

**Inland
Navigation
Week**

ReNEW

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ReNEW will play a key role in delivering **climate-neutral and climate-resilient IWT services**. Combining the technological advantages of **digitalisation and automation, autonomous barges and future-proof infrastructure** will revolutionise the IWT system.

ReNEW will promote economic growth whilst minimising the negative impact of IWT on the environment and its ecosystems.



24

Partners



11

Countries



4

Living Labs




36

Months

Consortium



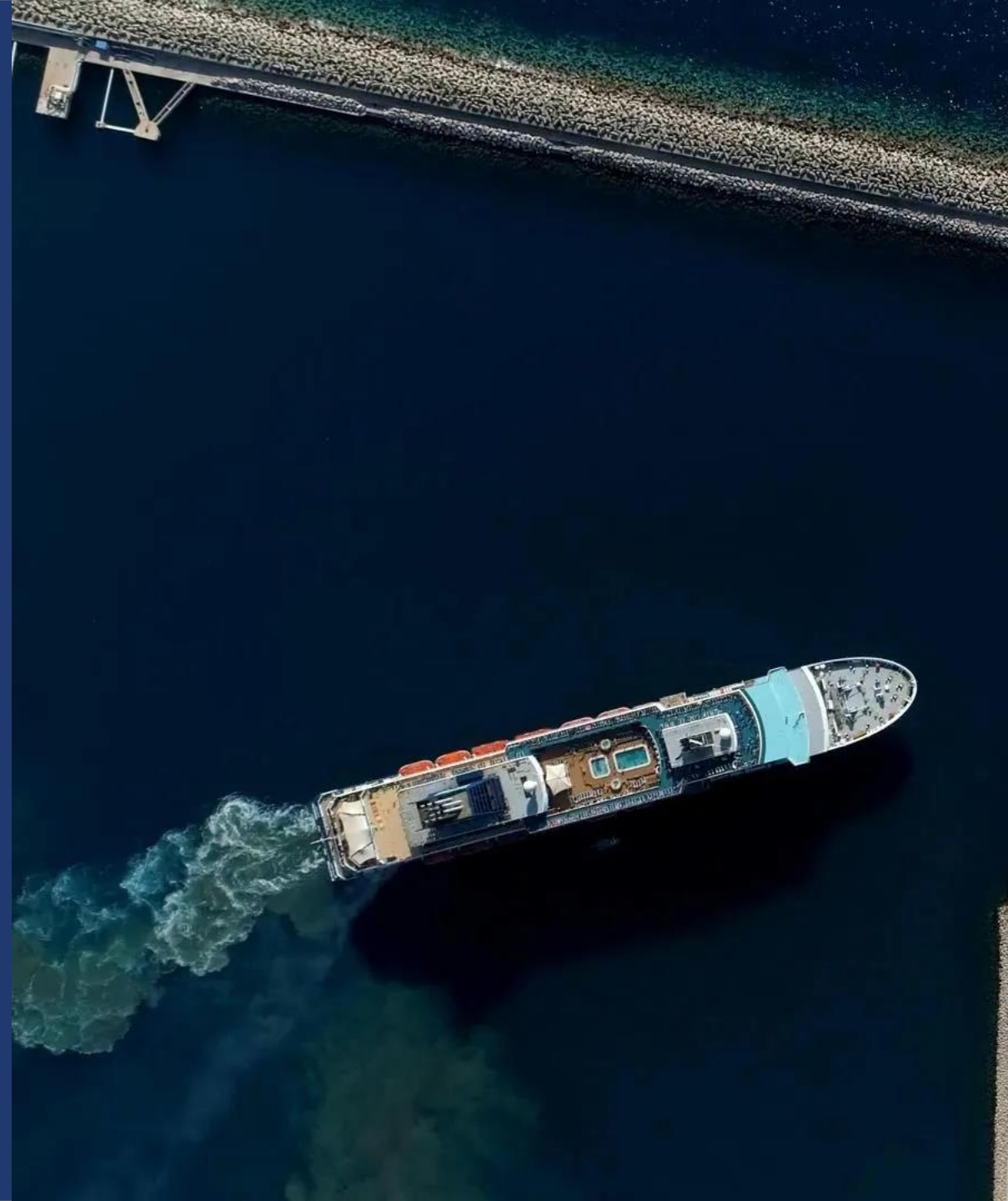
An aerial photograph of a large container barge loaded with multi-colored shipping containers (red, blue, green, orange, and white) moving along a wide river. In the background, a city skyline is visible, featuring several prominent industrial or commercial buildings with unique architectural designs, including one with a large cantilevered upper section. The sky is overcast with soft, grey clouds.

