

GREEN  
TECH  
SOLUTION

nJØRD



# TECHNOLOGY SCREENING

LADY HELENE  
IMO NUMBER 9467237  
SEPTEMBER 2025

# EXECUTIVE SUMMARY

Njord has completed a Technology Screening for vessel Lady Helene. Below are the key findings.

## KEY FINDINGS

4

Number of techs.  
found relevant

7.9

Savings potential in %

8.05

Return on Investment  
in Years

216,500

Total Investment in USD

26,881

Yearly Bunker Savings in USD





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# GENERAL INFORMATION

## METHODOLOGY

This Technology Screening is based on Njord's experience of +500 vessel assessments and +200 Energy Efficiency Technologies (EETs) installations. For LADY HELENE, Njord has utilized insights from work completed on similar vessels in terms of segment, size, and trading patterns. To avoid overlapping savings when applying multiple technologies, all technologies are prioritized based on impact. For example, if Technology X (priority 1) has a 10% individual impact and Technology Y (priority 2) has a 5% individual impact, Y's effect is calculated on the remaining 90% of fuel consumption. This approach ensures accuracy when applying multiple EETs and the avoidance of counting savings twice. Novel Technologies have been considered for the vessel in a separate appendix.

## ASSUMPTIONS

The Technology Screening is based on data provided by Spliethoff's Bevrachtungskantoor B.V. to Njord.

Equipment and installation prices are based on average figures from recent projects, and includes all-in costs (equipment, logistics, and installation). Final prices will depend on the specific project, volume, and negotiations.

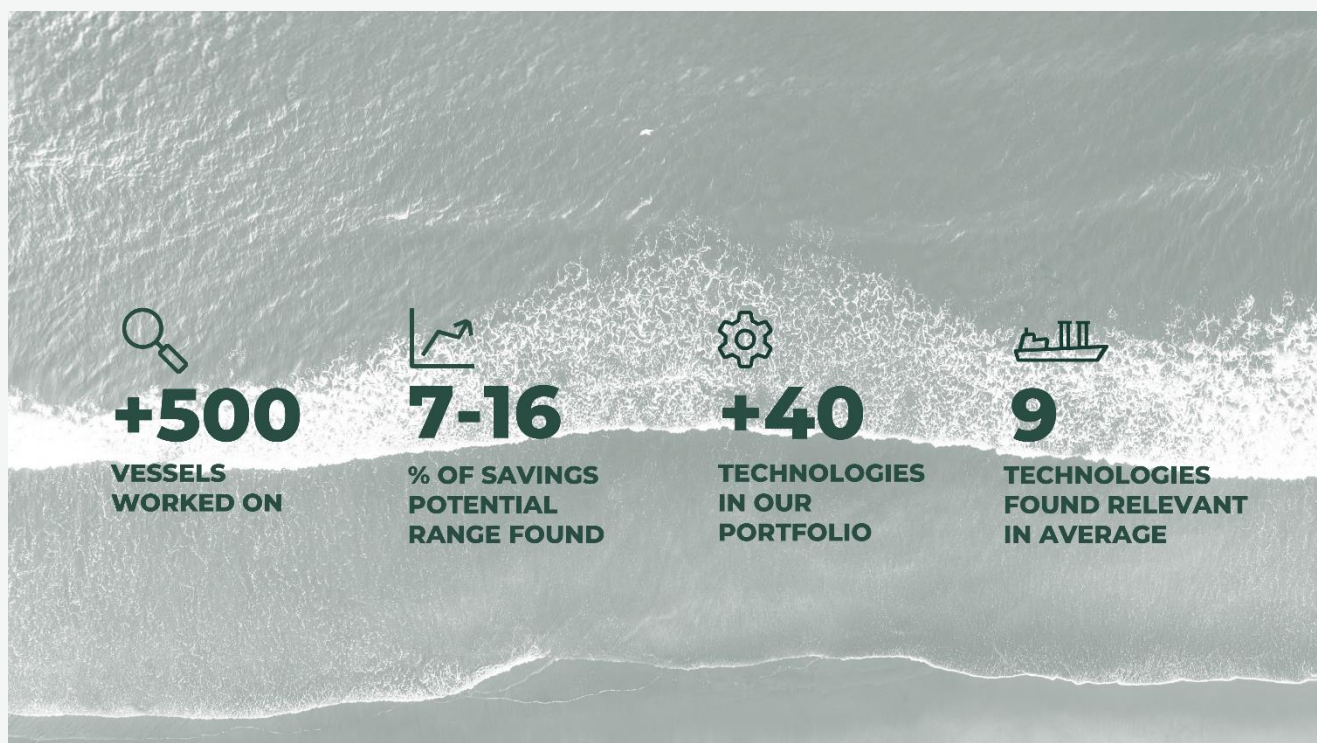
The saving potential is divided across two technology categories:

