



Ministry of Infrastructure
and Water Management



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

STUDY ON FINANCING THE ENERGY TRANSITION TOWARDS A ZERO-EMISSION EUROPEAN IWT SECTOR

CCNR Member States:



Study consortium:



In partnership with:

European Investment *Advisory Hub*
Europe's gateway to investment support

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July 2021

Study on Financing the energy transition towards a zero-emission European IWT sector

Deliverable – Research Question F Final Report

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Client: Central Commission for the Navigation of the Rhine

Vienna, Austria / Rotterdam, The Netherlands
Document date: 13 July 2020

Table of Contents

Abbreviations.....	8
Definition list.....	9
1 Executive summary	12
2 Introduction	18
3 Methodology.....	20
4 F1. EU Funding Programmes in 2021-2027	21
4.1 Connecting Europe Facility (CEF).....	21
4.1.1 Objectives	21
4.1.2 Budget	21
4.1.3 Eligibility	22
4.1.4 Forms of support	26
4.1.5 Grants.....	26
4.1.6 Synergies with other Programmes and instruments	28
4.1.7 Governance and programming	29
4.1.8 Examples of relevant projects for energy transition in IWT	31
4.2 Programme for the Environment and Climate Action (LIFE).....	37
4.2.1 Objectives	37
4.2.2 Budget	38
4.2.3 Eligibility	38
4.2.4 Forms of support	39
4.2.5 Grants.....	39
4.2.6 Synergies with other Programmes and instruments	40
4.2.7 Governance and programming	42
4.2.8 Examples of relevant projects for energy transition in IWT	43
4.3 HORIZON Europe	44
4.3.1 Objectives	44
4.3.2 Budget	47
4.3.3 Eligibility	47
4.3.4 Forms of support	48
4.3.5 Grants.....	48
4.3.6 Synergies with other Programmes and instruments	49
4.3.7 Governance & programming.....	51
4.3.8 Examples of relevant projects for energy transition in IWT	53
4.4 Innovation Fund.....	55

4.4.1	<i>Objectives</i>	56
4.4.2	<i>Budget</i>	56
4.4.3	<i>Eligibility</i>	56
4.4.4	<i>Forms of support</i>	56
4.4.5	<i>Grants</i>	57
4.4.6	<i>Synergies with other Programmes and instruments</i>	59
4.4.7	<i>Governance and programming</i>	60
5	F2. Financing schemes and products with EU financial backing	61
5.1	Existing funds and financing schemes (until 2020)	62
5.1.1	<i>EFSI 2.0 - European Fund for Strategic Investment</i>	62
5.1.2	<i>COSME Programme</i>	62
5.1.3	<i>EIB – European Investment Bank & EIF - European Investment Fund</i>	63
5.1.4	<i>ESI funds / ESIFs - European Structural and Investment Funds</i>	63
5.2	Impact assessment of current MFF (until 2020) and transition towards InvestEU	65
5.3	InvestEU Programme - single investment support instrument	67
5.3.1	<i>Objectives</i>	67
5.3.2	<i>Budget</i>	69
5.3.3	<i>Eligibility</i>	69
5.4	Conclusion - Relevance for an energy transition towards zero-emission inland waterway vessels	73
5.5	Examples from other economic sectors (if applicable)	74
5.5.1	<i>EIB: Financial support towards LNG bunker vessel in Greece</i>	74
5.5.2	<i>BlueInvest Fund</i>	75
5.5.3	<i>Green Shipping Guarantee Programme</i>	75
6	F3. Instruments for pay-per-use	76
6.1	Introduction into “pay-per-use” / “energy-as-a-service” solutions	76
6.2	Funding and financing schemes relevant for pay-per-use / energy-as-a-service solutions ...	76
7	F4. Accessibility for IWT	77
7.1	Lessons learnt from existing and past funding programmes and financing products	77
7.2	Recommendations for raising awareness of funding and financing options (visibility)	79
7.3	Recommendations for better accessibility of funding and financing options	80
8	F5. National and regional funding	82
8.1	Methodology	82
8.2	National and Regional funding opportunities supporting IWT	83
8.2.1	<i>Netherlands</i>	83

8.2.2	<i>Belgium</i>	86
8.2.3	<i>Luxemburg</i>	87
8.2.4	<i>France</i>	89
8.2.5	<i>Germany</i>	90
8.2.6	<i>Switzerland</i>	92
8.2.7	<i>Austria</i>	93
8.2.8	<i>Slovakia</i>	93
8.2.9	<i>Hungary</i>	93
8.2.10	<i>Croatia</i>	93
8.2.11	<i>Bulgaria</i>	93
8.2.12	<i>Romania</i>	94
8.2.13	<i>Czech Republic</i>	94
8.3	Recommendations for structuring the funding schemes.....	94
8.4	Overview.....	95
9	F6. Combining funds and blending options	100
9.1	Cumulation rules in funding programmes and financing products.....	101
9.2	Blending possibilities between funding programmes and financing products.....	101
9.2.1	<i>Definition of blending and its benefits</i>	101
9.2.2	<i>Existing programmes with blending and future possibilities</i>	102
9.3	Lessons learnt from elaboration of streamlined, harmonised and region-wide funding scheme(s) for the modernisation of inland vessels (GRENDDEL project).....	104
10	F7. Possibilities of hedging to secure price advantages	106
10.1	Introduction.....	106
10.2	Are there price advantages to be secured?.....	106
10.3	Hedging: a proven solution to offset price fluctuation risk.....	107
10.3.1	<i>Multiple possibilities to hedge fuel price fluctuations:</i>	107
10.4	Securing the price advantages between two commodities.....	108
10.5	Suitability of fuel hedging in the IWT.....	108
10.5.1	<i>Spot market operators</i>	109
10.5.2	<i>Contract market operators</i>	109
10.5.3	<i>Hedging in the IWT on a European scale</i>	109
10.6	Conclusion.....	110
10.7	Recommendations.....	110
11	F8. Options for specific IWT programme / instrument	111
11.1	Background.....	111

11.2 Need and possibility	111
11.3 Recommendations for a tailor-made IWT scheme.....	112
12 Conclusion.....	114

DISCLAIMER

This collection of information is based on the desk research (based on the status as of May 2020) of the consortium partners and the CLINSH consortium. It is solely prepared to provide an overview of the grant schemes offered in Europe to be used for IWT vessel-related projects. This collection of information does not consider all projects in all programmes where research, innovation and/or pilots are the scope and do not make roll-out eligible.

