



REDERIET STENERSEN AS  
SUSTAINABILITY REPORT 2021

— A modern and environmentally friendly chemical/product tanker fleet

Our clients value us as their *reliable* and *preferred* partner

Our overall goal is **zero loss** of life or personnel injuries, **zero harm** to the environment, and **zero damages** to assets or third-party property.

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We care

**Safety** and **quality** is always our priority.

Each employee is responsible for proper execution and safety control of their own work. Master and his ship management team members are responsible to verify that this is done. The company will allocate time, resources, and efforts required to develop and implement its safety management system, and to develop safety awareness and management skills inductive to continued safety improvements.

Our Values

**Hands-on, caring, responsible**

We believe that the best results are achieved through know-how, active involvement, and curiosity.

We believe that respect and commitment create long term values.

We believe that being reliable is an effect of our integrity and accountability.

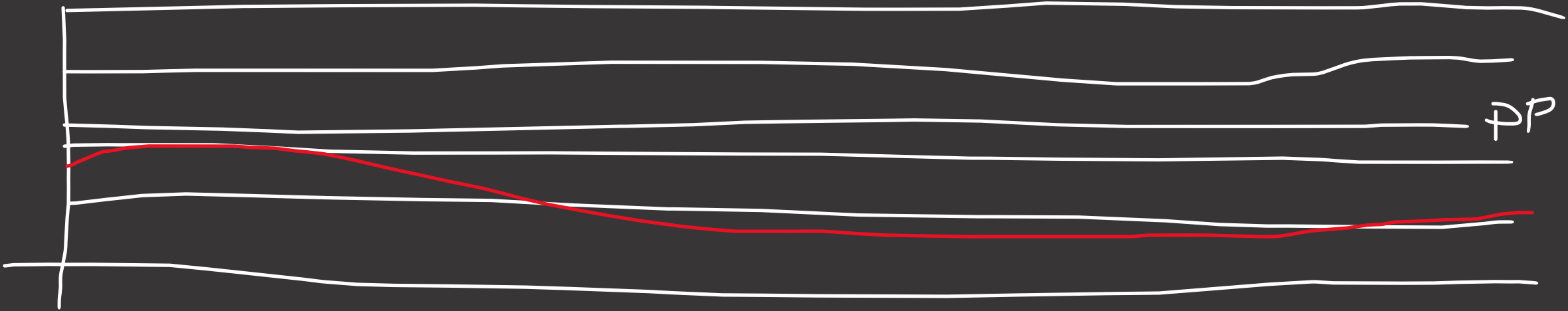
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Key Figures, Environment



Vessel name	Deadweight	Distance sailed	Transport work	CO2 emitted	EEOI	Sea Cargo Charter reference	AER	Poseidon Principal reference	CII	CII reference	CII rating
-	[dwt]	[nm]	[nm * ton]	[ton]	[g/nm*ton]	[g/nm*ton]	[g/nm*dwt]	[g/nm*dwt]	[g/(nm*dwt*cr)]	[g/nm*dwt]	-
Sten Arnold	16 578	43 819	326 206 819	9 296	28.398	19.03	12.797	14.854	-	13.72	C
Sten Aurora	16 596	41 562	450 677 519	8 608	19.324	19.03	12.479	14.854	-	13.71	B
Sten Baltic	16 607	46 656	374 529 557	10 295	27.206	19.03	13.287	14.854	-	13.70	C
Sten Bergen	16 655	40 171	284 346 656	8 484	28.653	19.03	12.681	14.854	-	13.68	B
Sten Bothnia	16 611	47 877	380 569 849	9 078	23.638	19.03	11.415	14.854	-	13.70	B
Sten Frigg	16 587	44 373	342 948 421	9 199	26.845	19.03	12.499	14.854	-	13.71	B
Sten Hydra	16 670	42 063	316 689 812	9 153	28.930	19.03	13.053	14.854	-	13.67	C
Sten Idun	16 614	45 019	382 550 675	9 560	25.025	19.03	12.782	14.854	-	13.70	C
Sten Moster	16 670	40 051	356 779 274	8 727	23.323	19.03	13.071	14.854	-	13.67	C
Sten Nordic	16 657	36 120	281 906 004	8 330	29.365	19.03	13.846	14.854	-	13.68	C
Sten Suomi	16 619	37 340	281 702 173	8 402	28.968	19.03	13.540	14.854	-	13.70	C
Stenberg	16 626	44 121	348 609 671	8 682	24.338	19.03	11.836	14.854	-	13.69	B
Stenheim	16 614	41 918	430 014 763	8 317	19.656	19.03	11.943	14.854	-	13.70	B
Fleet Average	-	42 392	350 587 014	8 933	25.667	19.03	12.69	14.854	-	13.70	B

\*Carbon Intensity Indicator correction factors (cr) not available

\*\*Data based on verified IMO DCS and EU MRV

\*\*\*Preliminary CII rating based on AER

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Key Figures, Environment



Greywater released to environment

723.44

Total volume of greywater released to sea



Number of oil spills and releases to the environment

55.65

Releases of substances as per definitions by MARPOL Annex 1-6



Treated ballast water released

30%

Releases of ballast water treated in BWTS, percentage of total ballast water released



Total waste disposed from vessel

0.045%

Total waste disposed from vessel in cubic [m³]



Waste delivered to shore-facilities

4

Percentage of waste delivered to shore-facilities



Number of unregulated waste releases to sea

1

Releases of waste not in compliance with MARPOL Annex 1-6 definitions



Scope 1 GHG emission, total

723.44

000' ton CO<sub>2</sub> equivalents emitted in total  
\*Excl. SF<sub>6</sub>, HFCs, PFCs



Scope 1 GHG emission, vessel

55.65

000' ton CO<sub>2</sub> equivalents emitted per vessel  
\*Excl. SF<sub>6</sub>, HFCs, PFCs



Fleet GHG emission intensity

12.47

gCO<sub>2</sub>/dwt-mile



Average sulphur percentage of fuel consumed

0.045%

Average sulphur content in bunker

NO<sub>x</sub>

Nitrogen oxides emitted

4

000' ton NO<sub>x</sub> emitted per vessel

SO<sub>x</sub>

Sulfur oxides emitted

1

000' ton SO<sub>x</sub> emitted per vessel

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Key Figures, Social



0

Lost time incidents rate (LTIR)



0

Lost time incident frequency (LTIF)



3

Restricted work cases (RWC)



2

First aid cases (FAC)



4

Medical treatment cases (MTC)



0

Serious operational related incidents



0

Fatalities



0

Permanent total or partial disabilities suffered



8

Total recordable cases (TRC)



4

Total recordable cases frequency (TRCF)