**Direct Savings Technologies (DS)** directly impact vessel performance post-installation and may influence EEXI.

**Enabled Savings Technologies (ES)** improve technical and/or operational efficiency.

The following bunker prices have been considered for the cost calculation:

HFO – 406 USD/MT  
MGO – 652 USD/MT



# VESSEL PARTICULARS

## General Information of Vessel

Vessel Name	Lady Helene
IMO Number	9467237
Vessel Owner	Spliethoff's Bevrachtingskantoor B.V.
Commercial Manager	Wijnne & Barends' Cargadoors- en agentuurkantoren B.V.
Technical Manager	Wijnne & Barends' Cargadoors- en agentuurkantoren B.V.
Vessel Type	general cargo
Build Year	2011
Flag	NLD
Classification Society	LR
Gross Tonnage	2992
Dead Weight	3500
Next Drydock Scheduled Date	18-01-2026

Machinery Details	
Main Engine: Type and Make	Mak Motoren GmbH & Company KG (Diesel)
Main Engine: No. of Engines	1
Main Engine: Max Power	2244
Main Engine: Max RPM	750
Main Engine: Power Limitations	N/A
Auxiliary Engine: Type and Make	Sisu Diesel Inc (74.475 CTAG-4V), Sisu Diesel Inc (74.475 CTAG-4V)
Auxiliary Engine: No. of Engines	2
Auxiliary Engine: Max Power	182kw
Boiler: Type and Make	One Wiesloch Thermal fluid heater (V3-0-TFO-004)
Boiler: Capacity	400kw
Hull: Antifouling Paint Specification and Paint Name	SeaForce 90 (SPL), Black a TBT free Self Polishing AntifoulingSeaForce 90 (SPL)Cuprous Oxide (CAS Number 1317-39-1)Copper Pyrithione (CAS Number 14915-37-8)
Ballast Water Treatment System. Make and model	Qingdao Headway Technology Co Ltd, OceanGuard Ballast WaterManagement System HMT-450
Loading Computer. Make and model	N/A
Scrubber/EGCS? If yes, Make, Model and Type (Open or Closed Loop)	Value Maritime EGCS open loop (VM18001)

Consumption	
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Annual Main Engine Consumption	580 CBM
Annual Auxiliary Engines Consumption	160 CBM
Annual Boiler Consumption	40 CBM
Annual "Other" Consumption	0

Operation Profile	
No. of Days Ballast in 1 year	52
No. of Days Laden in 1 year	162
No. of Days Idle/Load port in 1 year	66
No. of Days discharging in 1 year	69
General trade route of the vessel (voyages and ports/topography)	EU / UK up to and incl med
Total Annual Distance (365 days)	55611

Existing Energy saving devices and Equipment	
Main Engine	N/A
Hull	N/A
Auxiliary Engines	N/A
Boiler	N/A
Others	N/A
Voyage Planning	Spos, greenmaritime
Is Auto Logging available on the vessel?	N/A
Are Mass Flow Meters installed? If yes, which are the consumers?	Yes, Main engine and Aux engines
Is BWTS Installed? if yes, type and capacity	HTM-450/450 m3
Is the vessels installed with a scrubber? if yes, please specify Open Loop / Closed Loop	Yes, Open Loop
Which consumers are covered by the scrubber? example ME, Auxiliary Engines, Boiler	Main Engine
kWHr meter available?	N/A
Shaft Power Meter available?	N/A
Economisers (EGB) fitted on AEs and ME?	only ME
Are VFDs installed? If YES, which all equipment are covered?	N/A
Other Machinery Details where ESDs applicable (e.g. Cargo plant for Gas Carriers)	N/A
Make and Model of Loading software onboard	N/A

Any other information	
N/A	



# BUSINESS CASE

## ANNUAL SAVINGS POTENTIAL OF THE TECHNOLOGIES CONSIDERED

Savings potential

**7.9%**

MT CO<sub>2</sub> per year savings

**190**

MT Fuel savings

**61**

Main Engine

**57**

Aux Engine

**4**

Other

**0**

A total of 4 technologies have been used out of which 2 are of direct saving category and 2 are enabled savings.

