GRENDEL – Green and Efficient Danube Fleet

Project Summary

The project aims **to support the Danube fleet operators and their public counterparts** in **ecological and economic modernisation of the sector and in definition and deployment of necessary transition measures**. Dedicated activities will raise the awareness of the Danube fleet operators & sector concerning the impact of new regulations, advanced technologies which reduce air pollutants & energy consumption of inland vessels as well as improved transport & logistics management processes making use of digitalisation. On the other side, GRENDEL will support ministries and public authorities in elaborating public support measures (State Aid schemes) based on investment priorities of relevant Danube inland waterway fleet operators.

Project Main Objective

Improving the environmental and economic performance of the Danube fleet is the overall goal of the GRENDEL project. It aims to achieve a higher acceptance and use of inland waterway transport (IWT) as an environmentally friendly transport mode contributing to economic growth and a more sustainable transport system in the Danube region. GRENDEL addresses various fleet modernisation aspects: [i] use of low carbon & alternative fuels, [ii] reduction of air pollutant emissions (CO_2, NO_x, PM) and [iii] overall energy consumption. Besides this, [iv] transport & logistics management processes are addressed to ensure better integration of the Danube IWT into logistics chains through new services (including River Information Services), digital data provision as well as dedicated tools to improve efficiency of fleet operations. This overall objective will be achieved through three specific objectives:

1. **Know-how transfer for Danube fleet operators** with the help of intensive transnational collaboration between private & public stakeholders and targeted know-how transfer activities in order to overcome the existing knowledge gap, lack of activities and absence of instruments to deploy innovative solutions
2. **Elaboration of innovative technical vessel concepts** and **improved transport & logistic management processes** of fleet operators and sharing these as good practices for wide-scale implementation to strengthen the competitive position of inland navigation and to exploit its market potential
3. **Supporting development of favourable regulatory framework & well-designed public support measures** by introducing Model State Aid Scheme & innovative financial instruments to design national public support measures which will clearly address the needs of the sector

Relevance of the project

Studies carried out to quantify environmental costs ultimately show the same results: IWT is the most environmentally friendly mode of transport in terms of greenhouse gas (GHG) emissions per tonne-kilometre. Shipping more goods on water reduces GHG, traffic congestions and accidents. Inland vessels offer an enormous carrying capacity per transport unit and inland waterways dispose of ample unused infrastructure capacity. However, there is significant potential for reducing energy use (up to 10-20%) and pollutant emissions (up to 80%), in particular with regard to existing vessels as well as a large potential for modal shift by improved transport & logistic services.

Whereas in Western Europe, public and private efforts aim to modernise and green the IWT sector, the Danube region lacks of such initiatives. Little awareness, high investment costs of new technologies, higher price of alternative fuels, limited investment capacity of Danube fleet operators, lack of public support measures and unfavourable regulatory framework slow down innovation uptake and prevent deployment of greener fuels and propulsion solutions.

