

MARINETEK GROUP (ECO marinA®)

Innovative solution: Marinetek

September 2024

Introduction

This LCA study—part of Water Revolution Foundation’s project to assess suppliers solutions for improved sustainability in the yachting industry—compares two types of pontoons. It evaluates the environmental impact of an innovative pontoon made of concrete with carbon and glass reinforcement and built-in EPS floats (Scenario 2) versus a traditional pontoon with galvanized steel reinforcement (Scenario 1). The goal is to determine if the more durable and eco-friendly design in Scenario 2 outperforms the traditional option environmentally.

This document offers a brief summary of the LCA study.

Approach & Data

The LCA was conducted in accordance with the ISO 14040 and ISO 14044 by TETIS Institute SRL (University of Genova spin-off) with third party verification from ALEA Design (Università di Modena e Reggio Emilia). Data were collected for all processes, including material sourcing, production, transport, and end-of-life stages. Data quality was ensured through a combination of specific (primary), generic, and proxy data. The analysis was conducted using SimaPro software and the Ecoinvent database to assess environmental impacts

Functional Unit

The functional unit is defined as one complete pontoon with the same size (16.68m³)

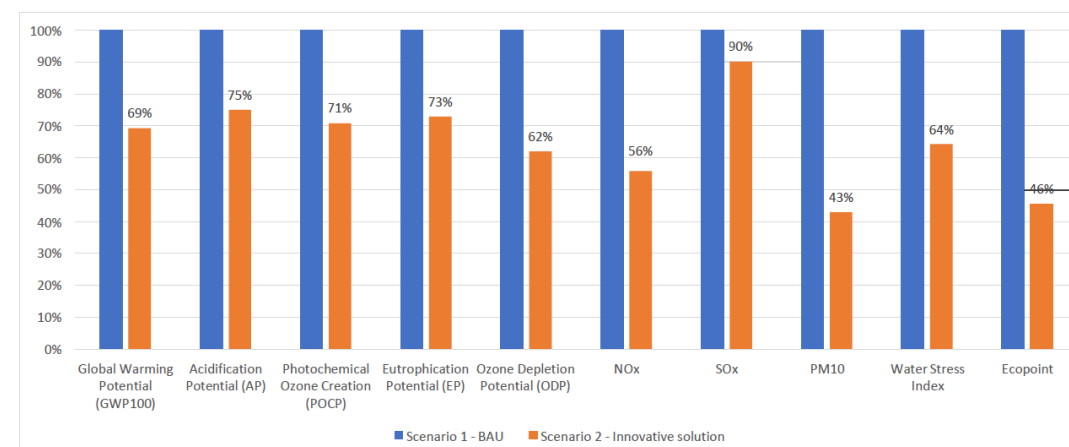
System Boundary

Divided into three phases: Upstream processes (from cradle to gate), Core processes (manufacturing from gate to gate), and Downstream processes (from gate to grave). No allocation procedure performed, as Marinetek provided all data regarding system production.

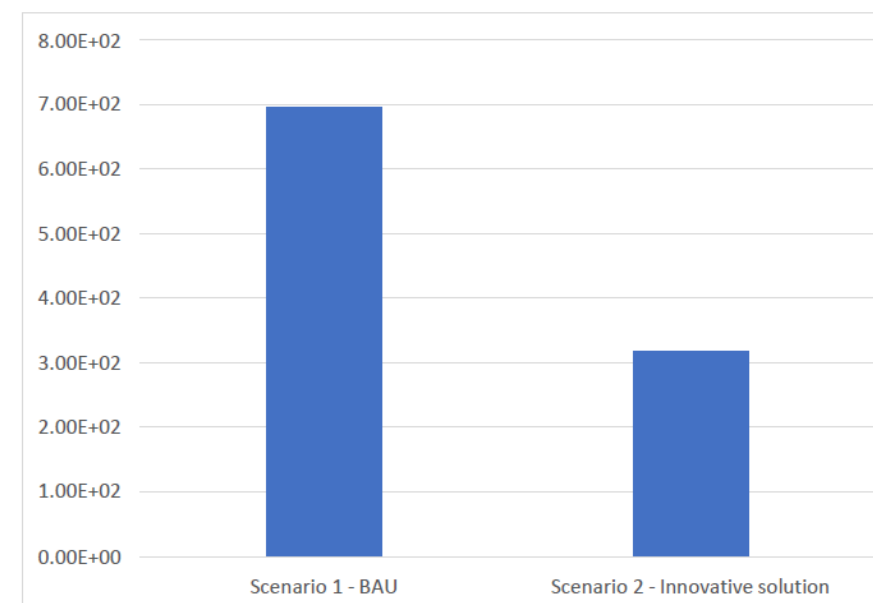
Conclusions

The study concludes that the innovative pontoon (Scenario 2) performs better environmentally across all impact categories, with reduction ranging from 39.9% to 57.1%. The main contributors to environmental impacts were identified as the production of raw materials (especially concrete and polystyrene) and diesel usage during downstream processes. Overall, the innovative solution presents a more environmentally-friendly option.

LCA Impact Category Results (Business-As-Usual vs Marinetek)



Comparison between the results of scenario 1 (BAU) and scenario 2 (Innovative solution). Results are expressed in percentages



Summary of the single score (Ecopoint) assessed scenarios. Scenario 1 is business as usual (pontoon with galvanized steel reinforcement), and scenario 2 is the innovative solution (pontoon made of concrete with carbon and glass reinforcement with built-in EPS floats). The higher the Ecopoint value, the higher the potential environmental impact.