

# 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

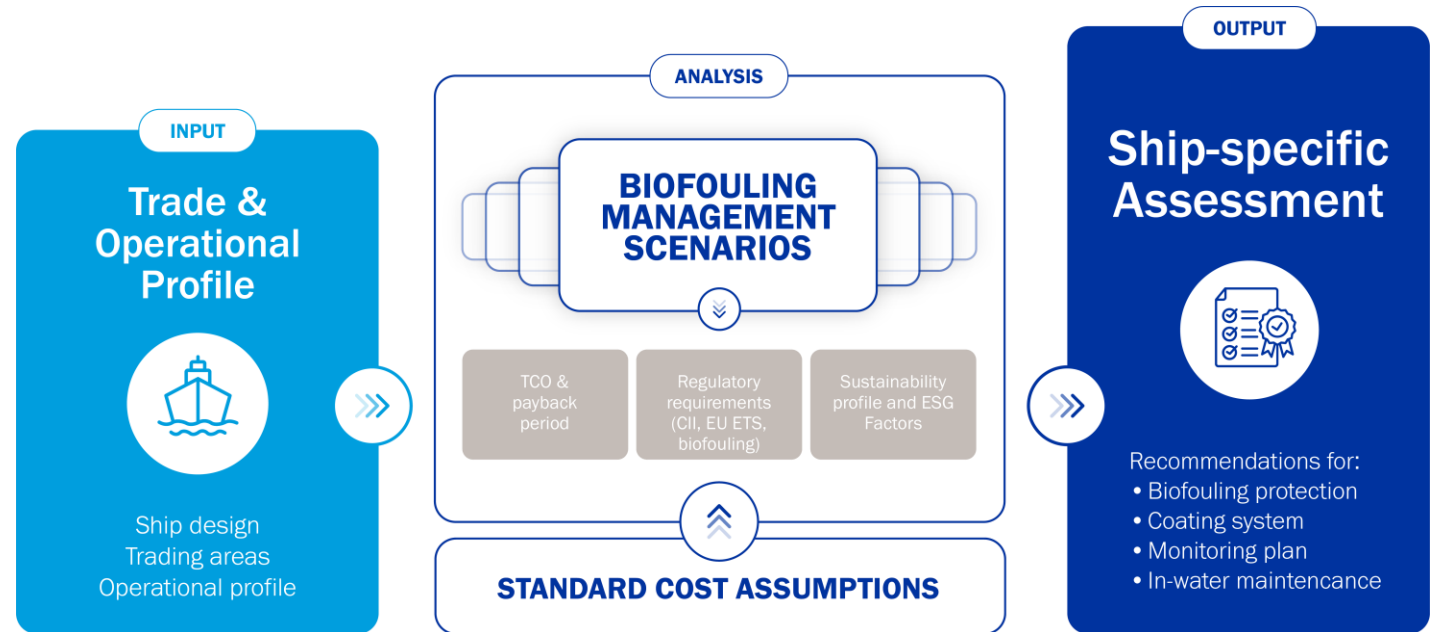
# Impact of a hull coating upgrade





# Ship Specific Assessment

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



# Comparison of three scenarios

Hull performance  
scenarios are based on 3  
coating solutions  
(Premium Silicone, Silicone, SPCs)

Hempaguard Ultima Top Performance System		
BootTop	Hempaguard X7+	Full blast
Vertical	Hempaguard Ultima	Full blast
Flat Bottom	Hempaguard Ultima	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

## Economic Feasibility Study



## Regulatory Compliance



Economical potential

# Impact of a hull coating upgrade





# Impact of a hull coating upgrade

## Expected efficiency improvements

Added Power % per year

● Full • Hempaguard Ultima ● Full • Hempaguard X7 ● Spot • Globic 8000



### 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**

**8**

**Months**



# 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	\$560,000	\$500,000	\$340,000	\$220,000
Repair Yard	Surface preparation cost	\$160,000	\$160,000	\$64,000	\$96,000
	Washing cost	\$10,000	\$10,000	\$10,000	\$0
	Paint application	\$116,000	\$116,000	\$49,500	\$66,500
	Shipyard Rent	\$40,000	\$40,000	\$30,000	\$10,000
	Off Hire cost	\$347,000	\$347,000	\$260,000	\$87,000
Cleanings	Diver cost	\$0	\$0	\$30,000	-\$30,000
	Extra costs for next DD	\$0	\$0	\$39,000	-\$39,000
	Additional fuel consumption	\$0	\$0	\$280,000	-\$280,000
	Off Hire cost - Cleaning	\$0	\$0	\$65,000	-\$65,000
Fuel	Total Cost of Fuel	\$31,300,000	\$31,600,000	\$37,400,000	-\$6,100,000
TCO	Total Cost of Ownership	\$32,533,000	\$32,773,000	\$38,567,500	-\$6,034,500
Total Savings					-\$6,034,500
Expected Payback Period (Months)					8

