



ESL & AtoB@C Shipping

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WHERE ARE WE TODAY

The leading carrier of dry bulk cargoes in the Baltic Sea region



1949/2000

—
Founded

49

—
Vessels

16.5 MT

—
ESL-AtoB@C combined
cargo volume in 2017

464,000 DWT

—
Vessel capacity in 2018

160 M€*

—
ESL-AtoB@C pro forma combined
net sales in 2017

11 %

—
ESL-AtoB@C pro forma EBIT-%
in 2017

*Figures are not IFRS-compliant

AtoB@C SHIPPING



AtoB@C Shipping

in line with ESL Shipping's growth strategy



30 dry cargo vessels in size of
4,000-5,000 tons

New customer and
cargo types for ESL including
finished products

Trading in the Gulf Of Bothnia to
Iberia

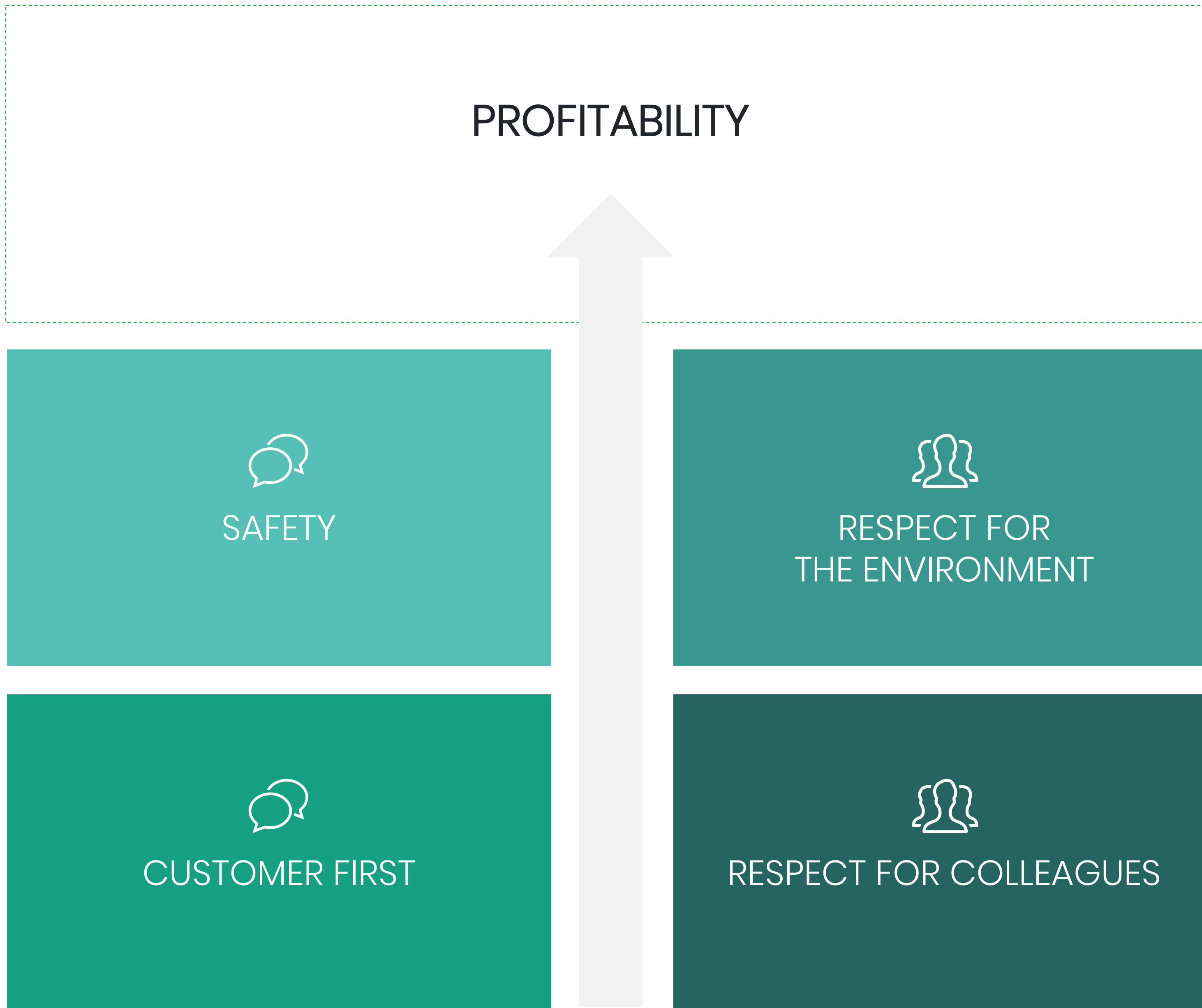
7 fully owned
2 partially owned
21 time-chartered

