dedicated round-trip railway service to efficiently deliver material between Novelis locations in Germany and the United Kingdom. This service has resulted in an 80% reduction in CO₂ equivalent emissions compared to standard road transport.

In North America, Novelis and Ford developed the world's **largest** closed-loop recycling system for their most popular lineup of aluminum-intensive trucks. As a result, Ford recycles and reuses more than 90% of scrap – enough to produce 30,000 F-150 bodies each month.

90% Amount of scrap
Ford recycles and reuses



**An aluminum-intensive vehicle
can achieve up to a 20% reduction
in total life cycle energy consumption
and up to a 17% reduction in
CO₂ emissions.¹**

1) Facts provided by the Aluminum Transportation Group



Life Cycle Assessment

Global regulations increasingly require a reduction in tailpipe CO₂ emissions, but emissions generated elsewhere in the value chain of a vehicle's life must not be ignored.

Lifecycle Assessment (LCA) enables automakers to consider effects across the whole life of a product.

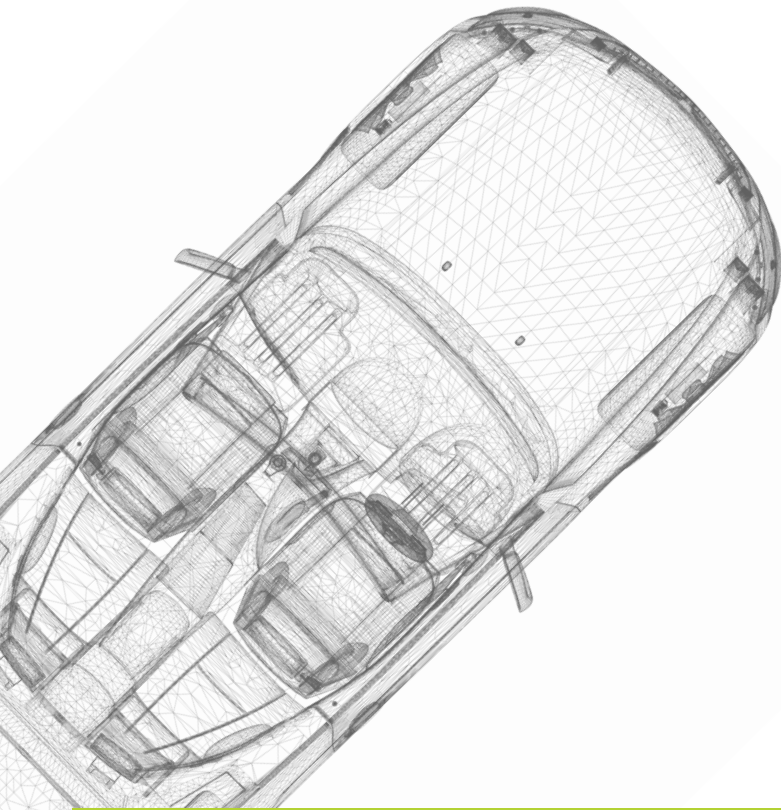
Post-consumer automotive recycling presents a long-term challenge that will require automakers and their suppliers to work together to bring more aluminum scrap back in to the system.

Jaguar Land Rover used LCA to improve the environmental performance of the Range Rover by incorporating aluminum into its design. This lowered the vehicle's body mass by 420kg and reduced the environmental footprint by 13.8%.

Strategic Sustainability Objectives

Over the past several years, Novelis has increased its recycled content to over 50% and cut its absolute GHG emissions by nearly 20%. In FY16 alone, Novelis reduced GHG emissions by 7%.

While our increased use of recycled aluminum is central to our shift toward a lower-carbon, increasingly circular business model, it's just one element of our broader strategy. Our sustainability strategy is focused on the following key objectives at each stage of our value chain.



Sourcing

- Reduce the embedded carbon in our products by increasing recycled content
- Re-engineer and minimize risk within our supply chain



Customers

- Provide value to our customers, particularly by helping them meet their sustainability objectives



Manufacturing

- Maintain safe and efficient operations and minimize natural resource use
- Ensure an adequate supply of talent
- Maintain our social license to operate



Consumers

- Increase post-consumer recycling of aluminum
- Help our customers make sustainable products that consumers want

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novelis.com

Not just aluminum, Novelis Aluminum.™

