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Trust is earned

Container Ship TCO Report

An assessment of the benefits, cost and savings of a hull coating upgrade.

Content of this report

1. Methodology and executive summary
2. Economical potential
3. Regulatory compliance

“We guide the maritime industry as a trusted advisor, enabling customers to achieve sustainability and operational excellence through responsible hull performance management”

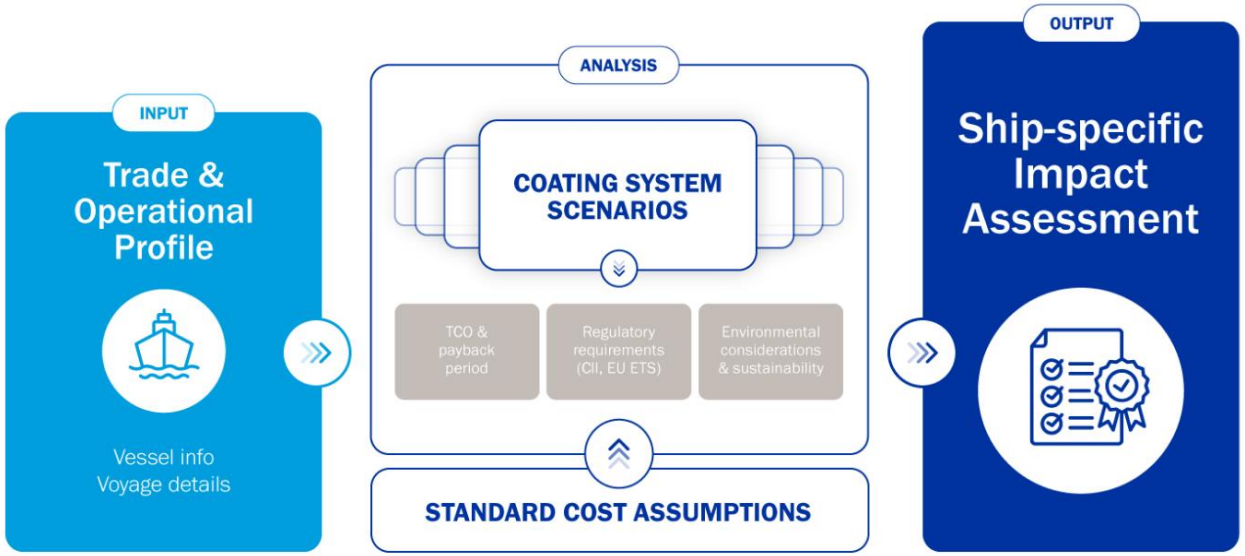
Alexander Enstrom
EVP Hempel Marine

Methodology and executive summary

Impact of a hull coating upgrade

Ship Specific Assessment

A fact-based approach for selecting the optimal solution for your vessel



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Comparison of three scenarios

Hull performance scenarios are based on 3 coating solutions

(Premium Silicone, Silicone, SPCs)

Hempaguard X7+
Top Performance System

BootTop	Hempaguard X7+	**Full blast**
Vertical	Hempaguard X7+	Full blast
Flat Bottom	Hempaguard X7+	Full blast

