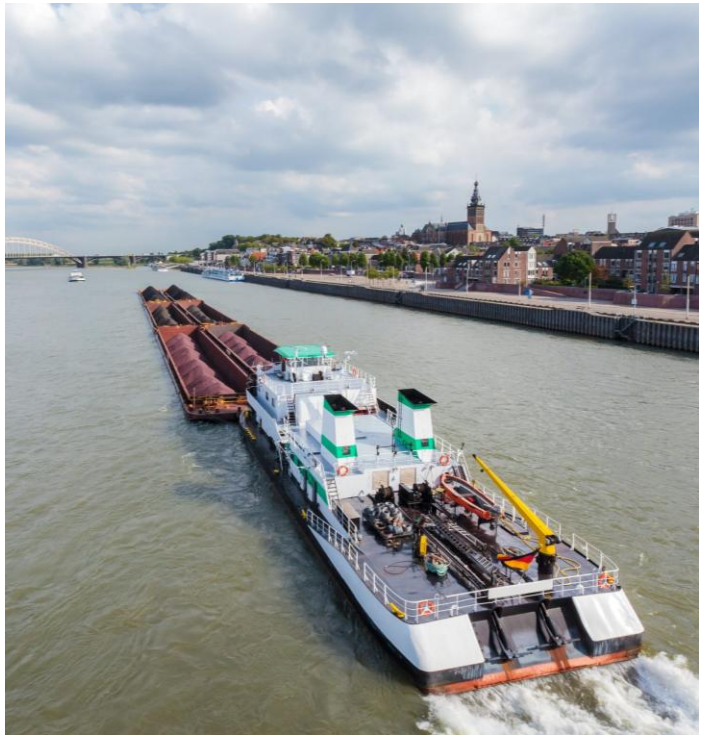
SMART & GREEN MULTIMODAL ASSETS

Scaling up Remotely Controlled Zero-Emission Barges

INNOVATION GAME



The strategic challenge #2:
How can we optimize and scale up the remote controlled zero emission barges?

Infrastructure & Operational Challenges

- Lack of standardized charging infrastructure for barges
- Limited or constrained grid capacity at inland terminals
- Complex coordination between vessels, terminal operations and energy providers

Current infrastructure is often not designed for interoperative E-charging.

Energy Demand

- High-power charging needs during limited docking windows
- Strong peaks driven by fleet synchronization
- Mismatch between grid capacity and operational demand

Without smart energy optimization, we risk creating bottlenecks rather than enabling scale.

Economic and Regulatory Barriers

- High CAPEX and OPEX for vessels, batteries and charging infrastructure
- Fragmented regulations across waterways, ports, and countries

NEW ENERGIES

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NEW ENERGIES

DIMENSION	CURRENT SITUATION	FOCUS FOR THE INNOVATION GAME
Charging Infrastructure	Not developed fully, high costs.	Interoperable, standardized charging, interchangeable batteries. Costs optimization. Digital tools/Data's.
Grid & Energy capacity Energy costs	Capacity constraints, slow upgrades	PPAs with energy providers, local flexibility, grid upgrades, costs optimization. Shore power for barges?
Market demand Customer interest	No transparency, limited knowledge or other priorities of customers.	Stimulation of demand, digital twins, new collaboration models & partnerships. Connecting partners to scale up.
Technology remote control	Fragmented, non-standard, limited coverage, lack of knowledge in the market	Optimization needed. Modular, standardized, scalable tech. Legal and regulatory framework.

SMART & GREEN MULTIMODAL ASSETS
PARTNERS

NEW ENERGIES

During the Design Sprint, the challenger will have access to the following partners' experts & young talents to leverage its solutions to real product:

BUREAU VERITAS 1828 BUREAU VERITAS

PSA The World's Port of Call

Port of Antwerp Bruges

CMA CGM

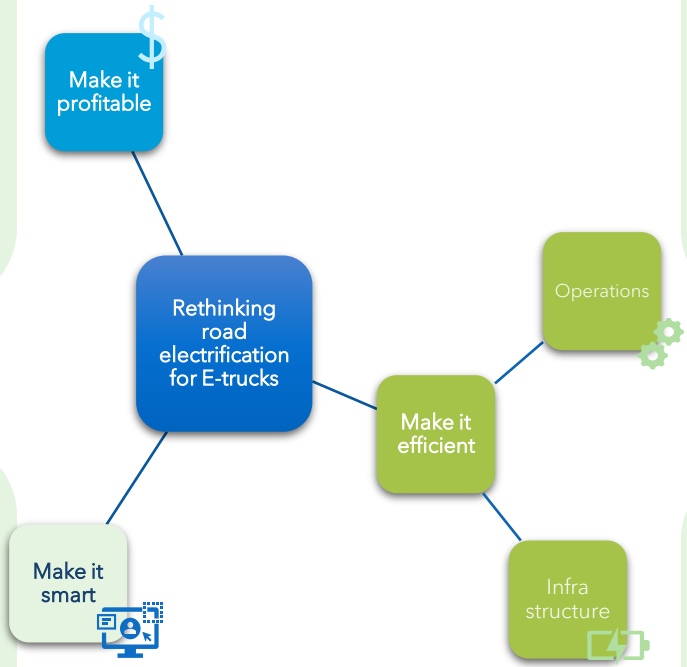
CEVA LOGISTICS

By orchestrating our world

How can we scale up the zero emission barges?
Battle Grounds

Make it PROFITABLE – *How do we make electrification profitable and scalable?*

Covers:
- Business models (CAPEX vs OPEX, ROI optimization)
- Private-Public partnerships
- Infrastructure sharing & cost pooling (matchbacks, external selling, shared services, re-routing, etc.)*
- New revenue streams
- Market adoption & incentives



Make it OPTIMIZED – *How do we maximize utilization and operational efficiency?*

Covers:
- Charging station utilization rates
- Match backs & empty miles reduction
- Dynamic rerouting
- Last-mile operations
- Fleet and route planning

Make it SMART – *How do we manage a complex system at scale using data?*

Covers:
- Digital twins for fleet management
- Energy optimization tools
- Corridor flow management systems
- Collaborative platforms
- Intermodality & network strategy (rail, cross-border flows)

Make it EFFICIENT – *How do we design flexible, high-value infrastructure?*

Covers:
- Charging station design
- Logistics hubs (cross-docking, storage)
- Energy flexibility (day/night charging, variable speed)
- New use cases (E-barges, E-trains, energy storage)

How can we scale up the zero emission barges?

DATA SETS – Examples of public information

5 000 barges in operations in Europe. +/- 50% of European Fleet is Dutch market

Countries with highest share of barges in Europe:
1. The Netherlands 2. Germany 3. Belgium 4. France

6 recharging stations for swappable batteries in operations in The Netherlands, 2 foreseen in Belgium.
The Autonomous Electric barge has been developed and is ready. There are 2 major technologies: **Seafar and MAHI.** Both technologies already tested and used on the ships in Belgium, The Netherlands and also Germany.

The European Green Deal goal is to get **150 Z-E ships in service by 2030.**
There are 6 new built zero emission ships and around 10 retrofitted zero emission ships deployed in The Netherlands. There are more than 20 projects in Europe for electric and hydrogen barges.

The challenger will have access to a set of data to support the innovation go to market,
f.e.: number of new built barges & retrofits, projections 2030 - 2040 - 2050, technology types remote control, etc...

WHY TO APPLY?

NEW ENERGIES

Do you want to:

- Tackle high impact decarbonization challenges in transport and logistics?
- Test, validate, and co-develop innovative low-carbon solutions?
- Benefit from tailored support and collaborative synergies with industry leaders?
- Increase the visibility and impact of your innovation?

Then this Innovation Game is for you! Join a dynamic ecosystem of corporates, startups, public & private mobility and logistics experts committed to accelerate the decarbonization. Together, let's imagine, experiment, and scale the next generation of sustainable mobility solutions.

Your solutions for SCALING UP ZERO EMISSION BARGES will have to:

- Use Clean Energy & optimize the energy costs at the charging hubs
- Introduce a new business model charging stations, to optimize the utilization
- Trigger the market demand, scale up the remote controlled zero emission barges

3 squads will be created and will compete to design Go to Market Solutions. The finale will be hold in front of the investors, procurement teams, sector leaders and the winner will receive an award of € 30.000 to develop the solution!

Apply now to become part of the innovative ecosystem shaping the future of low-carbon transport!