

6th International Conference and Exhibition on

Automobile & Mechanical Engineering

July 08-09, 2019 | Zurich, Switzerland

Ensuring safety during operation of the first all-electric ferry

Annie Kortsari

Hellenic Institute of Transport, Greece

Ferries for passengers and cars are popular especially in Europe, with main markets being Northern Europe/ Baltic and the Mediterranean. As ferries have a long life span and since energy efficiency has not been a focal area until recently, many energy inefficient ferries are in operation in Europe. The European fleet is in need of newer, more energy efficient and less CO₂ emitting and polluting types. The E-ferry Project, co-funded under the Horizon 2020 Programme, aims to support and promote energy efficient, zero greenhouse gas (GHG) emissions and air pollution free waterborne transportation for islands, coastal zones and inland waterways in Europe and beyond. This will be achieved through the application of an extremely energy efficient design concept and the demonstration of a 100% electric, emission free, medium sized ferry for passengers and cars, trucks and cargo in full scale operation on longer distances than previously seen. All-electric vessels face a number of challenges related to operation and safety. The absence of other energy sources means that the pack must function at all times, under all conditions to maintain the vessel's operability/manoeuvrability. Absolute reliability is achieved by innovative battery technology allowing the vessel to operate at all times. The largest battery pack (4.3MWh) has a weight impact, affecting the vessel's draft and efficiency and putting focus on weight saving. Furthermore, effective thermal management is essential for safety and pack longevity. These multiple conflicting requirements shaped the E-Ferry concept which at the same time needed to absolutely safe and reliable.

Biography

Annie Kortsari is a Research Associate at HIT/CERTH and Impact Manager of the E-Ferry project. She holds a degree in Civil Engineering from the Aristotle University of Thessaloniki and an MBA from the University of Macedonia, Greece. She is currently a PhD candidate in the area of railway transport with her thesis focusing on railway freight transport between Europe and Asia. She has been working in the Institute since 2005 and has participated in numerous research projects and transport studies. Her expertise is on railway transport systems, maritime transportation, mobility management, seasonal transport demand management and intelligent transport systems.

akorts@certh.gr

Notes: