MERIAURA

Meriaura
Sustainability Report 2024

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The sustainability report has been compiled by Minna Suuronen, Esko Pettay and Elina Mälkiä

Towards a Sustainable Future

The year 2024 was once again challenging due to economic uncertainty, political tensions, and the progression of climate change. Geopolitical turbulence and trade wars make the future even more unpredictable. Nevertheless, 2024 included many successes for Meriaura, and we look to the future with confidence.

Meriaura Oy's turnover grew by 6%, reaching 65.4 million euros. Of this, the bulk business accounted for 44.1 million euros and the project business for 19.0 million euros. The demand for the bulk business was variable, but volumes remained at a relatively good level. The project business performed well, and its profitability improved.

During the year, two new time-chartered vessels joined our fleet, increasing our total capacity by about 15% compared to the previous year. By increasing our capacity, we achieved greater flexibility and operational efficiency and naturally also the opportunity to expand our customer base.

Highlights of the year included the order of two low-emission, bio-oil-powered Eco Trader vessels with 25% more cargo capacity than our largest current ships. This aligns with a long-standing trend of increasing the average size of shipments. This development supports not only the cost-effectiveness of transport but also our emission reduction targets.

The double materiality analysis carried out during 2024 confirmed the preliminary assumption that by far the greatest environmental impact comes from our ships' emissions. We have been paying attention to this for a long time, and in addition to renewing and expanding the fleet, we have been working on the availability of biofuel. During 2024, we succeeded in increasing the use of biofuel in our fleet. Our carbon-neutral EcoVoy transport concept raised growing interest, and we made new EcoVoy agreements. In addition to air emissions, we also paid attention to the wastewater emissions of ships and expanded wastewater monitoring to time-chartered ships.

The double materiality analysis also provided us with good tools to highlight the dimensions of social responsibility and good governance in sustainability reporting. We have now increased the share of these themes, which are just as important as the environment, in our reporting.

Meriaura Oy's planned return to the ownership of Meriaura Invest during 2025 creates a strong foundation for the continuous development of our operations. We can now even better focus on core activities and advance the selected strategies, such as emission-free maritime transport and fleet renewal. As part of a listed company, we have gained a lot of valuable lessons and experience. The arrangement combines the agility of a family business with the good governance methods inherited from a listed company.

Beppe Rosin
CEO, Meriaura Ltd.

Meriaura in numbers

Turnover 2024

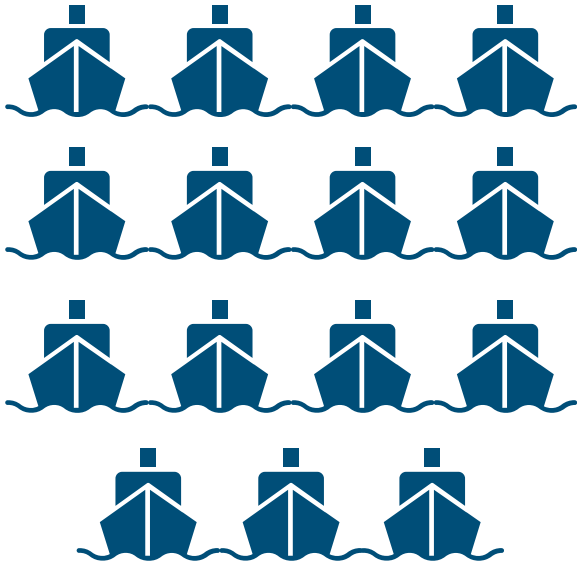
65,4 M€

Cargo volume 2024

2,19 M tons

16,6 g

CO2 emissions per tonne / km



17 vessels, operating mainly in the Baltic and North sea areas

5 vessels owned by **Meriaura**

10 vessels time-chartered and 1 external vessel under Meriaura management

726

succesful voyages in 2024

Last Year as part of a Listed Group

Meriaura Group Oyj (”Meriaura Group”) merged on June 9, 2025, through a share exchange agreement with Summa Defence Oy, which brings together defence and security companies. The new listed company was named Summa Defence Plc. As part of this arrangement, the Marine Logistics business (Meriaura Oy and its wholly owned subsidiary VG-EcoFuel Oy) was sold to Meriaura Invest Oy. Meriaura Oy continues to operate as an independent family-owned company.

During the year 2024 Meriaura Group Plc had two business areas: Marine Logistics and Renewable Energy.

Meriaura Oy, which engages in the Marine Logistics business, is a major provider of transport for bulk cargo and demanding project deliveries in Northern Europe, especially in the Baltic Sea and North Sea regions. The company provides its customers with competitive low-emission marine transport services, which are based on long-term affreightment agreements, a modern fleet and the active development of operational sustainability. In addition, Meriaura has a strong market position as a marine transport provider in renewable energy construction projects. The Marine Logistics business also includes VG-EcoFuel Oy, which produces biofuels from bio-oils and recycled oils generated as industrial by-products.

The Renewable Energy business focuses on comprehensive clean energy solutions. Meriaura Energy Oy designs and delivers clean energy production systems as comprehensive deliveries for industry and district heat production. Energy production is built around large-scale solar thermal systems implemented using high-performance solar thermal collectors manufactured by the company. The Renewable Energy business also includes Rasol Oy, which provides high-quality solar power systems for buildings, businesses and solar parks.

Companies operating close to Meriaura

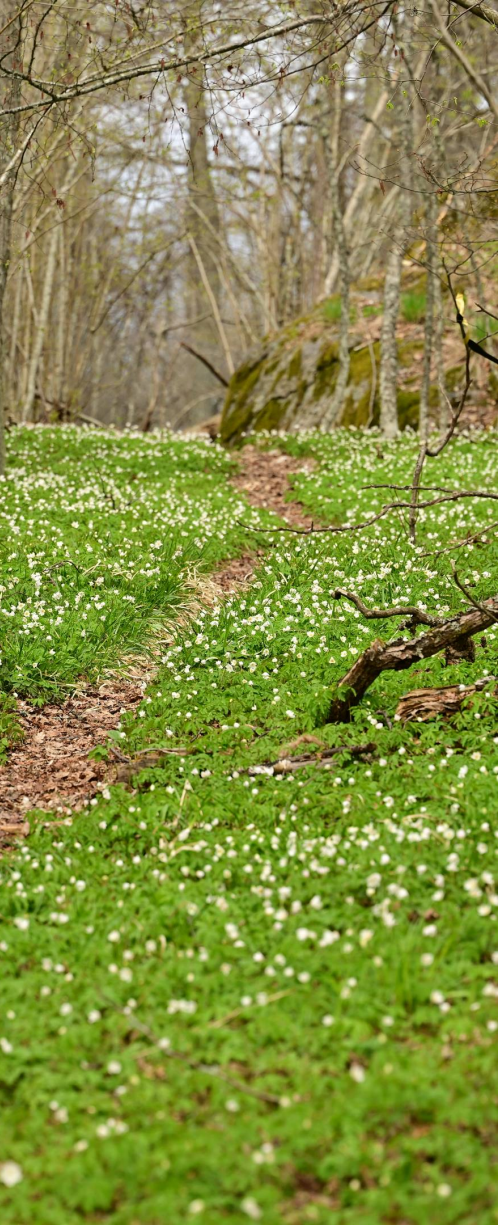
Other companies operating near Meriaura are an Investment company Aura Mare Oy, which specializes in bio and circular economy, and its subsidiaries Biolinja Oy Uusikaupunki (biogas plant) and VG-Port Oy (port services in Naantali).

The Board of Directors of Meriaura

Jussi Mälkiä, Chairman
Antti Vehviläinen
Ville Jussila
Patrik Rautaheimo

Management Team

Beppe Rosin, CEO
Mathias Landor, COO
Miia Peltonen, CFO
Jessica Troberg, CHRO, Crewing
Jyrki Hentula, CTO



Our Values

Innovativeness
We are not afraid to question established practices and find new ways to build cleaner and more efficient shipping.

