

Attested Rigs

Innovative solution: Air Vortex

April 2024

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 made it possible to compare the potential impacts related to the Business as Usual (Scenario 1), i.e. damaged pipe replaced with a new stainless-steel pipe, and the solution claimed to be more sustainable (Scenario 2) i.e. pipe treated with the Air Vortex® technology that allows to extend the life of the damaged pipe as if it were replaced. 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.3.9), 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 9.5 facilitated the study.

Functional Unit

The functional unit is defined as is 100 meters of pipe with a diameter of 80 mm treated or substituted, with the system function being its use in the yachting field.

System Boundary

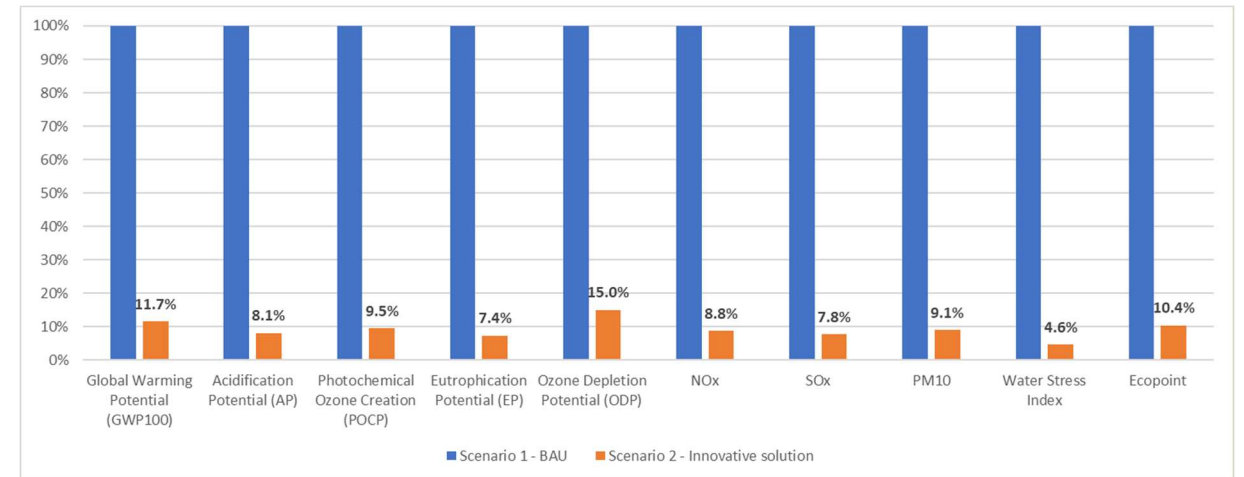
Divided into three phases: Upstream processes (from cradle to gate), Core processes (manufacturing from gate to gate), and Downstream processes (from gate to grave). No allocation procedure performed, as Attested Rigs provided all data regarding system production.

Results

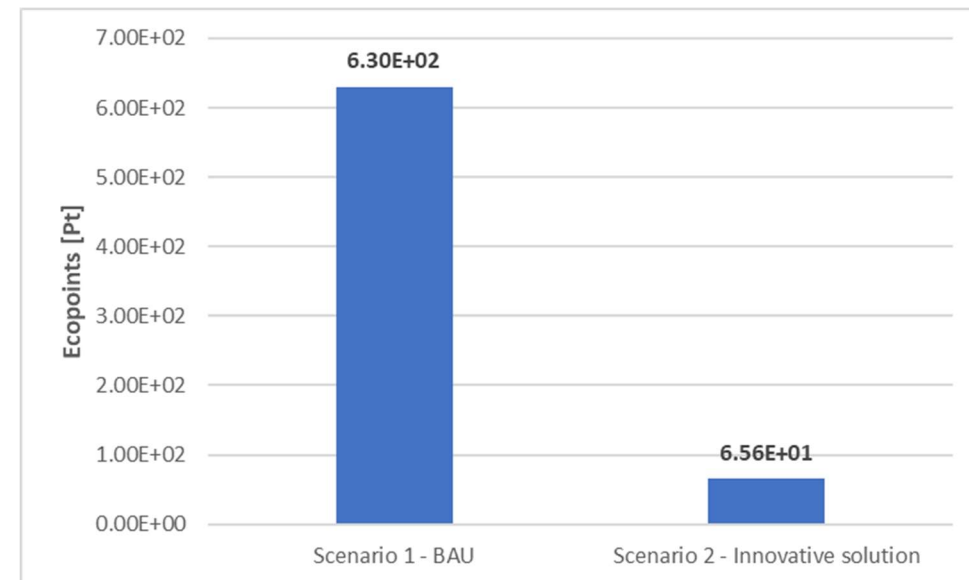
The LCA study confirms that Air Vortex solution in comparison with pipe substitution shows a reduction in the environmental indicators ranging from 85,0% to 95,4%.

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

LCA Impact Category Results (Business-As-Usual vs Air Vortex Technology)



Comparison between the results of the Scenario 1 – Pipe substitution (BAU) and Scenario 2 - Pipe treated with Air Vortex® technology (Innovative Solution). The results are expressed in percentage.



Summary of the single score (Ecopoint) assessed scenarios. Scenario 1 is business as usual (pipe substituted), and scenario 2 is the innovative solution (pipe treated). The higher the Ecopoint value, the higher the potential environmental impact.