What we define as serious operational related incidents

Allision

Collision

Grounding

Fire incident

Mooring incident

Explosion incident

Cargo and ballast

Alcohol

Human Resources

Officer Retention Rate

Senior Officer Retention Rate

Junior Officer Retention Rate

Ratings Retention Rate

Shore Retention Rate

Sick leave office

Result

95.5%

95.8%

95.0%

85.2%

86.5%

3.9%

Hour of rest violation

Number of 2 violations per person

Number of 3 violations per person

Result

2

0.3

Ship visit

Number of overdue ship visits, HR

Result

1

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Key Figures, Governance

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#### Message from the owners

- Challenges brought on by covid
- Facing new challenges; War, Sanctions
- Our objective is to be a substantial player in the 16400-20000DWT segment
- Our approach to sustainable growth
- How we avoid green washing, performance oriented (Walk the talk)
- Change from purely economic incentive of energy efficiency -> sustainability incentives (Green transition, Green Capital)
- Environmentally friendly fleet
- New-builds heading towards decarbonisation
- Current tonnage increased energy efficiency
- Outlook for 2022 and beyond
- ISO9001 and 14001 will lead to more detailed ESG-report, further implementing GRI requirements.

[Grab your reader's attention with a great quote from the document or use this space to emphasize a key point. To place this text box anywhere on the page, just drag it.]



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Rederiet Stenersen AS is a privately owned company with headquarters located in Bergen, Norway. We specialise in offering our customers innovative and efficient shipping solutions within the transportation of liquid products in the northern Europe, Baltic area.

This sustainability report will focus on the operational side of Rederiet Stenersen AS (Ship Management), however, Ship-owner and chartering entities will indirectly be included in the scope;

- Stenersen Chartering AS
- Stentank AS
- Stenship KS
- Stenoil KS
- Stenstraum AS
- Stenersen Crewing AS

The audited consolidated financial statements of the Rederiet Stenersen Group also consist of the subsidiaries Stenersen Shipsinvest AS, Stenoil AS, and Rolf Kjøde Skip I AS. These entities are investment companies with limited activity and are therefore not in the scope of this sustainability report.

The sustainability report is for the year 2021, and the Group aims to publish the sustainability report on a yearly basis.

The Stenersen Group seeks to receive external verification of its reported figures. Carbon intensity figures and emissions figures are verified according to IMO DCS and EU MRV by Det Norske Veritas (DNV).

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SK5054	Flag	DWT	Delivered
Sten Arnold	GIB	16 578	2008-01-03
Sten Aurora	NIS	16 596	2007-09-17
Sten Baltic	NIS	16 607	2005-08-31
Sten Bergen	NIS	16 655	2009-04-07
Sten Bothnia	NIS	16 611	2008-11-20
Sten Frigg	NIS	16 578	2009-01-19
Sten Hydra	NIS	16 670	2007-05-18
Sten Idun	GIB	16 614	2002-12-20
Sten Moster	NIS	16 670	2006-04-21
Sten Nordic	NIS	16 657	2005-11-30
Sten Suomi	NIS	16 619	2008-12-05
Stenberg	NIS	16 626	2003-11-20
Stenheim	GIB	16 614	2003-05-30

SK4056			
Sten Fjell	GIB	18 561	2010-01-06
Sten Skagen	GIB	18 531	2009-10-12

SK40/83-1			
Stenstraum	GIB	13 677	2001-10-01

# Strategy & Governance

What is governance, how do we apply it to reach our targets, UN sdgs?

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## UN Sustainable Development Goals

A collection of goals to ensure no one is left behind

The member states of the United Nations adopted what they called the sustainable development goals by General Assembly resolution A/RES/70/1 of 25 September 2015. The aim of the resolution is to achieve these 17 goals by 2030 with a view towards ending all forms of poverty, fighting inequalities, and tackling climate change while ensuring that no one is left behind.

The United Nations objective has been to create a positive and hopeful language that will be a constant thread through all efforts to support the SDGs, strengthening the sense that we are all in this together and are working toward the same objective. The United Nations' aim is that this will inspire and help carry the promise of a better world forward. Stenersen fully supports all the United Nations sustainable development goals, but we recognise that in order to make a real impact we have to choose the areas where the effect of our contribution is the greatest. That is why we have started by choosing 5 core goals that we will positively contribute towards and fully implement into our day-to-day operation.

Our long-term objective is to have no negative impact on any of the sustainable development goals and have an increasing amount of positive contributions towards all 17 UN Sustainable development goals.

In the coming pages we will do our best to describe our approach to the 5 core goals; why we have chosen them, what is our impact, and how can we contribute and measure our contribution.



The goal aims to ensure health lives and promote well-being for all ages.

- Support its own employees who experience substance abuse
- Provide alternative, maritime transport services to reduce road transport, thereby reducing traffic accidents
- Continue to reduce discharges to sea from its own operations, such as chemicals, oil, sewage and grey water
- Continue to reduce emissions from air from its own operations, such as NOx SOx and PM
- Continue to reduce the use of hazardous chemicals in its own operation
- Set requirements for suppliers with ship design, construction and scrapping with regard to chemical use, and emissions to air, water and soil.
- Use maritime regulatory institutions to effectively implement policies.

Relevant targets:

- Prevent and treat substance abuse, including narcotic drug abuse and harmful use of alcohol
- Halve the number of global deaths and injuries from road traffic accidents
- Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination

Disclosures:

- GRI 304: Biodiversity
- GRI 403: Occupational Health and Safety
- GRI 404: Training and Education

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The goals aim to achieve gender equality and empower all women and girls.

Targets:

- End all forms of discrimination against women
- Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision making

Disclosures:

- GRI 404: Training and Education
- GRI 405: Diversity and Equal Opportunity



United Nations SDG 7: Affordable and clean energy aims to ensure access to affordable, reliable, sustainable, and modern energy for all.

To contribute to this goal, our main objective is to provide environmentally- and climate-friendly shipping services for distributing renewable energy. We are continuously working to increase the energy efficiency of all parts of our operation, both ashore and at sea, and increase the share of renewable energy sources in our fleet; such as biofuels, hydrogen, solar, and wind.

Targets:

- Ensure universal access to affordable, reliable, and modern energy
- Increase the share of renewable energy
- Improving energy efficiency

Disclosures:

- GRI 302: Energy
- GRI 305: Emission
- GRI 404: Training and Education

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The world calls for urgent action to combat climate change and its impacts, which is the main purpose of UN SDG 13: Climate Action. IMO is developing measures to reduce GHG emissions from international shipping by regulations such as Carbon Intensity Indicator (CII) and Energy Efficiency Design Index (EEDI / EEXI).

