Environmentally responsible port operations

Port of Turku environmental report 2023

PORT OF TURKU
FINLAND

Clear goals for the environmental programme

- The Port of Turku's goal is to minimise the environmental impacts of port operations.
- We want to decrease the carbon footprint of our operations, reduce the impacts on the water system and maritime environment, as well as limiting the noise caused by port operations.
- Significant results can only be reached through co-operation involving different stakeholders.

Long-term work for the environment has yielded results

EMISSIONS INTO AIR -82%

Emissions into air caused by port operations decreased by 82% in proportion to the tonnage transported during the years 2011–2021.

ELECTRICITY CONSUMPTION -41%

Energy-efficiency has improved after reducing electricity consumption by 41% during the years 2011–2022.

ENVIRONMENTAL PROGRAMME

The goal of our environmental program is to further reduce air emissions, improve energy efficiency and secure the well-being of the maritime environment.

Environmental programme 2019–2025

OBJECTIVE

- Healthy maritime environment

GOAL

- Decrease the load on the water system that is caused by port operations.

OBJECTIVE

- Restrain climate change as part of the carbon-neutral Turku urban area.

GOAL

- Decrease the greenhouse gas emissions of port operations by 40% from 2008–2025.

OBJECTIVE

- Enhance energy consumption and save energy.

GOAL

- Improve the Port's energy-efficiency from the level of 2018.

Our environmental operations are guided by a DNV certified operating system that complies with ISO 14001, ISO 9001 and ISO 45001 standards. We update the system certifications in 2023.

