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Solutions for large batteries for waterborne transport

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D5.4 – Complete Assembled Hybrid Battery System

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## Document History

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## Project Abstract

The goal of the SEABAT project is to develop a full-electric maritime hybrid battery concept that is based on:

- Modularly combining high-energy batteries and high-power batteries,
- Novel converter concepts and
- Production technology solutions derived from the automotive sector.

The modular approach will reduce component costs (battery cells, converters) so that unique ship designs can profit from economies of scale by using standardized low-cost components. The concept will be suitable for ships requiring up to 1 MWh of storage or more.

## Public summary

Task 5.4 of the SEABAT project has achieved significant progress in the assembly and manufacturing of an advanced hybrid battery system designed for waterborne transport. This task transitioned from preliminary designs and tests to the full-scale manufacturing of a hybrid battery system capable of delivering 246 kWh, fully tested and ready for demonstration under real-world conditions.

The process involved meticulous assembly trials and rigorous quality controls to ensure that the system not only meets but exceeds the required performance standards. The focus was on optimizing manufacturing processes to ensure scalability and efficiency, which are critical for meeting future demands and cost objectives.

Through rigorous testing, including states of health (SOH) and charge (SOC) measurements, the project team successfully demonstrated the system's operational capability and its ability to meet scalability requirements.

The completed hybrid battery system is now fully assembled and calibrated, poised to demonstrate its potential in reducing emissions and operating costs in marine transport. This achievement marks a pivotal step towards the broader adoption of sustainable energy solutions in the maritime industry.