In general, we have a two-fold approach to climate action; reduce the GHG emissions from our current fleet by increasing the energy efficiency, seeking partners who focus on improved operational logistics, and finding alternative fuels which may be used without significant retrofits. and, for new build projects, we focus on low- or zero-carbon ships and the pathway to net-zero – but our overall objective is to positively contribute to the IMO trajectory.

By offering an environmentally- and climate-friendly fleet, we enable the transfer of transport work from road to sea increasing the overall efficiency in the transport sector.

#### Targets:

- Strengthen resilience and adaptive capacity to climate-related hazards, and integrate climate change measures into policy, strategy, and planning
- Improve education, awareness-raising, and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning

#### Disclosures:

- GRI 302: Energy
- GRI 305: Emission
- GRI 404: Training and Education



United Nations aims to conserve and sustainably use the oceans, seas, and marine resources for sustainable development.

As our operation takes place at sea, we feel a strong responsibility to take care of it. IMO and MARPOL are doing a fantastic job as maritime regulatory institutions, and it is a high priority at Stenersen to be in compliance with the regulations at sea.

To further increase our contribution to SDG 14 we are focussing on reducing discharges to sea, treating all ballast discharge, and using environmentally friendly chemicals in our operation. Reducing our GHG emissions will lower our contribution to ocean acidification and eutrophication.

#### Targets:

- Prevent and significantly reduce marine pollution, sustainable manage and protect marine and coastal eco-systems and minimise and address the impacts of ocean acidification

#### Disclosures:

- GRI 304: Biodiversity
- GRI 305: Emission
- GRI 306: Waste
- GRI 404: Training and Education

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Global Reporting Initiative

In order to consistently report our progress and contributions to UNs sustainable development goals, we will refer to the reporting framework Global Reporting Initiative (GRI). Transparency is key for reporting on sustainable development, and we believe GRI is doing a fantastic job to ensure the highest level of transparency for organisations across all industries – making it much easier for external stakeholders to understand and contextualise our disclosures.

We found our greatest challenge when implementing GRI was choosing our material topics, as our operation and organisation touch upon most of the topics described in the GRI standard. We recognised that in order to effectively and concisely disclose our results, we had to explicitly identify our internal and external stakeholders and connect the material topics of the GRI Standard to where our operation and organisation has the greatest impact. It is also important to consider what other companies in the industry are doing, so we can create consistency in our reports – foundations and partnerships such as Intertanko and Norwegian Shipowners’ Association have been of great assistance when identifying our material topics.

External Stakeholders

- Customers
- Investors and banks
- Governing bodies, such as IMO, EU, Gibraltar and Norwegian Flag-state

Internal Stakeholders

- Crew
- Shore-staff
- Owners and Board of directors

We have also used other frameworks such as the Non-financial Reporting Directive (NFRD), the Taskforce on Climate Related Disclosures (TCFD) and Sustainability Accounting Standards Board (SASB) as references when creating this sustainability report, however, that does not mean that the report is aligned with these frameworks.

Going forward we will continue to develop our sustainability reporting, following new guidelines and best practices from GRI and we are looking forward to the implementation of the sector standard for shipping. In the meantime, we welcome your feedback on how we can improve our sustainability reporting, as we are still improving and gaining experience. Feedback is an important step towards improving. Any feedback, input or ideas can be sent to [administration@stenersen.com](mailto:administration@stenersen.com).

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GRI 200: Economic

Economic Performance

Anti-corruption



GRI 300: Environmental

Energy

Biodiversity

Emissions

Waste



GRI 400: Social

Occupational Health and Safety

Training and Education

Diversity and Equal Opportunity



Economic impacts of climate change

Climate change poses a serious threat to life on our planet as we know it today, as well as a threat to healthy market conditions and economic growth. Hence governments and regulators are taking actions to incentivise business actors to operate in a more environmentally friendly way. Examples of such regulations in the market that we operate in are the implementation of the EU Taxonomy and the introduction of carbon taxes.

At Stenersen we welcome these regulations, and we have over the last decade put a lot of effort into making our vessels greener and more efficient, we believe that new and more strict regulations will benefit the climate but also give us opportunities for sustainable growth. Green and energy efficiency investments are something we have implemented and have proven that such investments give good financial and environmental returns. A great example of this is the fact that our vessels are highly competitive, both in terms of safety and emissions, even when compared to newer vessels, and our new-build projects such as the latest Odin-class we proved that battery hybrid vessels are a viable option to increase energy efficiency.

Historically, energy transitions take generations to accomplish and only a poor understanding of basic energy imperatives could lead to the unrealistic claims of an impending rapid downturn in global fossil fuel consumption.

Nevertheless, histories of modern primary energy and electricity production present clear trends toward lower carbon intensity. Fuelwood was followed by coal, coal by crude oil and crude oil by natural gas, and fossil-fuelled electricity generation was augmented by hydro and nuclear generation and, most recently, by solar and wind-powered conversions. However, the global pace of these transitions has been slow. Half a century ago the world derived about 94% of its primary energy from fossil fuels, by 2020 the share was still about 85%, while 60% of the world’s electricity was still generated in coal and natural gas-fired stations (crude oil and refined fuels accounted for another 4% of the total). (sources: BP -IEA – Vaclav Smil). This means that in the short to medium term the world will still depend on safe transportation of oil products. In order to maintain living standards, and not least assist developing countries with access to energy and feedstock, any presently available alternative is unrealistic based on the required scale in question.

Our goal with regards to reducing our carbon footprint coincides closely with the industry standards implemented by EU and IMO. Our strategy is therefore to continue offering our customers the best possible and environmentally friendly transport alternative technically and financially available.

Sustainable partnerships and initiatives

We believe that the shipping industry should move together towards a more sustainable future, and thus we will contribute to the shipping community through our memberships in the Norwegian Shipowners’ Association and Intertanko. UN Sustainable development goals are also a cornerstone of our sustainable development strategy.

