INTERREG NORTH SEA

REDII PORTS

BULLETIN #03

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Highlights:

- *Final deliverables and technical reports*
- *Highlights from partner activities and events*
- *Reflections on project achievements and future outlook*

By fostering collaboration among stakeholders and developing practical tools and strategies, REDII Ports has contributed to shaping a greener, more resilient energy future for ports.
Thank you for following our journey. Stay connected with us as our partners continue to build on the legacy of REDII Ports!

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Welcome to the Final issue of the REDII Ports Newsletter!

As the REDII Ports project reaches its conclusion, we are proud to present the third and final edition of our project bulletin.

This issue highlights the key outcomes and deliverables produced throughout the project, including a comprehensive list of reports and findings that reflect our collective efforts to advance renewable energy integration in European ports.

Although the project is officially ending, our partners remain actively engaged in promoting REDII Ports' vision and results across various platforms and events. Their continued commitment ensures that the impact of our work will extend well beyond the project timeline.

Interreg North Sea
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REDII Ports

By *Niedersachsen Ports*

Container Wind Turbine System at NPorts

Niedersachsen Ports aims to test three small-scale renewable energy systems in Emden to assess their performance. An overview of the three test fields is provided below.

In February 2025, on one of the test fields, **the first container wind turbine operated in a German seaport was installed in Emden Port**. It includes two small wind turbines mounted diagonally on a standard shipping container. The rotor blades and masts are made from lightweight, durable composite materials, allowing for easier installation and maintenance.

It was chosen for its cost-efficiency, compact design, and ease of implementation, making it suitable for ports with limited space or infrastructure. The installation exceeded performance expectations within the first weekend of operation.

Container WTS

At the Port of Emden, a container-based energy system developed with FlowGen combines wind turbines, solar panels, battery storage, and a charging infrastructure for passenger cars.
It generates over 45,000 kWh annually, supporting port operations and feeding surplus energy into the grid.