As climate change severely affects the performance of IWT operations, the priority is to **create and test new solutions for climate-neutral and climate-resilient IWT.**

IWT system resilience is essentially co-dependent on **infrastructure** and barge/fleet **reliability, maintainability, and fault tolerance.**

Key priorities

- Sustainable infrastructure adjustments
- Environmental friendliness and competitiveness of vessel fleet
- Digitalisation
- Integration of IWT in multimodal transport chains
- Securing the availability of skilled workers





The European Commission sees the **digitalisation of the Transport sector** as a primary enabler of smart solutions for sustainable transport.

To apply this to IWT sector, it is necessary to **incentivise innovations** and provide validation that can support the transition to a **sustainable and resilient IWT system**.



Funded by
the European Union

ReNEW will deliver:

01

A decision-support framework including Resilience and Sustainability Quantification supporting the strategic planning and operational optimisation of Green Resilient IWT (GRIWT)

02

Innovative infrastructure resilience and sustainability solutions targeting rapid deployment after disruptive events

03

A Green Resilient IWT Dataspace and Digital Twin providing primarily data sharing between infrastructure monitoring, RIS and traffic management and emergency systems and climate solutions

04

Four Living Labs focusing on integrated IW and hinterland infrastructure and a LL addressing specifically inland waterway resilience

05

Outreach and Upscale programme designed to maximise impact pathways

ReNEW Living Labs

LL1

**Ghent's Multifunctional
Synchromodality Resilient City
Logistics Hub**

LL2

**Smart Douro Inland Waterway
Infrastructure Resilience
Management**

LL3

**Netherlands / EU IWT Network
Resilience Mitigation App**

LL4

**Resilience promoting Autonomous
Zero-emissions Barges**

Living Lab 1

Ghent Hub

Create a **flexible** and **resilient logistic system** for multi-user and multifunctional purposes

Focus on the impact of events caused by climate change on the operations of the City Logistics Hub

Location

City Logistics Hubs in the city of Ghent - sea canal (between Ghent, Belgium, and Terneuzen, Netherlands), canals, rivers, canals with tidal action with a wide range of infrastructure

Corridor

Belgium to Netherlands





Living Lab 2

Smart Douro

Development of a digital twin for modelling the river behaviour, especially for drought and flood analysis and real-time prediction

Location

The **Douro Portuguese inland waterway** included in the **TEN-T** feeding point of the Atlantic Corridor connecting with the inner side of the North and Centre regions in Portugal

