

Propulsion Systems Evaluation and Design for Net-Zero Ferries

conceptual design and model-based prototype of a propulsion system, power electronics, energy storage and control system, and will be validated in a commercial multi-physics simulation tool

or equivalent). The goal is to demonstrate a system with net-zero GHG emissions and limits emissions of ambient air pollutants while meeting the the service demands (carrying capacity, speed) of current ferries and minimizing energy use and impacts on the regional energy grid.

Project Objectives:

First Term

- x Identify propulsion system performance requirements
- x Review system options and assess benefits and drawbacks
- x Select appropriate analysis and modelling tools

- x Define preferred propulsion system architectures

Second Term:

- x Create a system-level propulsion system design
- x Develop a *model-based prototype* of the propulsion system and adjust key component sizing to meet design requirements
- x Deliver a final report detailing the propulsion system design and the net energy and emissions implications of the proposed system

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