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Norges  
Rederiforbund  
Norwegian  
Shipowners’  
Association



INTERTANKO



### Anti-corruption

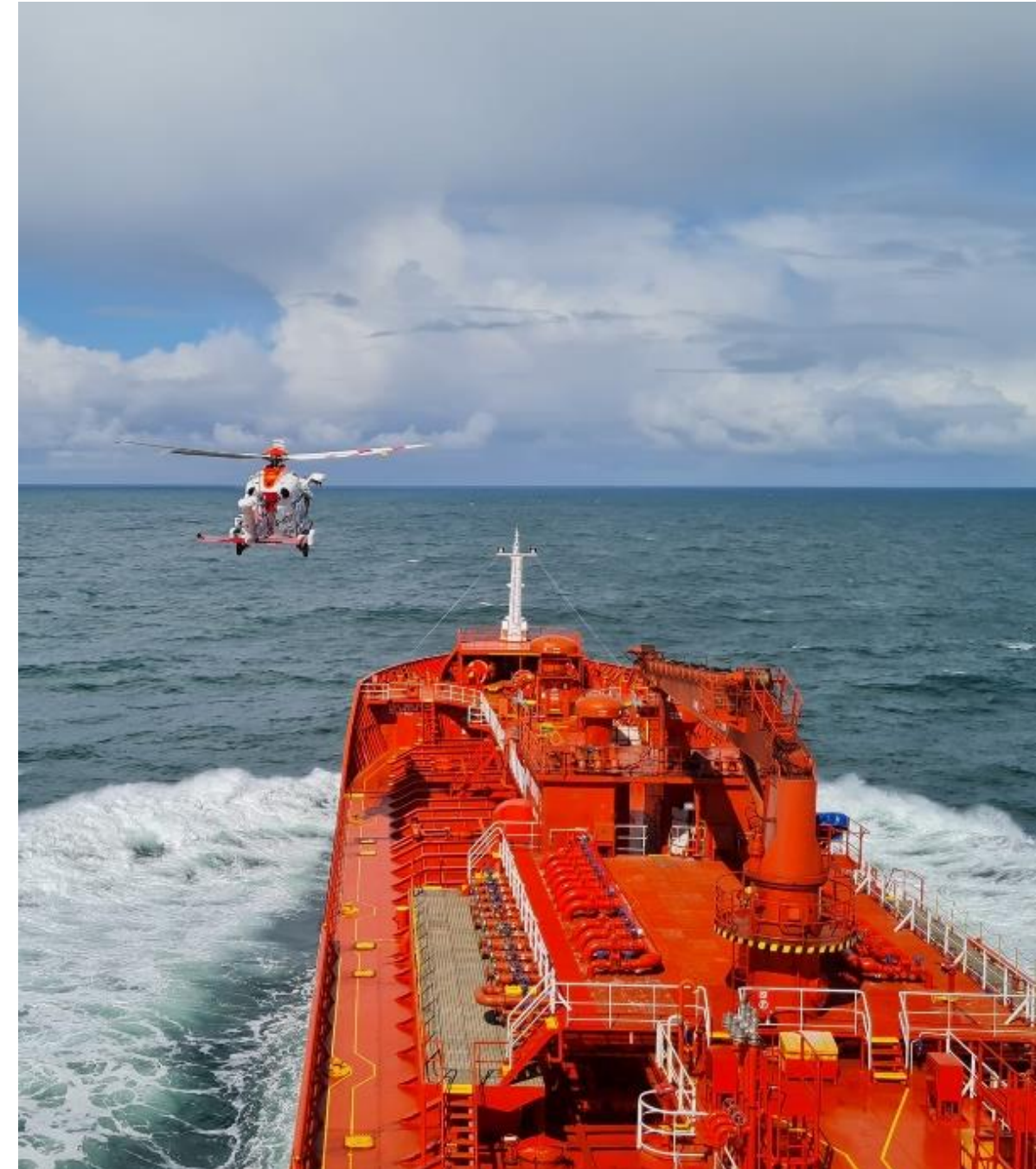
The impacts of corruption are severe. Amongst other corruption undermines the sustainable development goals, leads to economic loss and inefficiencies, and increases poverty and inequality (UN Global Compact). At Stenersen, we have a clearly stated zero-tolerance policy against corruption, and our anti-corruption policy is an integral part of the “Stenersen Code”. Our code of conduct describes the company’s clear statement concerning non-acceptance of smuggling, bribery, corruption or other unauthorised or prohibited acts.

We seek to hold a high ethical standard in the way we do business, and we have a zero-tolerance policy on corruption and money laundering. To ensure that we contribute to fighting corruption and money laundering, we perform KYC (“Know Your Customer”) controls on new customers. In our regular trade, our customers are companies well established in Europe and subsequently subject to scrutiny and legislation by the European Union when they are selling their product. This is also the case when we are trading to USA and Canada. Therefore, part of our risk assessment is that these companies will not run the risk of breaking any sanctions imposed by European or American legislators. Our ability as a transporter to identify individuals and companies outside our contract partner is usually limited. However, when fixing voyages, we shall, to the best of our ability, implement a Sanction Clause as an additional clause into the various Charter Parties.

If the formal charter party in question already has a Sanction Clause, this shall be examined and shall cover the following principle: The Charterer shall warrant that they will not sell or buy the product(s) from individuals or companies that are subject to any sanctions, and we as transporters will not guarantee delivery or carry any cargoes that have originated from individuals or companies on the sanction list. The Charterers must give such a guarantee as we are otherwise bound by the Charterparty to follow the Charterers instructions at any given time.

For “first time customers” or customers that appears dubious in any form, way or fashion, extraordinary diligence is required. In addition to the Sanction Clause, we will also need a BBB Payment Clause to ensure that our freight is paid before discharge. All customers belonging to this last category shall be subject to management approval before fixing. We also perform KYC diligence procedures on all new customers to ensure that we align with Anti Money Laundering requirements.

In 2021 none of the vessels in the Stenersen fleet had called at ports in countries that were in the 20 lowest rankings in Transparency International’s Corruption Perception Index. The total monetary losses because of legal proceedings associated with bribery or corruption were zero.



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### HSSEQ: Minimising the risk and negative impact of our operation

We are committed to setting the highest standards within Health, safety, security, Environment, and Quality (HSSEQ) and this is deeply embedded in our organisational culture, the culture we have spent decades developing through our long experience as a ship-owner and manager. Our overall objective is Zero. Zero loss of life or personal injuries. Zero harm to the environment. Zero damages to assets or third-party property.

We believe everyone is responsible but fewer are accountable – individual responsibility, organisational accountability. This form of just culture requires a clear strategy and governing principles, clear lateral communication throughout the organisation, and a strong management system.