Cooperation
We nurture the power of collaboration to maximize expertise and success between both co-workers and customers.

Honesty
We handle things sincerely, ethically and fairly, respecting each other and our stakeholders.

Hard work
We persistently and resolutely strive to complete things while renewing old established practices and finding more effective ways of working.

Responsibility
We take proactive responsibility for the impact of our operations on the environment and society. We do not compromise on safety.

Our Mission

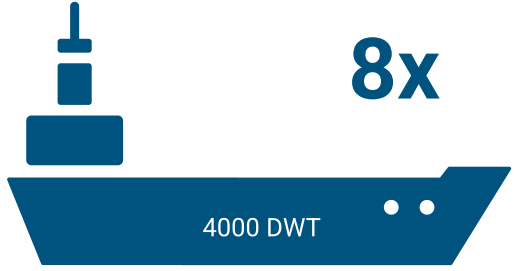
is to transport cargo in the Baltic and North Seas sustainably, professionally, to the benefit our customers.

Our Vision

is to be the leading forerunner in environmentally friendly, innovative and solution-oriented maritime transport services.

Our Fleet -
Owned and Time-Chartered

Helena VG, Baltic Sailor



Aava VG, Travetal*, Emilie*, Lottaland, Aurelie*, Loraland, Karion, Dreamland

Eeva VG, Mirva VG*, Nathalie*, Friendland

In 2024, our fleet consisted of 14 dry cargo vessels, with a capacity of 3000-4850 cargo tons, and two deck cargo vessels designed for special and heavy transports.

*Meriaura Group's main owner and parent company Meriaura Invest Ltd. is a co-owner in Helmer Lundström Ab Oy and Rederi Ab Nathalie (RABN), and Marship Minibulker Flotte GmbH.

Meri, Aura

Research vessel Aranda

Ecotrader newbuildings are built in Europe

In April 2024, Meriaura signed a delivery contract for two 6735-ton Ecotrader cargo ships with the Dutch shipyard Royal Bodewes. The design of these ships aims to achieve the lowest possible emission levels. The ships can be operated with biofuel, similar to the company's EcoCoaster ships Eeva VG and Mirva VG, which were introduced in 2016. Emission reductions are achieved not only through the use of renewable fuel but also through hull optimization and advanced engine technology provided by the Finnish company Wärtsilä.

The International Maritime Organization (IMO) has set a goal for carbon-neutral shipping by around 2050. The two ships on order will initiate a newbuilding program through which Meriaura aims to achieve carbon neutrality in accordance with its climate strategy ahead of the IMO target, by the end of the 2030s. The plan is to renew the fleet with a series of newbuildings. The newbuildings will allow an increase in the use of biofuel and reduce the carbon footprint of transportation.

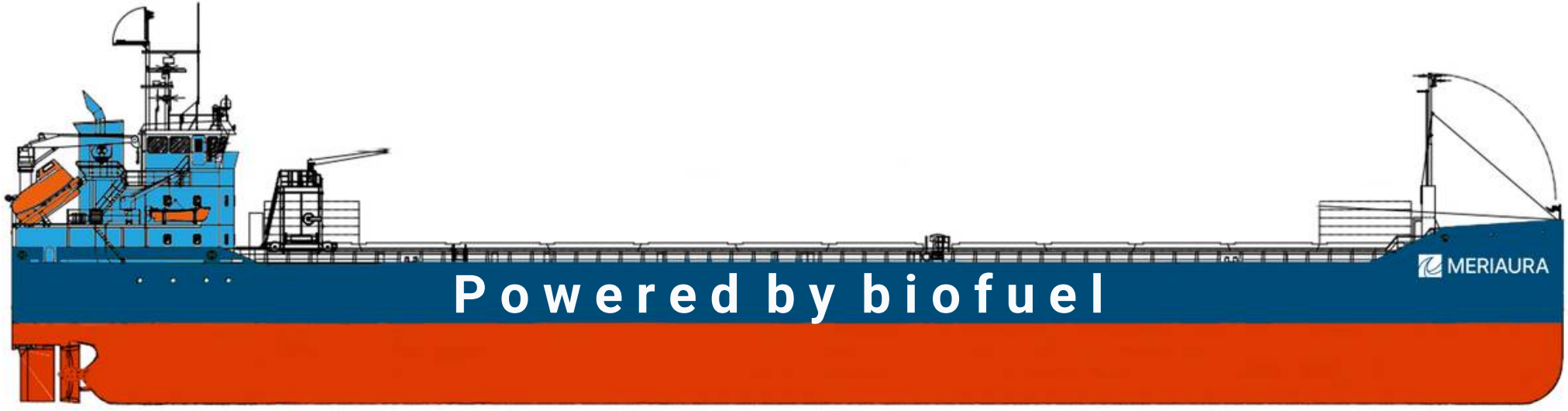
The ship order continues the series of successful investments in bio-oil-powered and energy-efficient ships. In the prevailing geopolitical situation and in accordance with Meriaura's sustainability strategy, a well-known Western European shipyard was selected as the builder. Delivery reliability and schedule, quality, and the shipyard's compliance with occupational safety and environmental regulations, along with positive experiences from previous newbuildings, were the key factors in choosing Dutch Royal Bodewes again as the builder. The ships are expected to join our fleet in 2026.

Newbuildings NB 832 & 833

Technical information

Lenght overall	104.93 m	Hold capacity	310,000 cbft (8778m³)
Length between perpendiculars	102.98 m	Tank top area	933 m2
Breadth moulded	15.00 m	Gross tonnage	4.144 GT
Depth	9.50 m	Speed	11.8 solmua
Draught	6.60 m	Air draft	~ 21.0 m
Dead weight	6.735 t	Main engine	Wärtsilä 9L20 (1800 kW)

The Ecotrader vessels are approximately 30 percent larger than the EcoCoaster vessels. This meets market and customer needs, and the larger vessel size also improves economic efficiency and reduces the environmental burden of transportation. The vessels are designed to run on biofuel. The Ecotrader vessels have two holds, both with bulkheads.



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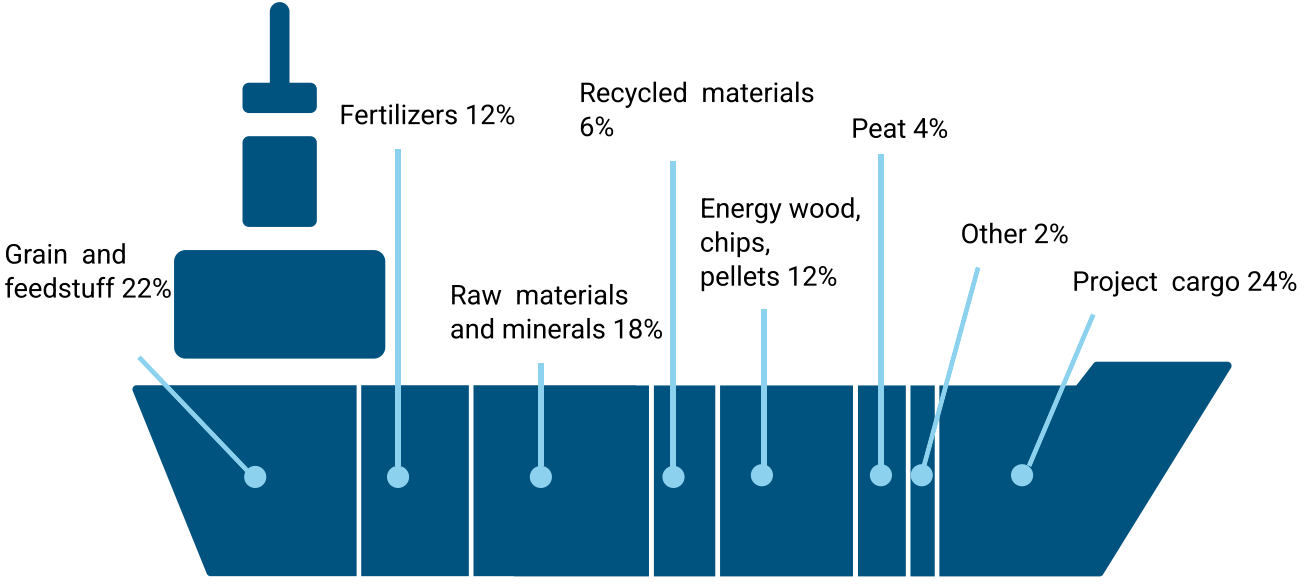
Cargo Flows