Read More on our website

Three Test Fields for small-scale Renewable Energy Solutions at NPorts
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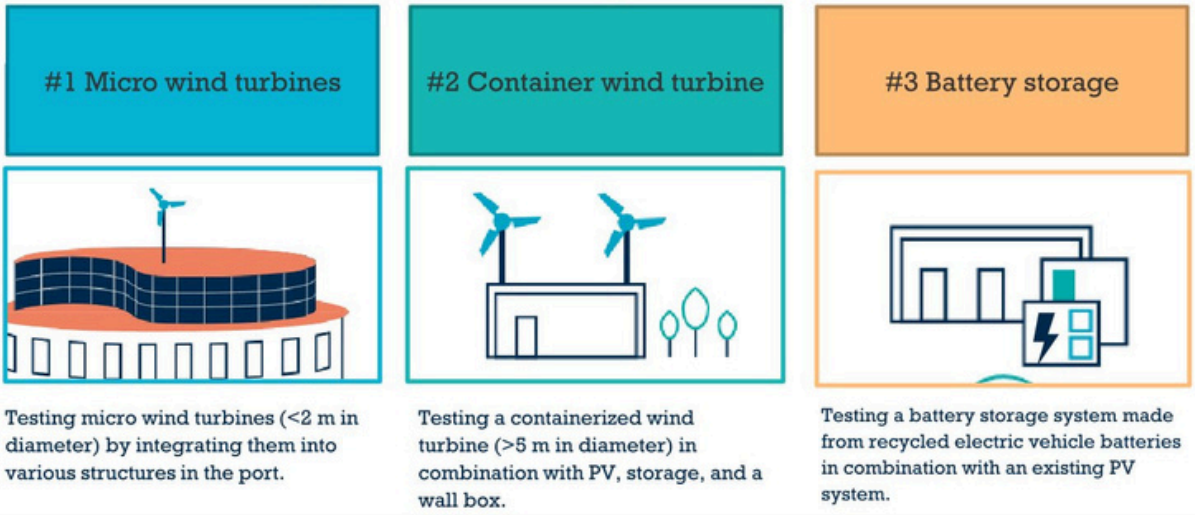
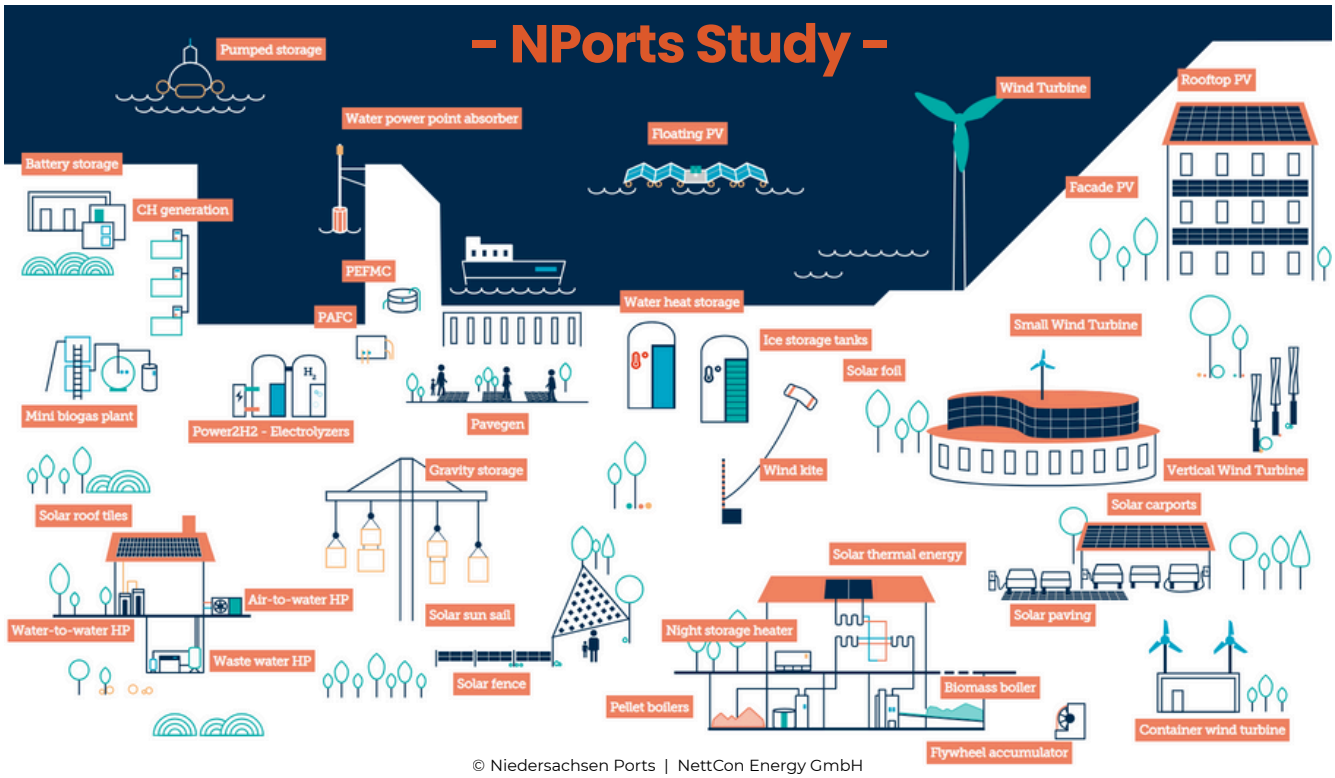


By *Niedersachsen Ports*

Sustainable energy for the Port of Emden



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Niedersachsen Ports carried out a study within the framework of REDII Ports focused on sustainable energy development in small-scale ports. It is a potential analysis aimed at transitioning the Port of Emden toward climate-neutral energy. The study evaluates current energy consumption and explores various small-scale renewable energy technologies—including photovoltaics, wind, hydropower, and heat storage systems—to determine their feasibility and cost-effectiveness in a typical port environment.

It emphasizes decentralized solutions that are easier to implement and approve than large-scale systems, especially in challenging conditions like salty air and fog. The goal is to support CO_2-neutral port operations by 2040 through smart combinations of electricity and heat generation. Technologies were assessed using dynamic investment calculations (DIN 17463), providing a clear comparison of their economic viability and sustainability potential.

Selected technologies from the study

© Niedersachsen Ports | NettCon Energy GmbH

Read More about NPorts' Study

REDII Ports at HyVolution 2025

By *Brittany Region*

© Bretagne

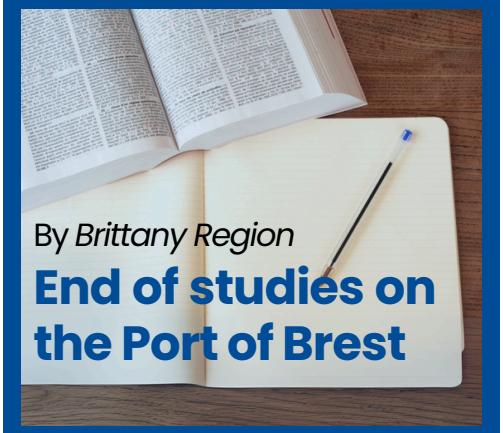
The REDII Ports project was proudly showcased at the HyVolution congress in Paris, held in January 2025. Represented at the Brittany Region stand and during a forum, the project highlighted innovative approaches to decarbonising port operations. With over 15,000 visitors attending the event, it provided a valuable platform to present the latest findings from the Brest and Saint-Malo studies, particularly focusing on hydrogen as a key energy solution.

