

Towards green, efficient and competitive river Danube transport

GRENDEL Innovation Factsheets & collection of technological requirements of Danube fleet feeding to State Aid schemes

KNOW-HOW TRANSFER EVENT MODERNISATION OF DANUBE VESSELS FLEET

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Project co-funded by European Union Funds (ERDF, IPA)

Not all ships are like...











Project co-funded by European Union Funds (ERDF, IPA)



E Lungtore

Source: www.binnenvaartkrant.nl

WAERS

Some look rather like...









Not only on the Danube...





Franada	ENI 04009670
Length	65 m
Breadth	8 m
DWT	699 t
Built	1912
Power	275 kW





Motivation



- Inland ships have extremely long lifecycles.
- Road transport is catching up in emission of air pollutants.
- Spreading of stage V engines takes a lot of time.
- IWT sector has to invest for greening and new markets.



- NO_x and PM harm locally (including the crew).
- Energy efficiency helps the ice bear and the operator.



Ex ante fleet investment plan questionnaire

- Objective: Assessment of current CAPEX plans of shipping companies
- Structure: General information on fleet, company profile and individual ships Questions on the current strategy of fleet maintenance and renewal
- Outcome: Long term modernization strategies are not the standard.
- Investment decisions require understanding of technologies.

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Fleet investment plan question DEL Green and efficient Danube Fleet ervice life of inland vessels, high investment costs, low re-investment c	GRENDEL									format, you	 Origin of your neck and system accommissioning of vessels account of the system of the	5. What would describe your maintenance strategy best? Multiple answers are possible.
e fleet operators together with knowledge deficits about green technolo f public actions & incentives impose severe barriers for the adaption of t					Engine				Modern	isation activities	Action 1 2 3 4 5 6 7 8 9 10	Fixed maintenance intervals for the whole vessel (general overhaul).
o forthcoming European IWT and environmental policy objectives. DEL shall support the Danube fleet operators and their public counterp:	Number	Size	Year built	8	ission	ult ear	Aain	Aux Ngine	30w Tuster	idder	Buy new-built vessels	 Fixed maintenance intervals for certain parts.
nt authorities) in the required modernisation process by establishing a ration platform of key IWT stakeholders. With the help of dedicated lear				-	sta	~	~ ~	10	"¢	ä	Buy used vessels	 Maintenance only in case of a failure.
ology deployment preparatory works, as well as guidelines and recomm widely accepted overall strategy for Danube fleet modernisation, GREN											Decommissioned vessels are sold	 Parts are replaced when a damage is irreparable.
rcome major innovation obstacles.		-	-					-	-		Decommissioned vessels are scrapped	 Parts are replaced according to manufacturer recommendation or after a predefined lifetime
a so well as improved transport & logistics management processes make issues. Further or built, GRIMDEL will support public authorities in data it measures [State Add Model]) haved on defined investment priorities of or on in pixel to human resources & training requirements of new technic inform eleborated will be hardered with the handle VHT sector as possib- itation eleborated will be hardered with the handle VHT sector as possib- ing the sector of the process o											3. How long do you usually keep vessels within your fleet?	Other: What are your investment priorities? Please rate from 1 (lowest priority) to 10 (highest priority).
ry in the main goal of the project and shall contribute to a higher acoust entrainable transport system. runces of this questionnaire is the assessment of the Danube fleet in ter runces of this questionnaire is the assessment of the Danube fleet in ter runces of this questionnaire is the assessment of the Danube fleet in ter runces of this questionnaire is the assessment of the Danube fleet in ter runces of this questionnaire is the assessment of the Danube fleet in ter runces of the system of the term of the Danube fleet in ter runces of the system of the system of the Danube fleet in ter runces of the system of the system of the term of the Danube fleet in ter runces of the system of the system of the term of the Danube fleet in ter runces of the system of the system of the term of the Danube fleet in ter runces of the system of the system of the term of the Danube fleet in ter runces of the system of the term of the term of the Danube fleet in term of the term of t	Project co	-funded by	r European Ur	nion Funds ((ERDF, IPA)						A. What are your reasons to decommission a vessel? Wen you decommission a vessel, what describes your reasons to do so best? Hease rate from 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Reason 1 2 3 4 5 6 7 8 9 10 Modernisation requirements (norease environmental performance

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Know-how transfer



- Dedicated selection of measures for the Danube region.
- Promotion and know-how transfer for stakeholders.



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Fact Sheets coming soon

- No 4: Drop-In (bio)Fuels
- No 5: Battery Electric Propulsion
- No 6: Fuel Cells

Danube Transnational Programme

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- No 7: Euro VI Truck Engines
- No 8: Energy Efficient Navigation





Fleet Investment Plan Template

Detailed investment planning in different categories for 10 years period



Activity 3.2: Fleet Investment Plan Template















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GRENDEL "Green and efficient Danube fleet"

Towards modernisation & greening of Danube inland waterborne sector and strengthening its competitiveness

www.interreg-danube.eu/grendel