WHO ARE WE?
WHO ARE WE?

A European Technology Platform for the Waterborne sector

- Continuous dialogue between waterborne stakeholders such as shipbuilders, ship-owners, maritime equipment manufacturers, infrastructure and service providers, classification societies, universities or research institutes, energy companies, environmental non-profit organisations, waterway and port operators, fisheries and citizen associations and with the EU Institutions, including Member States;
- Common medium and long-term R&D Vision and a Strategic Research Agenda (SRA).
- Waterborne = Maritime + Inland Navigation and lakes + Ports!
MISSIONS OF THE WATERBORNE SECTOR
MISSIONS OF THE WATERBORNE SECTOR

• The transformation of the Waterborne transport
  • Green and clean Waterborne transport
  • Connected and automated Waterborne transport
  • Safe and secure Waterborne transport
  • Safe, competitive and eco-friendly yards

• Developing European leadership and new business models for blue growth sectors
  • Understanding and protecting the oceans, seas and inland waters
  • The oceans, seas and inland waters as a source/font of natural resources
  • Working and living at sea

• Integrating shipping and inland navigation into seamless port and logistics operations
  • Port operations
  • Integrating maritime and hinterland logistics
  • Port infrastructure
MISSIONS OF THE WATERBORNE SECTOR

OBJECTIVE:
Green and Clean Waterborne Transport

Targets:
• 2030: New-build short sea ships and new-build inland vessels,
• 2050: All ship types.
MISSIONS OF
THE WATERBORNE SECTOR

OBJECTIVE:
Safe and secure Waterborne transport

Targets:
• 2030: Radically improve management of safety of ships: aiming for zero fatalities,
• 2050: Radically improved safety culture: zero accidents, zero loss-of-life and zero pollution.
MISSIONS OF THE WATERBORNE SECTOR

OBJECTIVE:
Connected and Automated Transport

Target:
• 2050: Large-scale introduction of resilient and secure autonomous operations in 2050
MISSIONS OF THE WATERBORNE SECTOR

OBJECTIVE:
Safe, competitive and eco-friendly yards

Target:
• 2030: Digitalisation and automation will lead to the use of advanced design and production technologies, which will deliver flexible and cost-effective ships, vessels and offshore structures
Based on the Commission Proposal for Horizon Europe, the common understanding between co-legislators and the Partial General Approach, both approved in April 2019.
Horizon Europe - Investing to shape our future
Our vision

A sustainable, fair and prosperous future for people and planet based on European values.

- Tackling climate change (35% budgetary target)
- Helping to achieve Sustainable Development Goals
- Boosting the Union's competitiveness and growth
While benefiting from world-class research and strong industries...

Our knowledge and skills are our main resources.

→ 7% of the world's population
→ 20% of global R&D
→ 1/3 of all high-quality scientific publications

1.3% EU business R&D investment

...Europe can do better at transforming this into leadership in innovation and entrepreneurship
Sibiu recommendations: Europe can shape its future through research and innovation

- Focusing research and innovation on the **ecological, social and economic transitions** and related societal challenges
- Leveraging Europe’s scientific strengths into **leadership in breakthrough and disruptive innovation**
- Setting **ambitious goals** for issues that affect us daily, such as skills development, the fight against cancer, harmful emissions, and the state of the oceans, including plastics
- Focusing on **cutting-edge research and innovation** projects spanning from research and innovation to deployment
Horizon Europe

The ambitious EU research and innovation framework programme (2021-2027)

- to strengthen the EU's scientific and technological bases and the European Research Area (ERA)
- to boost Europe's innovation capacity, competitiveness and jobs
- to deliver on citizens' priorities and sustain our socio-economic model and values

The Commission proposes a budget of € 100 billion for Horizon Europe.
Added value through Horizon Europe:

Benefits for Europe:

- Trans-national collaboration, exchange and networks
- Critical mass to address global challenges
- Competitive funding promoting excellence
- Visibility for leading research and innovation
- Transnational mobility
- Strengthened European R&I landscape
- Creating new market opportunities
- Attracting the best talents
Horizon Europe – Political agreement
European Parliament and Council reached a common understanding on Horizon Europe on 19 March 2019

- Budget, synergies and third country association still pending, depending on the overall MFF negotiations

- Commission has started preparations for the implementation of Horizon Europe
Horizon Europe: Preliminary structure

**Pillar 1**  
Excellent Science
- European Research Council
- Marie Skłodowska-Curie Actions
- Research Infrastructures

**Pillar 2**  
Global Challenges and European Industrial Competitiveness
- Health
- Culture, Creativity and Inclusive Society
- Civil Security for Society
- Digital, Industry and Space
- Climate, Energy and Mobility
- Food, Bioeconomy, Natural Resources, Agriculture and Environment
- Joint Research Centre