The authors cannot guarantee that all programmes have been identified and/or all support programmes based on tax concessions or other incentives have been taken into account. The authors cannot guarantee that all listed grant amounts have been paid out and used by beneficiaries, and that those were absorbed for greening purposes. The authors cannot be made liable on any consequences or decisions based on this overview.

Abbreviations

AP Call	Annual Work Programme Call (in CEF Programme)
CEF	Connecting Europe Facility
CCS	Carbon Capture and Storage
CCU	Carbon Capture and Utilisation
CF	Cohesion Fund
COSME	Competitiveness of Small and Medium-Sized Enterprises
EC	European Commission
EEA	European Economic Area (see definitions)
EFSI	European Fund for Strategic Investments
EFTA	European Free Trade Association (see definitions)
EIAH	European Investment Advisory Hub
EIB	European Investment Bank
EIF	European Investment Fund
ENP	European Neighbourhood Policy
ERDF	European Regional Development Fund
ESIFs	European Structural and Investment Funds
EU ETS	European Emissions Trading System (see definitions)
IMO	International Maritime Organisation
INEA	The Innovation and Networks Executive Agency
IWT	Inland Waterway Transport
LGF	Loan Guarantee Facility
MAP Call	Multi-annual Work Programme Call (in CEF Programme)
MFF	Multiannual Financial Framework
MS	Member State
PPP	Public–private partnership
R&I	Research and Innovation
RQ	Research Question
SMEs	Small and medium-sized enterprises
TEN-T	Trans-European Transport Networks
TFEU	Treaty on the Functioning of the European Union

Definition list

Term	Definition
Blending facilities	A cooperation framework established between the Commission and development or other public finance institutions with a view to combining non-repayable forms of support and/or financial instruments from the EU budget and financial instruments from development or other public finance institutions as well as from commercial finance institutions and investors.
Blending operation	Means operations supported by the Union budget combining non-repayable forms of support or repayable support or both from the Union budget with repayable forms of support from development or other public finance institutions, as well as from commercial finance institutions and investors; for the purposes of this definition, Union programmes financed from sources other than the Union budget, such as the EU Emissions Trading System (EU ETS) Innovation Fund, can be assimilated to Union programmes financed by the Union budget.
Break-even point	The point at which a business starts to make as much money as it has spent on a particular product, activity, etc.
Budgetary guarantee	Guarantee provided by the Union budget, pursuant to a legal commitment to support a programme of actions, representing a financial obligation that can be called upon if a specified event materialises during the programme implementation, and that remains valid for the duration of the programme.
Call or put option	A call or put option can be bought on the financial market to have the right to, respectively, buy or sell an asset or commodity like diesel on a predetermined date for a fixed price
CAPEX	Capital expenditure
Equity investment	Provision of capital to a firm, invested directly or indirectly in return for total or partial ownership of that firm and where the equity investor may assume some management control of the firm and may share the firm's profits.
EEA	European Economic Area. All EU Member States are EEA member states. EFTA countries Iceland, Liechtenstein, Norway are signatories of EEA. Switzerland has not joined the EEA but has a set of bilateral agreements with the EU which allow it also to participate in the internal market.
EFTA	European Free Trade Association is a regional trade organization and free trade area consisting of four European states: Iceland, Liechtenstein, Norway, and Switzerland
EU ETS	EU Emissions Trading System operates in all EU countries plus Iceland, Liechtenstein and Norway. It limits emissions from more than 11,000 heavy energy-using installations (power stations & industrial plants) and airlines operating between these countries and covers around 45% of the EU's greenhouse gas emissions. Directive 2003/87/EC of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community
Financial instruments	Union measures of financial support provided from the EU budget to address one or more specific policy objectives of the Union. Such instruments may take the

Term	Definition
	form of equity or quasi-equity investments, loans or guarantees, or other risk-sharing instruments, and may, where appropriate, be combined with other forms of financial support or with funds under shared management or funds of the European Development Fund.
Financial product	Financial mechanism or arrangement agreed between the Commission and the implementing partner under the terms of which the implementing partner provides direct or intermediated financing to final recipients mainly in the forms of debt or equity.
Financing and/or investment operations	Operations to provide finance directly or indirectly to final recipients, carried out by an implementing partner in its own name, provided by it in accordance with its internal rules and accounted for in its own financial statements.
Future contract	A future contract is a standardised financial product that gives the buyer the right to buy a certain product in the future for a specific price.
Green public procurement (GPP)	Defined in the Communication (COM (2008) 400) "Public procurement for a better environment" as "a process whereby public authorities seek to procure goods, services and works with a reduced environmental impact throughout their life cycle when compared to goods, services and works with the same primary function that would otherwise be procured." GPP is a voluntary instrument, which means that Member States and public authorities can determine the extent to which they implement it. Its application means that clear and verifiable environmental criteria for products and services are included in the public procurement process. Guidance in this area, in the form of national GPP criteria was developed by European Commission and a number of European countries.
Guarantee agreement	Legal instrument whereby the Commission and an implementing partner specify the conditions for proposing financing or investment operations to be granted the benefit of the EU guarantee, for providing the budgetary guarantee for those operations and for implementing them.
Hedge (fuel)	A hedge is an insurance on the price level of a commodity or different kinds of financial products and is used to offset the potential losses of fluctuating prices. A fuel hedge is therefore an insurance against increasing or decreasing fuel prices.
EU funding management modes: (In-)direct & shared management	<p>There are 3 EU funding management modes:</p> <ol style="list-style-type: none"> 1. Direct management: EC manages the budget when the projects are carried out by its departments, at its headquarters, in the EU delegations or through EU executive agencies. This includes awarding grants, transferring funds, monitoring activities, selecting contractors, etc. 2. Indirect management: Funding programmes are indirectly managed when they are carried out by non-EU countries, international organisations, development agencies (e.g. INEA) and other bodies. 3. Shared management: EC delegates the management of certain programmes to EU countries under shared management agreement elaborated by countries in collaboration with EC setting out how the funds will be used during a funding period, normally covered by a multiannual financial framework.