Commodities carried 2024 as share of turnover



The most visited ports by Meriaura fleet in 2024

	Loading port	No. of port calls
1	Uusikaupunki	54
2	Kokkola	45
3	Naantali	44
4	Gdansk	35
5	Wismar	32

	Discharging ports	No. of port calls
1	Naantali	82
2	Uusikaupunki	39
3	Muuga	31
4	Kokkola	26
5	Kalajoki	25

Profitable Business is a Prerequisite for Sustainability

The operating environment for maritime logistics was more challenging in many respects than in the previous year. Economic uncertainty, increased political tension, the threat of trade wars and labor market unrest contributed to market volatility and reduced predictability. Additionally, climate change continues to present growing challenges to the industry, with mitigation efforts progressing at a slow pace. Despite this, our performance over the past year remained stable, as we maintained a positive attitude and continued to approach the future with confidence.

Meriaura Ltd's revenue from January 1 to December 31, 2024, was 65.3 million euros, growing by 6% from the previous fiscal year. The business's profitability decreased slightly from the previous year, but considering the market situation, overall profitability can be considered satisfactory. The bulk business revenue was 44.1 million euros, and the project business revenue was 19.0 million euros. The bulk business accounted for 68% of revenue, and the project business accounted for 29%.

In the bulk business, demand became more unstable and harder to predict, and profitability weakened due to the sharp increase in costs. The seasonal fluctuations in demand, typical of the industry, were exceptionally strong during the year. However, transport volumes remained relatively good thanks to long-term customer contracts.

The project business's profitability improved slightly from the previous year, and the results achieved can be considered very good. In the project business, demand for heavy transport has increased in most segments, and the company's deck cargo ships were well utilised during the fiscal year. Demand for project transport is expected to remain stable in the coming years, and investments in renewable energy are expected to continue growing.

Meriaura Oy	2024	2023	2022	2021*
Turnover (MEUR)	65	63	69	56
Profit (MEUR)	3	5	10	5
Investments (MEUR)	6	1	5	6
Transported tons (Millions of tonnes)	2,19	2,14	2,38	2,31
Purchases in Finland (MEUR)	32	30	31	19
% of all purchases	52%	56%	56%	44%

*Until end of 2021 VG-shipping concern

The Principles of Good Governance Remain in a Changing Operating Environment

Governance principles

In 2024 the governance principles of Meriaura Oy were determined by the parent company Meriaura Group Oyj. Meriaura Group Oyj is a publicly listed company in Finland, whose governance is based on the Finnish Companies Act and the company's Articles of Association. Additionally, the company adheres to Finnish legislation and guidelines from the Financial Supervisory Authority and the stock exchange. Meriaura Group's shares are listed on the First North Growth Market in Sweden and Finland, and the company's governance follows the Nasdaq First North Growth Market rulebook. The company does not comply with the Corporate Governance Code for listed companies by the Securities Market Association, as it does not deem adherence necessary considering the company's size and business scope.

The strategy and management of Meriaura Group Oyj are overseen by the Board of Directors appointed by the General Meeting and the CEO selected by the Board. The CEO is assisted by the management team.

Similarly, the highest decision-making body of Meriaura Oy after the parent company's Board is the Board of Directors appointed by the General Meeting, responsible for the company's strategy and management together with the CEO selected by the Board. The CEO is assisted by the management team, which includes the heads of Meriaura's departments.

According to Meriaura Oy's Articles of Association, the Board of Directors consists of at least one (1) and at most five (5) regular members. The term of office for Board members ends at the conclusion of the first Annual General Meeting following their election.

Meriaura Oy's governance principles will change during 2025 due to the corporate restructuring, so the requirements of a public limited company will no longer apply to Meriaura Oy. However, the best practices of good governance established by the public limited company structure will continue to be upheld. In recent years, the governance actions of Meriaura Oy have been clarified, personnel resources enhanced, the administrative structure streamlined, internal communication improved, and the financial reporting schedule regularized.

Responsibilities of the Board

The tasks and responsibilities of Meriaura Oy's Board of Directors are defined by the Finnish Companies Act and other applicable legislation. According to the Companies Act and Meriaura Oy's Articles of Association, the Board is responsible for managing the company and organizing its operations appropriately and represents the company. The Board approves the company's strategy and monitors its implementation. The Board approves the company's financial statements and interim reports and oversees the proper conduct of accounting and financial matters. The Board decides on significant loans, acquisitions, and investments and approves business plans and budgets as well as risk management principles.

The Board also decides on the principles within which the management can make decisions on investments, company acquisitions and sales, contract agreements, and the provision of guarantees. The Board selects the CEO and decides on the terms of their service, as well as approves any potential remuneration programs. Additionally, the Board's task is to promote the success of the company and all its shareholders by planning the company's operations in a way that delivers the best possible return on the capital invested in the company over the long term.

Responsibilities of the Management Team

The management team assists the CEO in supervising the company's performance relative to set objectives. This includes setting long-term goals and defining the measures needed to achieve them. The management team monitors the strategy approved by the Board and ensures the adequacy of the company's assets and financing. The management team is also responsible for matters and policies related to statutory governance, compliance with requirements, and stock-exchange-related obligations. The management team oversees the company's financial situation, budgeting, and ensures that financial targets are met. The management team ensures that the right people are in the right positions and that personnel are continuously developed. This also includes maintaining and developing the company culture and addressing initiatives from the staff. The management team meets regularly on a monthly basis, and as needed. Matters handled at the management meetings that are suitable for internal distribution are communicated to the office staff in the internal monthly newsletter.

Collaboration with Stakeholders

Our most important stakeholders are our competent, motivated personnel and our valued customers. By upholding responsible practices, we establish ourselves as a reputable employer and attract individuals who align with our values. For our customers, our commitment to openness, transparency, and responsible conduct provides significant added value.

We carefully select our partners and suppliers to ensure reliability and quality. Important partners also include agents, stevedores, ports, spare parts and fuel suppliers, shipyards and classification societies, as well as partner shipping companies from whom we rent vessels. We also work closely with authorities, the Finnish Shipowners' Association, and environmental organizations focused on marine nature. Open and direct communication with stakeholders forms the basis for cooperation and helps us adapt to societal changes.

About one-third of the vessels chartered by Meriaura are owned by us, and the rest are rented, i.e., time-chartered vessels. In recent years, we have deepened and expanded our previous chartering cooperation with two Finnish partner shipping companies.

Since 2022, Meriaura Group's main owner and parent company Meriaura Invest has been a part-owner of Helmer Lundström Ab Oy and Rederi Ab Nathalie (RABN). These strategic partnerships ensure the availability of suitable Finnish equipment for our use in the long term. The partnership also promotes the sustainable development and strengthening of the Finnish shipping industry and supports the regional maritime sector.