**Pillar 3**  
Innovative Europe
- European Innovation Council
- European innovation ecosystems
- European Institute of Innovation and Technology

Widening Participation and Strengthening the European Research Area
- Widening participation and spreading excellence
- Reforming and Enhancing the European R&I system
Commission proposal for budget: €100 billion* (2021-2027)

€ 2.1
€ 2.4
€ 13.5
€ 25.8
€ 52.7

* This envelope includes EUR 3.5 billion allocated under the InvestEU Fund.
Horizon Europe – Central elements
Lessons Learned from Horizon 2020 Interim Evaluation

- Support breakthrough innovation
- Create more impact through mission-orientation and citizens' involvement
- Strengthen international cooperation
- Reinforce openness
- Rationalise the funding landscape
- Encourage participation

Key Novelties in Horizon Europe

- European Innovation Council
- R&I Missions
- Extended association possibilities
- Open science policy
- New approach to Partnerships
- Spreading Excellence
A mission is a portfolio of actions across disciplines intended to achieve a **bold and inspirational and measurable goal** within a set timeframe, with **impact** for society and policy making as well as relevance for a significant part of the European population and wide range of European citizens.

Horizon Europe defines mission characteristics and elements of governance, and 5 missions areas. Specific missions will be programmed within the Global Challenges and European Industrial Competitiveness pillar (drawing on inputs from other pillars).
Adaptation to climate change, including societal transformation

Mission areas

Healthy oceans, seas, coastal and inland waters

Climate-neutral and smart cities

Soil health and food

Cancer
New approach to European Partnerships

New generation of objective-driven and more ambitious partnerships in support of agreed EU policy objectives

Key features
- Simple architecture and toolbox
- Coherent life-cycle approach
- Strategic orientation

Co-programmed
Based on Memoranda of Understanding / contractual arrangements; implemented independently by the partners and by Horizon Europe

Co-funded
Based on a joint programme agreed and implemented by partners; commitment of partners for financial and in-kind contributions

Institutionalised
Based on long-term dimension and need for high integration; partnerships based on Articles 185 / 187 of TFEU and the EIT-Regulation supported by Horizon Europe
Areas for possible institutionalised European partnerships (based on Article 185/7 TFEU)

- Health innovations
- Key digital and enabling technologies
- Metrology
- EU air traffic, aviation and rail
- Sustainable bio-based solutions
- Hydrogen and sustainable energy storage
- Clean, connected mobility
- Innovative SMEs
Horizon Europe
Candidate co-programmed partnership
Zero-emission waterborne transport
Paris Agreement objective to limit global temperature increase to well below 2°C, try to limit increase to 1.5°C

Increase the EU’s GHG reductions target for 2030 to at least 50% and towards 55% compared with 1990 levels in a responsible way.

By 2050, Minimum 50% net GHG cut compared to 2008 objective zero GHG by end of centurary

Potential for net zero economy-wide emissions by 2050
EU financial support for green shipping

Concept

R&I
- 2014-2020 Horizon 2020
- 2021-2027 Horizon Europe

CEF
- upgrade of maritime links
- innovations
- Ports

Innovation Fund (CLIMA)
Regional funds ESIF

Market
Mechanisms?
- EIB Green Shipping Guarantee
- To come? ETS? Carbon border tax?
Transport €6.339 Bn

EUR 80 bn (total)

Typically €50m/year to waterborne transport
(≈400 m in total)
To Consider?

Sooner

- Measures to motivate deployment
- IWT battery propulsion in urban regions
- Speed reduction
- Route optimisation
- Efficiency improvements
- Battery propulsion
- 200 KM range battery electric
- Battery cost
- Fuel infrastructure
- Zero carbon fuel blends
- Multi MW efficient LNG Fuel cells
- Wind assist
- Solar assist
- Zero emission cruise ships (IWT+marine)
- Retrofit hydrodynamics