Hempaguard X7
Upgrade System

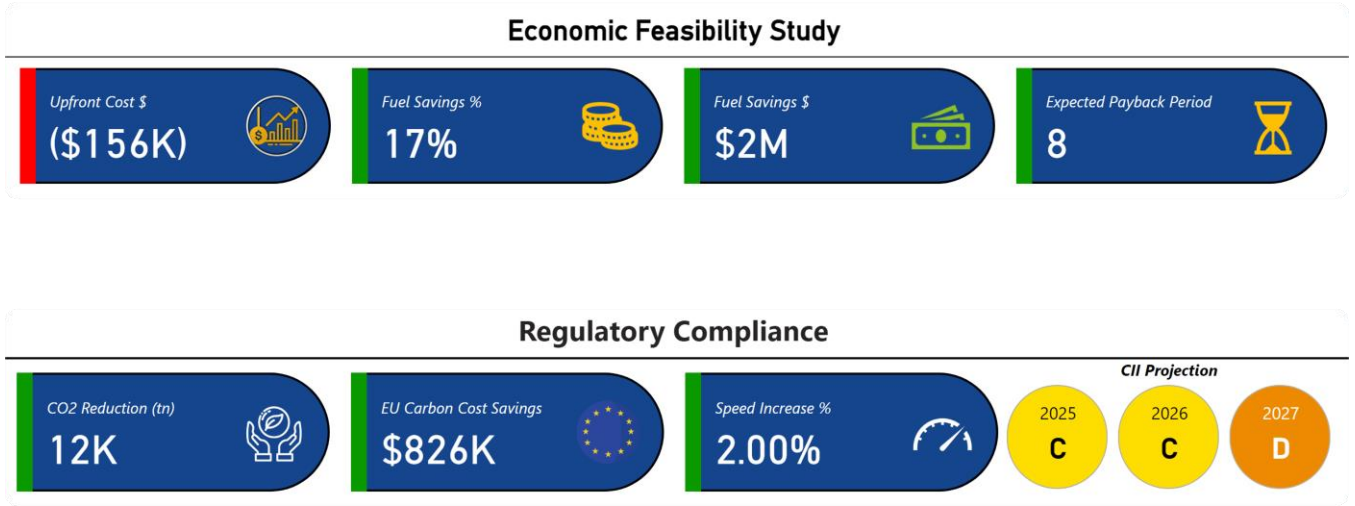
BootTop	Hempaguard X7	**Full blast**
Vertical	Hempaguard X7	Full blast
Flat Bottom	Hempaguard X7	Full blast

Globic 8000
Baseline System

BootTop	Globic 8000	**Spot blast**
Vertical	Globic 8000	Spot blast
Flat Bottom	Globic 8000	Spot blast

Executive summary

Economical benefits and regulatory compliance with premium silicone hull coating

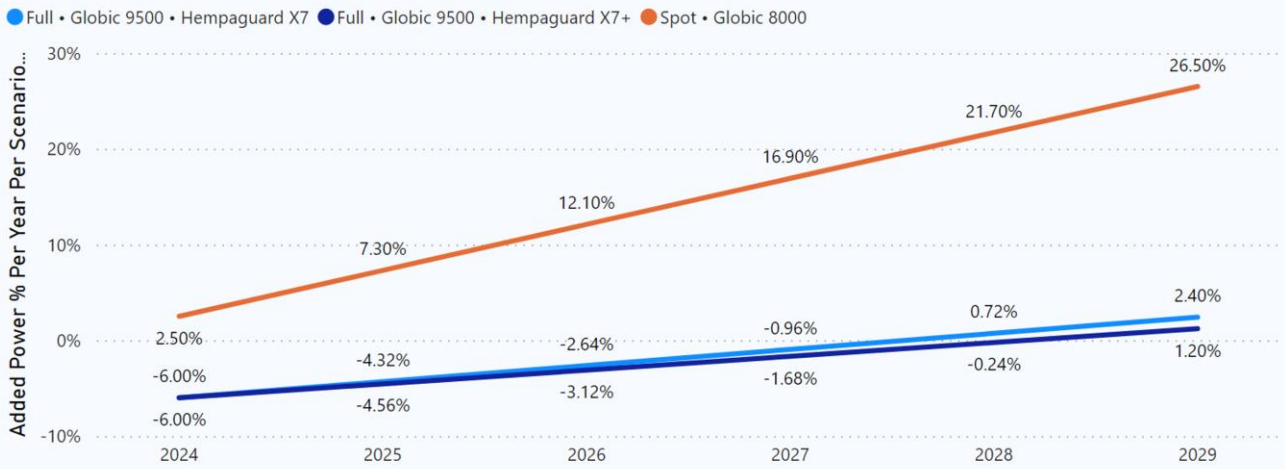


Economical potential

Impact of a hull coating upgrade

Impact of a hull coating upgrade

Expected efficiency improvements



Assumptions

Out of dock savings are based on the absolute power gain from the smoothness of silicone compared to self-polishing antifouling.

Savings over time is based on speed loss difference of silicone compared to self-polishing antifouling translated to power saving.

