

Integration of Prototype for Hybrid System

CLIENT MARINE EDGE

YEAR 2023

PLATFORM TYPE

MV Mygan

CLASS

SOW

Feasibility Study, Design Documentation, Class Interaction



10%

FUEL SAVING

12

SYSTEM LAYOUT ITERATIONS

0

INSTALLATION ISSUES

1

POINT OF CONTACT FOR ALL PHASES

CLIENT CONTEXT

Onboard integration of new energy technology

Marine Edge is a maritime tech company developing a regenerative hybrid technology, that uses machine learning and predictive algorithms to capture energy during low wave loads and redistributes it when loads are high.

Their goal is to integrate prototype technology onboard an existing vessel.

They needed an engineering company that has experience in complex retrofits and can help them identify the best solution for onboard integration.

THE WORK TO BE DONE

Project phases

- 3D laser scanning and point cloud of engine room
- Feasibility study, trouble shooting and risk assessment
- Concept design for best solution
- Engineering and production drawings
- Class documentation and class approval
- Installation guide

THE CHALLENGE

Integrating new technology in confined space

Transitioning from lab success to real-world application, Marine Edge confronts pivotal challenges in their project.

Moving to the MV Mygan's engine room introduces unprecedented complexities, requiring adaptation of the conceptual design within a tight budget. Precise positioning of the generator-motor with narrow tolerances amplifies the engineering challenge.

GLO Marine's integral role in facilitating integration underscores the paramount importance of technical problem-solving in groundbreaking projects, where persistent iterations are crucial for success.

Involvement of GLO Marine throughout the project stages

01. Feasibility Stage

The project's execution phase commenced with our engineering and operations teams collaborating to gain a comprehensive understanding of our client's objectives and constraints, as well as to familiarize themselves with the MV Mygan, the designated vessel for the system. To kick things off, our team boarded the MV Mygan to conduct a thorough 3D laser scan of the project environment. Our project team, composed of mechanical, electrical, systems, and installation engineers, collectively delved into the intricacies of the challenge. We identified a core issue that had the potential to impede the project's success: the connection and the absolute alignment between the vessel's shaft and the generator-motor.

02. Design and Engineering

This marked the beginning of a series of twelve system layout iterations, which were necessary to pinpoint a feasible working solution. This connection was meticulously simulated in over twelve layout iterations, exploring various positions and locations of the generator-motor. Each iteration was subjected to thorough discussions with all stakeholders, under the guidance of our Project Manager, to ensure alignment among all parties for the successful delivery of the project. The heart of a successful installation for a unique project like this lies in the quality of engineering and technical drawings. Our deep understanding of how these two disciplines complement one another was instrumental in transforming this laboratory-tested prototype into an operational vessel system. Once the best viable solution has been identified, this has been discussed and approved with Bureau Veritas

03. Installation Guide

Translated into a step-by-step installation procedure to be followed on site. This meticulous planning was aimed at ensuring that the exceptional work carried out during the design and engineering phase seamlessly transitioned into the installation stage.

The outcomes

Final results

- Engineering delivered without class comments
- Successfully integrated the technology onboard the vessel.
- No major modifications during installation
- Minimum modifications to existing structures – efficient cost of installation

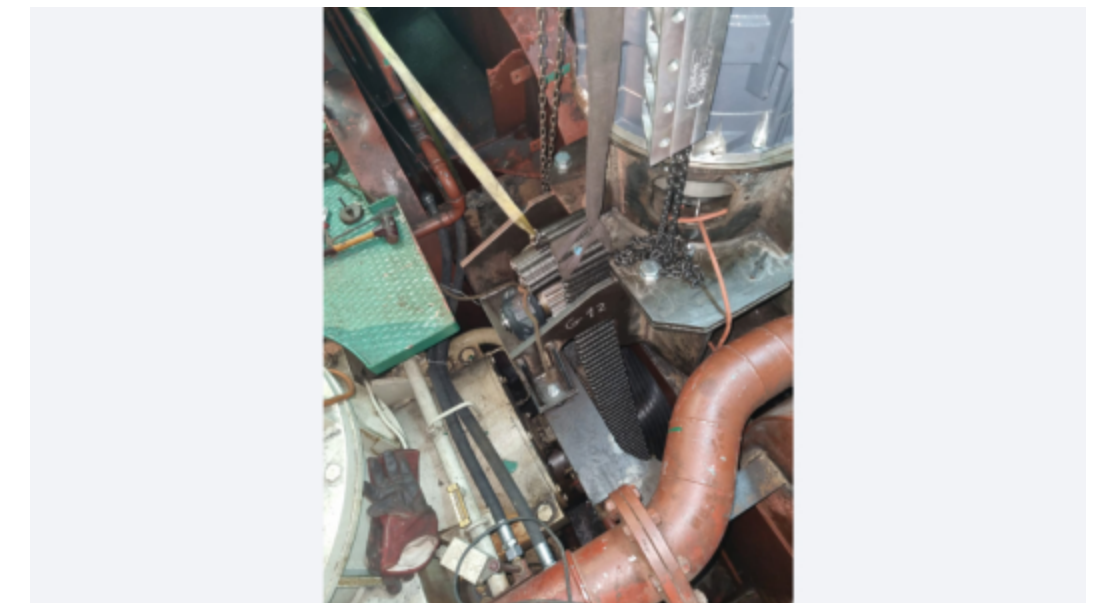
Marine Edge has been very satisfied with the fact that the prototype has been integrated successfully on board the MV Mygan, within the expected budgets and without major modifications to the vessel itself. Marine Edge has appreciated the close cooperation and constant communication, at all levels, between GLO's team and Marine Edge's representatives. Marine Edge expressed a strong interest in having GLO Marine as their partner for all future projects.



Electrical automation for an integration of a hybrid system onboard of a cargo vessel.



Electrical motor/generator installment for an integration of a hybrid system onboard of a cargo vessel.



Electrical motor/generator installment for an integration of a hybrid system onboard of a cargo vessel.

GLO Marine

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