SERTIFIOITU JOHTAMISJÄRJESTELMÄ
DNV
ISO 9001 · ISO 14001
ISO 45001

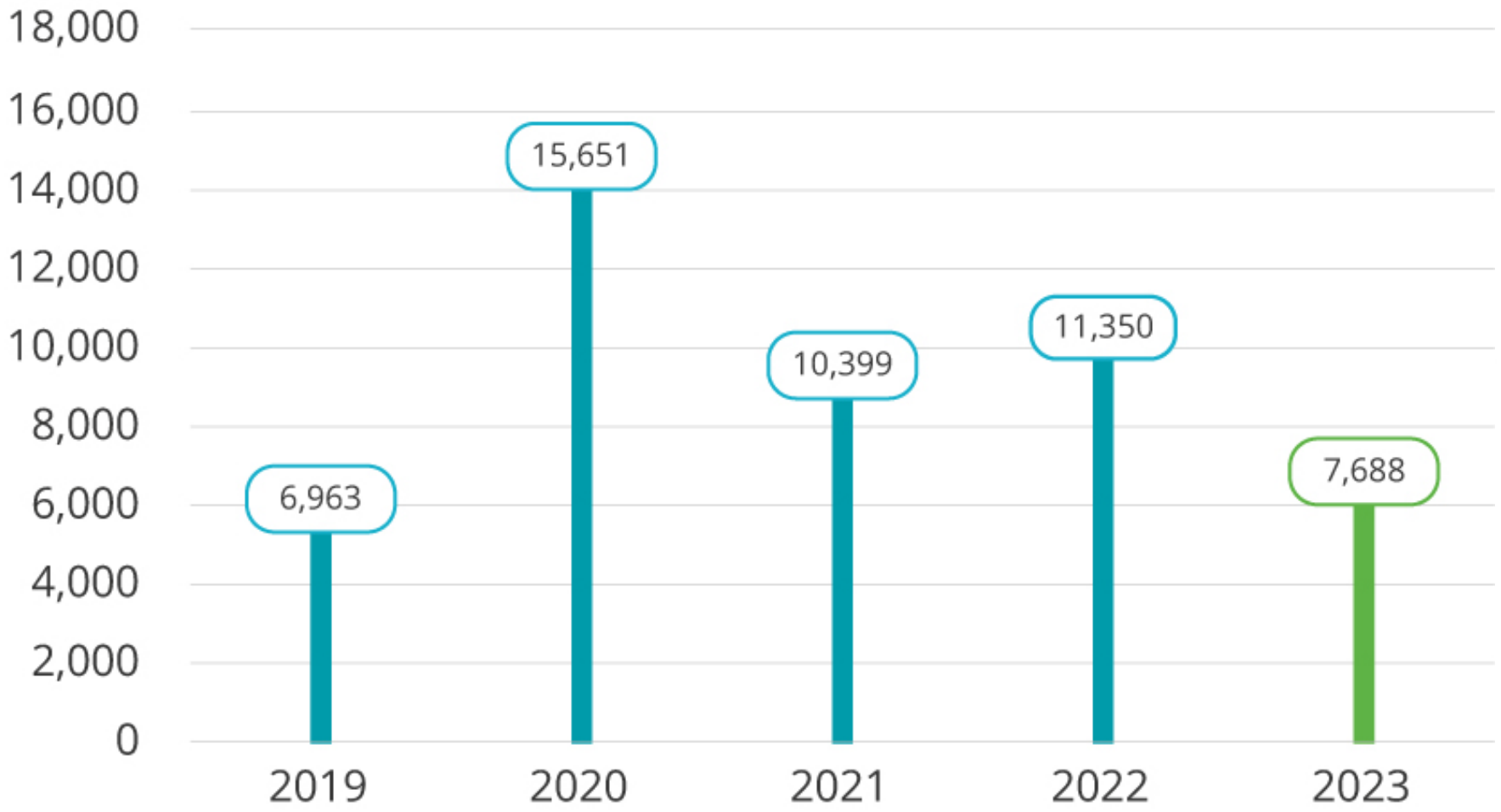
BECAUSE TIME MATTERS

PORT OF TURKU
FINLAND

The port as part of the Turku city's climate team

- The environmental program of the Port of Turku works in the same direction according to the city's climate plan; the goal is a carbon-neutral Turku.
- In all its activities, the port takes into account the City of Turku's climate plan and the European Union's "Fit for 55" goals.
- The port's climate action is to move towards carbon neutrality by investing in the use of renewable energy and the electrification of operations.
    - The electricity used by the port has been tendered as renewable.
    - The vehicle fleet has been changed to electric within the framework offered by the market, regarding both vans and other work machines.
    - In those vehicles where electrification is not possible, biodiesel will be used.
    - In addition, charging stations for electric cars have been added in the harbour area.

Emissions into air from port operations CO_2 [tons/year]



Due to the coronavirus pandemic, the ships that suspended their operation on the 2020 Helsinki–Stockholm route were transferred to berths in the port of Turku. The carbon dioxide emissions of those ships can be seen as a peak in the total emissions of the port area.
In 2022, the emissions calculation system was updated and the figures for 2022 were calculated according to the new system.

Environmental sustainability is our common cause

- We carry out long-term and planned environmental work in the port – with the aim of minimizing environmental impacts on land, sea and air.
- We actively participate in numerous cooperation projects that take into account environmental issues – taking into account the unique nature of the Baltic Sea and the Archipelago Sea and the needs of the population close to the port.

Ferry Port Turku project 2021–2024

- Started on the basis of the NextGen Link project and is part of the Ferry Terminal Turku project.
- The project primarily concerns berth design, as well as the procurement of related contracts.
- The Port activities are optimised by streamlining traffic arrangement, renewing safety systems and improving the quays for the passenger ferries.
- The quays are planned to utilise the latest technology e.g. an automatic mooring system and shorepower readiness.

