

# Panamax Bulker 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

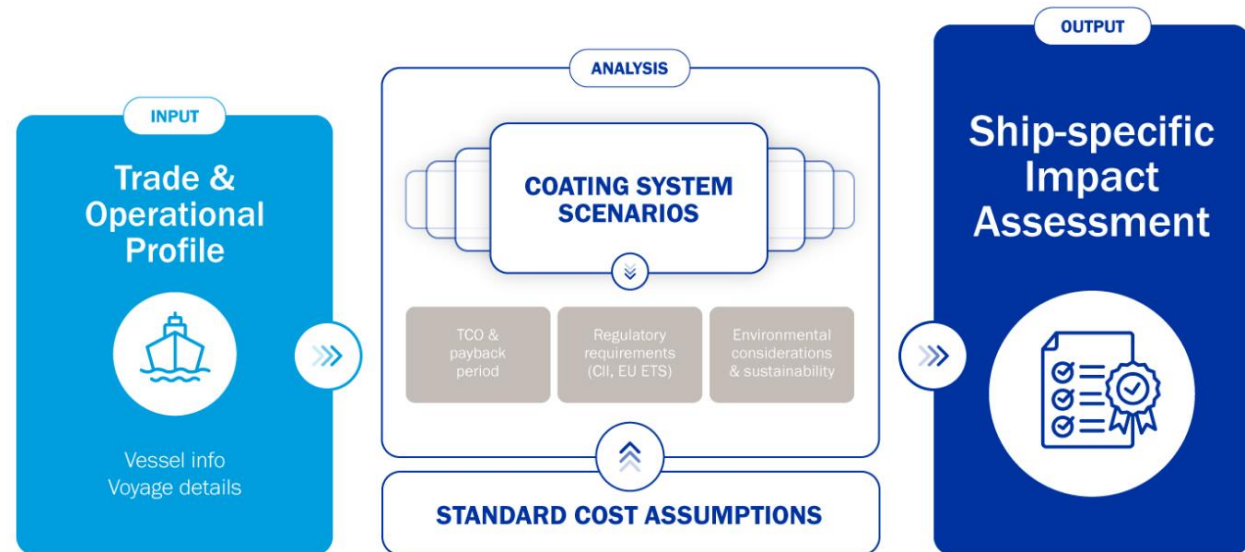
Methodology and executive summary

# 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)

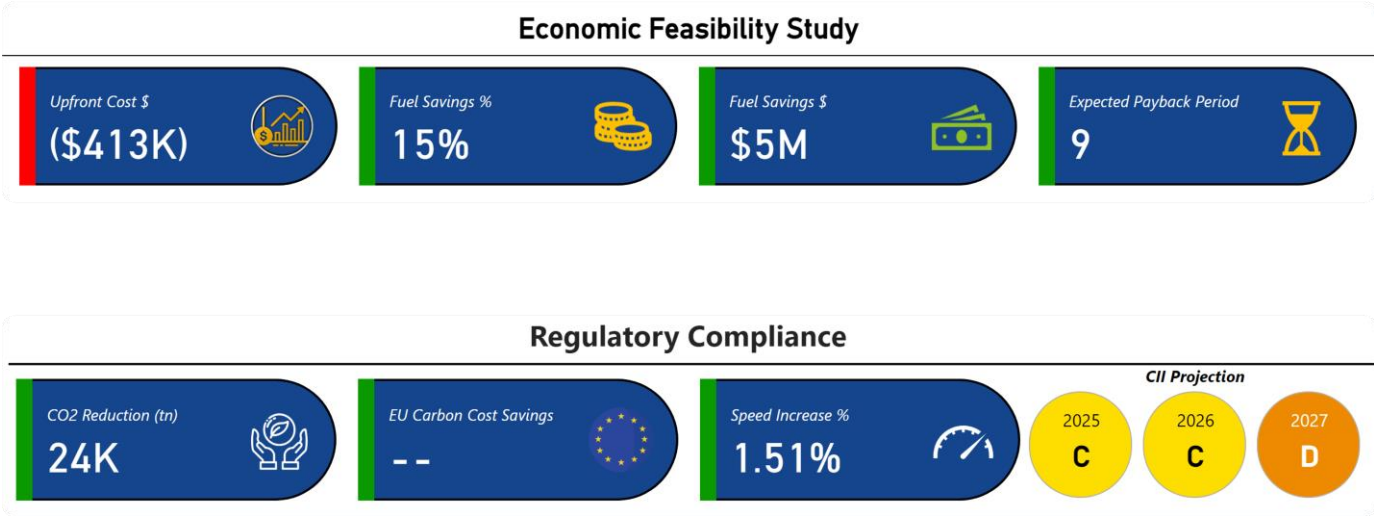
Hempaguard X7+ / Globic 9500 Top Performance System		
BootTop	Globic 9500	Full blast
Vertical	Hempaguard X7+	Full blast
Flat Bottom	Hempaguard X7+	Full blast

