

Solutions for large batteries for waterborne transport

GRANT AGREEMENT No. 963560



D4.3 – System interface between energy storage and power storage and its control

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Report details

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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, convertors) 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

The SEABAT project aims to create a Hybrid Energy Storage System (HESS) for marine applications where two different battery technologies are combined to optimize the system's performance.

Developing an energy storage system for a defined application requires multiple developments of its components. In this case, some components need to be updated or modified to fulfil the system hybridization architecture, which implies further efforts in the design and development phase of the project.

In general, the power electronic components of a battery system are critical when designing a battery system. Several components must be developed, identified, and prepared for integration into the final battery system. A dedicated task, Task 4.2, within WP4 of the SEABAT project, has been defined where the module DCDC converter design, prototype and validation has been carried out. Moreover, HESS system control and communication also has been developed in this task.

This deliverable summarizes the DCDC converter design and validation. Additionally, other important HW elements like the String inductance, String and HESS master controllers design is detailed.

12 Deviations from Grant Agreement Annex 1

This deliverable was expected to be submitted in M30. However due to a planning update carried out by the coordination team (where WP4 extension was considered), a new data for submission D4.3 in M34 was scheduled.

13 Acknowledgements and disclaimer

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Project partners:

#	Partner	Partner Full Name
1	FM	FLANDERS MAKE
2	DAMEN	SCHEEPSWERF DAMEN GORINCHEM BV
3	FCSI	FINCANTIERI SI SPA
4	RINA	RINA SERVICES SPA
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6	VARD	VARD ELECTRO AS
7	ABEE	AVESTA BATTERY & ENERGY ENGINEERING
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9	UNR	UNIRESEARCH BV
10	CEA	COMMISSARIAT A L'ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES
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