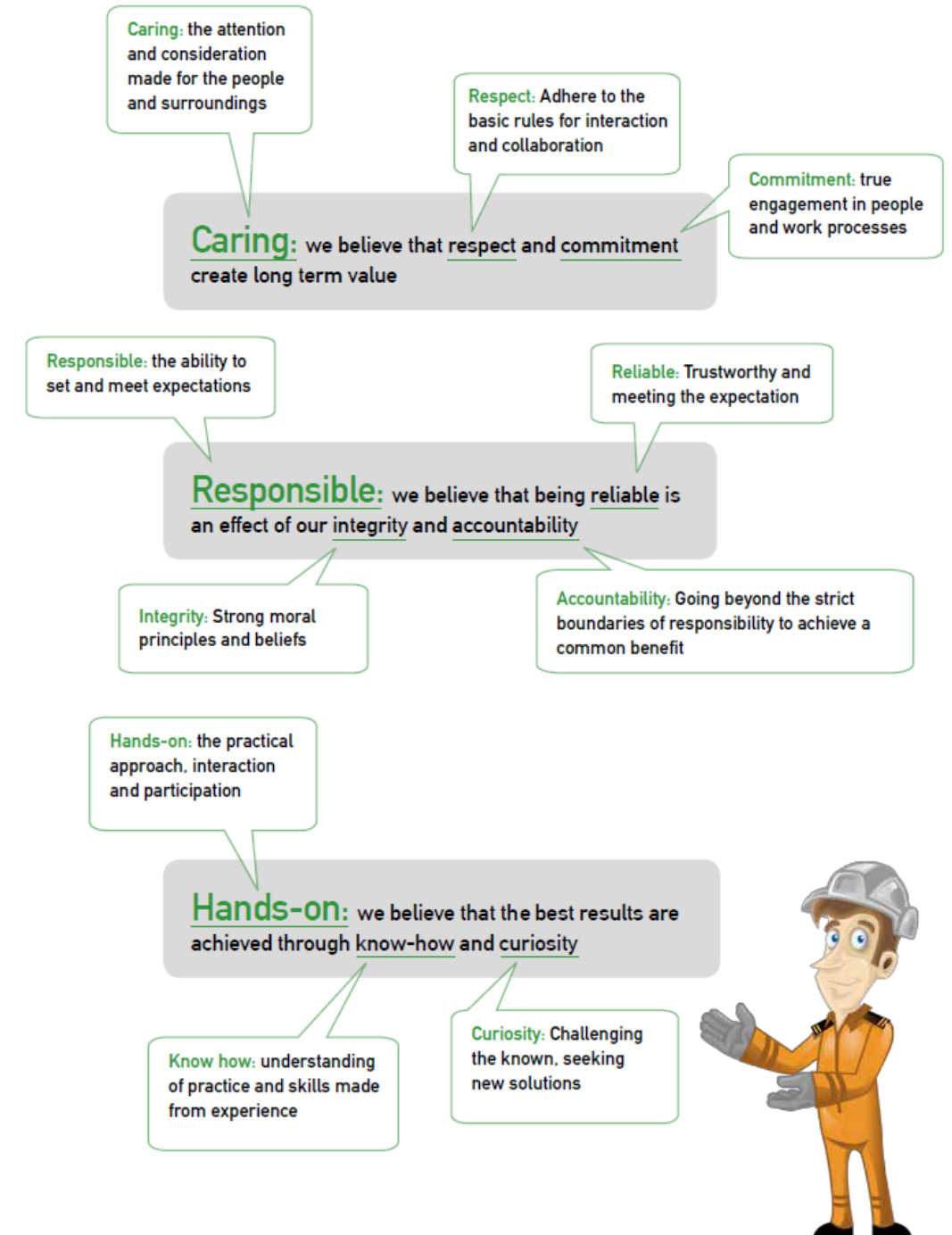
It all starts with the Board of Directors and the management team ashore responsible for maintaining and ensuring that there is a sufficient and appropriate management system in place to minimise the risk and negative impact of our operation. The management system is responsible for communicating the overall strategy, procedures, and policies to the organisation. The individual is responsible for following the procedures and policies of the management system, sharing experiences through experience transfer, and giving feedback to the appropriate body ashore.

- Integrated Risk assessment tool (UNISEA)
- How we measure our performance

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# Social



## Our people matter

The COVID-19 pandemic continued throughout 2021, and our number one priority has been to prevent our employees from any illness while maintaining our safe operation. Our health and safety ambitions are to achieve zero harm to anyone working for, or on behalf of, Stenersen – and our approach is that health and safety is always priority number one. Our people have handled the adversity presented by the pandemic in a fantastic manner. We believe this is due to our strategy of empowering our people by giving each member of the team responsibility and education to always make the right decision about their safety, health, and wellbeing.

Restrictions due to the pandemic have changed how we operate and communicate with our crew. Online communication in our trade can be challenging; short and hectic port stays call for highly structured and efficient talks with the crew. Therefore, we have implemented Safety Delta to use as a tool to get good feedback on our management system. New tools such as Safety Delta has enabled us to continue our excellent work on our socioeconomic sustainable development goals;

Good health and well-being –

Gender equality –

We developed Stenersen Leadership Course to assist our leaders. In 2021 we had our second iteration of this course with great success despite the pandemic influencing our communication. The main objective of our leadership course is to give our leaders the right tools to communicate with the crew.

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### Breakdown of our people

- Our role in employment (OSM),
- our approach to employment (gender equality),
- our people (Where are they from, what challenges do they face, and how do we contribute).

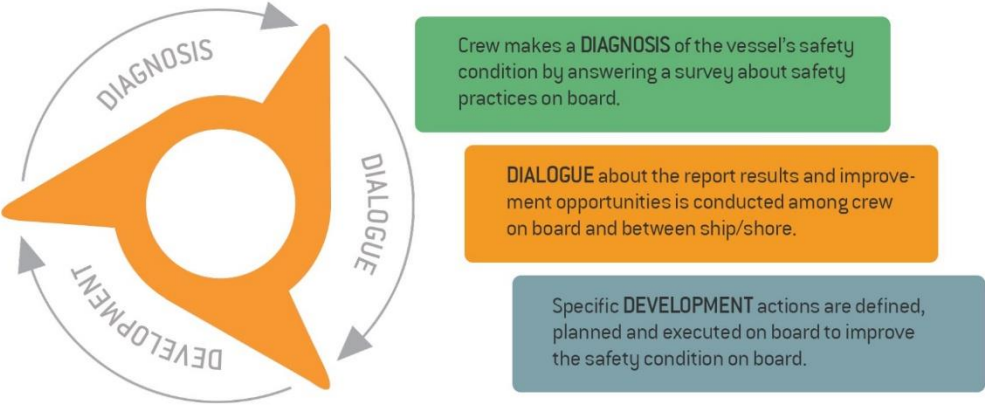
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Safety Delta

Through Safety Delta, we measure the safety matureness onboard our vessel and in the company. The safety delta gives an on-spot measurement on the safety matureness and creates a dialogue between leaders and crew as well with the office through dialogue and development plans to ensure that we continually develop and are operating to the highest standards.