0 technologies will have impact on EEXI value, and 4 technologies will have impact on CII ratings

## FINANCIALS FOR THE TECHNOLOGIES CONSIDERED

Return of investment (years)

**8.05**

Total investment USD

**216,500**

Yearly bunker savings USD

**26,881**

Bunker prices, as mentioned in the assumption section of this report, has been considered for calculation of yearly bunker savings and return on investment.



# REGULATORY IMPACT

## EU-ETS IMPACT/FUEL-EU IMPACT/CII IMPACT

Return Of Investment (Years)

**8.05**

Total investment USD

**216,500**

Yearly bunker savings of USD

**26,881**





The vessel is found to be trading less than 5000 GRT , hence no regulatory impact is applicable.





# BASIC TECHNOLOGIES

\*The savings ranges stated in this table showcases how technologies will perform on respective machinery (Main Engine/Auxiliary Engine/Boiler) if installed individually.

Technology		Description	Savings Category	Regulatory Impact EEXI/CII	Install in Drydock / Service	Savings Range %	Cost Range (USD)
	Propeller Fouling Protection - Ultrasound for Propeller	Ultrasonic propeller antifouling system. This device emits ultrasonic waves through the shaft to prevent marine growth on the propeller blades. As it's a preventive system, installation must begin with a clean propeller surface.	DS	CII	Both	0.5-1.0	25K-35K
	Auto Pilot Upgrade	Updated autopilot includes unique algorithms that ensure highly precise steering performance where it is needed, even at low speed	ES	CII	Both	1.0 -2.0	15-20k
	RPM & PITCH Optimisation	RPM and Pitch Optimization systems adjust engine speed and propeller pitch in real time using optimized combinator curves. This helps maintain consistent power and speed throughout a voyage, improving fuel efficiency and overall propulsion performance.	ES	CII	Both	5.0 -8.0	150K-200K
	LED	LED lights with low power consumption on AE have a longer running range and are a direct savings.	DS	CII	Both	0.4-1.0	20K-60K



# NEXT STEP - NJORD'S SOLUTION DESIGN

Get a detailed verification of each technology in scope, and have a tailor-made installation guide, ready to execute.

## NJORD'S SOLUTION DESIGN INCLUDES THE FOLLOWING:

- Confirmation of consumption profiles
- Confirmation of fuel savings per technology
- EEXI and CII impact analysis per technology
- Alignment and retrieval of CFD calculations from suppliers (if required, at cost)
- Recommendations for which supplier to choose per technology
- Determination of cost per technology (including and split in logistics, equipment, and installation costs)
- Performance studies for selected relevant technologies

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to design systems custom made for your vessels. Get to know how this will impact on the existing vessel performance.

**THROUGH OUR SOLUTION DESIGN**, we provide you with the clarity and guidance you need to reduce emissions, comply with regulations, and save fuel.



**OUR TEAM OF INDUSTRY EXPERTS ANALYSE THE SYSTEMS ON THE VESSEL** and find the best suited technology and tailor fit it to the existing environment on board!

When we design solutions, we deep dive into actual operational and consumption profiles in the last 365 days to scope out the best possible fit.

**READ MORE ABOUT SOLUTION DESIGN HERE**

**BREAKDOWN OF SAVINGS, COSTS, AND PAYBACK TIME FOR INDIVIDUAL TECHNOLOGIES**

**DETAILED ANALYSIS OF EVERY TECHNOLOGY AND HOW IT AFFECTS**



**Akshay Mathur**

Senior Solution Manager

M : +91 8657799186

[akshay.mathur@njordsolution.com](mailto:akshay.mathur@njordsolution.com)

**Maersk Tankers A/S**

Holmbladsgade 133

2300 Copenhagen S, Denmark

[www.njordsolution.com](http://www.njordsolution.com)

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