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HORIZON EUROPE PROGRAMME – TOPIC: HORIZON-CL5-2022-D5-01-02



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innovActive ENERgy storage systems onboArd vessels

Deliverable D 1.4

Final set of operational profiles and ESS requirements
for a broad range of vessels



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| Deliverable Type | Report |
| Dissemination Level | Sensitive |
| Due Date (Annex I) | 31.05.2024 (Month 16) |
| Pages | 61 |
| Document Version | Final |
| GA Number | 101095902 |
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Public Summary

This document is part of Work Package 1, Operational scenario Specification and Requirements, which main objective is to draw and define the main vessels characteristics that are currently electrified by using batteries and those one that will be electrified in the near future and that are suitable for the application of new ESS systems.

The scope of this document is to draft vessels requirements for the development of new ESS for different marine applications. To understand the required performance of the product under development it is important to know the vessels features and their use. Indeed, a first overview of the fleet is given with general description of its use, arrangement and energy systems.

Plus, a brief description of the company's data collectors is given to explain the source of electrical data that are depicted in the document. To fully understand the purpose of electrical storage systems, some marine battery applications are described which represent needs for the optimization of electrical energy use such as load levelling or peak shaving.

In particular, three use cases are illustrated providing for each of them detailed information about general arrangement, technical specification and their electrical equipment. The most relevant information is about the operational profile and electric load of the vessels explained in three different phases of the vessels at sea: navigation, port stay and x phases. These three use cases form the foundation for modeling and simulation to explore the implementation of innovative ESS solutions and optimize the energy and power system.