

BOAT DESIGN AND OPTIMIZATION



ASU
Global Launch
Arizona State
University



GREENLIGHT BOOTCAMP GREENPAPER

SUMMER 2022

To provide equipment and optimization recommendations for the

Alarivean boats to maximize nanobubble operations. CREATED BY GREENLIGHT SOLUTIONS AT KAUST: FAISAL ALAMRI | ABDULLAH

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The largest challenge with our project was determining the problem we should tackle. It was difficult to narrow and define a scope that needed improvement. We overcame this challenge by providing recommendations for the boat's hydraulic and energy systems, tube-leveling depth, energy distribution, and overall layout.

Our team has met all of our Key Performance Indicators (KPIs).

1. Our first goal was to monitor our progress for designing the boat, including a minimum of 60% of the equipment in our boat sketch.
 - a. Our team exceeded this goal by including **100%** of the equipment in the boat sketch.
2. Our next set of goals were to list a minimum of two significant pros and cons for both the hydraulic system and the energy system.
 - a. Our team exceeded this goal by not only providing the full pros and cons lists, but also provided recommendations for tube-leveling depth, various types of PV, and much more.

BENEFITS TO PROJECT PARTNER

We provided capacity to our Project Partner via research and recommendations; some of which were helpful because they were validating and others because they were new ideas. Our results will be directly utilized in the project launch in the next two weeks!

BENEFITS TO SOLUTIONEERS

This project made our group think outside the box in tackling a problem independently. In short, we assessed a problem and solved it. Our team has honed our problem solving skills thanks to this project. The largest benefit to the student is having the opportunity to show a relevant experience on a resume. We also expanded our understanding of how important this problem is.

BENEFITS TO THE COMMUNITY

The benefit to the community is easily the largest one because it is restoring our bodies of water to usable water, or at least water where wildlife can resume.