Term	Definition
Implementing partner	Eligible counterpart such as a financial institution or other intermediary with whom the Commission signs an agreement to implement the Union funds.
Mid cap companies	Entities having up to 3,000 employees that are not SMEs or small mid-cap companies.
National promotional banks or institutions	Legal entities carrying out financial activities on a professional basis which are given mandate by a Member State or a Member State's entity at central, regional or local level, to carry out development or promotional activities.
OPEX	Operational expenditure
Quasi-equity investment	Type of financing that ranks between equity and debt, having a higher risk than senior debt and a lower risk than common equity and that can be structured as debt, typically unsecured and subordinated and in some cases convertible into equity, or into preferred equity.
Price swap	A price swap trades the fluctuation of a commodity with a fixed price between parties
Risk-sharing instrument	Financial instrument which allows for the sharing of a defined risk between two or more entities, where appropriate in exchange for an agreed remuneration.
Small and medium-sized enterprises (SMEs)	Micro, small and medium-sized enterprises as defined in Article 2 of the Annex to Commission Recommendation 2003/361/EC.
Small mid-cap companies	Entities having up to 499 employees that are not SMEs.
Technical Assistance	Advisory support for the identification, preparation, development, structuring, procuring and implementation of investment projects, or enhance the capacity of promoters and financial intermediaries to implement financing and investment operations. Its support may cover any stage of the lifecycle of a project or financing of a supported entity, as appropriate.
Third country	Country that is not member of the European Union.
Third countries → candidates and potential candidates ¹	Candidate countries are Albania, the Republic of North Macedonia, Montenegro, Serbia and Turkey. Potential Candidates are Bosnia and Herzegovina and Kosovo
Third countries → countries covered by the European Neighbourhood Policy	The ENP covers the EU's closest neighbours: 6 countries in the East (Ukraine , Belarus, Republic of Moldova , Georgia, Armenia and Azerbaijan) and 10 countries in the South (Morocco, Algeria, Tunisia, Libya, Egypt, Israel, Palestine, Jordan, Lebanon and Syria)

¹ See details under <https://ec.europa.eu/environment/enlarg/candidates.htm>

1 Executive summary

This document answers the research question F of the main study on financing the energy transition towards a zero-emission European IWT sector. This deliverable provides answers to the following sub-questions:

- F1. What **funding schemes** are expected in the next few years from the EU level and what are their characteristics?
- F2. What **financing schemes and products** with EU financial backing are expected for projects related to greening and innovation?
- F3. What funding and financing schemes and products would be suitable to support **pay-per-use / energy-as-a-service** solutions?
- F4. Is it possible to make the programs and products more **accessible and visible** for the IWT sector, dominated as it is by very small companies, in order to help them invest in greening technologies?
- F5. Are **national and regional governments** prepared to provide financial support for the transition towards zero-emissions IWT?
- F6. To what extent is it possible to **combine the different EU and national and regional funds**? Can they be combined with financing schemes and products; what is the scope for **blending**?
- F7: Is it possible to secure a price advantage on a European level **between conventional diesel fuel and cleaner fuels**, for example by a hedge?
- F8: Would it be possible to develop a **specific programme, financial instrument/product or facility specifically for the IWT sector** and investments in greening with relatively simple procedures, low requirements and/or relatively high funding rates?

Multi-annual Financial Framework (MFF) 2021-2027

In the course of elaborating the answers to the above research questions, the preparations for the Multiannual Financial Framework (MFF) – having the utmost impact on the future funding schemes – have been continuously followed by the consortium. Whereas, the agreement on the MFF 2021-2027 is still pending (status May 2020). Therefore, the exact financial allocations to funding programmes (like Horizon Europe, LIFE or CEF) as well as to InvestEU (framework bringing together several EU financial instruments currently available under one roof in 2021-2027) are still not finalised. The current proposal, as presented by the Finish Presidency² from December 2019, reduced the budget for CEF which can have an impact on transport related projects funded through CEF. The budgets of other programmes seem to be maintained or figures are not available.

The IWT industry called upon the Member States to allocate sufficient budget to the programmes supporting the energy transition in waterborne transport, like Horizon Europe for research and innovation actions or Connecting Europe Facility where investments into alternative fuels infrastructure go hand-in-hand with investments into mobile equipment. The official negotiations on the EU level towards the MFF 2021-2027 have been suffering delays due to the effects of the COVID-19 crisis in Q1 and Q2 of 2020, whereas in order to provide financial support for relevant stakeholders, the European Commission and some Member States are proposing / offering

² Multiannual Financial Framework (MFF) 2021-2027: Negotiating Box with figures

recovery funds. Thus, neither the MFF is final when delivering this report, nor it is possible to analyse and evaluate the additional EU / Member State proposals and their potential effects.

F1: What funding schemes are expected in the next few years from the EU level and what are their characteristics?

The study offers an in-depth analysis of the most relevant funding programmes and financing instruments of the planned new multi-annual financial framework (MFF) 2021-2027 which are relevant for actions addressing energy transition towards a zero-emission European IWT. As stated above, the MFF 2021-2027 negotiations suffer delay, thus it is not possible to assess it in its final version when delivering this report. The funding programmes described in this report are expected to pursue climate resilience and energy transition related objectives. Besides the future oriented content, the study provides examples of projects and certain specifics of funding programmes and financing instruments known from the previous multi-annual financial frameworks.

The energy transition requires deployment of new innovative, green and energy efficient technologies and solutions. In order to cover the high costs of these technologies, lower profitability and the higher technological risks of associated projects, the key vehicle to deliver the support and to create a business case will still remain grants. Non-repayable grants will continue to be a main driver to create a business case for deploying innovative greening technologies and reaching the break-even point at which the financing, due to the high financial gap and high risks of projects, will be possible through financing instruments and products (even those instruments and products backed by EU).

At EU level, the investments into energy transitions actions towards a zero-emission European IWT sector can be funded by major funding programmes depending on the stage of the innovative technology life cycle, such as:

- **Horizon Europe** for research and innovation actions with co-financing rates up to 70% / 100% depending on the nature of action and type of beneficiary
- **LIFE programme** for actions including testing, demonstrating and piloting the effectiveness of new technologies, approaches or policies as methods for policy implementation with co-financing rates up to 60%
- **Connecting Europe Facility (CEF)** for large-scale roll-out and deployment actions with general co-funding rates are up to 50% for studies and up to 30% for works
- **Innovation Fund** for actions supporting the commercialisation and roll-out of highly innovative and sufficiently mature low-carbon technologies and processes, with co-financing rates up to 60% of capital costs and up to 60% of operational costs over up to 10 years

All the above schemes together with other opportunities (such as Cohesion Fund and blending operations) are described in detail later in this document.

