

**Roadmap for
Automotive Aluminum**
*Chris Devadas, Hydro Metals;
ATG Technical Committee Chair*

The Aluminum Association

Industry's leading voice in Washington, D.C.,
supporting 700,000+ jobs and \$228 billion+ in economic output.



The aluminum industry has committed & invested

\$10+ billion

in U.S. manufacturing over the past decade to capture next generation growth

This infographic features a dark blue background with a green rounded rectangle in the center. The text is white and green. There are four blue circles with white dollar signs: two in the top-left corner and two in the bottom-right corner.



Aluminum Association's Transportation Group (ATG)

Communicates the many benefits of aluminum in automotive



Hydro



Advisory Member



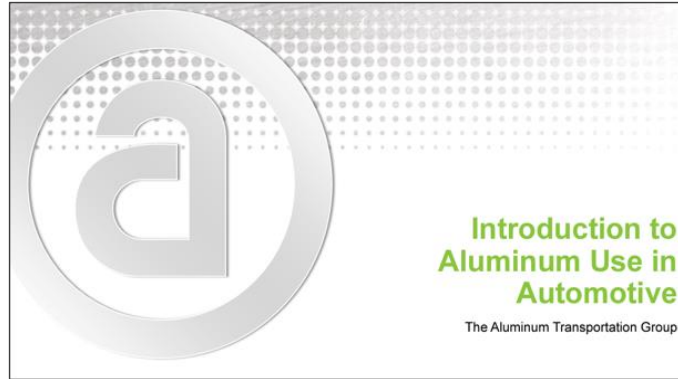
North American Die Casting Association

Die Casting Congress & Exposition - September 30-October 2, 2024 Indianapolis, IN USA