Co-financed by the Connecting Europe Facility of the European Union

BECAUSE TIME MATTERS

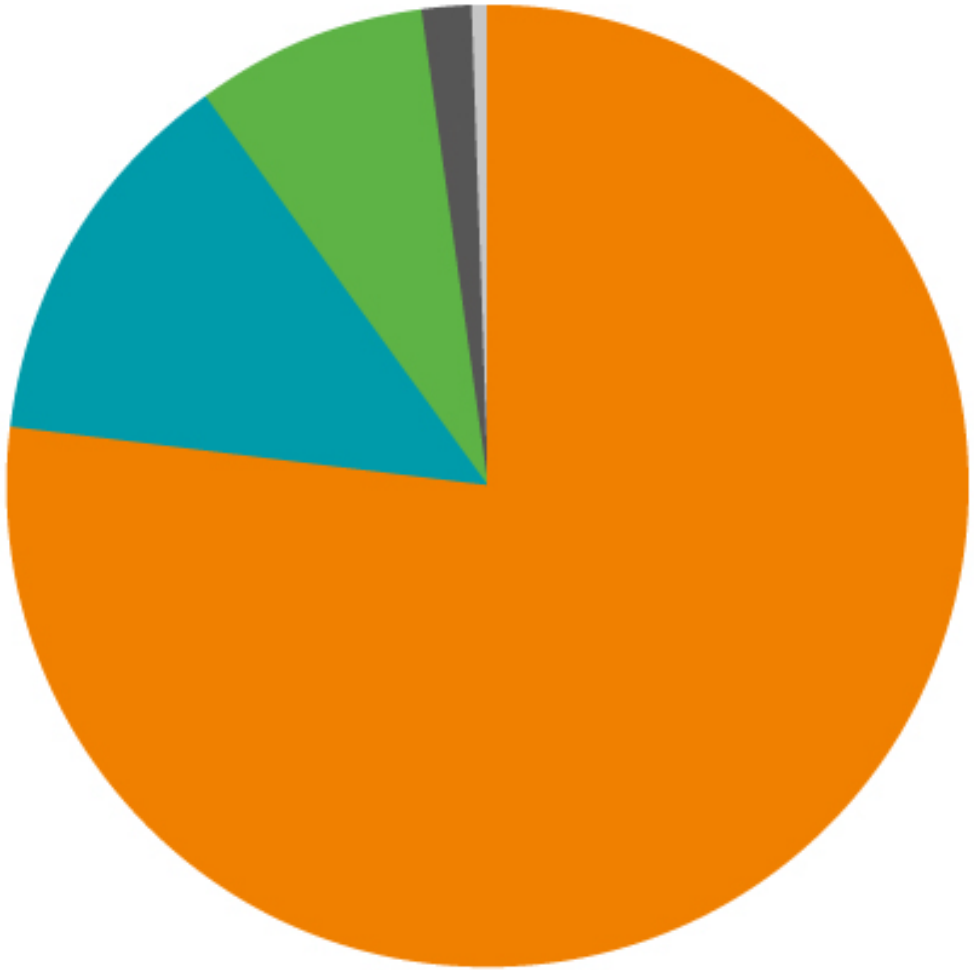
PORT OF TURKU FINLAND

The Baltic Sea Challenge fourth action period 2024–2028

- Launched by the cities of Turku and Helsinki in 2010.
- Continues with a new quinquennium and with an updated common action plan for 2024–2028.
- Turku Port's actions in the new period are related to the development of a compensation model for the water effects of waterways and port maintenance, where the compensation required for water damage is investigated and determined in situations where the damage cannot be avoided.

Waste distribution

Waste incinevation	77.36%
Other utilisation	13.31%
Recycling and reuse	8.78%
Unknown	0.54%
Waste disposal	0.02%



Smaller impacts on waterways from dredging

- The factor of port operations that affects most the loading on waterways in Turku is the dredging of the seabed.
- With dredging, we secure the operability of the ship fairways leading to the port and the water areas in the port.
- Most of it is maintenance dredging to ensure that the official fairway depths notified to seafarers are accurate.

