

Interreg Central Baltic Sustainable Flow

Sustainable flow of goods and
decreased CO₂ emissions of
transportation

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Sustainable Flow

Interreg Central Baltic Programme Priority 2 – Improved environment and resource use specific objective – decreased CO2 emissions

Partners

Satakunta University of Applied Sciences (Lead Partner), FI
Swedish Maritime Administration, SE
Åland University of Applied Sciences, AX
International Transport Development Association, LV
Tallinn University of Technology, EE
Fintraffic VTS Ltd, FI
Swedish Confederation of Transport Enterprises, SE

Public project information:

centralbaltic.eu/project/sustainable-flow/
merilogistiikka.fi/en/about-us/projects/sustainable-flow/



Project period

1 May 2023 – 31 May 2026



Project budget

€3,109,053.52
(ERDF €2.487.242,79)



Public project page

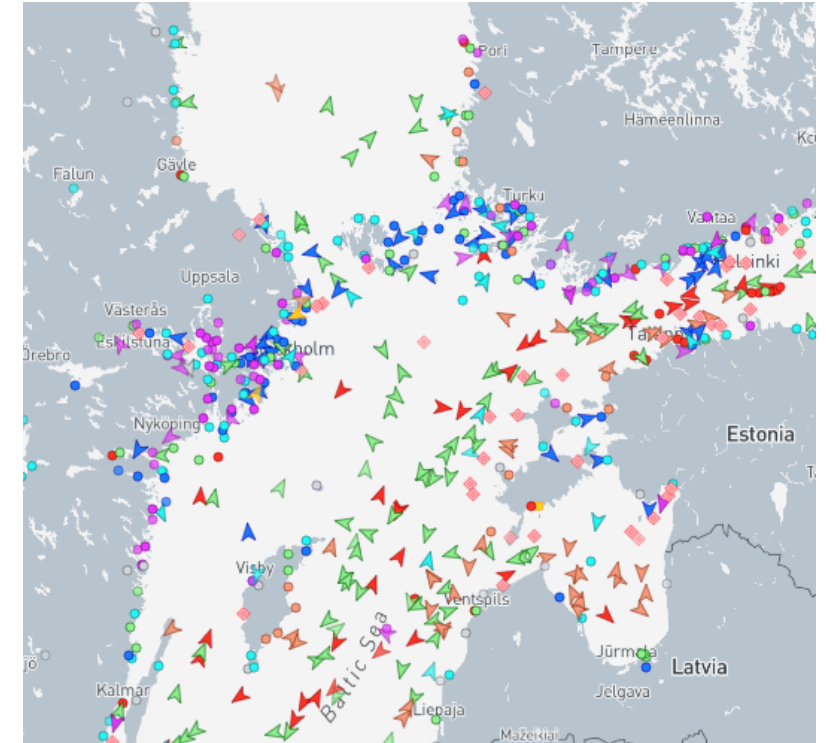
centralbaltic.eu/project/sustainable-flow/



Sustainable Flow

Sustainable Flow addresses transport-related emissions in busy Baltic Sea port operations.

- The Baltic Sea is one of the world's busiest waterways for freight and port-related logistics.
- Seven pilot ports work together to reduce emissions and improve everyday operational efficiency.
- The project links climate targets with practical tools, renewable energy measures and decision support.
- In a broader context, the project's digital tool can facilitate CSRD-required reporting.




Project ambition

Digital tools for emissions monitoring and decision support, plus renewable-energy investments in pilot ports, aiming at a 10% reduction of CO2 emissions by project end.