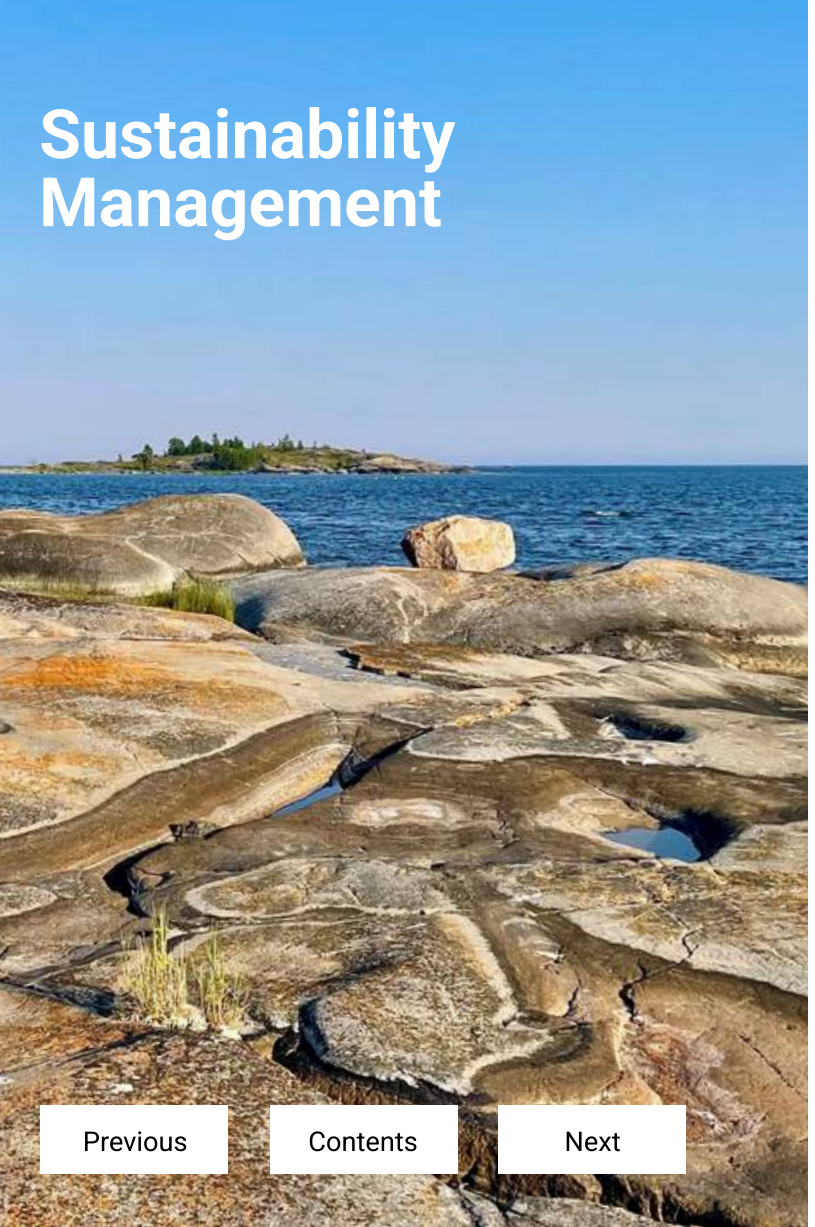
In collaboration, we develop innovative solutions and practices that promote more environmentally friendly shipping and better respond to current and future sustainability challenges.

Regarding the expansion of biofuel use, cooperation with partner shipping companies and other stakeholders has been very important. During 2024, we built a system for biofuel use for Mirva VG in collaboration with Helmer Lundström Ab Oy. Additionally, we are closely working with the equipment supplier to study the suitability of a new biofuel raw material for MV Meri's main engine. We have also received useful information from RABN's wind propulsion experiment on the applicability of the solution to Meriaura's traffic.

During 2024, we investigated fuel efficiency, waste heat utilization, and the potential for expanded biofuel use in the design of new vessels. In this development work, the contributions of shipyards and equipment suppliers were instrumental.

For also other than our part-owned time-chartered vessels, cooperation is primarily based on long-term contracts, and we know the shipowners well. Most time-chartered vessels have a pilot-exempt captain hired by Meriaura. This ensures good and smooth communication between the shipping company, the ship, and Meriaura's land organization. Cooperation between Meriaura and the owner shipping company aims for the most efficient and economical operation.

Sustainability Management



Meriaura's Code of Conduct

Meriaura's goal is to create a balance between a thriving work community, environmentally friendly operations, and economic success. This requires leadership where the company's values and responsibility goals guide decision-making at all levels.

We are committed to ethical guidelines in all our activities, which guide the actions and behaviour of our management and employees. Meriaura's principles of good business conduct bring together the rules that ensure responsible and ethical conduct on land, sea, and in ports.

We are committed to maintaining and developing sustainable shipping and environmentally friendly thinking in our daily operations. To achieve this, we adhere to all applicable laws and ethical guidelines in the industry, exceeding minimum standards. The business principles describe both our company's values – Innovation, Collaboration, Sincerity, Diligence, and Responsibility – and the requirements we set for all employees and partners in our group.

At the core of the business principles are compliance with national and international laws, regulations, and standards relevant to our industry and operations, respect for human rights and workers' rights, and especially ensuring the safety and health of maritime personnel. It is of great importance to us to develop environmentally friendly shipping and sustainable solutions in all our activities. Transparency, incorruptibility, and cooperation with authorities are the cornerstones of our operations.

Environmental Policy

Meriaura's environmental policy focuses on practical measures. We have analyzed the main environmental impacts of our activities using a double materiality analysis and designed concrete actions to reduce them.

Meriaura aims to be the leading pioneer of environmentally friendly, innovative, and solution-oriented maritime transport services. We are committed to promoting environmental values in our daily work and constantly seeking cost-effective solutions to environmental challenges.

Our vessels operate in sensitive marine areas, so understanding and managing risks is important. The most significant environmental impacts of maritime transport arise from air emissions from fossil fuel use and wastewater. In the event of an accident, a potential oil spill can cause significant damage to nature.

We respond to the challenges of our industry and operating environment by developing biofuel from recycled raw materials, properly treating wastewater, and employing skilled personnel. We continuously invest in the recycling and further processing of waste onboard. We train and encourage our employees to consider environmental responsibility in their daily activities.

We continuously monitor and strive to reduce the environmental impacts of our operations. Our future transport concept aims at completely carbon-neutral transportation. Considering the environment is an integral part of our work, regardless of external conditions.

The UN Sustainable Development Goals

The **UN Agenda 2030** for Sustainable Development aims at global poverty eradication and sustainable development, where the economy, environment and welfare of the people are considered equally. Our key areas of influence around these goals are included in the following five key areas.

Meriaura Group provides equal opportunities for everyone to participate fully in the operations and management, regardless of gender. We offer flexibility regarding work tasks, according to one's life situation.

We increase the use of renewable energy in both office and marine operations. Our EcoCoaster vessels are ESI-certified (Environmental Ship Index) to ensure energy-efficient operation.

We actively monitor the development of technology and promote the introduction of more sustainable shipping technology. We invest in new and more environmentally friendly cargo ships and test new methods and technologies.

We use renewable and carbon neutral electricity. We produce biofuel from waste-based material. Waste-based bio-oil is ethically sustainable and its lifecycle CO2 emissions are up to 98% lower compared to the traditional fossil fuel option.

We reduce the nutrient load to the sea by delivering the wastewater from our vessels ashore for proper treatment. Our ships are equipped with ballast water management systems.

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Audited Environmental System

Meriaura's ISO 14001 environmental management system is limited to the company's chartering and operational activities and the office as a work environment. Additionally, the environmental program partially covers the company's own ships.