F2. What financing schemes and products with EU financial backing are expected for projects related to greening and innovation?

Sub-optimal investment situations are presently (MFF 2014-2020) addressed through a diverse portfolio of EU financial instruments; they are centrally managed under programmes like the CEF, Horizon 2020, Competitiveness of Small and Medium-Sized Enterprises (COSME), Creative Europe or the Employment and Social Innovation Programme (EaSI) on one hand, and the European Fund for Strategic Investments (EFSI) on the other.

In the next financial period, a main objective is to *simplify the future EU investment support* by constructing a *single framework* that would help to reduce existing complexity. This will be done via the setting up of the **InvestEU Fund**, the successor of EFSI for the post-2020 period.

Integration of financial instruments within a single framework providing **loans, guarantees and risk sharing instruments** and defining **blending rules** with EU grants. This will allow mainstreaming of the EU financing along the four different EU main policies, the so called “**policy windows**” in **InvestEU**:

- Sustainable Infrastructure
- Research, Innovation & Digitisation
- SMEs
- Social Investments and Skills

Further, the InvestEU Programme shall provide a possibility to operate complementary to grant financing (e.g. Horizon Europe, CEF, etc.) through blending operations. The programme will be complementary with the European Structural and Investment Funds (e.g. ERDF, ESF+, Cohesion Fund, etc.) operating under shared management. The foreseen complementarity enables easier facilitation of the deployment through financial products, as the Member States can rely in the InvestEU Programme and its simple set of rules applying in all cases.

The detailed overview of the current and expected future schemes, demonstrating the development framework and its staging towards a Greener Europe, is presented in this document. The lessons learned from questions F1 and F2 have been used in the consolidation of the current status and drafting the recommendations for the future, in particular for the research questions F3 related to funding and financing suitable to support pay-per-use business models, or F6 which specifically addresses the blending as well as F8 assessing the possibilities to develop a specific programme (financial instrument/product or facility) specifically for the IWT sector and investments in greening.

F3. What funding and financing schemes and products would be suitable to support pay-per-use / energy-as-a-service solutions?

Based on the current experience with funding and financing schemes supporting investments in capital expenditures, those financial products cannot be considered as suitable for the vessel owner / operator for supporting pay-per-use or energy-as-a-service solutions. Thus, possibly increased operational costs for the fleet owner are not eligible; however, additional investments in the infrastructure on shore or on the vessel, needed for the implementation of such a model, can be integrated into potential fundable projects. As regards the infrastructure deployment, the currently planned Innovation Fund initiative can / shall be followed by the stakeholders where both CAPEX and OPEX can be made eligible. The pay-per-use principle is described in detail under research question D.

F4. Is it possible to make the programmes and products more accessible and visible for the IWT sector, dominated as it is by very small companies, in order to help them invest in greening technologies?

Awareness

In the European IWT sector, funding and financing programmes and products are principally well-known thanks to different tools such as the EIBIP funding database. The general sector feedback in the respect of awareness, being satisfied with the existing level of information and the way it's channelled towards the targeted audience, is positive. For an additional increase of awareness and visibility within the sector, success stories shall be used as tools to share knowledge and lessons learned.

Accessibility

Many vessel owners / operators fall short when it comes to mobilizing in-house resources to elaborate a project application within the existing support schemes. Therefore, some decide to work together with consultants, others prefer to get advice directly from regional promotional entities or from branch organizations, associations, etc. In addition, project management practices and reporting requirements also require significant resources from the applicants. Therefore, a harmonization and simplification of all administrative processes is very much deemed as necessary and highly expected for a reduction of needed time resources. When looking from the project engineering perspective, one might advise that several applicants team up to create synergies when approaching a consultant and / or other providers for projects.

Moreover, the sector stated, that for investments into greening technology a minimum of 50% funding rate is preferred. The availability of an initial financial contribution via the programme or by supportive financial institutions could also be an enormous advantage for the sector.

F5. Are national and regional governments prepared to provide financial support for the transition towards zero-emissions IWT?

In terms of existing financial instruments for greening IWT on national and regional level, several aspects are taken into consideration: total budget, funding rate, beneficiaries, timespan and whether the scheme supports roll-out or research / pilots / test etc. The overarching overview over all relevant support schemes for IWT in the specific European countries is ***summarised in tabular format in chapter 9.4.***

In order to adequately respond to the formulated research question, various types of data were collected via a set of methodologies comprising desk research, an online survey of national authorities and the analysis of secondary data collected in the framework of the GRENDEL project (where a model state aid scheme is being drafted) and data elaborated within the official co-operation with the CLINSH initiative (where funds are available for greening of the vessels).

This research question concludes that the degree of financial support provided for the transition towards zero emissions IWT differs per country and region significantly. While countries like the Netherlands, Belgium, Luxembourg, France, Germany and Switzerland provide the sector with numerous attractive IWT financing opportunities, countries like Austria, Hungary, Romania, Slovakia, Croatia or Bulgaria lack any kind of financing incentives related to IWT. The only Eastern European country currently having a state aid scheme for the modernisation of the inland fleet is the Czech Republic.

F6. To what extent is it possible to combine the different EU and national and regional funds? Can they be combined with financing schemes and products; what is the scope for blending?

Blending is the combination of grants with non-grant resources such as loans, equity and guarantees from financial institutions as well as commercial loans and private investments in order to achieve a leveraged development impact. The main benefits of blending are the leveraging effect of public money, hence the increased impact of support actions and the principle of returns for private investors.

All blending operations carried out under the described funding programmes, relevant for greening IWT (F1), shall be implemented in accordance with the InvestEU Fund (F2), comply towards the rules of the programmes under which the support is provided, and rules laid down in the Financial Regulation. It is planned to provide a possibility to operate complementary to grant financing (e.g. Horizon Europe, CEF, etc.) through blending operations. Moreover, the programme is complementary with the European Structural and Investment Funds (e.g. ERDF, ESF+, Cohesion Fund, etc.) operating under shared management, which enables easier facilitation of the deployment through financial products as the Member States can rely in the InvestEU Programme and its simply set of rules applying in all cases.

