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Passenger 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”

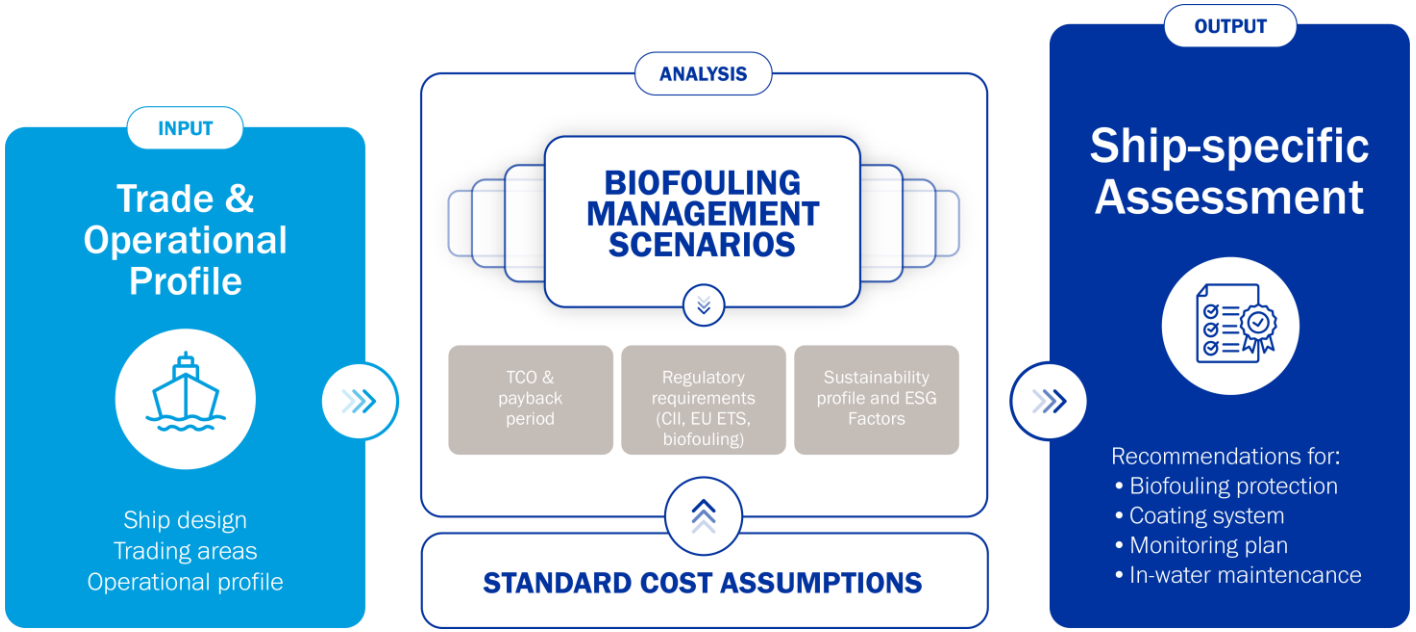
Alexander Enstrom
EVP Hempel Marine

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



Comparison of three scenarios

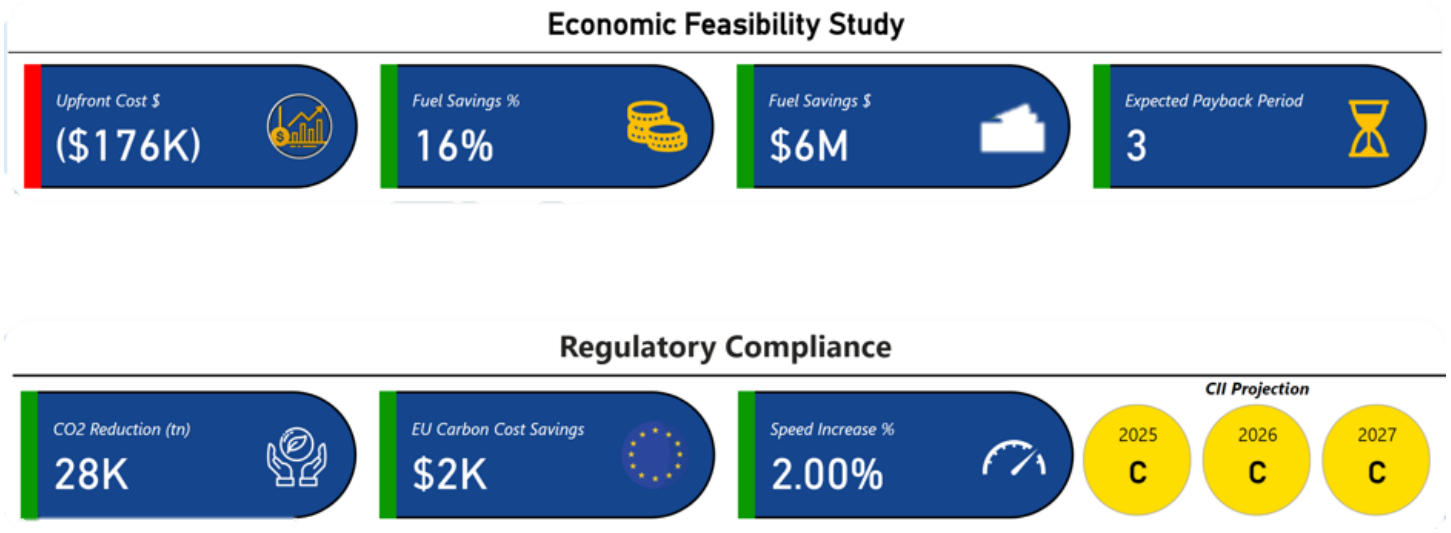
Hull performance scenarios are based on 3 coating solutions