The scope is determined by the ability to influence the environmental impacts of these activities, and the ships already comply with the ISM code, which includes provisions for environmental protection. The selected scope may be expanded in the future. Environmental protection measures are based on the requirements of ISO 14001:2015 and are integrated into Meriaura's safety and quality system.

In the environmental program, measurable indicators have been defined for concrete goals so to follow the principle of continuous improvement and systematically develop our operations in the right direction. During 2024, we have paid special attention to internal and external communication on sustainability topics, for example, in the form of the Sustainability in Action video series.

After moving to new office premises in March 2024, we have also updated the possibilities related to staff commuting and added options such as a commuter bus ticket and a company bicycle.

Meriaura ISO 14001 environmental program consists of:

Reduction and sorting of waste
- Sorting station at the office
- Waste management plan

Commuting
- Possibility to distance work
- Purchase of an electric company car

Communication
- Sustainability report on a yearly basis
- Staff training

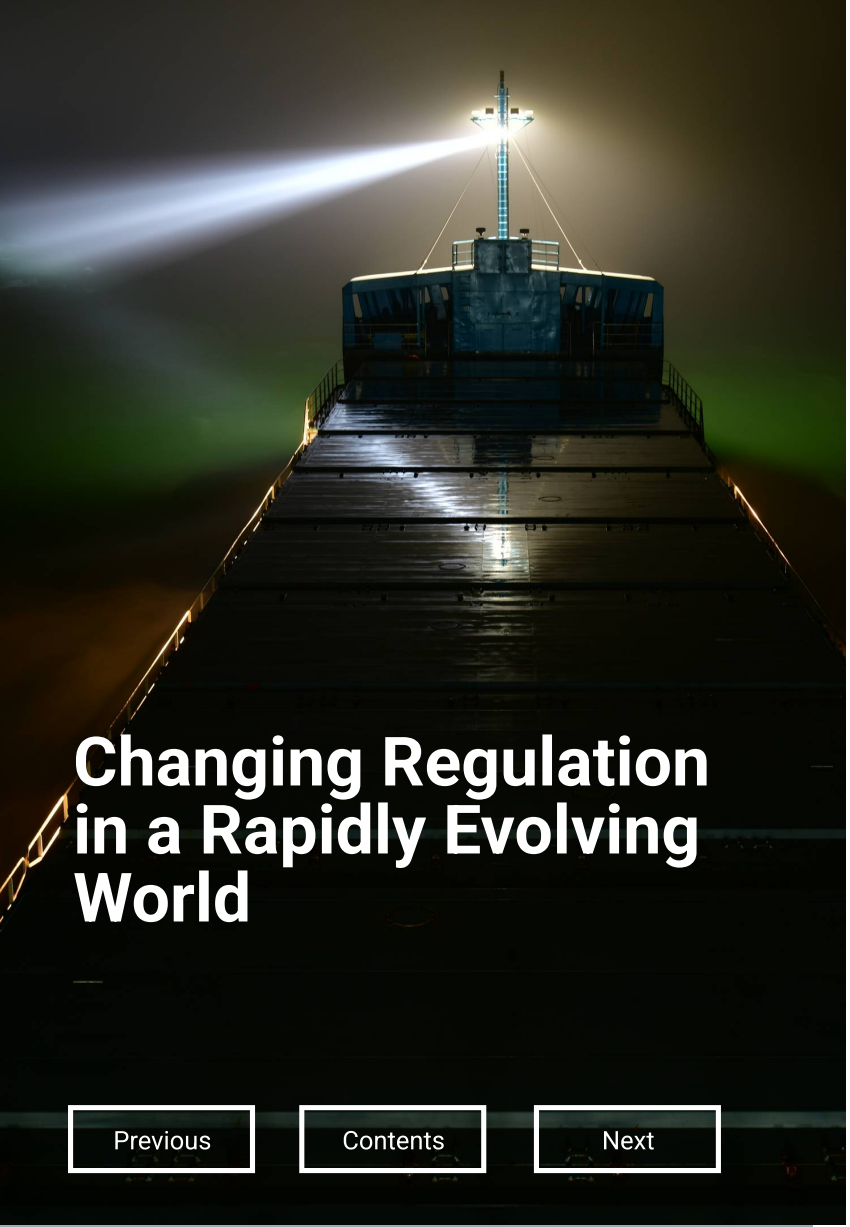
Biodiversity
- Follow-up of the sewage streams

Influencing
- Continuing cooperation with marine nature foundations
- Active participation in working groups of our interest groups

Material efficiency
- Use of waste-based biofuel on vessels
- Follow-up of emissions

Chemicals
- Chemical lists on board, updated yearly

CERTIFIED
ISO 9001
ISO 14001
BUREAU VERITAS



Changing Regulation in a Rapidly Evolving World

Double Materiality Analysis

In 2024, we initiated preparations for CSRD sustainability reporting by conducting a double materiality analysis to thoroughly identify the sustainability impacts of our activities. However, in early 2025, the EU Parliament extended the deadline for this requirement and revised the size thresholds for companies subject to this regulation. Consequently, Meriaura is no longer required to prepare a CSRD-compliant sustainability report.

The work we have undertaken will not be in vain, as the information obtained through the double materiality analysis can be utilized in our sustainability reports. Irrespective of regulatory requirements, we are committed to enhancing the scope of our reporting on an annual basis. We are convinced that transparent reporting promotes sustainability development. Through comprehensive monitoring and evaluation of the impacts of our activities, we can identify areas for improvement. By documenting our impacts, we can assess the effectiveness of our sustainability initiatives.

Many of our partners require information about the impacts of our activities. Clients often request calculations of the carbon dioxide emissions from transport, and financiers are interested in various sustainability data. In addition, large companies subject to CSRD send extensive questionnaires related to sustainability.

Our Material Impacts

The double materiality analysis has verified that CO_2 emissions represent the most critical impact of our operations. This will remain the primary focus of our sustainability reporting. In addition, reducing CO_2 emissions is our most important environmental goal.

The materiality analysis revealed global challenges in maritime operations, including corruption and poor working conditions. Consequently, it is essential to emphasize particularly in international operations, that we comply with Finnish collective agreements and have not encountered any corruption or violations related to working conditions. Our ethical principles explicitly prohibit all forms of corruption, and Meriaura is dedicated to maintaining and developing sustainable maritime practices and environmental considerations in its daily activities. We adhere to all legal and ethical standards applicable to our industry. Every Meriaura employee is expected to act responsibly and honestly, and everyone has the duty to adhere to this guidance and its underlying principles and instructions.

Our administration has also developed and learned a lot in recent years while managing the financial administration of the entire listed Meriaura Group.

The overall approach also includes assessing the impacts of the changing world on our operations. Regulations related to environmental and sustainability issues affect our operations in many ways. Unfortunately, it will still take a long time before regulations significantly reduce maritime emissions, and for example, emission trading or FuelEU Maritime do not yet apply to ships under 5000 GT, which includes Meriaura's fleet. The impacts of climate change on our operations have also been assessed.

Emissions Measurement and Reduction Goals

The double materiality analysis required by the CSRD confirmed that the main source of emissions for Meriaura is the fuel of the ships. Meriaura closely monitors the emissions from the ships, and how they relate to the performance (transport work done). In 2021, the company co-developed software for measuring CO_2 emissions and introduced a monitoring system for the whole fleet. The chosen monitoring unit was emissions per tonne of cargo transported per nautical mile. The monitoring was improved in 2023 with more systematic methods, the data from different years was harmonised, the data input for the calculation was standardised, and the used unit was changed to “tonne-kilometre”, which is also used by Traficom (the Finnish Transport and Communications Agency) to facilitate the comparison of the data with other modes of transport. Four full years of data have now been gathered for all the ships.