Forest industry, raw materials
and products, steel industry
products, fertilizers, recycled
materials, biofuels and
minerals

2017 net sales:
79.3 M€*
2017 EBIT:
3.2 M€* (4% of net sales)

OUR VALUES

Our values enable
efficient and profitable
operations



FOCUS ON SUSTAINABILITY AND SAFETY

Reduced air emissions at sea
and in ports

Targeting no dry bulk cargo
residues into the sea

Compiling with all ballast water
regulations and guidelines

Minimized shipboard waste

Social responsibility for
multinational crews

Low lost-time injury frequency
rate* (LTIF) in 2017

- Finnish industry average 2,95
- ESL Shipping 0,87

INVESTING IN SUPERIOR COMPETITIVENESS

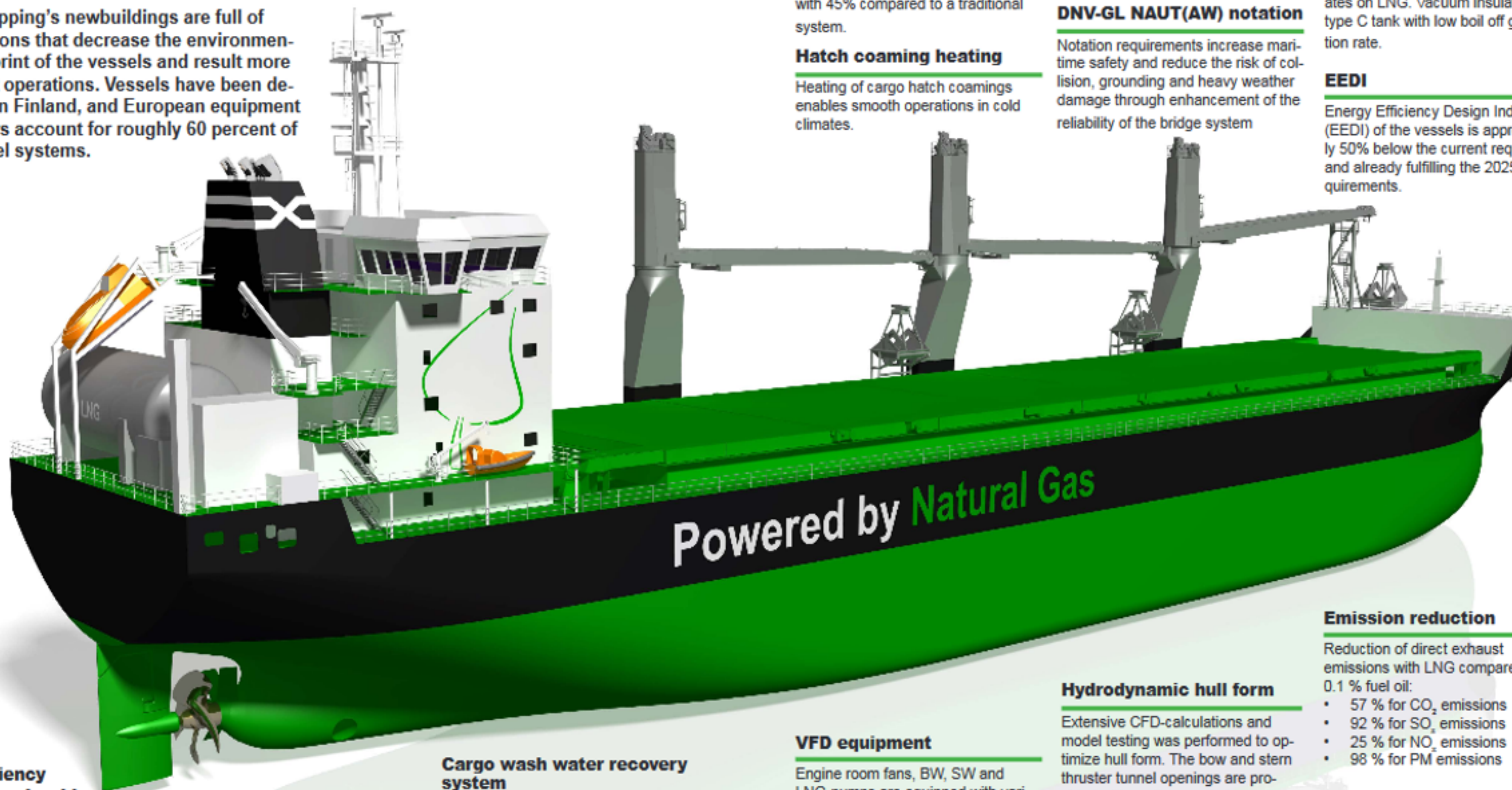
Environmentally friendly LNG-fuelled vessels