3:1 relationship between power increase and speed loss is assumed.

Paint System Description	Seamflow	Out of Dock Power Gain %	Surface Preparation %	Speed Loss %	Out of dock & Surface Preparation Diff%	Overtime Power Savings %	Total Fuel Savings %
Full • Globic 9500 • Hempaguard X7+		6.00	0.00	1.20	8.50	8.40	16.90
Full • Globic 9500 • Hempaguard X7		6.00	0.00	1.40	8.50	7.80	16.30
Spot • Globic 8000		0.00	-2.50	4.00	0.00	0.00	0.00

Expected paypack period

8

Months

Impact of a hull coating upgrade

TCO and expected payback period

	Elements of Cost	Full • Globic 9500 • Hempaguard X7+	Full • Globic 9500 • Hempaguard X7	Spot • Globic 8000	Top Upgrade VS Baseline System
Paint	Paint Purchasing Cost				
Repair Yard	Surface Preparation	$24,490	$24,490	$9,796	$14,694
	Washing	$1,975	$1,975	$1,975	$0
	Paint Application Cost	$38,960	$41,330	$5,451	$33,509
	Shipyard Rent	$45,000	$45,000	$30,000	$15,000
	Off Hire Cost	$59,400	$59,400	$39,600	$19,800
Cleanings	Diver Cost	$0	$0	$5,925	($5,925)
	Extra Costs Next DD	$0	$0	$7,003	($7,003)
TCO Fuel	Additional Fuel Consumption	$0	$0	$84,689	($84,689)
	Off Hire Cost - Cleaning	$0	$0	$9,900	($9,900)
	Total Cost of Fuel	$9,383,592	$9,451,343	$11,291,927	($1,908,336)
	Total Cost of Ownership	$9,692,417	$9,745,538	$11,552,267	($1,859,851)
				Total Savings $	$1,859,851
				Expected Payback Period (months)	8

Additional upfront cost for upgrade:

- **Paint Cost:**
- **Shipyard Cost: $83K**

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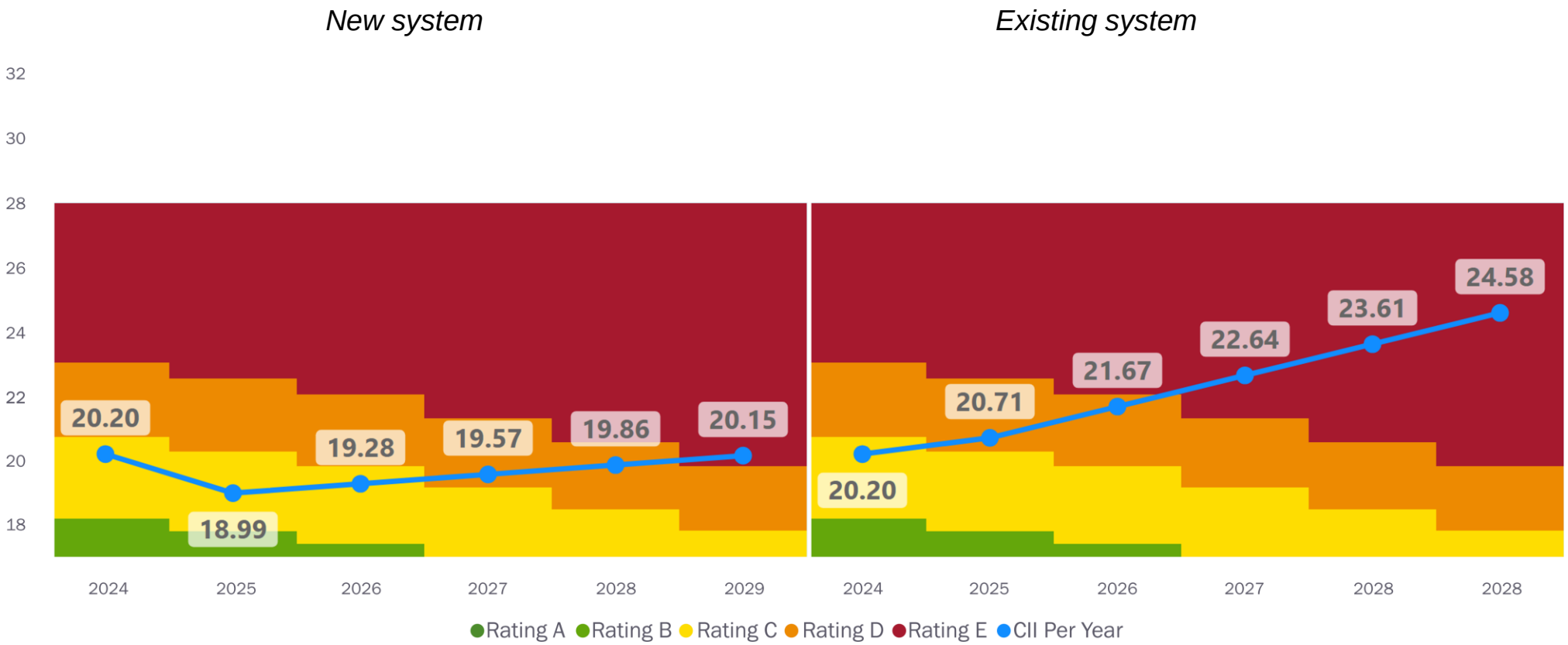
Regulatory compliance

