



## EU Ports Strategy

### ECTRI REPLY TO THE EC CALL FOR EVIDENCE

July 2025

The European Conference of Transport Research Institutes (ECTRI) is an international non-profit association that was officially founded in April 2003. It is the first attempt to unite the forces of the foremost multimodal transport research centres across Europe and to thereby promote the excellence of European transport research.

Today, it includes 30 major transport research institutes or universities from 21 European countries. Together, they account for more than 3,800 European scientific and research staff in the field of transport. ECTRI as the leading European research association for sustainable and multimodal mobility is committed to provide the scientifically based competence, knowledge and advice to move towards a green, safe, efficient, and inclusive transport for people and goods.

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ECTRI, the European Conference of Transport Research Institutes, welcomes the EU Ports Strategy as a crucial step toward strengthening the sustainability, efficiency, and resilience of European ports. Drawing on our application-oriented research expertise and considering the complexity of ports as clusters for multi-modal transport and energy generation, storage and distribution, as well as the diversity of stakeholders engaged in the ports and logistic ecosystem, we welcome this initiative and stress the need to stimulate research and innovation (R&I), and its implementation in European ports.

The Commission has already been active in supporting innovation of ports in the past, with several R&I projects funded under Horizon 2020 and Horizon Europe (such as the “Ports the future” call, the “European Green Deal” call, or the Zero-Emission Waterborne Transport partnership). The green and digital transition of EU ports and their improved performance can decisively be supported and accelerated by research and innovation activities covering governance, operations, and data utilisation.

Considering the complexity and plurality of the ports’ ecosystem, ECTRI considers that such R&I activities could be better addressed through open collaborative research. Accordingly, we wish to highlight several key aspects we expect the future strategy will address and present concrete recommendations. Those may be summarized as follows:

### **1. Research and innovation as drivers for implementation of the strategy**

The EU Ports Strategy acknowledges the importance of innovation and digital transformation, but only briefly mentions the role of research without highlighting its significance in achieving those goals. Research is essential for developing new technologies, operational models, and strategies that can enable the strategy’s ambitious objectives - particularly modal shift, emission reduction, and enhanced efficiency. ECTRI therefore recommends explicitly anchoring R&I as core pillars in the implementation of the strategy, supporting **three main areas**:

**A) R&I on the EU ports governance:** the current competition framework weakens the bargaining position of ports with the oligopoly of maritime carriers, fosters investment decisions in overlapping infrastructures and distributes unfairly benefits and impacts along European costs. Whereas any strategic cooperation should be subject to compliance with competition rules, it seems necessary to explore adequate legislative frameworks and institutional formats for fruitful strategic cooperation between European ports, including small and medium-sized ports (SMPs, see below). R&I activities in this area can provide a better assessment and understanding of such benefits and impacts and provide the basis to establish such cooperation.

**B) R&I on ports operations:** research and innovation activities remain critical to speed up the green and digital transition of ports, to become smart green hubs in the transport and energy networks. R&I activities can accelerate port digitalisation, with a view to improve the efficiency, productivity and sustainability of ports, to enhance port call optimisation (to reduce waiting times and enable just-in-time arrivals), to speed up the development and implementation of advanced navigation and automatic identification systems, and to provide optimised solutions for the electrification of ports.

**C) Ports data utilisation for research, statistics and innovation:** transport and trade data collected at ports are critical for evidence-based transport policy, climate-friendly logistics solutions and innovative cooperation models. Controlled access to this data for scientific

institutions should therefore be explicitly included in the future EU Ports Strategy, in strict compliance with data protection regulations and through suitable anonymisation procedures.

## **2. Targeted support for small and medium-sized ports (SMPs)**

SMPs are vital components of Europe's transport infrastructure and could become crucial multimodal hubs within supply chains (especially those that are part of the TEN-T), while contributing to a better balanced and fair spatial distribution of benefits and impacts of ports' activities. However, they face unique challenges in implementing sustainable and digital solutions due to limited resources, lower economies of scale, and higher investment risks. Targeted funding instruments and practice-driven research approaches are necessary to address the specific realities of SMPs and to develop tailored, scalable solutions.

## **3. Digitalisation as the foundation for sustainability and competitiveness**

Digital systems are foundational for sustainable, automated, and competitive port development, especially for SMPs. Their implementation enables immediate efficiency gains, improved operational resilience, and provides the basis for further automation.

Digitalisation must be understood as fundamentally multimodal: not only truck transport, but also rail and inland waterways-based freight flows as well as multimodal hinterland connections should be fully integrated. In this context, the digitalisation of rail freight is a strategic imperative for achieving the modal shift and climate neutrality targets enshrined in the "Fit for 55" package.

## **4. Intermodal integration and infrastructure resilience**

The seamless integration of ports into multimodal corridors - including maritime, inland waterways, road, and rail transport - is decisive for the competitiveness of European supply chains. Simultaneously, intermodal nodes are key to the resilience of critical infrastructures.

Research can make a significant contribution by:

- Developing concepts to optimise multimodal interfaces;
- Investigating new solutions to increase system (including ports) resilience against both human-induced and natural disruptions;
- Providing data and analytical tools for risk assessment.

## **5. Electrification and renewable fuels as a pillar for resilience and competitiveness**

The electrification and integration of renewable fuels into port operations is a central building block for achieving the EU's climate targets and at the same time strengthens the resilience and long-term competitiveness of European ports. Ports play a key role here, as they must provide and further develop the necessary infrastructure - such as onshore power supply (OPS), refuelling facilities, or electrolysis plants. The diversification of energy sources and the development of decentralised supply structures reduce dependencies, increase security of supply, and enable sustainable business models in the energy market.

Research here can contribute to the development of systemic, scalable and widely accepted solutions in a technology-neutral manner and thus ensure the economic viability and ecological sustainability of the energy transformation in the port and logistics sector in the long term.

## 6. Recommendations on research policy to support the strategy

To effectively advance the EU Ports Strategy objectives, we recommend the following research-focused policy measures:

- Promote open-technology research projects, with a focus on digitalising port processes across all modes of transport;
- Support the development of innovative business models and collaborative formats to accelerate uptake, particularly in SMPs;
- Strengthen cooperation among ports, operators, shippers, authorities, and research institutions to foster the pooling of expertise, data sharing, and solutions;
- Integrate sustainability and resilience as guiding principles in research addressing infrastructure planning and operational management;
- Foster research into renewable-based energy systems in ports, including onshore power supply, hydrogen production, and storage, to enhance energy autonomy and system integration.

### Conclusion

Overall, ECTRI fully supports the preparation of an ambitious EU Ports Strategy by the European Commission along these lines, as well as its subsequent effective implementation supported by consistent collaborative research and innovation activities. Digital traffic management, particularly in SMPs, can act as a catalyst for sustainable development. The digital integration of rail freight, the strengthening of intermodal hubs, and the promotion of resilient infrastructure are essential prerequisites for successful transformation. The European Commission is encouraged to highlight collaborative research as a strategic instrument in its ports strategy and provide strong and targeted support accordingly for strategy implementation.