Smaller impacts on waterways from dredging

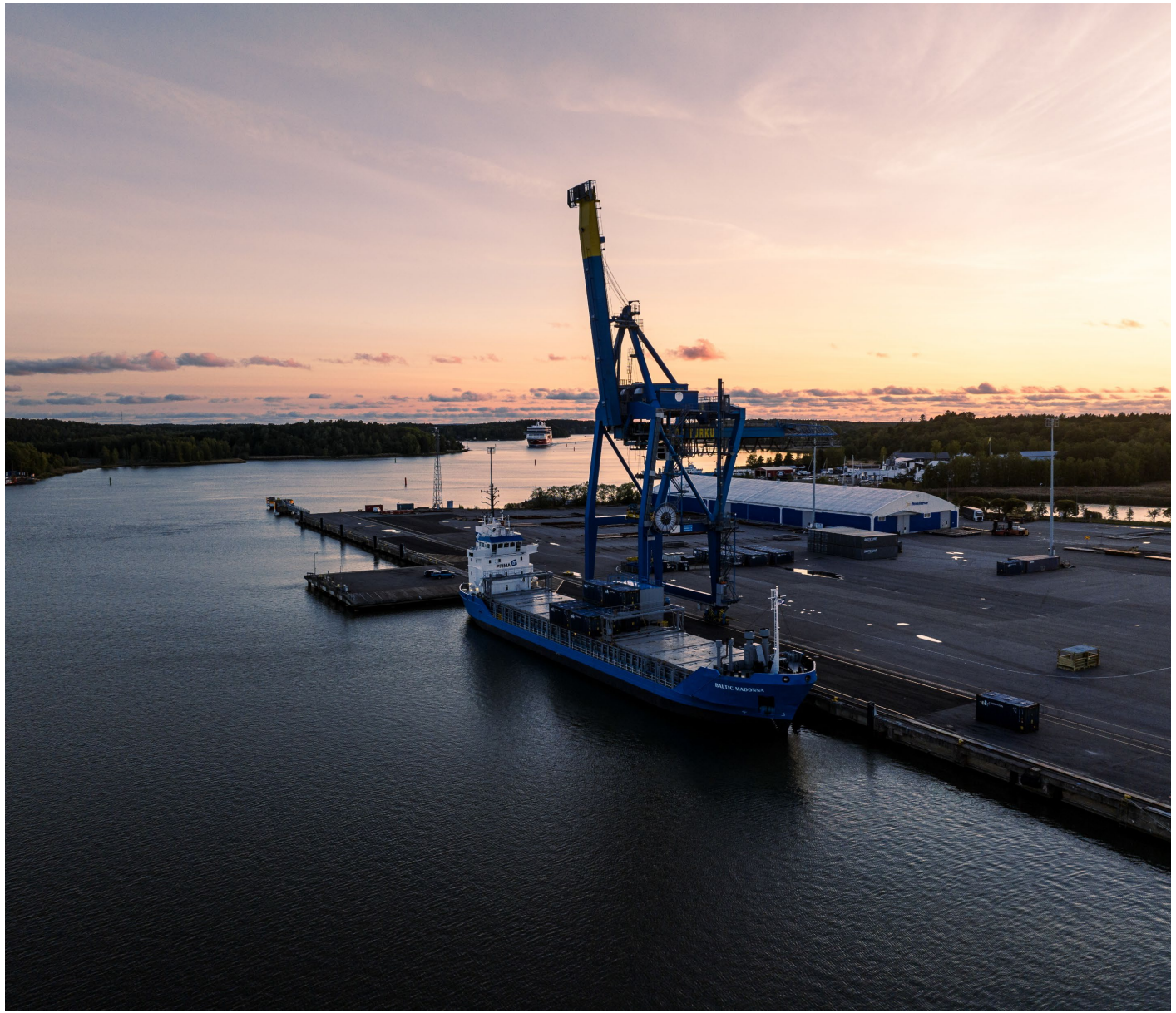
We made a decision together with the City of Turku on stopping the disposal of dredging masses in the sea by 2024 at the latest.

- In practice, it means switching to disposal on land, which will considerably reduce the impacts of dredging operations on nearby waters and the Airisto sea area.
- The disposal of dredging masses has started in Lauttaranta district on the northern shore of Hirvensalo island.
- At first, Lauttaranta has received dredging masses from Meyer shipyard's fairway and quay area as a joint project of the Port of Turku and Meyer shipyard.

- By placing the sediments accumulated from the dredging in the embankment basins built on the current wasteland, a new, maritime apartment block can be planned and built in the Latokari area.
- The area has received an environmental permit at the end of 2020. The first pools have been filled and the second phase has been built ready to receive the masses.
- In addition to Lauttaranta, efforts are also being made to promote the introduction of other potential sites in the future.
- For future land disposal, a joint working group of the City of Turku and the Port of Turku has been launched to find out the introduction of suitable disposal areas after Lauttaranta.

Vessel traffic contributes to environmental protection

- The shipping companies operating in the Port of Turku have contributed a great deal to the decrease of the carbon footprint.
- The emissions into air by vessel traffic have decreased considerably thanks to the EU's Sulphur Directive.
- Viking Line started using LNG (liquefied natural gas) on their vessels operating between Turku and Stockholm.
- Low-sulphur fuel, catalysers and new engine types used by Tallink Silja also had a positive impact.



Vessel traffic contributes to the environmental work

- The protection of the maritime environment is also taken into account in the design of the newest vessels.
- The hull shapes of the vessels are hydro-dynamically optimised to minimise wave formation.
    - In the archipelago between Turku and Stockholm, it prevents erosion and decreases the impacts of vessel traffic on the sensitive archipelago environment.