Corridor

Atlantic Corridor

Living Lab 3

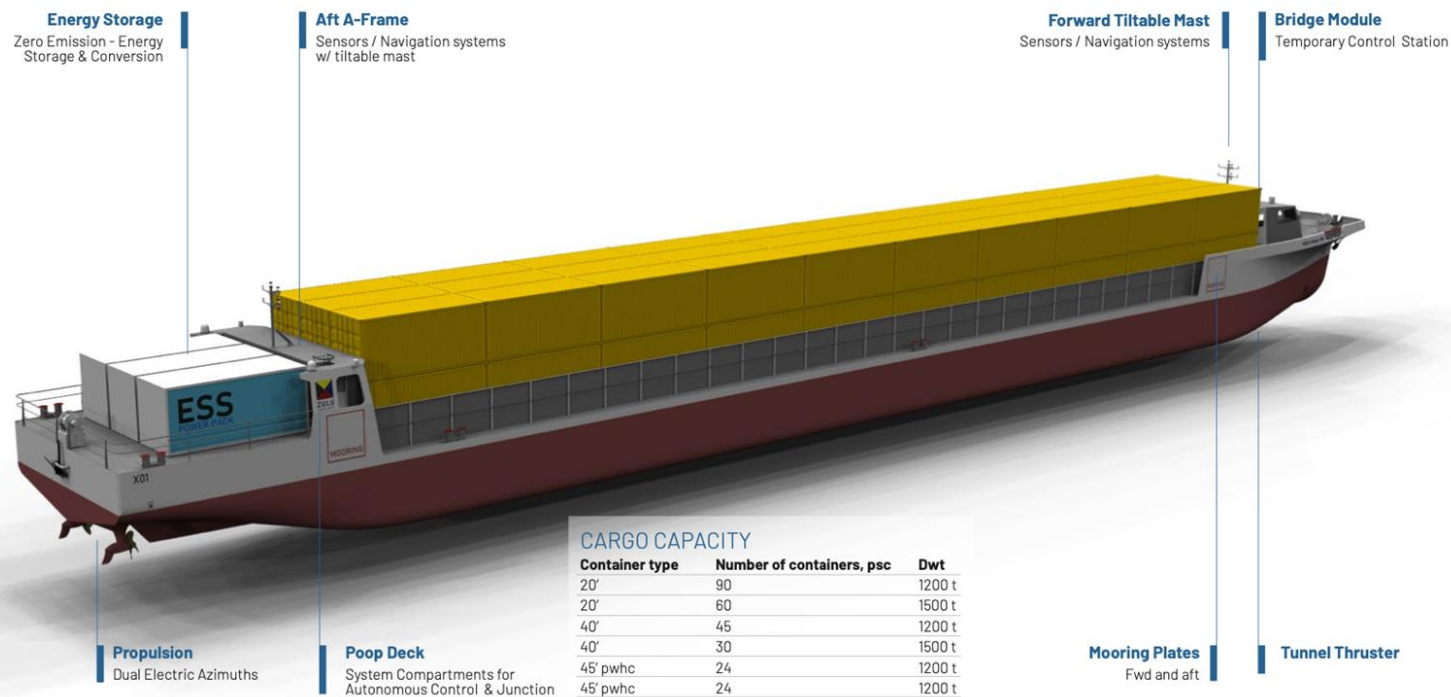
Netherlands / App

Develop and demonstrate a **planning mitigation demonstrator app** to boost the modal shift

Location / Corridor

Netherlands, Belgium, France,
Germany and Austria





Living Lab 4

Autonomous Barge

Use an autonomous CEMT class 4 barge (the X-barge) to demonstrate and test improved resilience of the IWT infrastructure

In combination with LL1, this Living Lab will complement the use of automation to longer international routes and a different, larger-size, logistics

Location / Corridor

Belgium, Germany, France, The Netherlands, Rhine region

NAIADES III Impact Map



*Strong
direct impact*



*Direct
impact*



*Indirect
impact*

Inland Navigation Week

shifting freight to water

Improve Resilience, link IWT to Rail and Road. Contribute with at least a 20% increase in modal shift to the sustainability of transport systems.

