

INNOVATIVE DANUBE VESSEL

“Action on fleet modernisation”

“Innovative Danube Vessel” is a research and development (R&D) project aiming to support the modernisation of the Danube fleet in order to increase its environmental and economic performance.

BASIC INFORMATION

- Commissioned by: via donau (PAC 1a) on behalf of DG REGIO
- Project duration: 1.7.2012 - 31.12.2013
- Outcome: Report containing description and analysis of innovative technology and vessel solutions recommended for further deployment by the barging industry within the EU Danube Region Strategy (EUSDR) as well as other EU programmes
- Availability of results: The results will be publicly available free of charge

OVERALL OBJECTIVE

Elaboration and assessment of different **innovative vessel and technology solutions** with high potential for implementation on the Danube as well as development and assessment of vessel designs and concepts. The proposed solutions and concepts must have an added economic value in comparison to existing Danube vessels.

The recommendations elaborated in the project will be used for further technology development and deployment within the framework of the Danube Region Strategy and other EU programmes and will support the identification of main goals and objectives for the upcoming EU financing schemes for the period 2014 – 2020.

They will, furthermore, provide the summary of innovative solutions to be guidance for investment decisions of barge operators.

KEY DRIVING FACTORS

Improvement of environmental and economic performance of Danube navigation via innovation (vessel concepts, engines, alternative low emission fuels), fleet modernisation (incl. retrofiting), reduction of exhaust gas emissions, improved energy efficiency, waste management and logistics operations, safe and economical vessel operation, establishment of common approach for the modernisation of vessels.



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SCHIFFBAUTECHNISCHE VERSUCHSANSTALT IN WIEN GMBH
VIENNA MODEL BASIN LTD



University of
Belgrade
Faculty of
Mechanical
Engineering



ÖIR
ÖIR GmbH



pro DANUBE
INTERNATIONAL



ACTIVITIES

- Collection and evaluation of relevant data with regard to the conditions for ship operation on the Danube
- Analysis of technical solutions derived from existing R&D projects
- Elaboration and assessment of new technology solutions
- Development and assessment of preliminary vessel concepts
- Provision of recommendations for further technology development and deployment

INVOLVEMENT OF THE INDUSTRY

A strong involvement of the industry is foreseen in the course of the project. “Study peer groups” from vessel operators, transport users and shipyards will be established to assess technological innovation, to ensure completeness and applicability of solutions (validation of technologies) and to include the practical market expertise (validation of concepts).

Dedicated dissemination actions (including the final workshop) will be carried out through networks of barge operators, transport users, shipyards and other stakeholders groups in order to present the results to the industry and to trigger pilot deployment or further research projects, if the need for such projects is identified.

CONTACT DETAILS

- **Contractee:** via donau (Mr. Juha Schweighofer, juha.schweighofer@via-donau.org)
 - **Consortium partners:** DST (Mr. Thomas Guesnet, guesnet@dst-org.de),
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Schiffbautechnische Versuchsanstalt in Wien GmbH
(Mr. Gerhard Strasser, gerhard.strasser@sva.at)
 - **Subcontractor:** Pro Danube International (Mr. Manfred Seitz, seitz@prodanube.eu)
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ACTIVITIES IN DETAIL

- **Collection and evaluation of relevant data with regard to the conditions for ship operation on the Danube.** This activity includes the consolidation of the navigational conditions, information about ports and their available infrastructure, description of the existing logistic chains involving the inland water transport and the technical state of the Danube fleet. The project will consider planned improvements (removal of bottlenecks) and innovations (innovative and low emission propulsion solutions such as LNG). Good-practice benchmarks will be defined as reference for demonstration of possible improvements, considering the most common vessels in use, construction of new standard vessels and selected representative transport relations.
 - **Analysis of technical solutions derived from existing R&D projects.** This includes consolidation of existing technical solutions from different R&D projects and assessment of their economic and environmental impact as well as their potential to be implemented. The solutions will be compared against the defined benchmarks. The most adequate solutions, showing clear economic and environmental benefits and return of investment, will be selected.
 - **Elaboration and assessment of new technology solutions** for optimised economic and environmental performance with following issues to be considered (non-exhaustive list): altered main dimensions for optimal performance complying with characteristics of the Danube transport, different pushed formations, alternative structural solutions for weight reduction or increase of cargo capacity and reduction of construction costs, improved low emission propulsion or propulsion with lower fuel consumption and hull improved forms.
 - **Development and assessment of preliminary vessel concepts** including strategies with respect to their operation in different Danube regions using the knowledge gained in previous tasks. Focus is on the vessel concepts and solutions that have a high potential for practical implementation till 2020. The concepts shall cover solutions for operation on different Danube sections (lower, upper or entire Danube) and shall comprise both motor cargo vessels as well as pusher with barges. The concepts shall include the technical aspects, such as general arrangements, proof of technical feasibility, as well as economic, environmental and operational considerations with respect to the applicability of proposed solutions.
 - **Provision of recommendations for further technology development and deployment** within the EUSDR or other EU programmes. Project findings will be consolidated in a report available for the public. It shall provide the comprehensive description of the solutions, clear justification for chosen solutions and recommendations for further R&D as well as deployment activities carried out by industry.
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