"The optimized hull shapes of the new ships reduce the formation of waves and thus prevent erosion, which contributes to the preservation of the delicate archipelago nature on the route between Turku and Stockholm."

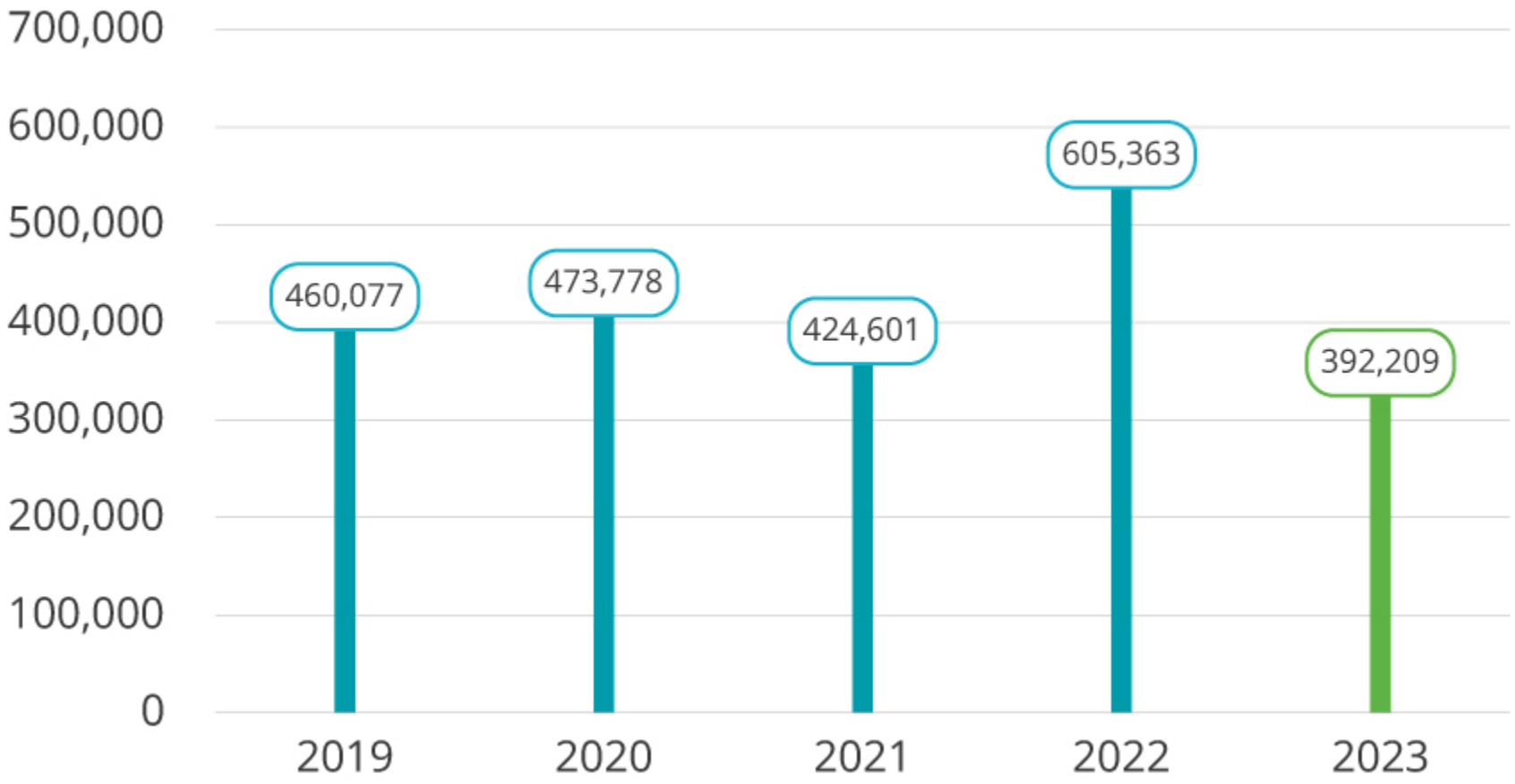
Green shipping corridor partnership agreement signed

