

Contribution ID: 24

Type: Paper

## A zero-emission ferry for inland waterways

*Wednesday, 15 June 2022 18:00 (20 minutes)*

Reducing the human environmental impact is one of the most critical issues nowadays: in this perspective the progressive decommissioning of fossil fuels is a significant priority to guarantee a sustainable future for the next generations. This paper proposes a zero-emission ferry for inland waterways and short-sea navigation, focusing on realistic solutions to provide the best trade-off between operational performance and environmental sustainability. In particular, the object of this study is the refitting of a double-ended ferry working in the Lago Maggiore, one of the largest Italian lakes. Systems suitable for the purpose have been selected and integrated on board with a view to maximum efficiency, implementing full-electric propulsion with electric motors, a Li-ion battery storage system and photo-voltaic panels. The benefits and drawbacks of the considered technologies have been evaluated to select the most promising design solution, focusing on both on-board and on-shore impact in terms of compatibility with the existing infrastructures and considering life-cycle sustainability.

**Primary authors:** Dr MALOBERTI, Luca (Università degli Studi di Genova); Dr ZACCONE, Raphael (Università degli Studi di Genova); Prof. GUALENI, Paola (Università degli Studi di Genova); Dr MAZZUCHELLI, Paolo (Ministero delle Infrastrutture e della Mobilità Sostenibili, Gestione Governativa Navigazione Laghi Maggiore di Garda e di Como)

**Presenters:** Dr MALOBERTI, Luca (Università degli Studi di Genova); Dr ZACCONE, Raphael (Università degli Studi di Genova)

**Session Classification:** 3C

**Track Classification:** Inland waters vessels