(Premium Silicone, Silicone, SPCs)

	Hempaguard Ultima Top Performance System		Hempaguard X7 Upgrade System		Globic 8000 Baseline System	
BootTop	Hempaguard X7+	Full blast	Hempaguard X7	Full blast	Globic 8000	Spot blast
Vertical	Hempaguard Ultima	Full blast	Hempaguard X7	Full blast	Globic 8000	Spot blast
Flat Bottom	Hempaguard Ultima	Full blast	Hempaguard X7	Full blast	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	Out of Dock Power Gain %	Surface Preparation %	Speed Loss %	Out of dock & Surface Preparation Diff%	Overtime Power Savings %	Total Fuel Savings %
Full • Hempaguard Ultima	6.00	0.00	0.90	8.50	7.80	16.30
Full • Hempaguard X7	6.00	0.00	1.20	8.50	6.90	15.40
Spot • Globic 8000	0.00	-2.50	3.50	0.00	0.00	0.00

Expected paypack period

3

Month

Impact of a hull coating upgrade

TCO and expected payback period

	Elements of Cost	Full Globic 9500, Hempaguard Ultima	Full Globic 9500, Hempaguard X7	Spot Globic 8000	Top Upgrade VS Baseline System
Paint	Paint purchasing cost	$200,000	$165,000	$90,000	$110,000
Repair Yard	Surface preparation cost	$40,800	$40,800	$16,000	$24,800
	Washing cost	$2,500	$2,500	$2,500	$0
	Paint application	$44,000	$44,000	$12,500	$31,500
	Shipyard Rent	$40,000	$40,000	$30,000	$10,000
Cleanings	Diver cost	$0	$0	$7,500	-$7,500
	Extra costs for next DD	$0	$0	$9,900	-$9,900
	Additional fuel consumption	$0	$0	$267,000	-$267,000
Fuel	Total Cost of Fuel	$29,800,000	$30,100,000	$35,600,000	-$5,800,000
TCO	Total Cost of Ownership	**$30,127,300**	**$30,392,300**	**$36,035,400**	**-$5,908,100**
				Total Savings	**-$5,908,100**
				Expected Payback Period (Months)	**3**