Sea freight carbon footprint

Sea voyages have four stages: ballast voyage; loading; cargo voyage; and discharging of cargo. On a ballast voyage, the ship carries no cargo as it travels to the loading port. All stages of the freight journey produce carbon dioxide emissions. Time spent in port and anchorages causes lower emissions than when the ship is sailing. Our cargo ships spend about half of their time sailing and half in ports.

The Carbon Footprint indicator that we use is closely related to the share of ballast miles in the total journey, which reflects the situation of the freight market and the success and efficiency of chartering.

In our calculation of the carbon footprint for Meriaura, we consider the CO_2 emissions from every stage of each cargo voyage. Emissions from docking and repairs of time-chartered ships are not part of the reported figures.
The carbon footprint of sea freight depends on the amount and type of fuel used. We convert fuel use data into carbon dioxide emissions using coefficients. For light low-sulphur fuel oil (MGO), we use the number 3.206 (tonnes of carbon dioxide/tonne of fuel), and for bio-oil (LBO) made by VG-Ecofuel, 0.0, as coefficients.

The calculated CO_2 amount is divided by the transport work, which is obtained by multiplying the number of freight kilometres by the amount of freight sailed. The DWT equivalent number is used as the amount of cargo. The equivalent refers to the fact that instead of the weight of the cargo, for light products, the amount of cargo is limited by the cargo hold’s volume. In practice, a DWCC number is defined for each ship, which indicates the maximum weight of the cargo. The ship’s utilisation rate is therefore evaluated in addition to the weight from the perspective of the use of the volume of the cargo spaces. The trip-specific DWT number is obtained by multiplying the ship’s utilisation rate by the DWCC number.

Data reliability

The information affecting the calculation is obtained from the ships’ voyage reports on a trip-by-trip basis. For example, the trip report reports the amount of cargo, the degree of filling of the ship, fuel consumption, the arrival and departure times in ports, and the lengths of ballast and cargo journeys. Among these data that affect the carbon footprint of the journey are the fuel consumption of the entire journey, fuel type, the length of the cargo journey and the ship’s degree of occupancy (utilisation).

The ship’s filling rate is stated as a percentage of the maximum amount of the cargo in question the ship could load. Fuel consumption during the trip is based on measurements taken at the beginning and end of the trip. The accuracy of individual measurements may suffer in challenging conditions, but the data on total consumption will level off over time. In addition, the consumption data is compared with the bunker delivery data. The length of the freight voyage is obtained with the aid of GPS tracking and can be considered reliable. Data is manually entered into the voyage report and from the voyage reports into the operational system. Typing errors are possible in both phases, but gross errors are noticed in the monitoring of the reporting.

Carbon Footprint calculation formula
Carbon Footprint (g/tkm) = CO_2-emission (grams)/Transport work (tn, km)
CO_2-emission (grams) = 1000000 x (MGO tons x 3,206 + LBO tons x 0,0)
Transportwork (tn, km) = (utilisation rate x ship DWCC x caargo kilometres)/100
((utilisation rate/100) x ship DWCC) = DWT_eq
(cargo kilometres = 1,852 x nautical miles loaded)

Our Emissions in 2024

Meriaura's long-term goal is to be a carbon-neutral shipping company by the end of the 2030s, significantly ahead of the IMO's targets.

The short-term goal is to improve carbon intensity, i.e., to reduce the amount of emissions relative to transport performance by 4% annually or 15% over four years starting from 2021. In 2024, our total maritime emissions increased by approximately 6.5% compared to the previous year due to the increased fleet size. Carbon intensity decreased only slightly (18.0g CO_2/tkm in 2021, 16.5g CO_2/tkm in 2022, 16.8g CO_2/tkm in 2023, 16.6g CO_2/tkm in 2024). Success in reducing emissions consists of many small things together, the most important of which are minimizing ballast trips, maximizing vessel load factor, and optimizing port times. So far, we have succeeded in improving our carbon intensity by 7.8% compared to the year 2021. Progress has been made, but not enough.

Customers are key, as they decide where the ships go. The batch sizes of customers must also match the cargo capacity of the ships as closely as possible. Harmony in the customer portfolio creates synergy. In planning and optimizing vessel schedules, the digital application NauticAI Fleetrange plays an important role and has also developed as a tool for monitoring environmental data. Skilled ship officers ensure economical driving. Efficient port operations reduce the time ships spend in port and enable economical sailing at sea, saving fuel and reducing emissions.

For the first time in 2024, we also calculated the emissions from the production phase of the fossil fuel used by our ships. Oil drilling, refining, and transportation cause significant emissions. The biofuel we use is also significantly lower in the production phase emissions compared to fossil fuel.

We also calculated for the first time the emissions from our staff's air travel. The majority of flights are due to crew changes. We moved to new, highly energy-efficient premises at the beginning of March 2024. For this reason, the amount of heat consumed, and the emissions are extrapolated estimates.

CO_2 emissions 2024

Scope 1	**Vessels** 47128 t		**Cars** 3,6 t	
Scope 2	**Electricity** 0 t*		**Heat** 5 t	
Scope 3	**Vessels** 7022 t		**Flights** ~55 t	

*100% carbon dioxide-free electricity contract

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Collection of Onboard Sewage Expands

For several years, one of our most significant environmental objectives has been the proper handling of ship toilet wastewater via port reception facilities. Although legally permissible to discharge into the sea, this wastewater contains nutrients, bacteria, fats, and chemicals, which are only partially mitigated by onboard treatment facilities. Consequently, our strategy involves retaining toilet wastewater in ports, ensuring its transportation for appropriate treatment. This approach significantly minimizes water pollution.

In 2024, we expanded wastewater monitoring to include our time charter vessels. Some of these ships have insufficient tank capacity to allow all toilet wastewater to be left in ports, and for many, the practices are new. However, in the first year, we managed to collect approximately 25% of the toilet wastewater from these ships.

For our part-owned vessels, about 60% of the wastewater was delivered to land facilities. Our EcoCoaster vessels Eeva VG and Mirva VG managed to discharge all their toilet wastewater into port reception facilities.

By maintaining a strict policy, we have encouraged several ports to change their practices to promote the collection of wastewater, thereby encouraging other shipping companies to pump toilet wastewater ashore.

Our goal for 2025 is to further reduce the amount of wastewater entering the Baltic Sea and to develop monitoring and reporting. It will be interesting to see how the legislative change coming into effect in summer 2025 impacts overall toilet wastewater emissions from cargo ships. The discharge ban in Finnish territorial waters comes into effect on July 1, 2025.

Fuel with Low Lifecycle Emissions

Meriaura has been using biofuels in its fleet for over a decade. The system in which our group of companies and affiliated companies both collect the raw material, produce bio-oil, and even the energy used in the manufacturing process is clean (biogas), and consume the fuel in our own fleet, is completely unique.

Biofuels, especially on a large scale, come with numerous sustainability issues, but if the fuel is produced from raw materials that have no better use, the situation changes. Raw materials produced as by-products and waste do not compete with food production or degrade biodiversity.

Waste-based biofuels can also be considered almost carbon-neutral, as the carbon they contain comes from the atmosphere and would be released back there anyway. It makes sense to utilize bio-oil produced from such raw materials for energy, for example as fuel for ships. The Tank-to-Wake emissions of sustainable biofuels are currently calculated as zero, but in the case of recycled biofuels, the Well-to-Wake emissions are also significantly low.

Using bio-oil does not require major technological changes. Distribution can be done with similar equipment as traditional oil, and ship engines can use such fuel with small modifications.

The ships built today will be in traffic for decades, so it is important to consider the emissions over the entire lifespan of the ship and enable the necessary emission reductions now – bio-oil makes this possible. Fortunately, the need to reduce emissions is finally reflected in maritime regulations. For instance, the IMO has stated that shipping must be carbon-neutral by 2050.