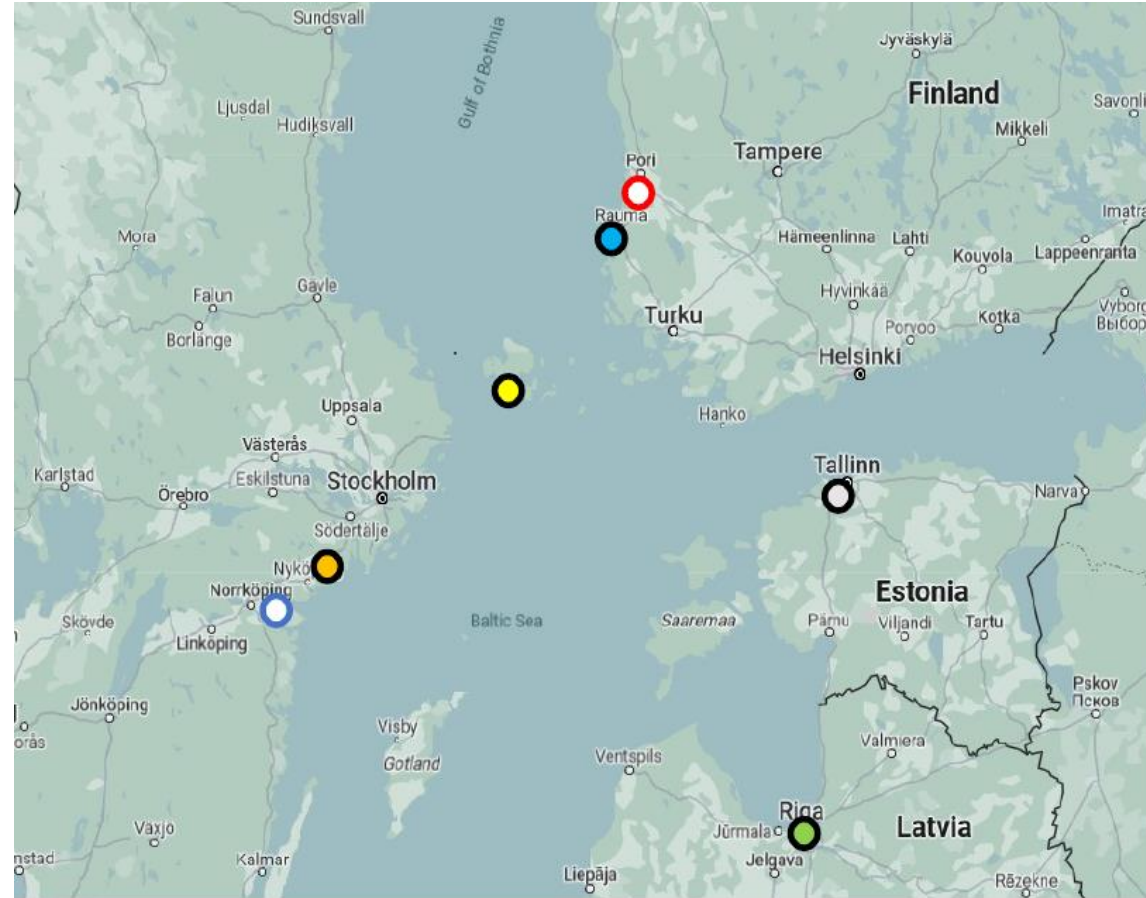


Sustainable Flow

Pilot ports from Finland, Åland, Sweden, Estonia and Latvia.

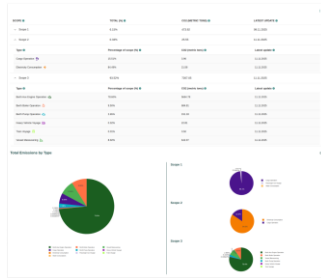
-  Rauma, FI
-  Pori, FI
-  Mariehamn, AX
-  Norrköping, SE
-  Oxelösund, SE
-  Tallinn, EE
-  Riga, LV

Seven pilot ports — one shared learning environment.



Sustainable Flow

1 Emission Monitor



Project output

Open-access tool for emissions monitoring, reporting and operational follow-up in multimodal transport.

Current status

MVP evolved into the Emission Monitor through pilot-port testing with operational and emissions data.