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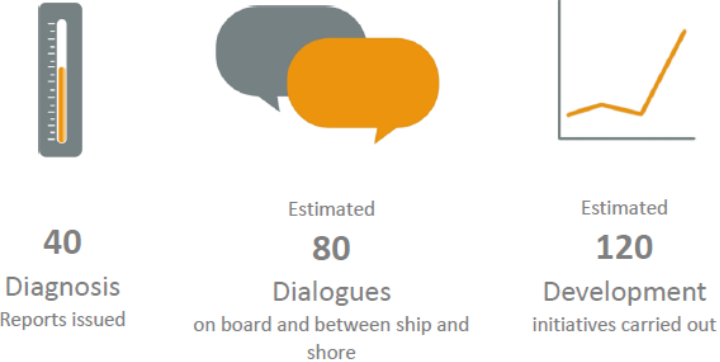
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14 vessels participated

Safety Area	Cycle 1	Cycle 2	Cycle 3
Safety leadership	🚩	🚩	
Health and well-being	🚩	🚩	
Risk management	🚩		🚩
On-board learning and development	🚩	🚩	
Safety reporting	🚩		🚩

In the same period, three Safety Delta cycles were carried out including the following activities:



## Stenersen Leadership Course, volume II

Good safety is all about good leaders.

Stenersen has always had a high focus on developing our leaders to ensure that our operations are carried out in an efficient and to the highest safety standards in the industry and have a safe and cooperative working atmosphere. Since 2011 we have run several leadership programs to ensure continual development within the organization.

Stenersen leadership volume II is the latest In addition to our leadership program and is focusing on topics such as:

- Being a leader in Stenersen
- Driving a safety culture
- Developing people
- Developing our teams
- Setting the risk management standard
- Dealing with people



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0

Lost time incidents rate  
(LTIR)



0

Lost time incident frequency  
(LTIF)



3

Restricted work cases  
(RWC)



2

First aid cases  
(FAC)



4

Medical treatment cases  
(MTC)



0

Serious operational related incidents



0

Fatalities



0

Permanent total or partial disabilities  
suffered



8

Total recordable cases (TRC)



4

Total recordable cases frequency  
(TRCF)

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What we define as serious operational related incidents
Allision
Collision
Grounding
Fire incident
Mooring incident
Explosion incident
Cargo and ballast
Alcohol

Human Resources	Result
Officer Retention Rate	95.5%
Senior Officer Retention Rate	95.8%
Junior Officer Retention Rate	95.0%
Ratings Retention Rate	85.2%
Shore Retention Rate	86.5%
Sick leave office	3.9%

Hour of rest violation	Result
Number of 2 violations per person	2
Number of 3 violations per person	0.3
Ship visit	Result
Number of overdue ship visits, HR	1



# Environment & Climate

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## Tackling new challenges

Climate change is putting intense pressure on the world to act. Since the pre-industrial era, the earth has already warmed by about 1.1°C – and if we are to align with the 1.5°C Paris Climate Agreement we need to halve emissions by 2030. One of the major drivers of this reduction will be the energy transition, however, it might take decades to fully transition as there are still many unanswered questions regarding fuel type; availability, and feasibility.

One of our core values is Responsibility. We acknowledge that we cannot tackle climate change by ourselves, but we are committed to taking responsibility by being on the frontline in the transition to a sustainable future in line with the UN Sustainable development goals. Three of our core sustainable development goals are environmental goals;

Affordable and Clean Energy – we will do our best to be able to transport affordable and clean energy. Seeking partnerships with companies that are focusing on renewable energy sources and offering a reliable and environmentally friendly fleet.

Climate Action – we will take responsibility to act on climate change. Reducing our emissions to air and carbon footprint by increasing the energy efficiency of our current tonnage and finding the best solutions and plan for decarbonisation on new-build projects.

Life Below Water – our goal is zero spills. There are possibilities to further increase our contribution to Life Below Water by reducing the number of hazardous chemicals and waste discharged to sea in our operation and installing ballast water treatment systems to protect marine environments of invasive species.

Our objective is to contribute to these goals by transforming our operation, but also enable our partners to use our tonnage to make their desired transformation. We always seek opportunities to collaborate on new and interesting projects with the objective to find new and green solutions.

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### GHG Intensity

Currently, all our vessels are using fossil fuels which means that in order to reduce our carbon footprint; we must take steps to ensure they are as energy efficient as possible. From the design phase back in the start of the 2000s until now we have had a great focus on sustainable solutions for our vessels, from design improvements such as efficiency rudder to technical and operational improvements with Yara Marine Technologies Fuel Optimiser system (previously known as Lean Marine) on the main engine.

We believe our approach to sustainable design and solutions is the reason why our vessels operate with such high energy efficiency, proven by our Carbon Intensity metrics. However, our aim is to continuously improve by making the necessary operational and technical changes to the vessels.

IMO are taking great measures to increase the transparency and overall efficiency in the shipping industry, and we fully support the regulations that are now emerging with the increased pressure of Climate Change. Benchmarking our vessels against the segment trajectory shows that our vessels are well with the design-parameters required by EEXI, without any retrofits or design changes such as Engine Power Limitation (EPL) or Shaft Power Limitation (ShaPoLi).

Annual Efficiency Ratio, and subsequently Carbon Intensity Indicator, show that we are well within the trajectory for operational efficiency (Rating level C for CII), with most of our vessels at B-rating – which gives us confidence that we are able to take all of our vessels to B-rating or higher. It should be noted that this is based on preliminary calculations, not taking into account correction factors that are currently being developed by IMO.

Having already taken significant measures to ensure high energy efficiency and low GHG intensity at an early stage; our approach to GHG intensity reduction is geared towards newbuilds and alternative fuels. Given our operational area, regulations, and market demand, making significant retrofits for parts of our fleet is not a sustainable approach. Therefore, we are very interested in renewables that our compatible with minor or no retrofits.

We have proven that the vessels we build are sustainable, and we are willing to adapt to and adopt new solutions to ensure longevity for our fleet. So, we are confident that our new-build developing program is strong and sustainable, and we are currently developing our next generation of environmentally friendly vessels – ready for many types of different fuels, such as ammonia and hydrogen, dependent on the supply and feasibility.



### External voice: Neste OY

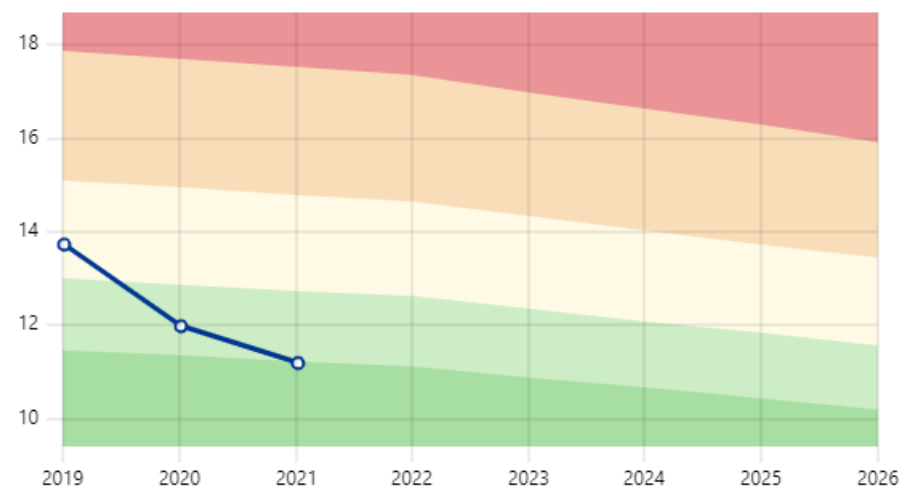
Is it possible to get a 2008-built tanker to A-class rating in IMO's new CII with an efficient operation?