more attractive jobs

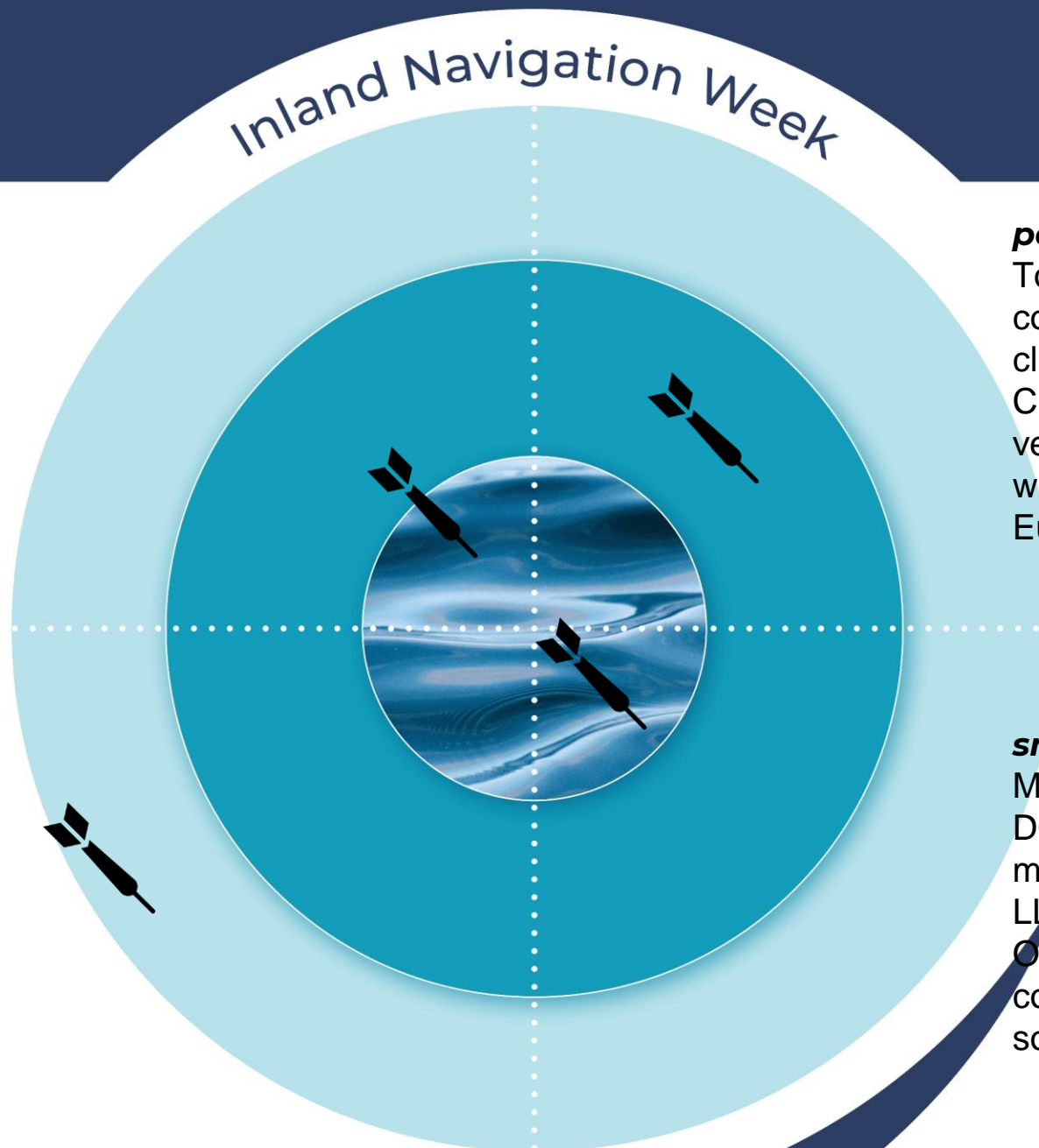
Automation and remote control of vessels & infrastructure could make a job in the inland waterway industry more attractive

pathway to zero emission fleet

To prove the economic feasibility and competitiveness together with the climate resilient characteristics of CEMT Class 4 autonomous zero emission vessels in European inland waterways, will pave the way for a renewal of the European inland waterway fleet.

smart waterways

Mobile command center in LL1
DOURO: RIS info to assist decision making when extreme events happen
LL3: blue wave app
Overall WP2 and WP3 outcomes contributing to resilience and smart solutions





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ReNEW



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