- The Ports of Stockholm, the Port of Turku and Viking Line launched a collaboration to develop a green maritime transport corridor between the Ports of Turku and Stockholm, the goal of which is to be free of fossil fuels by 2035 at the latest.
- The project and partnership qualify as a green shipping corridor according to the Clydebank Declaration, of which both Sweden and Finland are signatories.
- The partnership will act as an innovative platform to develop scalable solutions for phasing out fossil fuels and enable green shipping between Stockholm and Turku.
- During the project the partners will successively reduce their carbon dioxide emissions and work towards creating an entirely fossil fuel-free corridor.
- The collaboration may also expand to involve other key stakeholders in the shipping industry, as well as other relevant ports, cargo owners and forwarding companies.

Discounted vessel charges serve as incentives

- We encourage shipping companies to take the environment into account by granting environmental discounts on vessel charges.
- We renewed the criteria for environmental discounts for ships in 2020 to follow the Clean Shipping Index classification used in Sweden.
    - The rating is broader than the environmental discount we used previously based solely on the ship's nitrogen emissions.

Taking the environment into account in port charges (euro)



New solutions for noise prevention

- Most of the noise of the port operations is caused by vessel calls, loading and unloading, and the vehicle traffic to and from the Port.
- Occasional noise in the port, within the framework of permit regulations, focuses on the hours around the daily departures of passenger vessels.
- The noise from port operations is regulated through the provisions in the Port's environmental permits.

New solutions for noise prevention

- The noise level of the port is controlled through noise reports which examine the noise emissions from port operations in different situations and compare the noise levels to those determined in the Port's environmental permits.
    - The latest noise measurement in the inner harbour was performed at the turn of the year 2020-2021, and the next one is taking place in 2025.
    - The environmental noise situation in the Pansio Harbour will be followed in the future according to the same schedule as the inner harbour.

"We monitor the port's noise level with noise surveys by examining the noise emissions of the port's operations and compare the noise values with the values specified in the ports' environmental permits."

Digitalisation helps reach reductions in emissions

- Increasing the digital aspects of port operations will reduce the carbon dioxide emissions of the entire transport chain and cut down the energy consumption of port operations.
- We are aiming at smaller emissions by utilisation of location technology as well as increasing use of automation and robotisation in load handling.

Digitalisation helps reach reductions in emissions

- Automation is used at the Port of Turku e.g. during ports calls of passenger vessels.
- The usage of an automooring system, that speeds up the mooring and unmooring of ships, reduces the fuel consumption and emissions of ships during port calls.
    - The automooring equipment was installed at Viking Line's berth in 2021.

- Digital services are also used in traffic guidance in the Port.
    - The new gate systems and new traffic arrangements in the passenger harbour will decrease the idling and emissions of vehicles in the port area.
- Digitalisation also affects the energy consumption of the port operations.
    - We have considerably decreased our electricity consumption by switching to LED lighting in the biggest warehouses and the inner harbour area and by introducing digital controlling of lights.

Environmental balance sheet

	2022			2023		
	REVENEUE, €	COST, €	INVESTMENTS, €	REVENEUE, €	COST, €	INVESTMENTS, €
1. Air and climate protection	0	119,951	64,750	0	122,042	0
2. Water protection and waste water processing	0	28,438	0	0	33,766	0
3. Waste management and littering	91,684	85,093	49,163	77,812	85,536	0
4. Soil and ground water protection	0	0	0	0	0	0
5. Noise and vibration abatement	0	0	0	0	0	0
6. Nature and landscape protection	0	0	0	0	0	0
7. Official duties of environmental protection	0	0	0	0	0	0
8. Promotion of environmental protection	0	94,939	0	0	144,996	41,366
Total	91,684	328,421	113,913	77,812	386,341	41,366
9. Environment-based taxes and fiscal charges	0	0	0	0	0	0
Waste tax	0	0	0	0	0	0
Fuel tax	0	17,288	0	0	0	0
Electricity tax	0	83,432	0	0	0	0
Environmental operating costs total	0	100,719	0	0	88,428	0
Environmental protection devices (investments) depreciation	0	0	0	0	0	0
Depreciation total	0	999,056	0	0	976,249	0
Total	91,684	1,428,197	113,913	77,812	1,451,018	41,366

www.portofturku.fi

www.aboard.fi