Regulatory compliance

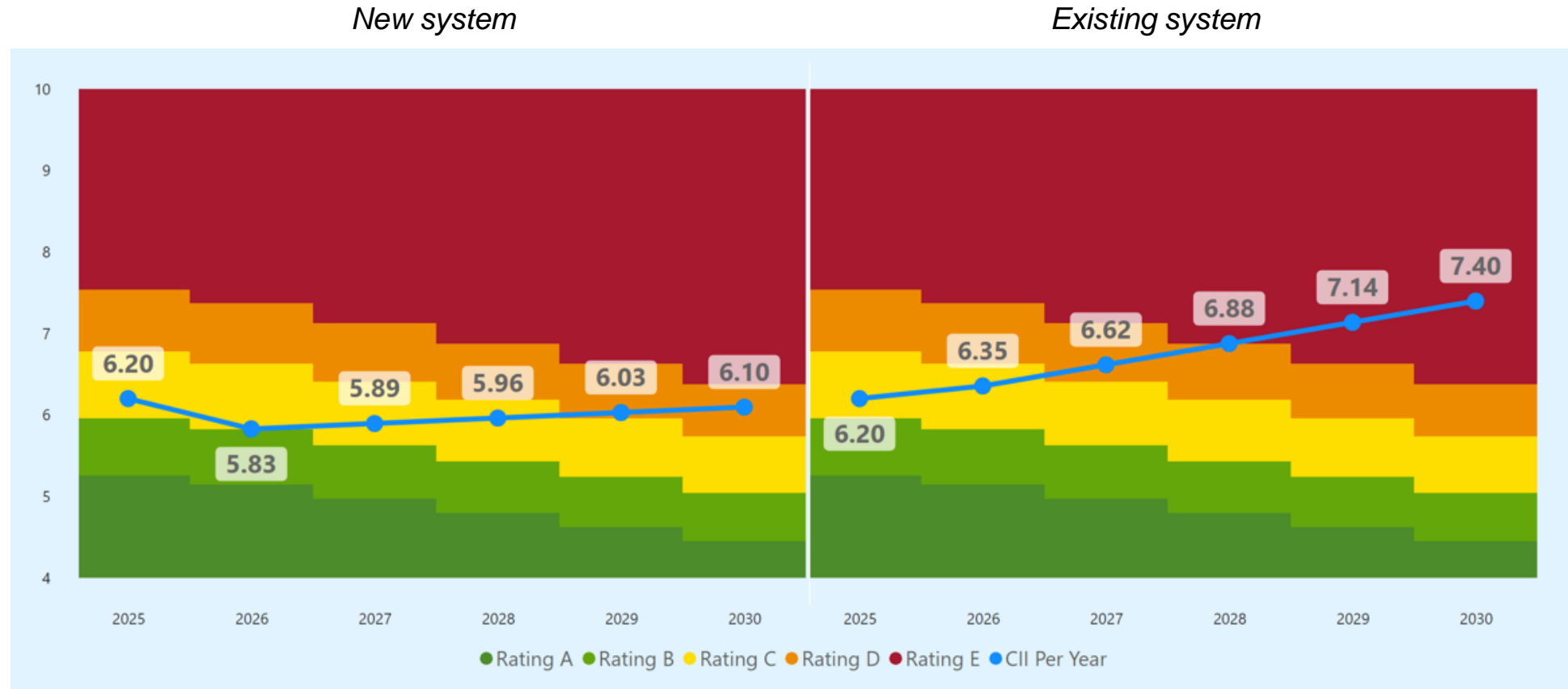
# Impact of a hull coating upgrade





# Impact of a hull coating upgrade

Impact on CII rating vs. existing coating system



# Impact of a hull coating upgrade

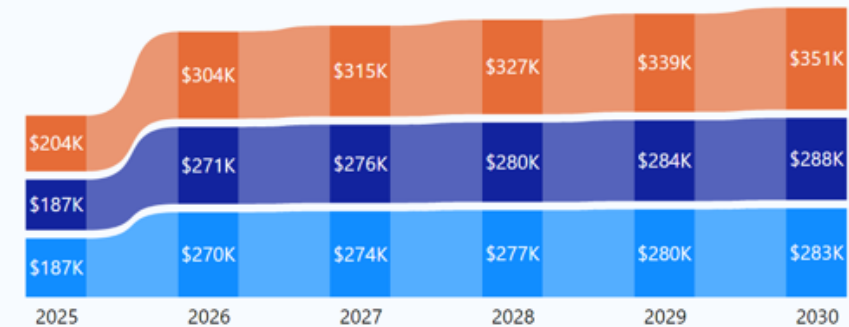
## EU ETS carbon cost and savings

### Added Power % and CO2 emissions

% eligible emissions to be taxed	70%	100%				
Project Paint System Description	2025	2026	2027	2028	2029	2030
<b>Spot • Globic 8000</b>						
Added Power %	2.50%	6.70%	10.90%	15.10%	19.30%	23.50%
CO2 Emissions (tn)	37038	38556	40074	41591	43109	44627
<b>Full • Hempaguard X7</b>						
Added Power %	-6.00%	-4.56%	-3.12%	-1.68%	-0.24%	1.20%
CO2 Emissions (tn)	33967	34487	35008	35528	36048	36569
<b>Full • Hempaguard Ultima</b>						
Added Power %	-6.00%	-4.92%	-3.84%	-2.76%	-1.68%	-0.60%
CO2 Emissions (tn)	33967	34357	34747	35138	35528	35918

### Carbon Cost (\$)

● Full • Hempaguard Ultima ● Full • Hempaguard X7 ● Spot • Globic 8000



### 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)	3071	4199	5326	6454	7581	8709
Carbon Cost Savings (\$)	\$16,926	\$33,055	\$41,931	\$50,806	\$59,682	\$68,557



# Get an **impact assessment** of a coating upgrade for **your vessel**

[Book a vessel specific assessment today >>](#)