REDII Ports at Waterstof Industrie Cluster Fair

By *VIVES*

Sam Schotte from VIVES presented REDII Ports project at the WIC Conference, hosted by the Belgian-Dutch Hydrogen Industry Cluster in June 2025 in Turnhout. The annual event featured a dynamic day of speed networking and pitches from leading figures in the hydrogen sector and academia, offering a valuable platform to showcase REDII Ports and its role in advancing port decarbonisation.

© VIVES



By *Brittany Region*

End of studies on the Port of Brest

The two studies on developing renewable fuels—hydrogen and ammonia —at the Port of Brest have now concluded. Results confirm that hydrogen production, storage, and distribution are feasible within the port and, with additional infrastructure in the city, could meet maritime and terrestrial demand through 2050.

Additionally, the port shows strong potential to contribute to a national ammonia hub, thanks to its promising storage capacity.

By *Port of Hamburg Marketing*

REDII Ports at Transport Logistic 2025

At Transport Logistic 2025, held in Munich from June 2–5, the REDII Ports, presented by Port of Hamburg Marketing made a strong impression by showcasing their commitment to sustainable port development and innovation.

© Port of Hamburg Marketing

At the Interreg and iHATEC pop-up info stand, POHM engaged with visitors through presentations and one-on-one discussions, focusing on decarbonization in maritime logistics, the role of ports as energy hubs, and digitalization in supply chains. POHM team actively contributed to dialogues on how ports can lead the energy transition, highlighting REDII Ports' achievements and future potential.
A key moment was the visit from the Scandria Alliance Delegation, which brought together regional and academic representatives to explore REDII Ports' strategies for greener logistics...

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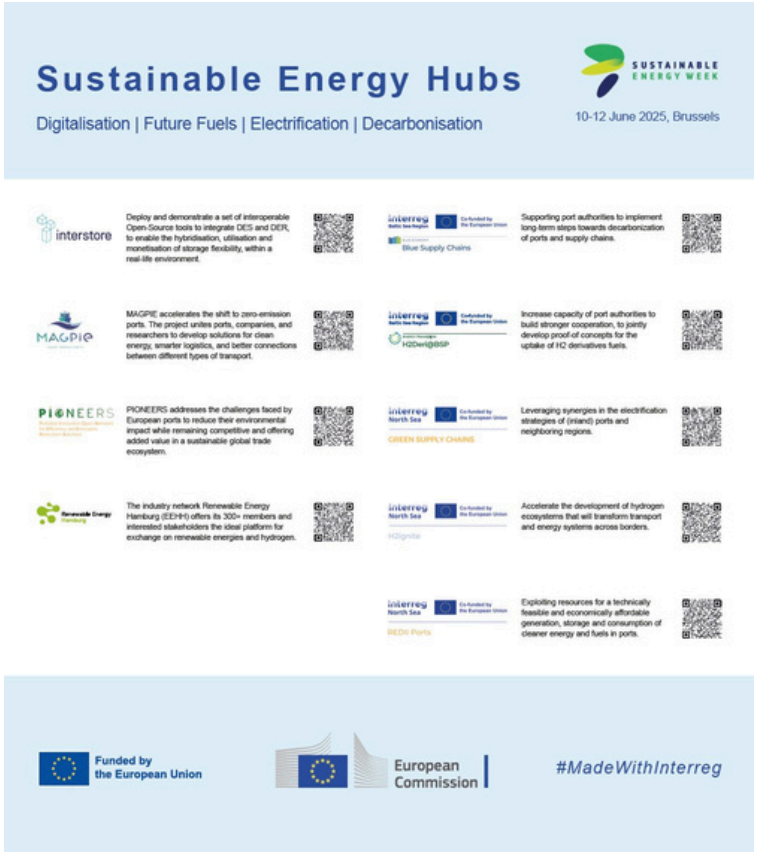

REDII Ports at EUSEW 2025

By *Port of Hamburg Marketing*

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During the European Sustainable Energy Week 2025, REDII Ports joined forces with other Interreg and Horizon projects to showcase how EU-funded initiatives are driving decarbonisation in maritime logistics...

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Project Output

The REDII Ports project delivered a set of strategic documents that guide ports in adopting renewable energy solutions.

