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Solutions for large batteries for waterborne transport

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D5.2 – Process Flow Diagram and List of Process Steps

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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

This report explains the advancements on the SEABAT project with respect to battery modules and HESS (Hybrid Energy Storage System) manufacturing. Within the scope WP3 and WP4.5, battery module and HESS were designed. This work package comprised of realization and functional tests of the design.

For the manufacturing of such a system, first of all, a Bill of Materials (BoM) list is developed to overview each required component with respect to the module design. BoM includes standalone design pictures of each component, as well as technical specifications and part number information, if the component is procured. All components are also referenced to internal part number in the BoM.

Using the information in the BoM, raw or semi-raw materials and components (i.e. metal sheets, plastic parts, cells or electronics) are procured. Regarding the metal parts, production procedures are prepared (i.e. welding, bending, etc.) and added to the BoM. Parts produced in WP5 are included in the components developed in WP4 are combined and controlled with respect to the specifications. Moreover, some of the parts and components (battery, electronic components etc.) are directly procured from suppliers. Next step of WP5 is the assembly. With the scope of Task 5.2, an assembly process and steps are defined and added to the Assembly Process Flow Diagrams.

The output of Task 5.2 is the Module Bill of Materials, the HESS assembly process, and detailed steps for assembling the modules. These outputs are used as inputs to the de-risking during the assembly process works in Task 5.3.

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6	VARD	VARD ELECTRO AS
7	ABEE	AVESTA BATTERY & ENERGY ENGINEERING
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