In regards of cumulation in funding products, an action may be financed jointly from separate budget lines by different authorising officers responsible; however, in no circumstances shall the same costs be financed twice. In order to gain a stronger impact with the existing resources, projects shall not be covered fully by a grant. Therefore, co-financing may be provided in the form of the beneficiary's own resources, income generated by the action or work programme, or via financial or in-kind contributions from third parties.

F7. Is it possible to secure a price advantage on a European level between conventional diesel fuel and cleaner fuels, for example by a hedge?

Research question C presented that for the greening technologies (such as LNG and electricity), significant savings on fuel costs can be obtained in comparison with conventional diesel fuel cost. This difference could potentially offset the additional investments (capital costs) for greening technologies. Furthermore, the price of diesel, LNG and electricity all fluctuate substantially.

A hedge can be used to offset the price fluctuation of commodities and to secure the price advantage between the greening technologies and diesel. Hereby keeping energy costs within a predictable range to provide a more secure business case for investments into alternative green technologies in the IWT sector.

A hedge is an insurance on the price level of a commodity or different kinds of financial products and is used to offset the potential losses of fluctuating prices. A fuel price hedge can, therefore, be used to diminish the risk of potential losses of fuel prices unexpectedly increases. There are three main hedging strategies: future contracts, options contracts and price swaps.

Despite the commonly used principals of the different fuel hedging strategies in sea shipping, fuel hedging is not common practice in the inland waterways. For individual shipowners working in the spot market, current hedging possibilities are cumbersome, potentially costly and therefore not entirely suited for individual ship owners to secure the price advantages between commodities in the long term.

Hedging in terms of price swaps can be used by shipowners working on contracts for a longer period securing the price advantages of a greening technology. To be feasible, multiple shipowners need to be participating and cooperating in the swap. On a European scale, price swaps on a specific location could be an interesting opportunity to offer greening technologies for a fixed or maximum

price cap to individual shipowners. However, the price fluctuation of conventional diesel is not taken into account with the price swap. Therefore, in order to stimulate the transition towards greening technologies, hedging is not a solution on its own.

F8. Would it be possible to develop a specific programme, financial instrument/product or facility specifically for the IWT sector and investments in greening with relatively simple procedures, low requirements and/or relatively high funding rates?

Considering the conclusions from the relevant sub-questions in F and the experiences from the business, the current funding and financing schemes are not suitable to achieve a large-scale greening of the European IWT fleet. Therefore – also taking into account the available information on the follow-up programmes – new ways of funding and financing solutions have to be identified and programmed in order to reach the objective.

As such, the need is high to have a possibility for the IWT sector where funding and / or financing is available with relatively simple procedures, low requirements and / or relatively high funding rates. This need is also derived from the different environmental requirements, whereas those can hardly be met by only using the own resources of the owners / operators. Thus coordinated, transparent and fair support is needed as well for the stakeholders.

In principle it is possible to develop a specific scheme for the IWT sector for greening the fleet, whereas, when it comes to the possibility of developing the scheme, the following principles have to be declared from the very first moment of planning:

- All applicable legislation have to be respected and applied.
- The scheme has to be transparent for all stakeholders, and as inclusive as possible.
- The scheme shall provide reasonable, well-justified and fair support to all stakeholders to qualify for that, ensuring a level playing field.

It shall be the overall goal of the scheme to support the IWT sector in arriving to zero-emission waterborne transport by 2050. In addition, the scheme shall collect all available resources in order to provide and further promote them to the stakeholders. The support of the newly developed scheme can be provided in the form of the following or their combination:

- non-repayable grant
- bank guarantees
- loans

A potential new element additional to the above list might be, if more Member States decide for national / regional schemes, such as dedicated state aids for greening the IWT fleet.

The planned setup and structure of the fund is subject for research question I which integrates results and inputs from all other relevant research questions.

2 Introduction

Research question F will analyse how funding and financing can contribute to the energy transition towards a zero-emission European IWT sector in 2050. Given the involved considerable investments for greening techniques, the IWT sector expects that financing the investments on their own will not sufficiently contribute to the 2050 objective and as such there is a need for public funding (subsidies/grants) and financing (soft loans). There are ongoing European and national funding programmes either dedicated to the IWT sector or in general accessible for investments in greening. However, these funding programmes are insufficiently contributing to greening the IWT sector, especially given the zero-emission objective for the year 2050. There are several factors at play which cause this, two important reasons are:

- Funding programmes are characterised by difficult accessibility for the average inland shipping company which is very small in size;
- There are many funding programmes across Europe providing funding for projects with a relatively restricted scope in terms of budget and time, whereby each programme has its own set of conditions.

An important discussion then relates to how existing funding programmes and products, either national or European, can stimulate the energy transition towards a zero-emission European IWT sector. Which programmes and products are currently present and what are their characteristics, does it make them suitable for the objective? If not, is it possible to adjust/combine existing programmes or develop new programmes dedicated to greening the IWT sector with a specific set of conditions and characteristics? These questions need to be answered in Part F of the study.

Research carried out for the EP TRAN Committee on EU funding of transport projects is relevant. It will be important when looking at the co-financing rate to check what is expected for the next financial period (when available) for 2021-2027. Therefore, the task F will be forward looking; investigating what may be expected in the next 5-10 years rather than looking into schemes which existed in the recent past.

To take stock, it is relevant to map out EU funding schemes which are accessible for the European IWT sector, as well as their characteristics. This will help to decide whether and which programmes can be helpful in funding the greening of IWT towards zero emission, and in which way and in which magnitude.

Next to funding, there are also financing schemes providing financial products with EU backing. The IWT sector in general does not make much use of such financial products for several reasons. Before conducting analysis on this matter and coming up with solutions to alter this situation in which the IWT sector cannot optimally take advantage of such financial products, it is relevant to take stock and map out the financing schemes and products with EU backing which can be relevant for greening investments in IWT.

The following figure provides the overview of funding options with relation to the stage of innovation and deployment linked to the new single financing framework 2021-2027 – InvestEU Programme.