Later

- Autonomous ships
- Standards for new technology
- Cost/operational effective Carbon Capture
- All ferries battery electric
- Zero carbon synthesised fuels
- Multi MW Ammonia Fuel Cells
- Hybridised multi zero emission energy sources and storage
- Ship operation and fuel production is integral
- Global Hydrogen bunkering
- 100% electric
- Zero Carbon Hydrogen Fuel cell
- Multi MW Ammonia Fuel Cells
- Zero emission cruise ships (IWT+marine)
- Very high efficiency
- Scalability/cost of other alternate zero carbon fuels
- Duea Fuel, retrofit ammonia fuel solutions
- Hydrogen zero carbon production
- Fuel Infrastructure
- Exhaust treatment- zero discharge
- Battery hybrid
- Hybridised electric
- Shore side power
- Wind assist
<table>
<thead>
<tr>
<th>Horizon Europe</th>
<th>EU R&amp;I Framework Program 2021-2027</th>
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<tbody>
<tr>
<td>Candidate</td>
<td>24/10/2019 included on the list of candidate partnerships</td>
</tr>
<tr>
<td>co-programmed partnership</td>
<td>Sector + Member States +COM Work Program, open calls</td>
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<tr>
<td>Zero-emission</td>
<td>Decarbonisation, no air and water pollution</td>
</tr>
<tr>
<td>waterborne transport</td>
<td>All ship types and services (inland and maritime)</td>
</tr>
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Portfolio of current candidates for European Partnerships (48)

**HEALTH**
- EU-Africa Global Health
- Innovative Health Initiative
- Chemicals Risk Assessment
- Fostering an ERA for Health research
- Large-scale innovation and transformation of health systems in a digital and ageing society
- Pre-clinical / clinical health research
- Personalised Medicine
- Rare Diseases
- One Health/ AMR

**DIGITAL, INDUSTRY AND SPACE**
- High Performance Computing
- Key Digital Technologies
- Smart Networks and Services
- AI, data and robotics
- Photonics Europe
- Clean Steel - Low Carbon Steelmaking
- European Metrology
- Made in Europe
- Carbon Neutral and Circular Industry
- Global competitive space systems
- Geological Services

**CLIMATE, ENERGY AND MOBILITY**
- Transforming Europe’s rail system
- Integrated Air Traffic Management
- Clean Aviation
- Clean Hydrogen
- People-centric Sustainable Built Environment
- Towards zero-emission road transport
- Mobility and Safety for Automated Road Transport
- **Zero emission Waterborne transport**
- Batteries
- Smart Cities and Communities
- Clean Energy Transition

**FOOD, BIOECONOMY, NATURAL RESOURCES, AGRICULTURE AND ENVIRONMENT**
- Accelerating farming systems transition
- Animal health: Fighting infectious diseases
- Environmental Observations for a sustainable EU agriculture
- Rescuing biodiversity to safeguard life on Earth
- A climate neutral, sustainable and productive Blue Economy
- Safe and Sustainable Food System for People, Planet & Climate
- Circular bio-based Europe
- Water4All: Water security for the planet

**PILLAR III AND CROSS-PILLAR**
- EIT Climate KIC
- EIT Health
- EIT Manufacturing
- EIT Food
- EIT InnoEnergy
- EIT Manufacturing
- EIT Raw Materials
- EIT Digital
- EIT Urban Mobility
- Innovative SMEs
- European Open Science Cloud (EOSC)
Candidate zero-emission waterborne transport partnership

**Strategic Objective:**

Demonstrate zero-emission solutions by 2030 which can be implemented, so to achieve zero-emission ambitions by 2050.

**Expected impacts**

- Demonstrate of deployable zero-emission solutions suitable for all main ship types and services by 2030.
- Maintain and reinforce Europe’s global leadership in green shipping technologies.
- Contribute to clean and a carbon neutral future.
Candidate zero-emission waterborne transport partnership

Specific objectives

- Develop technological solutions to enable **decarbonisation of all main ship types** responsible for the most GHG emissions, which could be first deployed by 2030.

- Cut **air and water** pollution.

- Develop technologies **enabling the use of zero-carbon fuels**.

- Exploit the **full potential of smart technologies to increase energy efficiency**.

- Deliver **comprehensive risk assessments for the new technologies**, supporting regulation, enabling faster deployment.

- Accelerate impact by **improving the environmental performance of existing vessels**, developing and deploying new technologies to achieve deep decarbonisation.
How does it work?

- Based on a Strategic Research and Innovation Agenda, agreed with the Commission Services;
- Partnership with industry, but possibility to use co-programmed Partnerships with Member States, or with Member States and private partners;
- Partners implement their commitments under their responsibility;
- Union contribution is implemented via the Horizon Europe Work program (comitology);
- Partners provide input on the drafting of the respective parts of the Work programme;
- Contractual arrangements signed with the association representing the private partners;
- These will need to specify objectives, key performance and impact indicators, and outputs to be delivered, as well as the related commitments for financial and/or in-kind contributions of the partners.
Where are we now?

Waterborne TP

A European Technology Platform for the Waterborne sector

End of February 2020: Development of the proposal

May-June 2020: Public Consultation of Strategic Research and Innovation Agenda (SRIA)

End of July 2020: Final SRIA

2021: launch of the Partnership
Waterborne TP Association
Research Members
Waterborne TP Association

Associations
Thank you!

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