SEASTARS

Designing modular, future-proof decarbonisation pathways for ships

SEASTARS develops and demonstrates modular, low-risk and zero - emission vessel solutions for inland, short-sea and deep-sea shipping.

Targets 30% well-to-wake GHG reduction & 20% energy efficiency improvement performance.

Development of 8 vessel designs (4 retrofits, 4 newbuilds) incorporated in a Platform-as-a-Service (PaaS) that supports shipowners and partners in planning phased, Assembly-to-Order decarbonisation roadmaps for their fleets.

Combines a toolbox of technologies (alternative fuels, propulsion-power systems optimisation, energy-saving devices, CCS, OPS) with a Model-Based Systems Engineering(MBSE) approach.

SEASTARS outcomes address:

- **Technical complexity** – multiple innovative technologies, interfaces and constraints per vessel.
- **Regulatory pressure** – evolving IMO/EU rules and the need for clear compliance pathways.
- **Low Investment risk** – uncertainty on lifetime costs, payback times and residual value.
- **Scalability** – need for solutions that can be adapted across vessel types and upgraded over time.

Stakeholder Groups

- **Shipowners & Operators** – technical, operations and fleet management teams.
- **Shipyards & Design Offices** – concept design, retrofit engineering, integration.
- **Technology Providers** – fuel cells, batteries, ESDs, CCS, digital tools, etc.
- **Classification Societies & Regulators** – reviewing safety, compliance and new concepts.
- **Financiers & Insurers** – green finance, risk assessment, new business models (e.g. PAYS).
- **Ports, Clusters & Associations** – coordinating local/sectoral decarbonisation initiatives.

The platform is being built to answer questions that the market is already struggling with:

"Which mix of technologies makes sense for my ship, on my route, under my budget?"

"How can I phase investments to stay compliant (IMO, EU Fit for 55) without taking excessive risk?"

"How do different fuel/technology choices impact CAPEX, OPEX, GHG emissions and operational flexibility?"

Co-funded by the European Union

The Project Has Received Funding From The European Union's Horizon Europe Innovation Actions Program Under Grant Agreement No 101192901.

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SEASTARS Design Thinking Workshops (DTWs)

What are the DTWs?

A series of co-creation workshops (5-6 hours) where external stakeholders work directly with the SEASTARS consortium to shape:

- Modular vessel concepts and retrofitting pathways
- Modern and automated digital decision-support platform features
- Business models and financing schemes for green upgrade

How do they work?

- Based on design thinking sprints (problem framing → ideation → evaluation of options).
- Use real-world cases (routes, vessel types, technologies) from participants.
- Combine technical, operational, financial and regulatory perspectives in the same room.

Objectives

- Capture real user requirements (not just theoretical ones).
- Validate SEASTARS configurations and platform outputs against practical constraints.
- Co-design phased decarbonisation roadmaps and investment strategies that you could actually take back to your organisation.

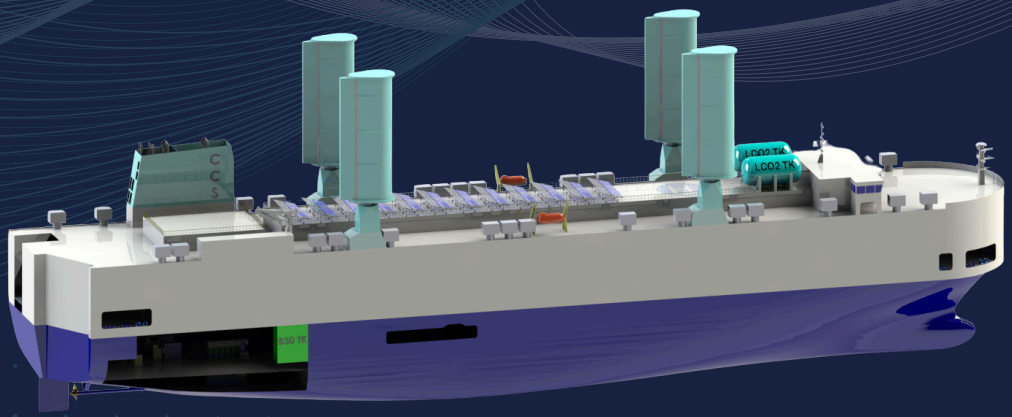
Are you involved in decisions about ships, fleets, technologies or green finance?

Do you want to:

- Test decarbonisation options on realistic vessel cases?
- Provide input that will directly shape an EU-funded platform-as-a-service?
- Network with shipowners, yards, technology providers, class and financiers around concrete projects?

You will:

- Work hands-on with SEASTARS experts to build and stress-test decarbonisation pathways.
- See how your feedback is embedded into the SEASTARS platform, guiding future configurations
- Help define practical, financeable and certifiable solutions for the next generation of low- and zero-emission vessels.



Join the SEASTARS Design Thinking Workshops

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