The biggest weakness of waste-based biofuel is that the amount of suitable raw material is limited, and it only has potential to replace part of the fossil fuels. However, for some companies in the shipping industry, it is a significant alternative to fossil fuels.

Fossil fuels will be replaced by many different technologies. We are monitoring the development and will also adopt other carbon-neutral solutions, but at the moment, the production and use of bio-oil are at the center of our development work.

The two new bio-oil-powered 6750-ton cargo ships we ordered in the spring of 2024 and will be completed in 2026 will significantly increase the share of bio-oil in the fuel we use. This will enable further reduction of the emissions of our transports.

EcoVoy Transport Contract – Emission Reductions for Customers

Meriaura transported cargo for several customers in 2024 using the carbon-neutral EcoVoy concept. The EcoVoy concept is based on Meriaura's vessels' ability to use biofuel as an energy source. When using biofuel that meets the criteria of the Renewable Energy Directive RED II, transport is carbon-neutral in terms of emissions during combustion. For biofuel made from recycled raw materials, the lifecycle emissions are also very low, as much as 97.7% lower than those of fossil fuel. The biofuel used by Meriaura is produced in Uusikaupunki, Finland, by Meriaura's subsidiary VG-EcoFuel Oy. The EcoVoy concept has been audited by KPMG according to the ISAE3000 standard, ensuring emissions reductions for customers from the use of biofuel. The production of VG Marine EcoFuel™ is ISCC-certified, and the raw materials for the fuel are recycled materials and industrial byproducts sourced in the Nordic Region.

Boliden Reduced CO_2 Emissions by 80 Tonnes

Meriaura transported metal concentrates for Boliden in a collaborative pilot project. Meriaura's biofuel-compatible vessels made five voyages of about 5,000 cargo tonnes between Gävle and Kokkola, Kemi, and Pori. By choosing Meriaura's EcoVoy, Boliden significantly reduced their CO_2 emissions, saving about 15 tonnes of CO_2 emissions per voyage.

In total, the emissions reduction was approximately 80 tonnes compared to traditional fossil fuel based transport. The lifecycle emissions for the five voyages using biofuel were less than two tonnes of CO_2. "Our customer Boliden aims to be the world's most environmentally friendly metal producer. Maritime transport has been a particularly challenging area for achieving emissions reductions, and it's great that we can promote sustainable development in maritime transport together," says Meriaura's COO Mathias Landor.

Subsea 7's Transport Emissions Halved

Meriaura transported offshore structures for Subsea7, which are part of Aker BP's Skarv Satellites project. Meriaura's deck cargo carrier M/V Meri loaded the structures in Gdansk, Poland, and transported them to Sandnessjøen, Norway, using a fuel blend consisting of 50% biofuel and 50% marine gasoil. This reduced the transport's CO_2 emissions by about half compared to transports performed using only fossil fuels. "We're very pleased to serve our customer Subsea7 and help them achieve their sustainability goals," says Meriaura's Chartering Manager Mathias Mattsson.

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Development Projects

In 2024, Meriaura had an ongoing development project related to the development of carbon-neutral shipping, funded by Business Finland. The goal of the project is to create a cargo ship and service concept that is as carbon-neutral as possible and sustainable in terms of other ship emissions. The aim is to achieve the emission reduction targets set by IMO, Finland, and the EU for 2050 already in the 2030s.

The **VG Green Maritime Future (GMF)** project focuses on the technical research and design of a ship concept that enables carbon-neutral operation. In addition, the project aims to explore possibilities to reduce other exhaust emissions produced by the ship. At the same time, the sustainability of alternative fuels and other energy sources, as well as new loading and unloading concept solutions, are being investigated. The aim is to produce digital and simulation based solutions that enable the optimization of the ship's operational energy efficiency and more efficient management of the ship's overall operational lifecycle.

The VG Green Maritime Future project will last until June 30, 2025.

In addition to our own project, we are involved in external research and development projects that study topics related to sustainable shipping, which are in line with Meriaura's environmental policy and goals. The main projects are listed on the next page

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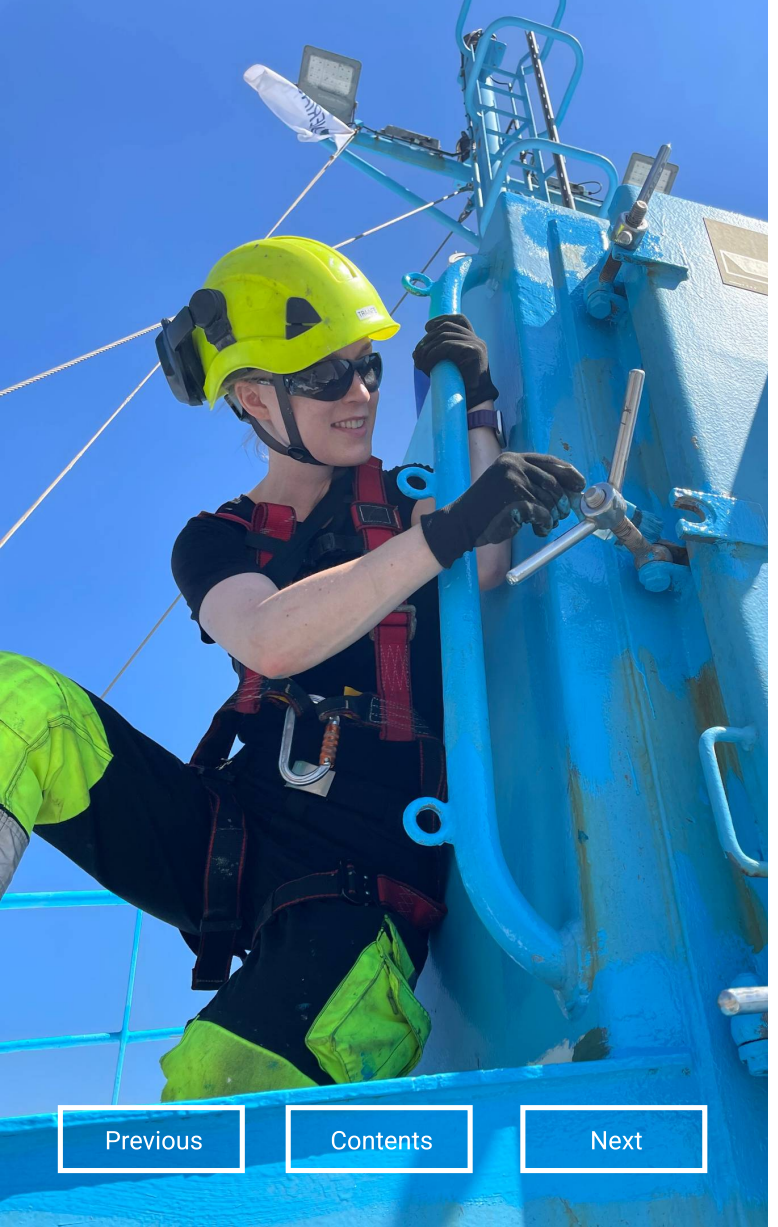
Own Projects

Project	Lead	Financier	Timeline	Goals
VG Green Maritime Future	Meriaura	Business Finland	7/2021 - 6/2025	The project focuses on the technical research and design of a ship concept that enables carbon-neutral operation. The sustainability of alternative fuels and other energy sources and new types of loading and discharging concept solutions are being studied.