Short answer: Yes! We have tested and proved that; in good co-operation with Rederiet Stenersen AS and their vessel Sten Bothnia which Neste has a long history with. During 2019, Sten Bothnia operated more or less always with C/P speed to the terminals. In Q2 2020 the vessel started what we call "situational dependent speed optimisation" or more commonly known as "just-in-time arrivals" instead of fixed speed orders – by communicating the jetty availability time and changes directly to the crew onboard Sten Bothnia, giving standing orders to adjust speed according to the arrival time. The first finding was that Neste saved fuel and reduced emissions with this approach, but it also helps vessels to maintain compliance with the new regulations.

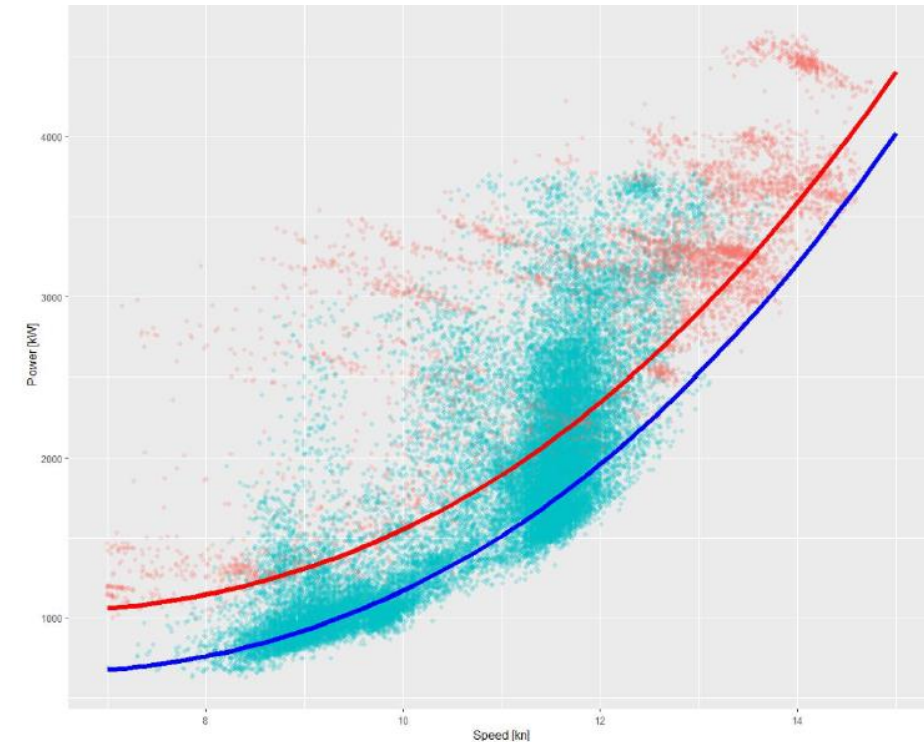
Carbon Intensity Indicator (or CII) is calculated by converting fuel consumption to emissions and dividing that by the transportation work of the vessel (for CII this means dwt-mile). Therefore, the improvements in the operational efficiency and carrying the cargo with less fuel consumption have a direct impact on lowering the CII-rating. It is delightful to see that good co-operation between ship-owner, charterer, and crew onboard the vessel can help reduce emissions, and we have proven this with real-life data.

#### Risto-Juhani Kariranta

Shipping performance manager, Neste OY



Preliminary CII Rating for Sten Bothnia. Colour coded based on Rating.



Speed-power curves demonstrate the benefit of the FuelOpt System

- FuelOpt on  
- FuelOpt off

During the last ten years, NAPA Ltd. Has developed and successfully used statistical models to describe the technical performance of vessels.

In 2021, NAPA Ltd. and Neste OY carried out a regression analysis on Sten Bothnia, clearly demonstrating the benefits of Yara Marine Technologies Fuel Optimiser system, which we have had installed for nearly ten years.



### Optimising with Yara Marine Technologies

In 2013, we installed Lean Marine's – acquired by Yara Marine Technologies in July 2021 – fuel optimisation system FuelOpt on all our vessels. This has helped us increase energy efficiency and reduce emissions by a significant percentage; our own studies and third-party studies both show a reduction in fuel consumption (and in turn emissions) of around 15-18% by FuelOpt system dynamic control of main engine RPM and propeller pitch.

In 2021 we further developed our co-operation with Yara Marine Technologies by taking a small part in a project called Via Kaizen by volunteering our vessels to test an AI-powered ship operation support system called Route Pilot.

The objective of Route pilot is to reduce emissions by increasing the vessels energy efficiency. The system calculates the most energy efficient operational parameters for a defined route and under predicted environmental conditions by using machine learning and calculated parameters are executed via the fuel optimising solution which is installed on our entire fleet.

This is an important step towards just-in-time arrival in the industry. If the ship-owners are able to accurately predict ETAs based on weather forecast and vessel performance, it is much easier for the industry to take the next step towards a more operational efficient future.

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Moving towards decarbonisation

Decarbonisation requires a new generation of hybrid tankers for oil and chemicals. When we are planning our next projects, our focus is on sustainability and longevity. We want our next generation to be competitive now and in the future. Our current new-build project is optimised around a lower service speed to reduce transport cost and GHG emissions per tonne-mile. The hull is designed for low consumption on all drafts and less speed loss in head seas, paired with battery packs to take peaks-loads reduces the use of Gen Sets and enhances safe operation, whilst we have frequency converter / DC grid to allow for shaft generator to be used at varying main engine speeds.

The main engine, auxiliary engines and boilers as designed for economic operation on LNG as primary fuel and a range of secondary fuels – we have prepared for retrofitting and adaptation to non-fossil alternative fuels such as ammonia and hydrogen. We have also allocated additional space to allow for retrofitting additional batteries.

Innovative and efficient hull form designed for reduced fuel consumption and economic performance at a range of speeds on all drafts, with less need for ballast. The hull design is also ready for Air-lubrication systems to reduce the hull frictional resistance, and various wind-solutions such as roto-sails to reduce power requirement.

Introduction of well-to-wake calculations may affect which fuel is sustainable, and there are still unanswered questions regarding the fuel of the future, which is why we have taken a quite broad approach to ensure flexibility and being able to use the most environmentally friendly fuel.