The REDII Ports outcome documents draw on diverse pilot activities across partner ports such as **Skagen, Egersund, Brest, Niedersachsen, Moss, Trelleborg, Korsør and Zwolle**, where renewable energy technologies like biodiesel, methanol, hydrogen, and battery systems were tested, offering practical insights and scalable models for sustainable energy transition in port environments.

These outputs synthesize lessons from pilot activities, stakeholder engagement, and technical evaluations, offering practical recommendations and replicable models. They serve as a foundation for future planning, helping ports transition toward sustainable energy systems across the North Sea Region.

In addition to our reports, you can access previous editions of the bulletin, project flyers, and other relevant materials on our website.

Read More on our website

- **Future fuel distribution for long-distance heavy transport**

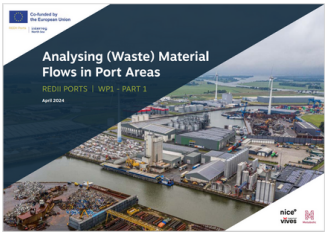
Responsible Partner: Port of Trelleborg
Published February 2024

What will fuel long-distance freight in the decades to come? The Port of Trelleborg, one of Northern Europe's busiest truck transit hubs, has taken a proactive step by commissioning a comprehensive study on the future distribution of renewable fuels for heavy transport.
Conducted by Sweco, the report explores current fuel trends, forecasts future energy needs, and evaluates the infrastructure required to support a transition to low-carbon alternatives such as hydrogen, biofuels, and e-fuels. It combines market analysis, interviews with vehicle suppliers, and environmental scanning to offer strategic insights for port authorities, logistics operators, and policymakers.

Read the full report here

Port of Trelleborg

Analysing (Waste) Material Flows in Port Areas



Responsible Partner: nice°, VIVES
Published April 2024

How can ports become catalysts for a more sustainable future? This report, developed under Work Package 1, dives into this question through a detailed Material Flow Analysis (MFA) of three North Sea Region ports. Conducted by Metabolic in collaboration with VIVES and nice°, the study identifies untapped opportunities in excess material streams—many currently treated as waste—that could be redirected into circular value chains or even serve as biofuel feedstock.

This report offers fresh insights into how ports can transition from traditional logistics hubs to drivers of circular innovation, supporting both environmental goals and regional economic resilience.

Read the full report here

Decision Report: Stationary Batteries in the Port of Moss

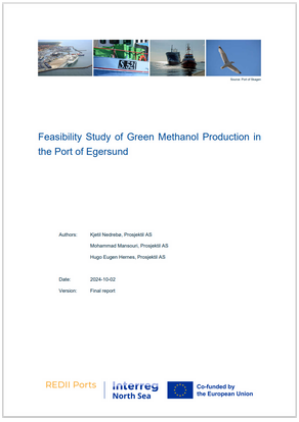
Responsible Partner: Port of Moss
Published June 2024

As the Port of Moss sets its sights on zero emissions by 2030, the challenge of meeting rising energy demands becomes increasingly urgent. This report, authored by Sweco, explores the feasibility of installing a stationary battery energy storage system to support the port's electrification strategy.

The study assesses optimal battery placement, sizing, and integration with existing infrastructure—including shore power, charging stations, and renewable energy sources. It also outlines potential benefits such as peak shaving, price arbitrage, and frequency regulation, making a strong case for battery storage as a key enabler of sustainable port operations.

Read the full report here

Feasibility Study of Green Methanol Production in the Port of Egersund



Responsible Partner: Port of Egersund
Published October 2024

Can local resources fuel the future of sustainable shipping? The feasibility study from REDII Ports investigates the viability of establishing a green methanol production facility at the Port of Egersund. Conducted by Prosjektil AS, the report evaluates two promising pathways: e-methanol from hydrogen and captured CO_2, and bio-methanol from regional biomass sources.

The study reveals that both approaches are technically feasible, but each comes with distinct challenges—from seasonal CO_2 fluctuations to competition for biomass. It also highlights untapped opportunities for circularity, such as waste heat recovery and hybrid production models.

Read the full report here

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THANK YOU

FOR JOINING US ON THE REDII PORTS JOURNEY!

REDII Ports brings together insights from a wide range of pilot activities across partners. These pilots explored renewable energy options such as biodiesel, methanol, hydrogen, solar, ammonia, and battery systems, while research and development of eco tools supported circular economy strategies tailored to local port conditions.

As the project comes to a close, the materials developed throughout its duration remain accessible to support future strategies and foster ongoing innovation across the North Sea Region.

We invite you to visit our website and watch the project video , offering a visual journey through the partners' outstanding findings and contributions.

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Project partner:

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Explore REDII Ports' story and resources on our social media!