Projects we are involved in

Project	Lead	Financier	Timeline	Goals	Meriaura's role
Bio4All	VTT	Business Finland	3/2024 - 8/2026	Bio4all project will aim at developing value chain from challenging forest and agricultural biomass residues through liquefaction technologies to aviation and marine fuels as well as selected chemical products.	Steering Group member
Data Analytics for Zero Emission Marine (DAZE)	Åbo Akademi	Business Finland	9/2023 - 8/2026	The DAZE research project aims at significant energy efficiency and marine system performance improvements using a data-driven process.	Steering Group member
The Flexible Green Propulsion Technologies	Vaasan yliopisto	Business Finland	5/2024 - 4/2027	The project's goal is to establish an economically stable, zero-emission future for the Finnish powertrain industry, departing boldly from locally-driven, single-fuel agendas.	Steering Group member
Pontos	RISE (Ruotsi)	Trafikverket (Sweden	4/2023 - 4/2025	A project dedicated to advancing research, fostering innovation, and driving product develoment by providing open access to ship operational data.	Supporting Partner
RoboSea	Turun Ammattikorkeakoulu	EAKR	1/2024 - 12/2026	The RoboSea project is developing an automated water traffic test platform in collaboration with regional companies. The test platform consists of a test boat and a remote control center.	Steering Group member
REFOLUTION	SINTEF (Norja)	Horizon Europe Innovation Action	1/2023 - 12/2027	The EU project REFOLUTION aims to reduce greenhouse gas emissions from aircraft and ships by developing advanced and cost-effective biofuels.	Advisory Board Member
FOR-Blend	Vaasan yliopisto	EU Interreg, University of Vaasa, Åbo Akademi University, RISE	10/2024 - 12/2027	The project aims to develop a feasible process for managing forest-based residue locally, produce a sustainable fuel blending component.	Steering Group - Advisory Board Member



Working at Sea

Meriaura employed 85 seafarers on the company's own and crewed vessels at the end of 2024. In addition to its own cargo ships, Meriaura provides the crew for the research vessel Aranda and the cargo vessel Mirva VG. Most of Meriaura's time charter vessels also have a pilot-exempt captain hired by Meriaura. Our vessels generally operate on a five-week work period. Working at sea requires adaptation to special conditions, such as heave of the sea, and for some of the staff, shift work. The professional qualifications and health requirements for maritime personnel are precisely defined by international agreements and national legislation.

Work and rest hours must be carefully planned in maritime work

The proper organization of work and rest hours is the employer's responsibility. The planning and implementation of work and rest hours are based on national and international legislation as well as local collective agreements. These regulations aim to ensure that employees receive adequate rest and recovery so they can perform their duties safely and efficiently.

In maritime work, especially in Baltic Sea traffic where cargo trips are short, complying with work and rest hours can sometimes be challenging.

Proactive planning and keeping work schedules visible are crucial so that employees can prepare for their workdays and recover sufficiently. When planning work and rest hours, the ship's captain must consider the requirements of different tasks and the individual needs of the employees.

We offer leadership training for supervisors and officers. This year, we have made an agreement with the Finnish Seamen's Mission for their ship chaplain services. In terms of wages and other working conditions, we apply the current collective agreements and maritime labour legislation.

Our maritime personnel have the opportunity to participate in the ForMare program designed for seafarers, which offers a unique opportunity to improve balance and well-being in life. The participants define their own goals they want to achieve during the two-year program. The program includes fitness tests, health check-ups, lectures, and wellness events that include exercise, as well as personal training under the guidance of a coach.

Occupational Safety at Sea

Meriaura's occupational safety is being developed systematically and in the long term. The systematic development of occupational safety has brought results and has led to a clear decrease in accidents at work. The goal of an accident-free year at work was achieved in 2024.

Key personnel in occupational safety are trained in their occupational safety tasks, so that the knowledge gained in the training can be shared further within the work community. The ships' occupational safety committees are encouraged to bring forward their occupational safety observations, which will allow potential dangerous situations to be addressed and corrected in advance. Meriaura's personnel are provided with the necessary and work-appropriate protective equipment, which acts as a guarantee on top of the safety culture and training.

Accidents at Meriaura	2024		2023		2022		2021	
Working hours total	200 005		192 299		259 491		234 168	
	Incidents	**Frequency**	**Incidents**	**Frequency**	**Incidents**	**Frequency**	**Incidents**	**Frequency**
Total recordable case frequency	0	0	1	5,20	9	34,68	3	12,81
Lost time injury frequency	0	0	1	5,20	7	26,98	3	12,81
Medical treatment / case frequency	0	0	0	0	2	7,71	0	0
Fatal accident frecuencia	0	0	0	0	0	0	0	0

When calculating the accident frequency, the number of employees, the average number of hours worked and the number of accidents that occur are taken into account. Accident frequency = 1,000,000 * (Number of accidents at work / Hours worked)

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Our Personnel at Sea and on Land

We use the extensive expertise of our land and sea personnel flexibly through job rotation. Working in both land and sea positions increases understanding of the significance, challenges, and solutions of tasks performed in different environments, improving collaboration throughout the organization.

In 2024, our entire staff completed GDPR and cybersecurity training.

Internal newsletters facilitate communication and information flow within the organization. As a new means of communication, we introduced an initiatives mailbox in 2024, where anyone from the staff can submit a suggestion, which the management team will review. Good, implemented suggestions are rewarded.

We organized a crew meeting for all our staff for the first time, inviting the entire sea personnel. Two corresponding events were organized to accommodate work shifts and ensure everyone could participate. After encouraging feedback, we decided to make this an annual event.

The occupational safety committee and the well-being at work group meet regularly to address issues related to working conditions.

We offer sports and cultural benefits as well as a lunch benefit, which are conveniently accessible through the ePassi application.

The annual job satisfaction survey for land and sea personnel is an important tool for monitoring and continuously improving working conditions. The survey annually maps, among other things, the work atmosphere, well-being, leadership, communication, living and leisure conditions on the ship, and the smoothness of cooperation between the ship and the office's operational functions.

Meriaura*	2024	2023	2022	2021
Staff ashore	38	36	36	24
Staff at sea	85	78	101	106
Staff altogether	123	114	137	130
Women	22	24	24	14
Men	101	102	113	116
Average age of staff ashore	44	42	41	43
Average age of staff at sea	39	41	41	40

Staff at the end of the year.
**Until end of 2021 VG-Shipping and Meriaura together*

1986-2024: Environmental Milestones

1986

Meriaura Ltd. is founded.

Early 1990s

First bio oil experiment and a battery-powered shore-side power system with solar and wind power introduced on tugboat Aura

1996

Acquisition of a ship recycling dock in Korppoo. Lifting of shipwrecks from the Archipelago Sea and recycling them.

1998

Meriaura starts using low-sulphur fuels

2002

Ownership in Biota BD Ltd., development projects for conserving the biodiversity of rainforests in Latin America

2010

Investments in bio and circular economy, closed circulation aquaculture, biogas and biofuel production

2012

Second deck cargo vessel is built at the Turku shipyard. M/V Meri is the world's first commercial cargo ship designed for bio oil use.

2015

Sustainability certification of bio oil production process

2016

Bio oil -powered EcoCoaster vessels Eeva VG and Mirva VG are built in the Netherlands and start operating in the fleet

2017-2019

Ship recycling trial in Naantali in cooperation with Turku Repair Shipyard as part of the EU ship recycling regulation and responsibility strategy

2019

Meriaura EcoVoy charter contract is launched. Meriaura launches Zero Waste Program on its fleet and ships leave their sewage in the port

2021-2022

Bio oil development project and ISCC certification. Construction of the environment system and certification. Implementation of emissions monitoring for the entire fleet.

2023

Certification of the EcoVoy charter contract in accordance with the ISAE 3000 standard. Environmental system ISO14001 certification.

2024

Meriaura orders two 6750 DWT Ecotrader cargo vessels. Preparing for emissions trading and other new regulations by making a double materiality analysis.

2025

Biofuel raw material sources are being expanded. EcoTrader vessels are under construction.