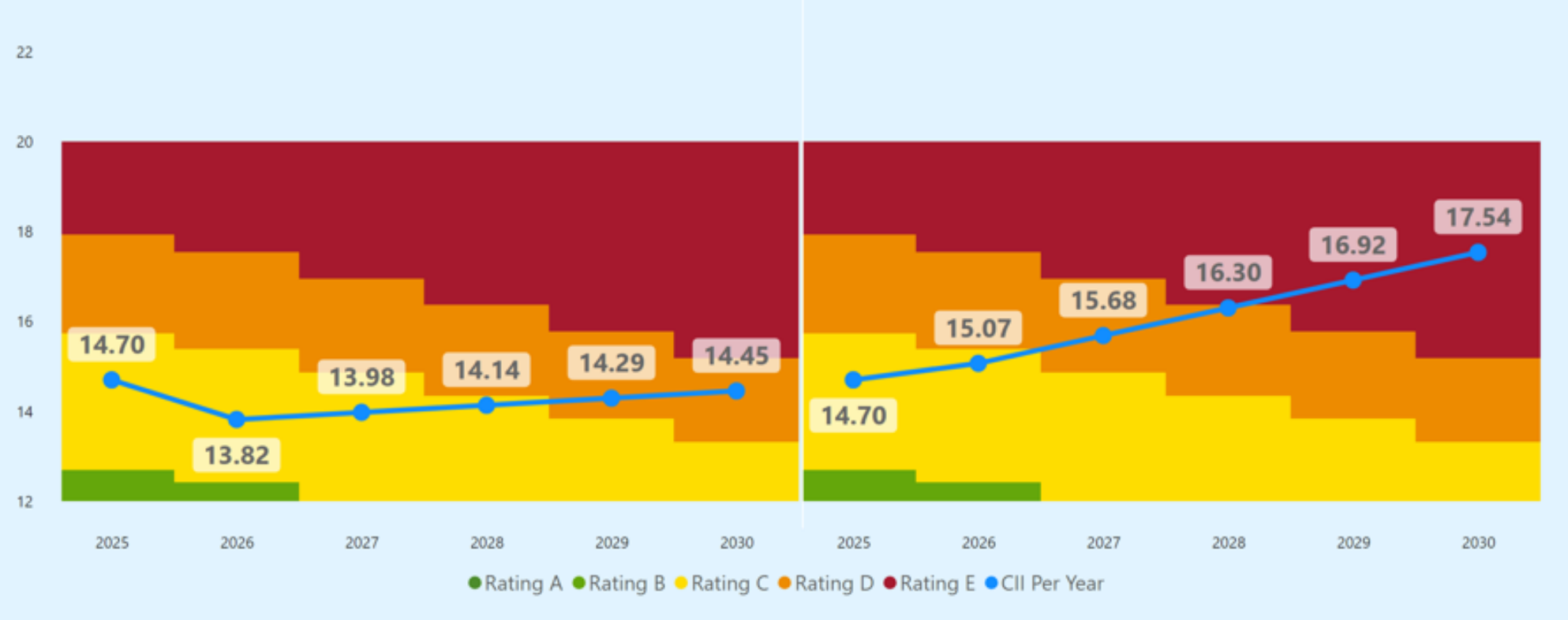
Regulatory compliance

Impact of a hull coating upgrade

Impact of a hull coating upgrade

Impact on CII rating vs. existing coating system

New system *Existing system*

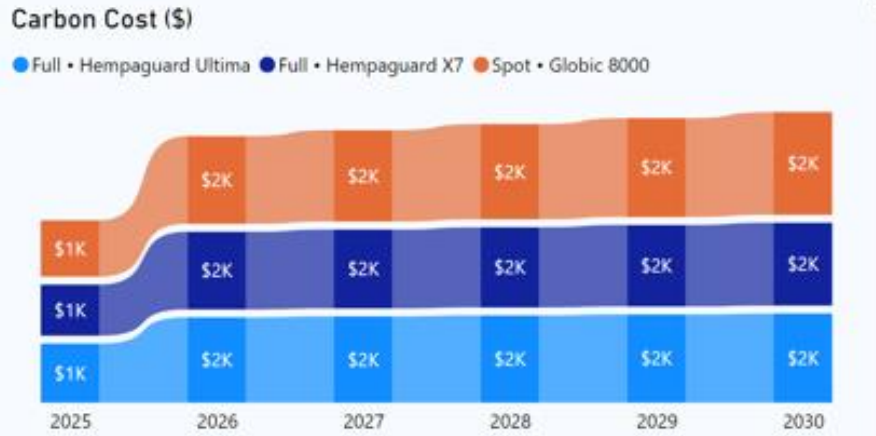


Impact of a hull coating upgrade

EU ETS carbon cost and savings

Added Power % and CO2 emissions

% eligible emissions to be taxed	70%	100%				
Project Paint System Description	2025	2026	2027	2028	2029	2030
Spot • Globic 8000						
Added Power %	2.50%	6.70%	10.90%	15.10%	19.30%	23.50%
CO2 Emissions (tn)	35542	36998	38455	39911	41367	42824
Full • Hempaguard X7						
Added Power %	-6.00%	-4.56%	-3.12%	-1.68%	-0.24%	1.20%
CO2 Emissions (tn)	32595	33094	33593	34092	34592	35091
Full • Hempaguard Ultima						
Added Power %	-6.00%	-4.92%	-3.84%	-2.76%	-1.68%	-0.60%
CO2 Emissions (tn)	32595	32969	33343	33718	34092	34467



Top Performance VS Baseline System

	2025	2026	2027	2028	2029	2030
Added Power Difference %	0.00%	10.06%	11.62%	13.18%	14.74%	16.30%
CO2 Emissions Reduction (Tn)	2947	4029	5111	6193	7275	8357
Carbon Cost Savings ($)	$106	$207	$262	$318	$374	$429

Get an impact assessment of a coating upgrade for your vessel

Book a vessel specific assessment today >>

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