



SEABAT Project



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What does the SEABAT project entail?

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

- combining modular high-energy batteries and high-power batteries
- novel converter concepts
- production technology solutions derived from the automotive sector.

A modular approach will reduce component costs (battery, converter) so that unique ship designs can profit from economies of scale by using standardized low-cost modular components. The concept is suitable for future battery generations and high-power components that may have higher power densities or are based on different chemistries.

Expected results?

An optimal full-electric hybrid modular solution that minimizes the battery footprint and reduces the oversizing (from up to 10 times down to max. 2 times). It will validate as a 300-kWh system (full battery system test) at TRL 5, and virtually validate the solution for batteries of 1 MWh and above, using 300 kWh system P-HiL tests. The result will be a validated hybrid battery solution for capacities of 1 MWh and beyond, a roadmap for type approval and a strategy towards standardization for (among others) ferries and short sea shipping. The solution will deliver a 35-50% lower total cost of ownership (TCO) of maritime battery systems, including 15-30% lower CAPEX investment, 50% lower costs of integration at the shipyard and a 5% investment cost recuperation after the useful life in the vessel.

SEABAT Consortium:



The role of ABEE in SEABAT:

Avesta Battery & Energy engineering (ABEE) will be involved in the definition of the hybrid battery system architecture concept and the set-up of the roadmap. Furthermore, ABEE will also play a big role in the modelling and sizing of the different battery system components, thermal management solution, TCO calculation, testing and validation, dissemination and at last the technical coordination.