Impact of a hull coating upgrade

Impact of a hull coating upgrade

Impact on CII rating vs. existing coating system



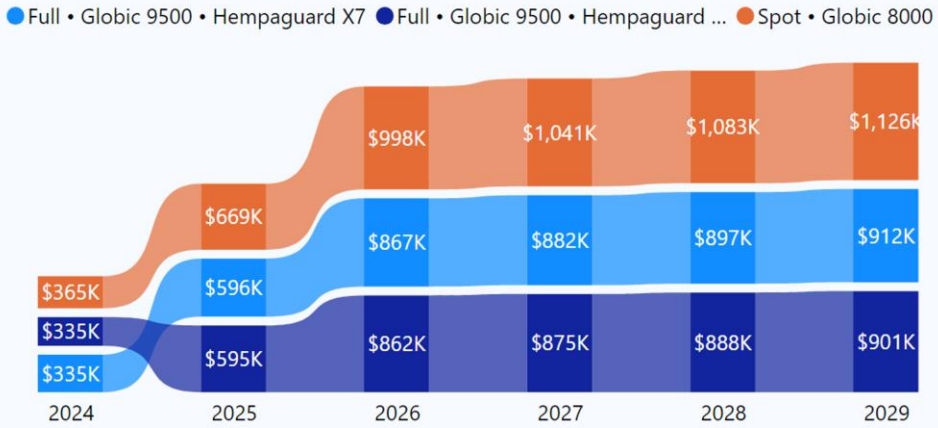
Impact of a hull coating upgrade

EU ETS carbon cost and savings

Added Power % and CO2 emissions

% eligible emissions to be taxed	40%	70%	100%			
Project Paint System Description	2024	2025	2026	2027	2028	2029
Full • Globic 9500 • Hempaguard X7						
Added Power %	-6.00%	-4.32%	-2.64%	-0.96%	0.72%	2.40%
CO2 Emissions (tn)	13381	13620	13859	14098	14337	14577
Full • Globic 9500 • Hempaguard X7+						
Added Power %	-6.00%	-4.56%	-3.12%	-1.68%	-0.24%	1.20%
CO2 Emissions (tn)	13381	13586	13791	13996	14201	14406
Spot • Globic 8000						
Added Power %	2.50%	7.30%	12.10%	16.90%	21.70%	26.50%
CO2 Emissions (tn)	14591	15274	15957	16641	17324	18007

Carbon Cost ($)



Top Performance VS Baseline System

	2024	2025	2026	2027	2028	2029
Added Power Difference %	0.00%	10.18%	11.86%	13.54%	15.22%	16.90%
CO2 Emissions Reduction (Tn)	1210	1688	2167	2645	3123	3601
Carbon Cost Savings ($)	$30,268	$73,907	$135,494	$165,405	$195,317	$225,229

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Get an impact assessment of a coating upgrade for your vessel

Book a vessel specific assessment today >>

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