<p>The LNG vessels will improve profitability by lower operating costs</p>	<p>2 x 25,600 DWT — vessel carrying capacity, M/S Viikki & Haaga</p>	<p>Designed with Finnish Deltamarin 60% of vessel systems by European suppliers Built in China</p>
<p>60 M€ — Value of investment</p>	<p>Long-term agreement for raw material sea transport with SSAB</p>	<p>50 % — More than 50% lower CO2 emissions</p>

INNOVATIVE NEWBUILDINGS

ESL Shipping's newbuildings are full of innovations that decrease the environmental footprint of the vessels and result more efficient operations. Vessels have been designed in Finland, and European equipment suppliers account for roughly 60 percent of all vessel systems.



Thermal insulation & Heat recovery

Vessels have improved thermal insulation and are equipped with energy saving solution for air handling unit. Heat recovery wheel reduces cooling energy consumption with 30% and heating energy consumption with 45% compared to a traditional system.

Hatch coaming heating

Heating of cargo hatch coamings enables smooth operations in cold climates.

DNV GL Clean Design notation

The notation requires special features such as 5 ppm bilge water separator, biofouling management, ODP = 0 (Ozone depletion potential), GWP max 1300 (Global warming potential)

DNV-GL NAUT(AW) notation

Notation requirements increase maritime safety and reduce the risk of collision, grounding and heavy weather damage through enhancement of the reliability of the bridge system

Energy management system

The system enables crew to optimize energy consumption.

All LNG-powered

All engines and boiler burner operates on LNG. Vacuum insulated IMO type C tank with low boil off generation rate.

EEDI

Energy Efficiency Design Index (EEDI) of the vessels is approximately 50% below the current requirement and already fulfilling the 2025 requirements.

High efficiency propeller and rudder

Optimal hydrodynamic design with rudder bulb to optimize the water flow.

Exhaust gas heat recovery

Efficient exhaust gas heat recovery

Electrical motors

In general, electrical motors of 7.5 kW and above has an energy efficiency class of IE3.

Shore power

Vessel can perform operations

Cargo wash water recovery system

Vessel is able to re-use the washing water and discharge used washing water to port facilities.

Ballast water treatment systems

Capacity 2 x 1000 m³, UV-type,

VFD equipment

Engine room fans, BW, SW and LNG-pumps are equipped with variable frequency drive (VFD) to reduce the power consumption.

Hull coating

Hull is painted with low friction ice-resistant paint. No harmful antifouling paint is used. Frequent hull cleaning

Hydrodynamic hull form

Extensive CFD-calculations and model testing was performed to optimize hull form. The bow and stern thruster tunnel openings are provided with scallops and streamline grids. Special attention for monitoring of hull surface roughness was done during the building stage.

Stator fins

The vessel is equipped with four stator fins in order to optimize the flow to the propeller and to increase

Emission reduction

Reduction of direct exhaust emissions with LNG compared to 0.1 % fuel oil:

- 57 % for CO₂ emissions
- 92 % for SO_x emissions
- 25 % for NO_x emissions
- 98 % for PM emissions

Permanent magnet PTI/PTO shaft generator with VFD drive

Shaft generator enables flexible and efficient operation of propulsion and power generation at sea as well as extra power for ice conditions through power take in/power take out shaft



BOTHNIA BULK

An industrial partnership for more sustainable Baltic sea transports

SSAB

ESL Shipping

PORT OF RAAHE
RAAHEN SATAMA

PORT OF
LULEA
HAMN
SWEDEN

Oxelösunds Hamn AB

RAAHEN
VOIMA

A partnership between industrial customers, ports and shipping companies to increase the sustainability of the whole supply chain