PROGRAMMES AND STAGES TO SHIFT TO A GREENER EUROPE (2021-2027)

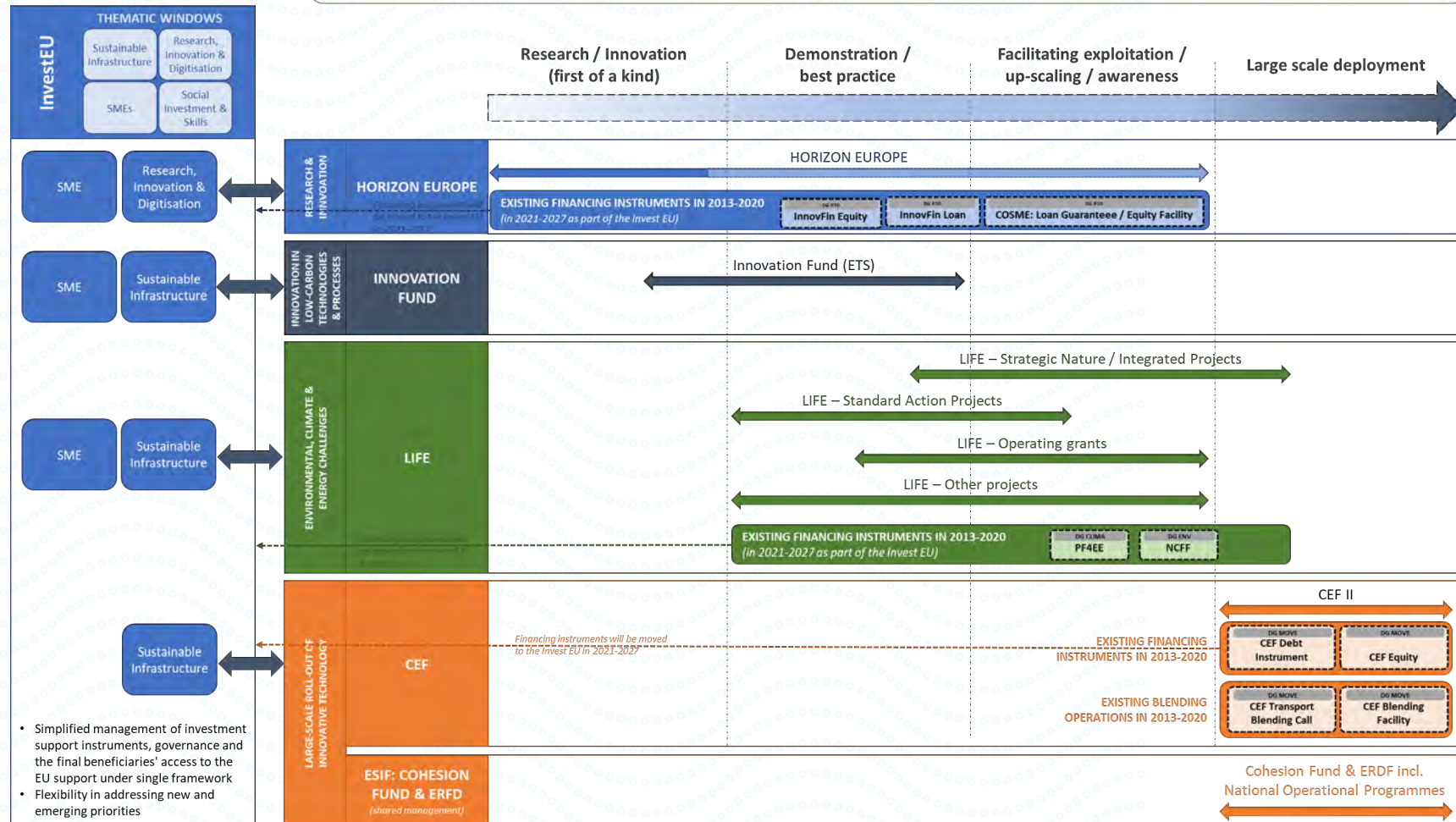


Figure 1: Overview of funding options with relation to the stage of innovation and deployment linked to the new single financing framework 2021-2027 – InvestEU Programme

3 Methodology

The analysis of potential funding programmes (research question F1) and financial instruments backed by the EU funding (research question F2) which are expected in the next multi-annual financial framework period was done through extensive desk research of the regulatory framework which is currently shaped. This regulatory framework is built upon the evidence and lessons learned from interim evaluation of previous Union Programmes and the impact assessments which accompany the proposals for Regulations establishing new Union Programmes (CEF, LIFE, Horizon Europe, Innovation Fund or InvestEU).

Further to the extensive desk research, some of the finding and open points were validated through interviews with SEA Europe (member of the working group on Innovation Fund), DG MOVE or EIB / EIAH.

The chapters below are consolidated based on the status as of **May 2020**, thus based on the Commission Proposals for Regulations establishing new Programmes, the common understanding between co-legislators and the Partial General Approach, both approved in **April 2019**.

The proposals for the regulatory framework of new Union Programmes were adopted and presented by the European Commission in June 2018, followed by the discussions within the Council and its preparatory bodies, and opinion by the Committee of Regions, European Economic and Social Committee. The European Parliament delivered its position in April 2019 and this is the most recent status of the development of the regulatory framework; still waiting for the final financial allocations based on the final agreement on the Multiannual Financial Framework (MFF) 2021-2027.

Apart from the regulatory framework for the new Union Programmes, the European Commission communicated proposals for the MFF 2021-2027. The information about the budgetary allocations to individual Programmes provided in this report is in line with the proposal of the Commission, and where explicitly mentioned, information from either the latest version approved by the Parliament in April 2019 or taken from the MFF toolkit with financial figures from December 2019 is used. It was identified that the changes and numbers used in various sources are inconsistent and sometimes numbers even do not sum up. The final budgetary allocations can be made as soon as the Member States agree on the MFF. Furthermore, the MFF negotiations are still on-going when delivering this report.

As there was no agreement achieved on the Summit in 20-21 February 2020, the budgetary allocations remain open and need to be updated as soon as the information is available. It was communicated by some Member States, that the late approval of the MFF will postpone as well for instance the allocations and planning related to the use of Cohesion Fund or ERDF, which both can be considered important for the funding and financing of the energy transition towards zero-emission European IWT sector in 2050 on the national and regional levels. The finalisation of Operational Programmes and Partnership Agreements for the use of the Cohesion budget could be postponed till beginning 2021.

During the elaboration of this document, several interviews and questionnaires have been conducted with relevant stakeholders. The received answers and inputs have been considered during the drafting of the text. In the elaboration of the answer to research question F5, official co-operation has been established with the CLINSH initiative. CLINSH has provided input relevant for the respective countries. The Corona crisis experienced in Q1-Q2/2020 is shortly reflected in the Conclusion chapter.