2 Guidance and decision-making support

Scenario	SCENARIOMÄTT	UTILITÄTSTYP	REDUKTIONSFAKTOR (0-100%)	ÅRSÅRDER
Switch cargo handling equipment from diesel to biodiesel	Luchthavens	74	<input type="checkbox"/>	
Switch heavy vehicles from diesel to biodiesel	Tung fordonstrans	74	<input type="checkbox"/>	
Switch generators from diesel to biodiesel	Örn på industriområde	74	<input type="checkbox"/>	
Converting to LED lighting	Luchthavens	15	<input type="checkbox"/>	
Installing solar panels	Örnströmning	29	<input type="checkbox"/>	
Reducing anchorage time	Havensöster	20	<input type="checkbox"/>	
Installing shore power	Örn på industriområde vid lag	50	<input type="checkbox"/>	
Switching to heating green electricity	Örnströmning	50	<input type="checkbox"/>	
Switch cargo handling equipment from fuel to electricity	Luchthavens	50	<input type="checkbox"/>	
Switch heavy vehicles from fuel to electricity	Tung fordonstrans	50	<input type="checkbox"/>	

Project output

Guidance content and decision support for choosing energy-saving and renewable-energy measures.

Current status

Guidance and scenario-based decision-making tools were developed to support practical port energy choices.

3 Port-level practical pilots



Project output

Energy-saving and renewable-energy pilots in seven ports linking strategy with practical implementation.

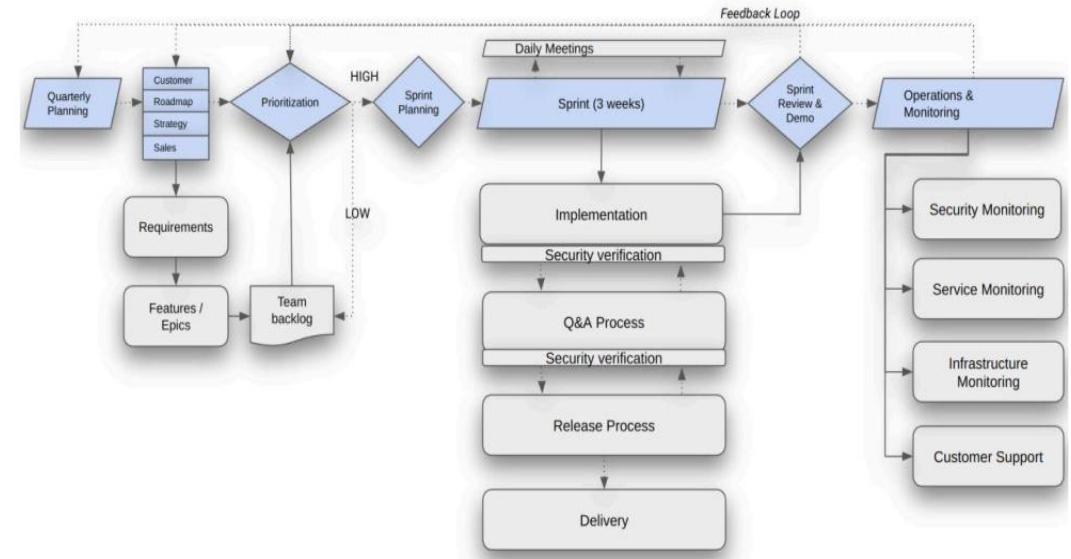
Current status

Solar panel installations are completed in six pilot ports during the project.

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The digital tool was developed iteratively from an MVP into the Emission Monitor.

- The tool started from the project plan’s “CO2 and logistics activity app” and was first implemented as a minimum viable product.
- Verification and testing were carried out with pilot-port operational and emissions data, together with user feedback from the partner network.
- Verification and improvements covered functionality, usability, reporting logic and cybersecurity-related requirements.
- By the final phase, the MVP had evolved into the Emission Monitor: an open-access tool for emissions monitoring, reporting and operational follow-up.



Pilot-port testing and repeated verification turned an early prototype into a practical project output.

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The second output translated project learning into practical guidance for port energy choices.

- The project focused also on a concept for energy-saving measures and the use of renewable energy in ports as hubs of multimodal operations.
- The guidance content was developed using lessons from seven different pilot-port contexts, making the output relevant beyond a single port type.
- A scenario-based decision-making tool was developed to help target groups compare practical options and support investment planning.
- Together, the guidance and decision-support outputs complement the Emission Monitor by helping ports turn emissions data into concrete action.