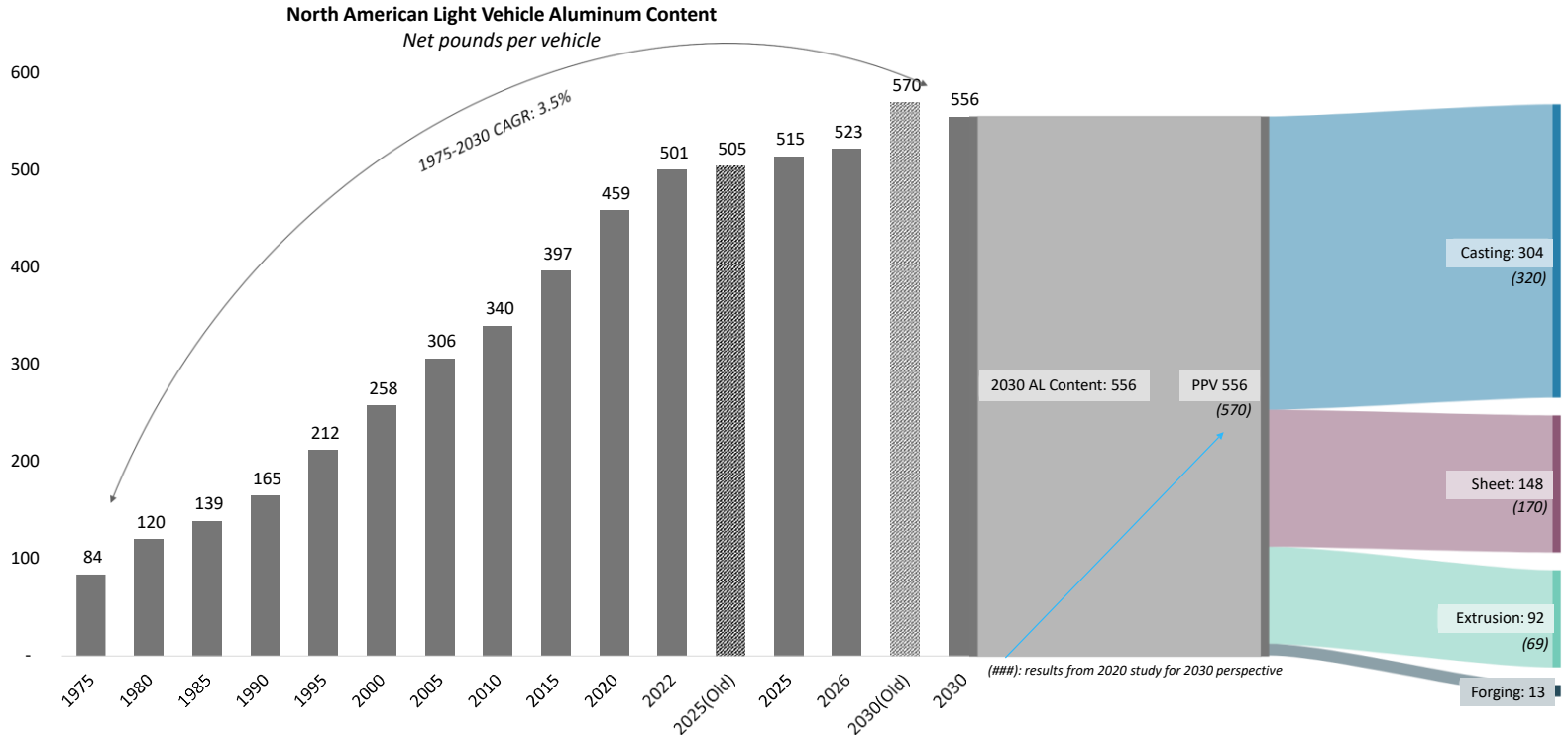
Overview of ATG Activities



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Long Term Aluminum Growth Forecast by Ducker



Source: Ducker, Q1 2023

Castings Remain the Predominant Product Form

Forgings (+3 PPV by 2030)

Forgings benefit from the necessity to offset EV increasing weight and performance specifications

10 PPV

CAGR 22-30 3.5%

301 PPV

CAGR 22-30: 0.1%

Extrusions (+34 PPV by 2030)

The fastest growing product form due to increasing penetration in body-in-white and CMS

58 PPV

CAGR 22-30 6.0%

133 PPV

CAGR 22-30 1.4%

Content per vehicle in 2022 & CAGR between 2022 and 2030

Castings (+3 PPV by 2030)

Remains the largest product form for aluminum components as powertrain and transmissions components are compensated by the new EV components (e-drives, high voltage devices, etc.) and structural casting for body-in-white

Sheet (+15 PPV by 2030)

Promoted by efficiency and weight reduction targets as well as product mix leaning toward larger vehicles, aluminum closure demand continues its growth





A Blueprint for Automotive Aluminum

Aluminum Technology Roadmap

Research priorities to increase adoption of auto aluminum.

- Responds to a call for industry partnership
- Five mobility technology pathways
- Developed by the industry, welcome additional feedback

Contact:

- **Tech Leadership:** John Newman
(jnewman@aluminum.org)
- **General ATG:** Contact@DriveAluminum.org

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Castings in Sustainability & Recycling Pathway

- Develop High-Speed / High-Volume Sorting and Recycling
- Need for New Casting Alloy Applications to Absorb Recycled Content
- Enable and Ensure Life Cycle Management Across the Value Chain

Castings in Other Roadmap Pathways

Design Engineering

- Innovation in joining / bonding of multi-material multi-products (castings, sheet, extrusions)

New Alloys

- Casting alloys without need for heat treatment; ability to absorb recycled material content

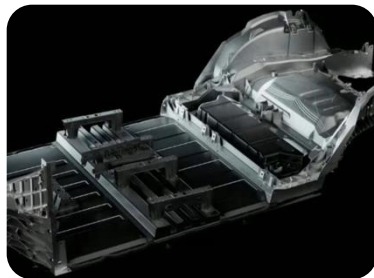
Future Vehicles

- Reducing overall part / sub-system cost through part consolidation with large castings
- Castings used in battery housing applications

A photograph of a car's metal body in a factory. The car is silver and is shown from a side-rear perspective. The background is dark with industrial lighting. A semi-transparent graphic overlay, consisting of a grey circle and a yellow-green shape, is positioned in the foreground. The text "Roadmap In Action" is written in white on the grey circle.

