H2 meets H2O
Roadmap for the development of a climate-neutral hydrogen supply along the Danube
• **Project type:** Exploratory
• **Volume:** 306.939 €
• **Duration:** 04/22-03/23 (12 months)
• **Funding line:** Mobility of the Future, 17th AS, national Austrian funding Programme
• **Consortium:**
  - Pro Danube Management GmbH
  - Port of Vienna GmbH
  - University of Applied Sciences Landshut
  - Energy Institute at the Johannes Kepler University Linz
  - via donau - Austrian Waterways Ltd.
  - WIVA P&G - Hydrogen Initiative Showcase Region Austria Power & Gas
Objectives and key results:

- Assessment of the feasibility/sensibility of a hydrogen supply based on the Danube logistics axis from a technical, legal and socio-economic perspective.
- Development of the basis for a subsequent R&D project with pilot application for inland waterway vessels, railways and HGVs.
- Participatively developed roadmap for the implementation of hydrogen infrastructure.
- Presentation of potential synergy effects in relation to multimodal freight logistics chains.

Characteristics of the project:

- Networking of relevant stakeholders in several workshops
- High acceptance of results due to stakeholder involvement (infrastructure, logistics, shipping)
- Multisectoral approach
- Exploitation of the development potential of ports as hydrogen hubs
- Considerations regarding an international roll-out of the solution approaches in the Danube region
Objective - Project areas

H2 meets H2O

- Logistics
- Infrastructure
- Shipping
Infrastructure

- Evaluation and localisation of potential hydrogen production sites along the Danube (H2 hubs) - with a focus on Austria and Germany (Bavaria).

- Evaluation of the infrastructure requirements in the ports in case of a further development to hydrogen hubs incl. potential assessment.

- Analyses and preliminary work for the development of implementation concepts (feasibility study, demonstration project) for a lead project (interest on the part of the Port of Vienna and the Port of Straubing).
Logistics

- Identification of important key players on the H2 customer side in Austria and Bavaria.
- Identification of possible supply areas, starting from the involved inland ports.
- Outline multimodal logistics concepts (ship, rail, truck) for energy supply to customers/end users.
- Evaluation of the technical and economic feasibility of transporting hydrogen by inland vessel incl. back-up solutions by rail and, if necessary, pre-carriage and on-carriage by truck.
Evaluation of the economic and technical feasibility of a widespread conversion of the inland navigation fleet to hydrogen propulsion, in new builds and retrofits.

Analysis of the technical, legal and economic framework conditions, possibilities and limitations of incorporating shipping into multimodal logistics chains.
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“Creativity is intelligence having fun.”
Albert Einstein