The project did not stop at data collection – it also supported practical choices on what to do next.

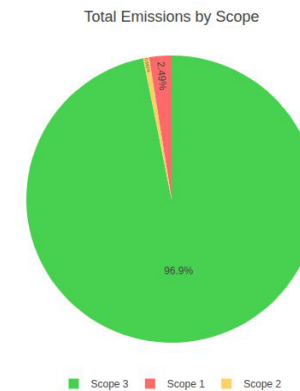
Emission summary

Period: 25.9.2024 - 25.9.2025 | Location: SENRK

Emissions Data Table

SCOPE	TOTAL (%)	CO2 (METRIC TONS)	LATEST UPDATE
Scope 1	2.49%	124.41	25.09.2025
Scope 2	0.64%	32.06	25.09.2025
Scope 3	96.87%	4848.69	25.09.2025

Emissions Chart



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The pilot work tested how renewable-energy investments can be implemented in real port conditions.

- Project partners worked with their designated pilot-ports to plan, procure and implement an investment of about 15.000€/incl. VAT while sharing lessons across the consortium.
- Solar panel installations were completed in Pori, Rauma, Mariehamn, Norrköping, Oxelösund and Riga, with different types fittings in practice which means that in certain ports panels may have roof or wall installations or even solar tracker foundations.
- The works in pilot ports showed that ownership structures, permits, procurement rules and local priorities strongly shape what is feasible in each port.



A key lesson from the pilots is that practical implementation always depends on local conditions, even inside a shared project framework.

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Cross-border cooperation has been a central success factor throughout the project.

- Bi-weekly partner meetings and weekly working-group meetings kept development moving across work packages.
- Face-to-face meetings arranged by project partners in different locations at project area strengthened coordination and problem solving.
- Pilot-port visits, usability testing and shared feedback helped adapt the tools to real port needs.
- Communication, stakeholder engagement and project events increased visibility and supported uptake of the results.

Shared data, shared testing and shared learning have made the outputs stronger and more usable.

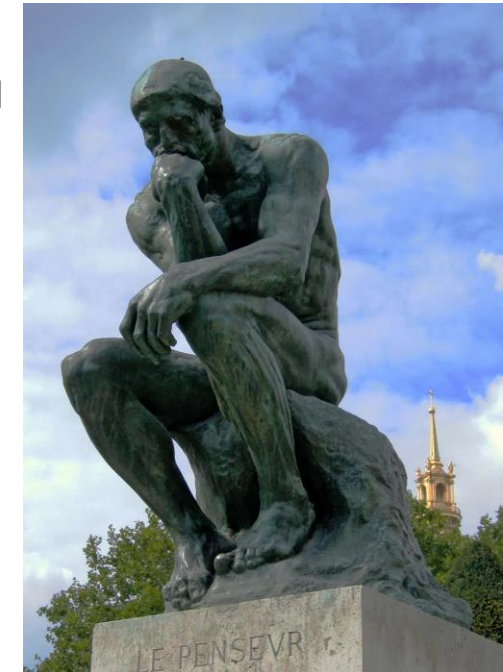


Sustainable Flow

Key takeaways from the project.

- Regulation and reporting requirements are accelerating change in ports. Emissions reporting, fuel infrastructure, on-shore power, resilience and financing all shape decisions.
- Cross-border cooperation makes solutions more relevant. Regular meetings, site visits and shared testing helped match tools to very different port contexts.
- Data and usability matter. Real operational data, pilot testing and user feedback made the digital solutions more useful and more credible.
- Implementation is always local. Renewable-energy investments progressed, but procurement, supplier availability and local conditions affected timing and scope.
- Sustainability can also improve operations. Lower emissions, better data and better decision making can support efficiency and long-term business value.
- The Emission Monitor will be available for all parties interested in open-source format as a result of the project which increases transferability. The digital tool and energy concept were designed to support wider use beyond the seven pilot ports.

From project plan to real-world delivery: collaboration, testing and local implementation conditions all matter.







Interreg



Co-funded by
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