The goal is to make the Baltic sea routes more eco-friendly

Partly funded by the EU

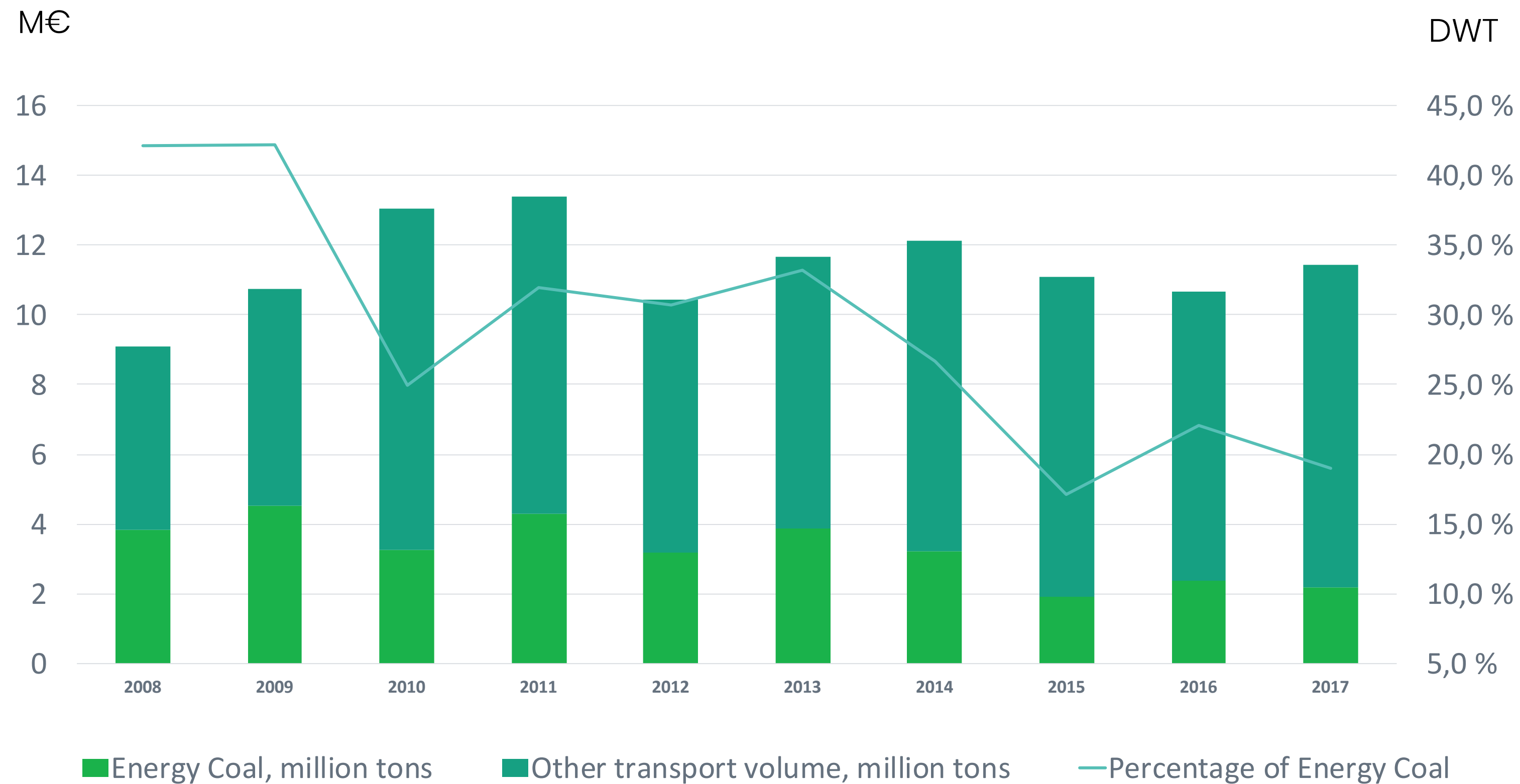
- ESL shipping's share approximately 5 M€

 Co-financed by the European Union
Connecting Europe Facility



FOCUS ON ENVIRONMENT

Decreasing demand for energy coal transports



Energy coal used to be an important profitability driver for ESL Shipping

The decrease in energy coal transport demand has not negatively impacted ESL Shipping's profitability

FOCUS ON ENVIRONMENT

Strong trend in transition from coal to biofuels: Transportation needs to increase significantly





THANK YOU