Climate Assessment of steel Pipe + U-Bolt

The climate assessment of the steel Pipe + U-Bolt quantifies the CO_2e emissions throughout its life cycle by comparing two scenarios over a 30-year vessel operational lifetime. In the Baseline scenario, ten complete Pipe + U-Bolt units are required to cover this period, each manufactured, operated for 3 years, and then replaced. In contrast, the Lifetime Extension Scenario achieves the same 30-year service life by restoring a single unit onboard using Wencon Coating systems through three scheduled treatments at years 3, 13, and 23, allowing the same component to remain in service throughout the vessel's operational lifetime.

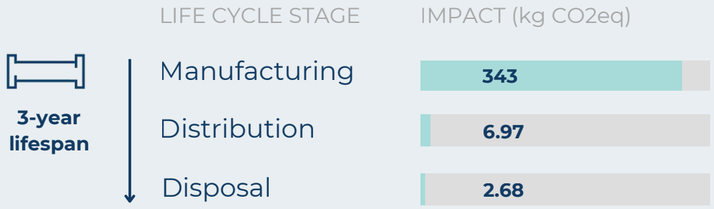
WENCON®

Climate Assessment made by ReFlow®

BASELINE SCENARIO

30-year lifespan using 10 new units (replaced every 3y)

Life Cycle Stage Impact Contribution



353 kg CO2eq

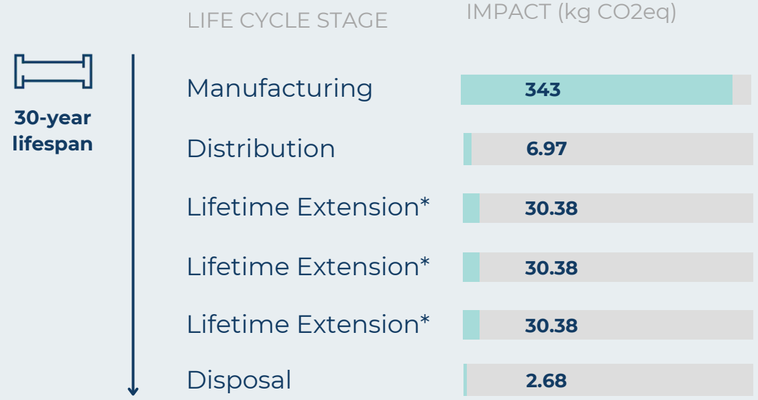
TOTAL CARBON FOOTPRINT

Steel Pipe + U-Bolt carbon footprint across a 30-year vessel lifespan.

LIFETIME EXTENSION SCENARIO

30-year lifespan using 1 unit with 3 reconditioning cycles every 10y

Life Cycle Stage Impact Contribution



444 kg CO2eq

TOTAL CARBON FOOTPRINT

Lifetime Extension:*

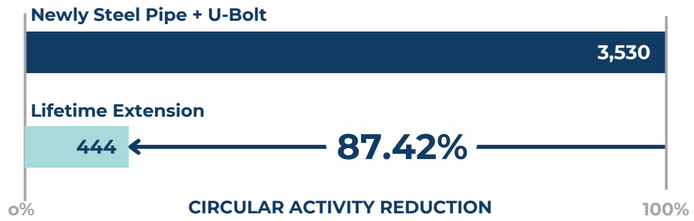
After the first 3 years of service, the unit undergoes a lifetime extension treatment using a protective Wencon coating, which extends its service life by an additional 10 years. Subsequent treatments take place at years 13 and 23, further prolonging the functional lifespan of the unit to cover the vessel's entire 30-year operational period while maintaining its original structure. Transport of coating materials and lifetime extension activities are included within this scenario.

METHODOLOGY

Methodology: ReFlow Climate Assessment
Database: Ecoinvent 3.10
IA Method: ReCiPe 2016 v1.1. Midpoint method, H.
Assessed by: ReFlow ApS - ClimateHub

RESULTS:

Carbon Footprint Reduction



EMISSIONS SAVED OVER A VESSEL'S 30-YEAR LIFESPAN

87.42%

EMISSIONS SAVED

3,086 kg CO2eq

CARBON FOOTPRINT AVOIDED THROUGH STEEL PIPE + U-BOLT LIFETIME EXTENSION

The above data is based on a lifecycle screening performed by ReFlow (re-flow.io) and includes limitations and assumptions. For a full list of limitations and assumptions please contact Wencon Aps