4 F1. EU Funding Programmes in 2021-2027

This chapter focuses on the funding programmes which are expected for the financing period 2021-2027 that fall under the **(in-)direct management** meaning that the Commission implements budget directly by the departments of the Commission or through executive agencies (as defined in the Article 69 Executive agencies of the Financial Regulation). The **current** characteristics of such programmes is out of the scope of this research.

4.1 Connecting Europe Facility (CEF)

4.1.1 Objectives

The **general objective** of the new Connecting Europe Facility (CEF) is to **build, develop, modernise and complete the trans-European networks in the fields of transport, energy and digital** and to facilitate cross-border cooperation in the field of **renewable energy**, taking into account the long-term **decarbonisation** commitments, **increasing European competitiveness**, smart, sustainable and inclusive growth, territorial, social and economic cohesion, access to and integration of the internal market and **with emphasis on synergies among transport, energy and digital sectors**.

Specific objectives are defined as contribution to the development of projects of common interest relating:

- **in transport sector** - to efficient, interconnected and multimodal networks and infrastructure for smart, interoperable, sustainable, inclusive, accessible, safe and secure mobility;
- **in energy sector** - to further integration of an efficient and competitive internal energy market, interoperability of networks across borders and sectors, facilitating decarbonisation of the economy, promoting energy efficiency and ensuring security of supply, and to facilitate cross-border cooperation in the area of energy, including renewable energy;
- **in digital sector** - to the deployment of safe and secure very high capacity digital networks and 5G systems, to the increased resilience and capacity of digital backbone networks, as well to the **digitalisation of transport** and energy networks
- **synergetic actions** - actions contributing simultaneously to the achievement of one or more objectives of at least two sectors shall be eligible to receive Union financial assistance under the new CEF and to benefit from a higher co-funding rate (by 10%). Example can be a project with a lock being co-funded via CEF-transport which would include some renewable energy generation aspects falling under CEF-energy.

4.1.2 Budget

The final budgetary allocations for CEF depends on the outcomes of on-going negotiations on Multi-annual Financing Framework 2021-2027.

As part of the next long-term EU budget (MFF 2021-2027), the European Commission proposed in June 2018 to renew the Connecting Europe Facility (CEF), a funding programme that supports the **development of transport, energy and digital infrastructure** within trans-European

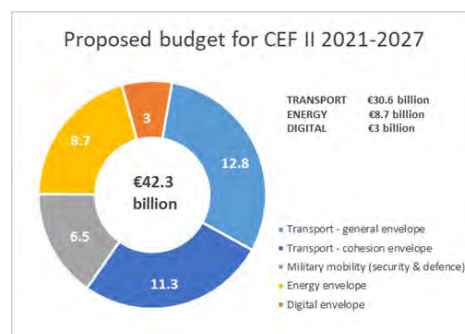


Figure 2: Proposed MFF budget for the new CEFII. Source: Proposal from EC

networks with the total budget of **€42.3 billion**³ in current prices. The current proposal for MFF 2021-2027: „Negotiating Box with figures“ from December 2019, as presented by the Finish Presidency, however dramatically reduced the budget for CEF which will not be beneficial for transport-related projects.

Compared to the first CEF, the new proposal seeks to speed up the **decarbonisation and digitalisation** of EU economy by better integrating the transport, energy and digital sectors, and to help achieve EU climate objectives. It should also support jobs, economic growth and the deployment of new technologies.

In transport, the focus shifts to **decarbonisation and making transport connected, sustainable, inclusive, safe and secure**. The proposed transport budget consists of three parts. There is the **general transport envelope of €12.8 billion** and **€11.3 billion earmarked in the Cohesion fund**, to be implemented under the CEF on projects in EU countries eligible for cohesion funding. An additional **€6.5 billion, earmarked in the security and defence budget**, destined to projects adapting parts of the transport network to enable dual civilian-military use.

Transport - Cohesion envelope

The Cohesion envelope is to be used to implement the CEF projects in EU countries eligible for cohesion funding, whereas the cohesion envelope shall **not be used** to finance **cross-sectoral** work programmes and **blending** operations.

The proposal for a Regulation establishing the Connecting Europe Facility⁴ (an outcome of the European Parliament's first reading, April 2019) envisages that *“as of 1 January 2023, resources transferred to the Programme **which have not been committed to a transport infrastructure project shall be made available, on a competitive basis, to all Member States eligible for funding from the Cohesion Fund to finance transport infrastructure projects in accordance with this Regulation.**”*

4.1.3 Eligibility

Eligible actions

Only actions contributing to the achievement of the objectives of the new CEF (hereinafter referred to as Programme), taking into account **long-term decarbonisation commitments**, are eligible for funding. Such actions include **studies, works** and other accompanying measures necessary for the management and implementation of the Programme and the sector-specific guidelines.

³ <http://www.europarl.europa.eu/legislative-train/theme-new-boost-for-jobs-growth-and-investment/file-mff-cef-2021-2027>

⁴ Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL establishing the Connecting Europe Facility and repealing Regulations (EU) No 1316/2013 and (EU) No 283/2014. - Outcome of the European Parliament's first reading (Strasbourg, 15 to 18 April 2019)

