Octo Marine SAS®

Innovative solution: Slimline 5-stage drinking water system

November 2024

Introduction

This study is part of a larger project by Water Revolution Foundation focused on assessing suppliers' solutions for improved sustainability in the yachting industry. It evaluates the environmental impacts associated with the entire lifecycle of Octo Marine's Slimline 5-stage Drinking Water System, comparing it to a Business-As-Usual (BAU) scenario using onboard bottled water on a 50m superyacht. The goal is to assess whether Octo Marine's technology offers any environmental advantage when compared to the BAU option. 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 LCA Working Group(University of Modena Reggio Emilia) with third party review from TETIS Institute SRL (University of Genova spin-off). Primary and secondary data were sourced from Octo Marine and the Ecoinvent database respectively. The study employs the SimpaPro 9.5 software for modelling and applied ReCiPe 2016 and CML-IA baseline methodology for impact assessment. Data collection encompassed all processes, including materials, production, transport, energy, and end-of-life

Functional Unit

The functional unit is the annual consumption of 8.76 m^3 of drinking water, required for a 12-person crew on a 50m superyacht, applied consistently across both scenarios.

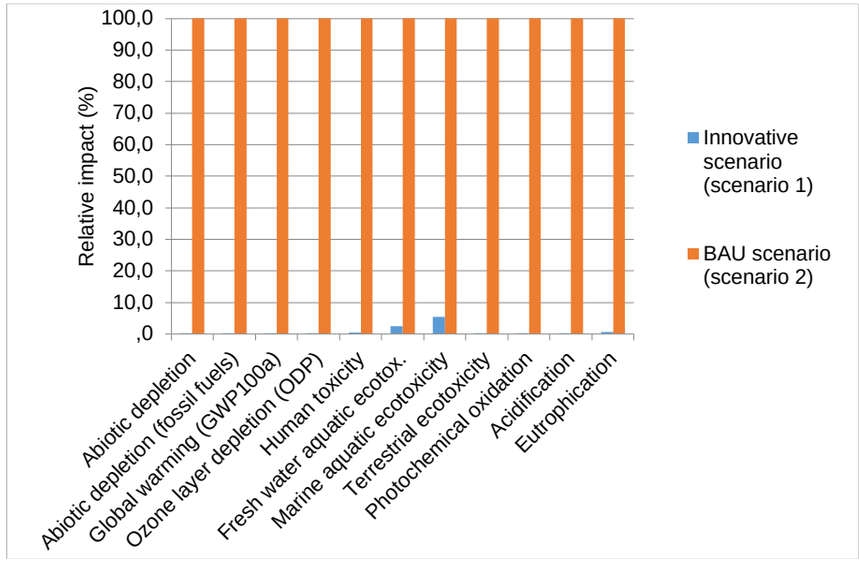
System Boundary

The system boundary encompass a full life stage of both scenario: upstream (material extraction, transport), core (manufacturing and assembly), downstream (transport, installation, maintenance and end-of-life)

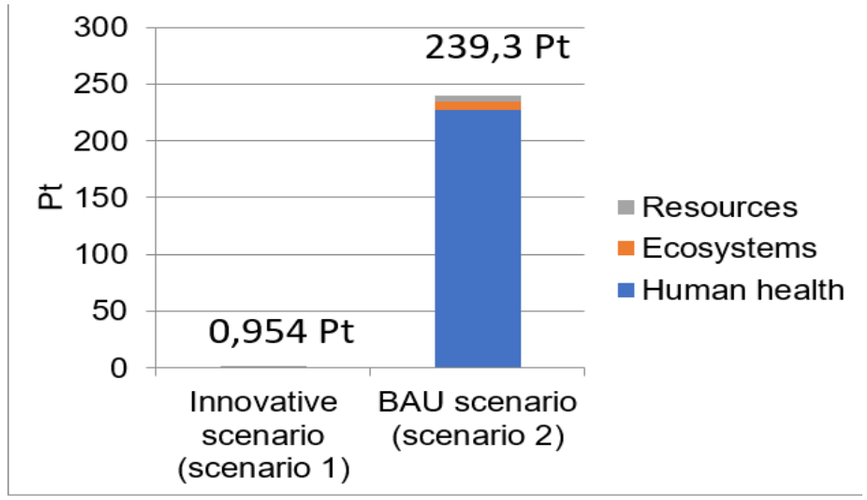
Conclusions

The LCA results demonstrate that Octo Marine's Slimline 5-Stage Drinking Water System offers substantial environmental benefits compared to the BAU onboard bottled water option. The Slimline system achieves reductions in environmental impact ranging from 56% to 99.9%, with significant improvements in key areas such as global warming potential (GWP), acidification, and photochemical oxidation, where reductions approach 99%. Overall, the system delivers a 99.6% reduction in total potential impacts, highlighting its potential as a better alternative in terms of environmental performance compared to using onboard bottled water.

LCA Impact Category Results (Business-As-Usual vs Slimline 5-stage drinking water system)



Relative percentages of the contribution of both scenarios to the 11 impact categories



The single score (ecopoint) comparison between scenario 1 and 2

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