Main Particulars

Length Overall	149.90 m	Df Stream + Composite Boilers	12 + 2 t/h
Length Between Perpendiculars	146.30 m	Deadweight, Design	16 400 dwt
Breadth, Moulded / Extreme	22.80 / 23.00 m	Deadweight, Scantling	18 000 dwt
Depth, Mld.	12.70 m	Cargo Tanks Incl. Slop Tank, 100%	20 500 m³
Moulded Draft, Design / Summer	8.80 / 9.30 m	Ballast Tanks, MARPOL / 100%	5 000 / 7 600 m³
Mean Ballast Draft, MARPOL / Max	5.00 / 6.00 m	LNG Fuel Tanks	700 m³
Gross Tonnage 1969 Abt.	12 700 GT	FO & MGO Tanks	344 m³
Dual Fuel Main Engine SMCR	4 800 kW	FW Tanks-Technical / Potable	400 / 200 m³
Booster Power	1 200 kW	Discharge Rate / Time	1 800 m3/h / 12hrs
Dual Fuel Generators	2 X 1 500 kW	Loading Rate	500 m3/h per tank
Batteries	1 000 kW	Sailing Range LNG / FO	7 000 / 5 000 nm
Frequency Controlled Bow Thruster	1 000 kW	St.Lawrence Fitted And Approved	

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Greywater  
released to  
environment

723.44

Total volume of greywater  
released to sea



Number of oil  
spills and  
releases to the  
environment

55.65

Releases of substances as per  
definitions by MARPOL Annex 1-6



Treated  
ballast water  
released

30%

Releases of ballast water treated  
in BWTS, percentage of total  
ballast water released



Total waste  
disposed from  
vessel

0.045%

Total waste disposed from vessel  
in cubic [m³]



Waste delivered  
to shore-facilities

4

Percentage of waste delivered to  
shore-facilities

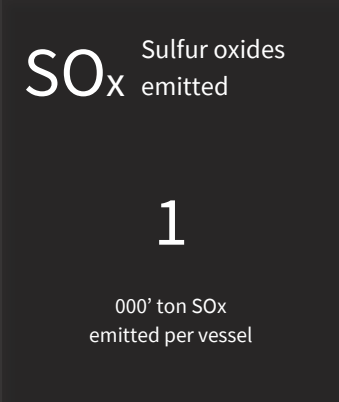
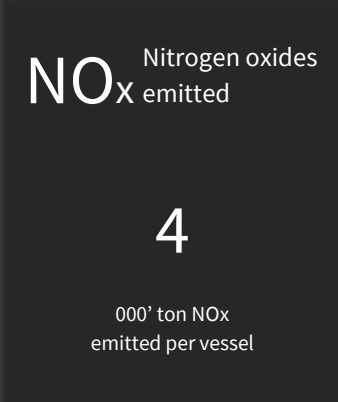
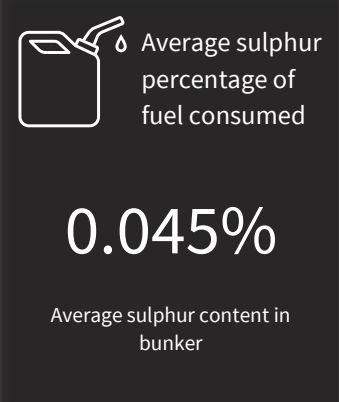
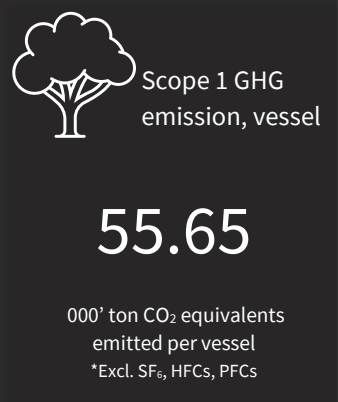
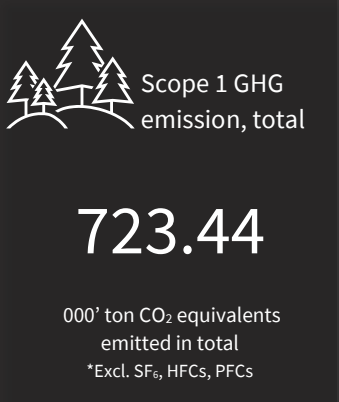


Number of  
unregulated  
waste releases  
to sea

1

Releases of waste not in  
compliance with MARPOL  
Annex 1-6 definitions





Vessel name	Deadweight	Distance sailed	Transport work	CO2 emitted	EEOI	Sea Cargo Charter reference	AER	Poseidon Principal reference	CII	CII reference	CII rating
-	[dwt]	[nm]	[nm * ton]	[ton]	[g/nm*ton]	[g/nm*ton]	[g/nm*dwt]	[g/nm*dwt]	[g/(nm*dwt*cr)]	[g/nm*dwt]	-
Sten Arnold	16 578	43 819	326 206 819	9 296	28.398	19.03	12.797	14.854	-	13.72	C
Sten Aurora	16 596	41 562	450 677 519	8 608	19.324	19.03	12.479	14.854	-	13.71	B
Sten Baltic	16 607	46 656	374 529 557	10 295	27.206	19.03	13.287	14.854	-	13.70	C
Sten Bergen	16 655	40 171	284 346 656	8 484	28.653	19.03	12.681	14.854	-	13.68	B
Sten Bothnia	16 611	47 877	380 569 849	9 078	23.638	19.03	11.415	14.854	-	13.70	B
Sten Frigg	16 587	44 373	342 948 421	9 199	26.845	19.03	12.499	14.854	-	13.71	B
Sten Hydra	16 670	42 063	316 689 812	9 153	28.930	19.03	13.053	14.854	-	13.67	C
Sten Idun	16 614	45 019	382 550 675	9 560	25.025	19.03	12.782	14.854	-	13.70	C
Sten Moster	16 670	40 051	356 779 274	8 727	23.323	19.03	13.071	14.854	-	13.67	C
Sten Nordic	16 657	36 120	281 906 004	8 330	29.365	19.03	13.846	14.854	-	13.68	C
Sten Suomi	16 619	37 340	281 702 173	8 402	28.968	19.03	13.540	14.854	-	13.70	C
Stenberg	16 626	44 121	348 609 671	8 682	24.338	19.03	11.836	14.854	-	13.69	B
Stenheim	16 614	41 918	430 014 763	8 317	19.656	19.03	11.943	14.854	-	13.70	B
Fleet Average	-	42 392	350 587 014	8 933	25.667	19.03	12.69	14.854	-	13.70	B

\*Carbon Intensity Indicator correction factors (cr) not available

\*\*Data based on verified IMO DCS and EU MRV

\*\*\*Preliminary CII rating based on AER

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