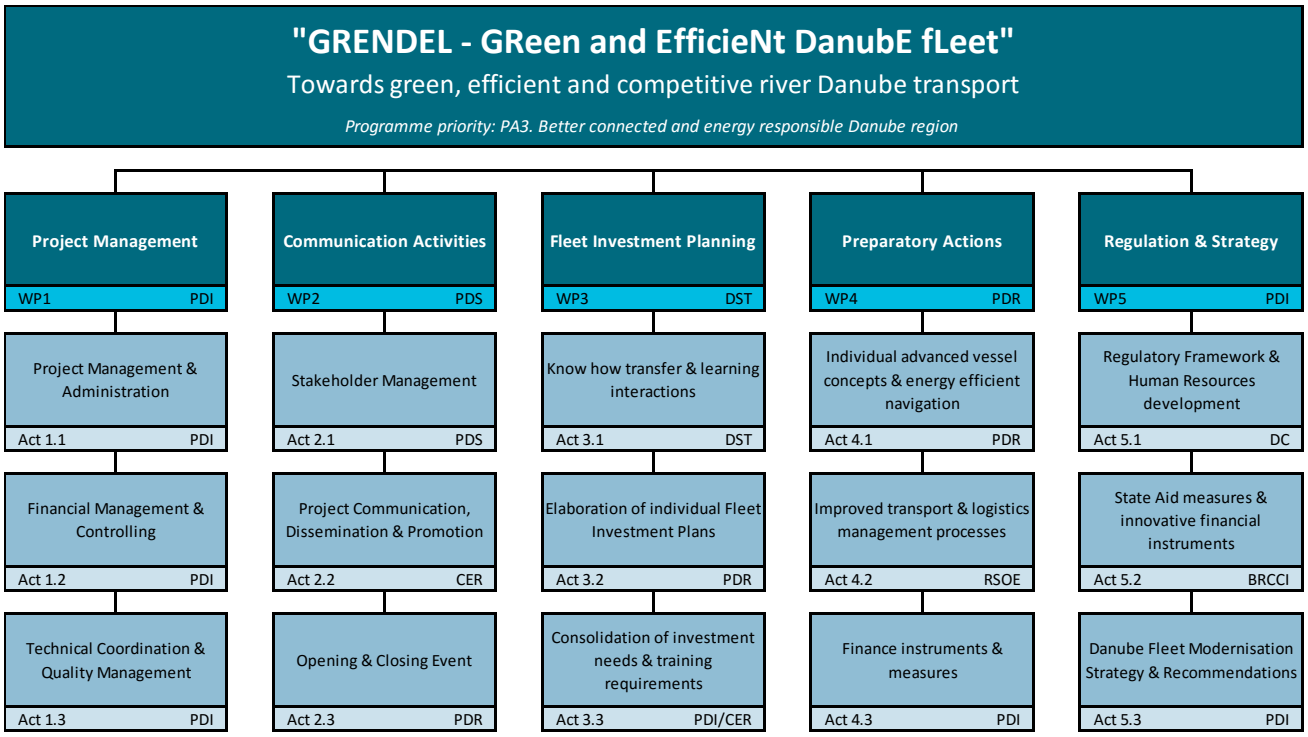
GRENDEL brings key Danube IWT fleet operators directly into a transnational cooperation with public authorities responsible for development of transport policies and framework. Jointly, they will cooperate on developing a more favourable framework for green investments and taking important first steps into a wide-scale fleet modernisation.

Project Budget & Duration

Total Budget: **1,824,999.20 EUR** of which
ERDF Contribution: 1,481,137.05 EUR
IPA Contribution: 70,112.25 EUR

Start Date: 01.06.2018
End Date: 30.11.2020

Work Breakdown Structure



Partnership Structure

Lead Partner: Pro Danube International/ AT

ERDF Partners:

- DST – Development Centre for Ship Technology and Transport Systems (DE)
- National Association of Radio Distress-Signalling and Infocommunications (HU)
- Danube Commission (International Org.)
- Bulgarian-Romanian Chamber of Commerce and Industry (BG)
- Pro Danube Romania (RO)
- Romanian Maritime Training Centre – CERONAV (RO)
- SDG – Ship Design Group S.R.L. Galati (RO)
- Romanian Naval Authority (RO)
- River Navigation Company NAVROM SA (RO)
- Fluvius Shipping and Transport. Company (HU)
- Danubia Kreuzfahrten GmbH (AT)

IPA Partners:

- Pro-Danube Serbia (RS)

Associated Strategic Partners:

- Federal Ministry for Transport, Innovation and Technology (AT)
- Ministry of National Development (HU)
- Executive Agency Maritime Administration (BG)
- CFND (RS)
- Donau Tankschiffarts-Gesellschaft m.b.H (AT)
- Bulgarian River Shipping (BG)
- Romanian River Ship Owners and Port Operators Association (RO)
- BAVARIA Schiffahrts- und Speditions-AG (DE)
- Ministry of Maritime Affairs, Transport and Infrastructure (HR)
- Ministry of Transport (RO)