

AZL Joint Partner Project

# Sustainable Composite Battery Casings

Proving and showcasing Eco-Design for and with recycling using thermoset and thermoplastic composite solutions

**AZL** Aachen GmbH



Excellence in Lightweight Production

Battery casings for electric vehicles typically consist of a box structure and a lid. Both components require significant material use and must meet numerous demanding requirements. Thermoset and thermoplastic composite materials are particularly well-suited for these massproduced and high-value components. Regulations mandate that OEMs ensure the recyclability of battery casings and lids, including incorporating recycled materials. Due to their substantial size and weight, these components are well-suited for collection and reuse, making them an excellent source of post-consumer recyclates. Their size also enables innovative design and processing opportunities for integrating recycled materials locally. To maintain and reinforce the image of composite solutions as recyclable, it is crucial to effectively demonstrate the techniques and advantages to decision-makers in the automotive industry.

## What will you get?

AZL has a proven track record in designing composite-based, multi-material battery casings. Additionally, AZL offers extensive infrastructure for processing various composite materials, from small-scale coupons to full-scale component production. The project will specifically focus on demonstrating „Design for and with Recycling“ for thermoset and thermoplastic battery casings.

- **WP1:** Detailed engineering and CAE activities to design box and lid structures that integrate recyclates and facilitate part recycling.
- **WP2:** Develop and implement an experimental methodology for efficient and applicationoriented characterization of material and design options at coupon and sub-scale levels.
- **WP3:** Refine structural designs based on experimental results and produce variousdemonstrators to showcase competitiveness concerning all required key performance indicators (KPIs).

### Follow-Up to this Consortium



### Open to join

**Project Start: July 15<sup>th</sup> 2025**

**Duration: approx. 9 months**



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