Roadmap In Action

ATG Product Teams Research Projects



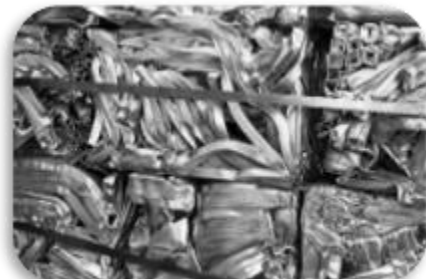
Castings & Foundry Products



Flat Rolled Products (FRP)

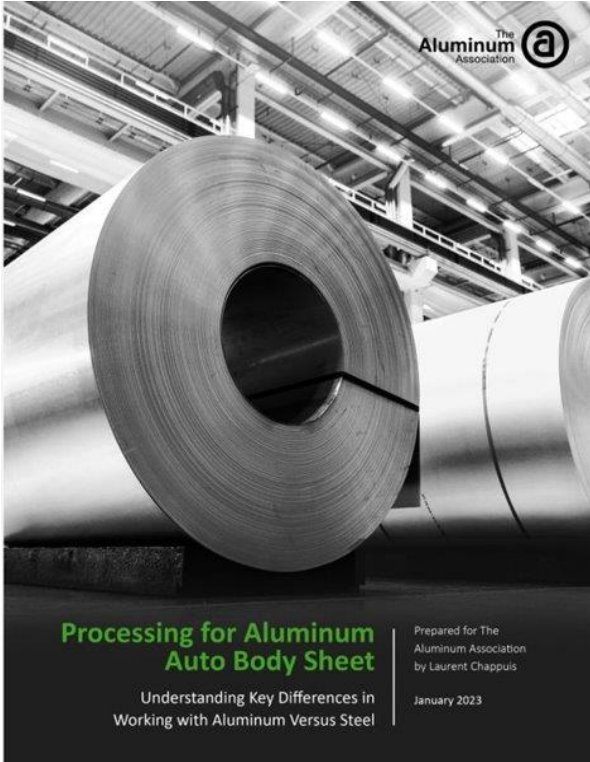


Extruded Products (EP)



Sustainability and Recycling

Flat Rolled Products Team Research

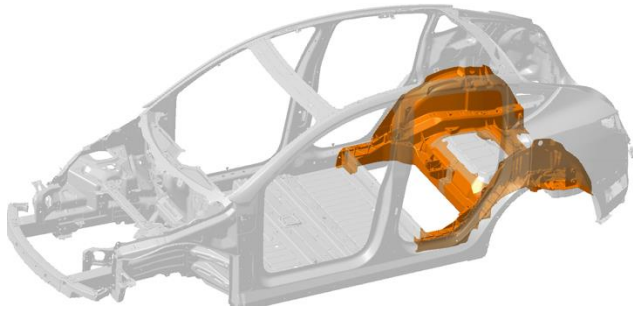


Laurent Chappuis discusses aluminum body sheet formability, techniques, and simulation considerations for ABS in vehicle design.

**Scan to Download
and Watch Webinar:**



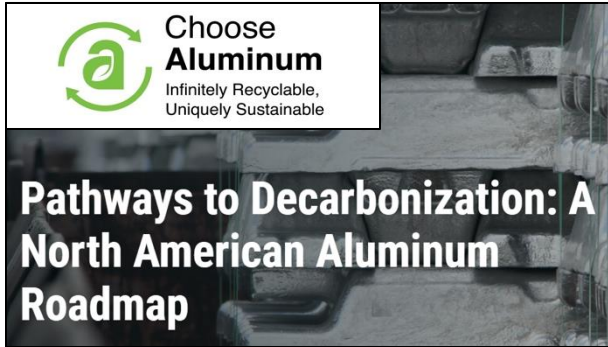
Casting / Foundry Products Team Research



[Tesla Model Y gigapress aluminum casting \(sae.org\)](https://www.sae.org)

- Joining of castings (fusion and mechanical) to other products

Sustainability Team Research



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Aluminum Industry
Decarb Roadmap:



- Webinar series on sustainability covering decarbonization, LCAs, sortation and upcycling
- Forthcoming research: auto-specific decarbonization roadmap



Living Document

ATG's Roadmap is a Living Document

We welcome your insights on new research areas and opportunities for partnership.

Share Your Input:



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