Hempaguard X7/ Globic 9500 Upgrade System		
BootTop	Globic 9500	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

### Added Power % per year



### 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+		4.53	0.00	1.50	7.03	7.50	14.53
Full • Globic 9500 • Hempaguard X7		4.53	0.00	1.70	7.03	6.90	13.93
Spot • Globic 8000		0.00	-2.50	4.00	0.00	0.00	0.00

# Expected paypack period

9

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				
	Surface Preparation	\$88,598	\$88,598	\$35,439	\$53,159
Repair Yard	Washing	\$7,145	\$7,145	\$7,145	\$0
	Paint Application Cost	\$79,142	\$85,616	\$19,720	\$59,422
	Shipyards Rent	\$45,000	\$45,000	\$30,000	\$15,000
TCO Fuel	Off Hire Cost	\$108,000	\$108,000	\$72,000	\$36,000
	Diver Cost	\$0	\$0	\$16,185	(\$16,185)
	Extra Costs Next DD	\$0	\$0	\$19,131	(\$19,131)
	Additional Fuel Consumption	\$0	\$0	\$254,626	(\$254,626)
	Off Hire Cost - Cleaning	\$0	\$0	\$18,000	(\$18,000)
	Total Cost of Fuel	\$29,017,021	\$29,220,722	\$33,950,124	(\$4,933,103)
	Total Cost of Ownership	\$29,793,906	\$29,955,081	\$34,622,370	(\$4,828,464)
Total Savings \$					\$4,828,464
Expected Payback Period (months)					9

Additional upfront cost for upgrade:

- ✦ Paint Cost:
- ✦ Shipyards Cost: \$164K

Regulatory compliance

# Impact of a hull coating upgrade

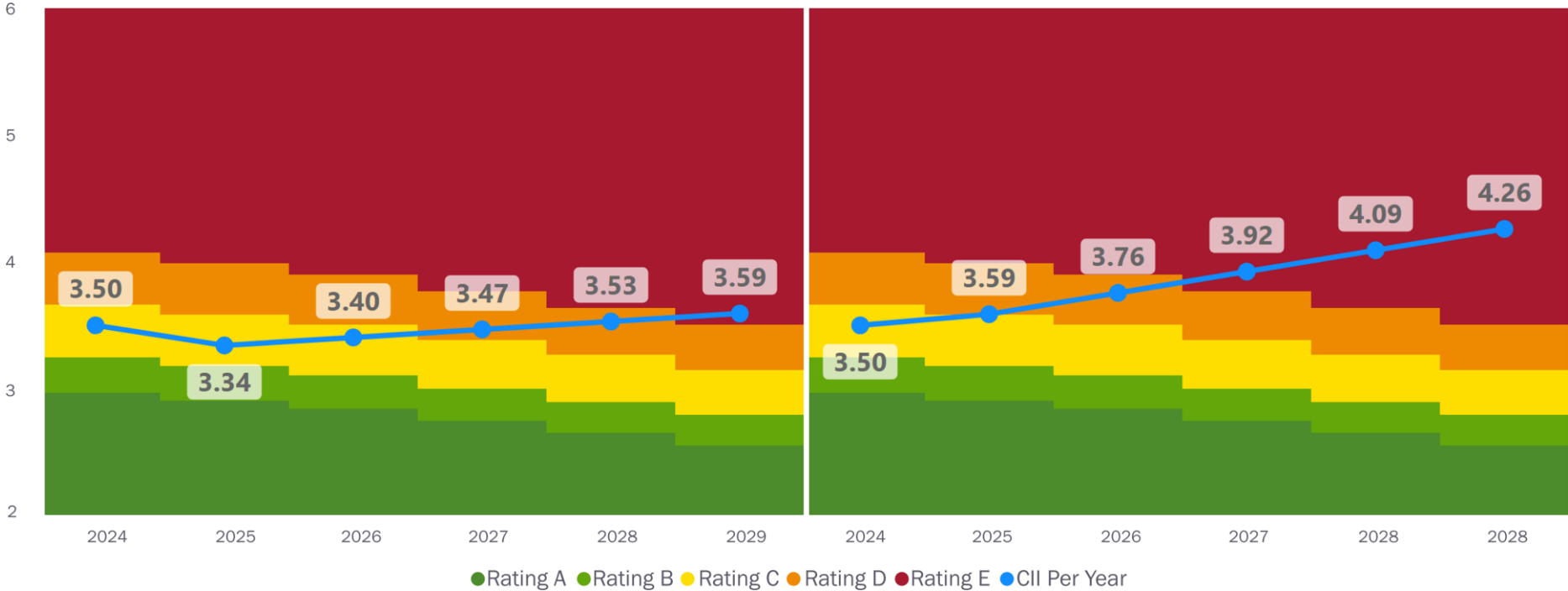


# Impact of a hull coating upgrade

Impact on CII rating vs. existing coating system

*New system*

*Existing system*



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

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