

Hull Vane

Innovative solution: Submerged wing Hull Vane

November 2022

Introduction

The study—conducted as part of the Water Revolution Foundation’s broader project on sustainable solution within the yachting industry—aims to assess the environmental performance of a yacht equipped with a stern-mounted submerged wing produced by Hull Vane compared to a yacht without one (Business as Usual). This document offers a brief summary of the LCA study.

Approach & Data

The LCA, conducted following ISO 14040 and ISO 14044, was carried out by TETIS Institute SRL (University of Genova spin-off) and third-party verified. It encompasses data on input/output flows including materials, transport, energy, products, and emissions. Data quality was assessed based on various parameters. Collected data was categorized into specific, generic (from databases like Ecoinvent v.3.5), and proxy data. Specific data predominated, while generic data was used for raw materials, fuels, and electricity. Transport was modelled based on means and distances. SimaPro 9.0 facilitated the study. Not all life cycle stages of the yacht are considered due to the Hull Vane wing's structural role alongside the yacht.

Functional Unit

The functional unit is defined as 1 hour of use, with the system function being its use in the yachting field.

System Boundary

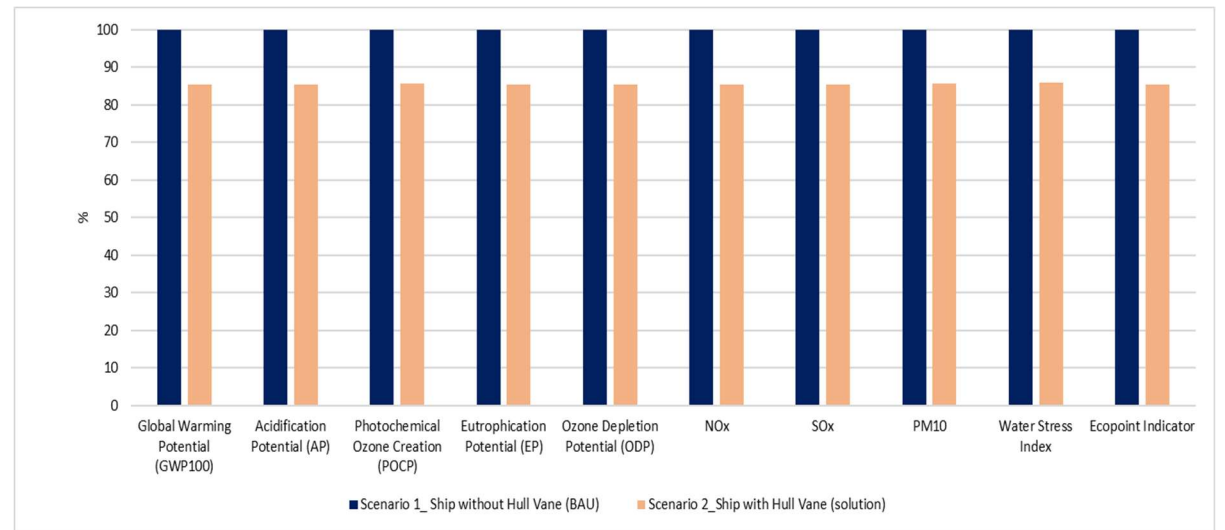
Divided into three phases: Upstream processes (from cradle to gate), Core processes (manufacturing from gate to gate), and Downstream processes (from gate to grave). No allocation procedure performed, as Hull Vane provided all data regarding system production.

Results

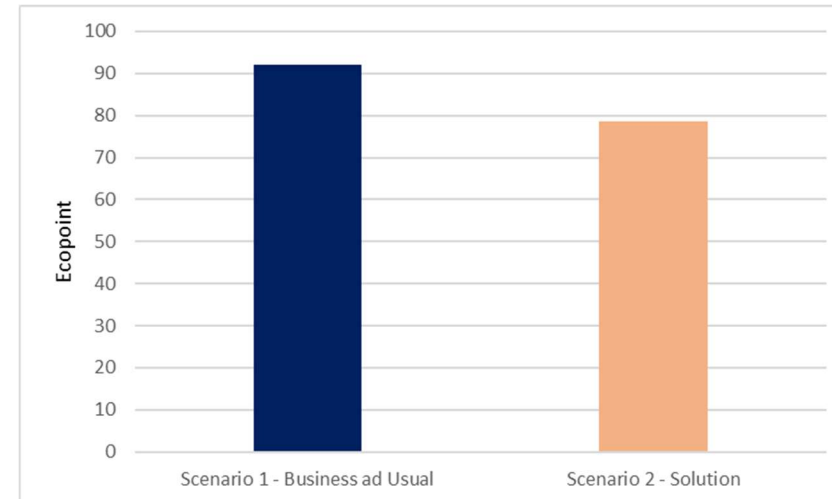
The LCA study confirms that yacht equipped with the innovative submerged wing Hull Vane (scenario 2) presents a lower environmental impact when compared with yacht without submerged wing (BAU). The Hull Vane innovative solution demonstrate a 14-15% reduction across all impact category.

Detailed information on the methodology, data sources, assumptions, references and results is available at Hull Vane upon request.

LCA Impact Category Results (Business-As-Usual vs Hull Vane Innovation)



Comparison between the results of Scenario 1- Yacht without submerged wing (BAU) and Yacht with Hull Vane submerged wing (Innovative Solution). The results are expressed in percentage.



Summary of the single score (Ecopoint) assessed scenarios. Scenario 1 is business as usual (yacht without submerged wing), and scenario 2 is the innovative solution (yacht with Hull Vane submerged wing). The higher the Ecopoint value, the higher the potential environmental impact.

