September 11, 2024

Novelis is Taking End-of-Life Automotive Recycling to the Next Level

The move to electric vehicles (EVs) drives sustainability opportunities across the entire aluminum supply chain

ATLANTA, Sept. 11, 2024 /PRNewswire/ -- The following is a blog post by Daniel Kern, Vice President Global Automotive Development, Novelis.

Industry leaders like Novelis are fueling efforts to capture recycled aluminum's tremendous value for the global automotive supply chain via closed loop recycling programs and investments in new recycling operations. Now the focus turns to the industry's next challenge -- recapturing aluminum from vehicles once they are no longer on the road.

Novelis has been working on this opportunity for years and we are making progress. We have invested in and deployed innovative scrap sortation and segregation operations that "close the loop" by enabling aluminum from end-of-life vehicles to be captured, further realizing the value of recycled content. We have also done research and developed new automotive aluminum alloys that accept higher scrap content along with creating single-alloy designs for hoods, doors and other closures that support design-for-disassembly initiatives.

Still, to fully realize the opportunity presented to us as an industry, it is incumbent upon all players in the automotive supply chain to come together to make cost-effective recapture of high-value, end-of-life automotive aluminum a reality.

The Lay of the Land

Novelis, our supply chain partners and forward-thinking automotive OEMs have made great strides in incorporating aluminum made from high amounts of recycled content into the latest vehicle models. The lightweighting and sustainability benefits delivered by aluminum-intensive designs are well-documented, and our close collaboration with some of the world's leading automotive manufacturers has created efficient, sustainable designs and circular

economy standards and practices to enable high recycled content aluminum. Every pound of recycled aluminum used cuts GHG emissions by up to 95% versus using primary aluminum, delivering measurable performance and sustainability benefits to automotive OEMs and consumers alike.

EVs Accelerate the Need for End-of-Life Recycling

The rise of electric vehicles – the vast majority of which leverage the lower weight, versatile performance properties and sustainability benefits of aluminum makes the search for solutions to end-of-life automotive aluminum scrap recapture an increasingly critical challenge for our industry's role in carbon reduction.

- EVs accounted for approximately 12.4% of all passenger cars sold worldwide in 2023, coming in at 10.8 million vehicles, with sales of EV passenger cars expected to reach 44 million units by 2035, according to GlobalData.
- The latest survey by Ducker Carlisle predicts that aluminum use in new EV models will increase by nearly 100 net pounds per vehicle from 2020 to 2030.
- As EVs reach their average operational end-of-life of 12.5 years in the U.S., according to the Bureau of Transportation Statistics, or are severely damaged in a crash, this aluminum needs to be recovered and recycled in ways that maintain the high value of the various alloys within it.

A New Auto Dismantling Paradigm

Reclaiming automotive aluminum at a vehicle's end of life can result in significant value capture. When the vehicle is ready for recycling, before it is crushed, we can capture and segregate its various aluminum alloys before they are mixed into "twitch" – scrap that combines a wide range of aluminum types and alloys at the scrap yard, which leads to downcycling high-quality material rather than preserving it for re-use in its original form.

This opportunity – and responsibility – for making optimal use of the aluminum recaptured from auto dismantling and end-of-life scrap recycling processes for EVs is shared across all players in the value chain.

- OEMs are working with Novelis and tier one suppliers on unialloy designs for hoods, door panels and other closures. Unialloy designs reduce the need to separate multiple alloys at the end of life, making recycling automotive aluminum more efficient and cost effective.
- Novelis is working to increase the recycled content of automotive aluminum sheet by developing new alloys that incorporate higher amounts of recycled material while maintaining the critical properties required by OEMs.
- Sorting the aluminum within twitch using optical identification and AI-based sensor technologies offers the opportunity for further segregation of comingled aluminum scrap. Furthermore, these materials can be segregated into their respective alloy grades, minimizing downcycling.

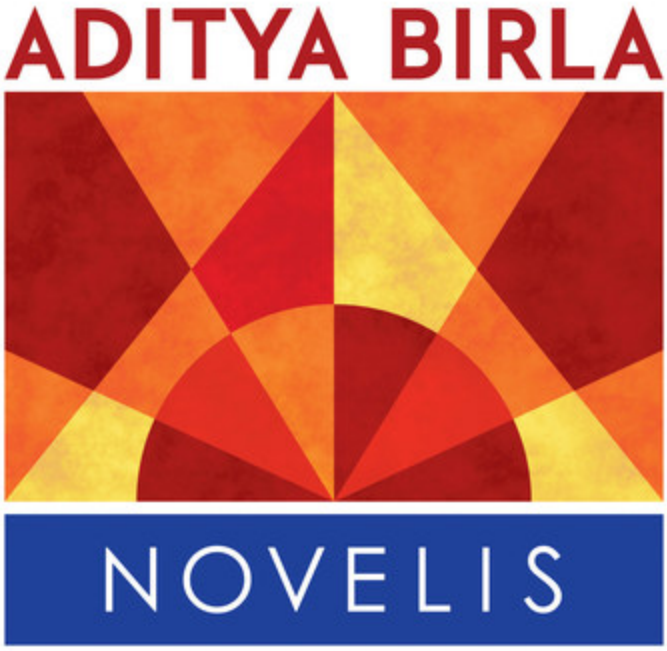
It's important to keep in mind the primary objective here – ensuring we do everything we can to preserve the value of automotive aluminum so these alloys aren't downgraded unnecessarily due to inefficient vehicle design and poor end-of-life recycling practices. This benefits all participants:

- OEMs benefit from the increased availability of more recycled materials for use in building lighter weight, better performing vehicles.
- Automotive dismantlers and scrap yards benefit from a more robust revenue stream resulting from early extraction of high-value automotive sheet alloys before they are co-mingled with less valuable aluminum types.
- Novelis and other automotive aluminum sheet providers benefit from more efficient recycling of high-value automotive sheet using segregated, alloy-specific, end-of-life automotive scrap.

This initiative to improve end-of-life aluminum scrap recapture won't happen all at once – some of these measures will take time to have a noticeable impact while others can benefit from our collective efforts in short order. The key is to recognize that we must come together as an industry to help drive these important initiatives.

The Way Forward is Clear

The development and adoption of higher recycled content automotive aluminum sheet is already under way, with progress coming in waves over the next few years. Increased collaboration across the supply chain – particularly at the end-of-life stage – is necessary to engage dismantlers and scrap yards in creating win-win business models from both a financial and sustainability perspective. Discovering new partnerships with technology providers also represents a promising opportunity to create a more efficient future state of aluminum recycling and ensure that no amount of aluminum is downcycled or ends up in the landfill. As an industry, we all must work together to achieve a new reality for automotive aluminum. Contact Novelis to learn how our global automotive expertise helps OEMs and suppliers design and manufacture the next generation of vehicles with aluminum to achieve a more sustainable future.



View original content to download multimedia:https://www.prnewswire.com/news-releases/novelis-is-taking-end-of-life-automotive-recycling-to-the-next-level-302245320.html

SOURCE Novelis Inc.