Eligible actions in the transport sector (according to the new CEF)			IWT ⁵	Blending	
Actions relating to		Alignment with TEN-T policy (based on Regulation (EU) No 1315/2013)			
TRANSPORT	(a) efficient, interconnected, interoperable & multimodal networks for development of railway, road, inland waterway & maritime infrastructure	(i) actions implementing the core network (ii) actions relating to cross-border links of the comprehensive network (iv) projects of common interest connecting TEN-T with neighbouring countries	Add (i) incl. (pre-identified) cross border and missing links, as well as urban nodes, multimodal logistics platforms, maritime ports, inland ports , rail-road terminals and connections to airports of the core network Add (ii) incl. actions for pre-defined sections, actions relating to studies for the development of the comprehensive network and actions relating to maritime and inland ports of the comprehensive network Add (iv) ... in order to connect the trans-European network with infrastructure networks of neighbouring countries (<i>examples: implementation of traffic management systems, facilitate IWT with third countries, connection the core network at border crossing points, or completion of transport infrastructure in 3rd countries serving as a link between parts of the core network</i>)	YES (<i>partially if addressing the infrastructure like ports, etc. and linking with alternative fuels infrastructure, renewable energy generation, etc.</i>)	YES
	(b) smart, interoperable, sustainable, multimodal, inclusive, accessible, safe and secure mobility	(ii) actions supporting telematic applications systems (RIS for inland waterways) (iii) actions supporting sustainable freight transport services and actions to reduce rail freight noise (<i>that use infrastructure of comprehensive network and contribute to reducing CO2 emissions and other negative enviro impacts, e.g. stimulate resource and carbon efficiency, in particular in the fields of ... driving/steaming, systems and operations planning</i>)	<ul style="list-style-type: none"> ▪ sustainable use of transport infrastructure, including its efficient management; ▪ deployment of innovative transport services, including telematic applications and the development of the ancillary infrastructure necessary to achieve mainly environmental and safety-related goals of those services, as well as the establishment of relevant governance structures; ▪ multimodal transport service operations, accompanying information flows & cooperation between transport service providers; ▪ resource and carbon efficiency (...driving/steaming, systems and operations planning); ▪ information on fleet characteristics and performance, administrative requirements and human resources ...⁶ 	YES	YES

⁵ Actions and topics defined in the new CEF with relevance for energy transition towards a zero-emission European IWT sector

⁶ In accordance with Article 32 of Regulation (EU) No 1315/2013 (TEN-T) Sustainable freight transport services

Eligible actions in the transport sector (according to the new CEF)			IWT ⁵	Blending	
Actions relating to		Alignment with TEN-T policy (based on Regulation (EU) No 1315/2013)			
		(iv) actions supporting new technologies and innovation , incl. automation, enhanced transport services, modal integration and alternative fuels infrastructure for all modes of transport	<ul style="list-style-type: none"> ▪ decarbonisation of transport through transition to innovative and sustainable transport technologies ▪ decarbonisation of all transport modes by stimulating energy efficiency, introduction of alternative propulsion systems, including electricity supply systems, and provision of corresponding infrastructure ▪ measures to reduce external costs, such as congestion, damage to health and pollution of any kind including noise and emissions ▪ improve resilience to climate change ▪ further advance the development and deployment of telematic applications within and between modes of transport⁷ 	YES	YES
SYNERGIES	As above in combination with (i) ENERGY actions or (ii) DIGITAL actions		Examples of funded projects may be: If a lock on a canal is being co-funded via CEF-transport and includes some renewable energy generation items (which are not eligible under CEF Energy), then such items can also be co-funded under a CEF Transport if synergetic elements does not exceed 20% of the total eligible costs of the action	YES	YES

Table 1: Overview of eligible actions in terms of the energy transition towards a zero-emission European IWT sector.

Source: Article 9 Eligible actions of the proposal for a Regulation establishing CEF and Article 32&33 of Regulation (EU) No 1315/2013 (TEN-T)

⁷ In accordance with Article 33 of Regulation (EU) No 1315/2013 (TEN-T) New technologies and innovation

Eligible entities

Legal entities established in a **Member state**, including joint ventures, legal entities created under Union law and international organisations where provided for in the work programmes and legal entities established in a third country associated to the Programme are eligible.

Legal entities established in a **third country which is not associated to the Programme** are **exceptionally eligible** to receive support under the Programme where **this is indispensable for the achievement of the objectives of a given project of common interest** in the field of transport, energy and digital or of a cross-border project in the field of renewable energy. This is a prerequisite for non-EU Member States like Switzerland, Serbia, Ukraine, Moldova or Bosnia and Herzegovina.

Natural persons are **not** eligible.

Proposals submitted by legal entities require the **agreement of the Member State concerned** as in the previous programme. Novelty is, that Member State may decide that such agreement is not needed for specific work programme or for specific categories of applications. This shall be, however, explicitly indicated in the relevant work programme or call.

Participation of third countries

The Programme shall be open to (a) EFTA members which are members of EEA, (b) acceding countries, candidates and potential candidates, (c) countries covered by the European Neighbourhood Policy (ENP), (d) other third countries; all in accordance with general terms and conditions laid down in respective (framework) agreements and / or other specific conditions.

For third countries with inland waterway transport, the programme is open as follows (Feb 2020)

- Switzerland (Rhine river) is member of EFTA, however Switzerland has not joined the EEA but has a set of bilateral agreements with the EU which allow it also to participate in the internal market. Therefore, Switzerland is in CEF considered as a third country and entities from third countries may participate as part of a consortium with applicants from EU/EEA.
- Serbia (Danube river) is a candidate country
- Ukraine and Republic of Moldova (both Danube river) are ENP countries
- Bosnia and Herzegovina (Sava river) is a potential candidate

Additional agreements can be made for third countries based on other framework agreements. Details on participations are set in the work-programmes and the calls for proposals. The details may contain for instance (lessons learned from MFF 2014-2020) requirements like agreement of the Member State concerned by the proposed Action, an explanation from the European partner involved in the proposal on why the participation of the third country applicant is indispensable. Applicants that are entities established in a third country can be required also to provide proof of the support of the third country authorities concerned by the Action.

4.1.4 Forms of support

The Programme may provide funding in forms of **grant** and **procurement**. It may also contribute to **blending operations**. In the **transport sector** the Union contribution to blending operations may be used for **actions relating to smart, interoperable, sustainable, inclusive, accessible, safe and secure mobility** and shall not exceed 10% of planned budgetary amount.

4.1.5 Grants

Award criteria and selection

Transparent award criteria shall be defined in the work programmes, followed-up by the calls for proposals. In addition to the “traditional” award criteria known from previous Programme 2014-2020 like maturity, relevance, impact, quality, the projects will be required to deliver economic, social and environmental impact, including **climate impact (project life cycle benefits and costs)**, soundness, comprehensiveness and transparency of the analysis. The proposed projects shall be sound as regards **maintenance strategy for completed projects**, implementation plan, and shall prove the catalytic effect of financial assistance on investment or the need to overcome financial obstacles (generated by insufficient commercial viability, high upfront costs or the lack of market finance). In the transport sector, the assessment of proposals shall, where applicable, ensure that proposed actions are consistent with the corridor work plans. The assessment shall also evaluate whether the implementation of actions financed by the CEF risks causing disruption to freight and passenger flows on the section of the line concerned by the project and whether these risks have been mitigated.

Co-financing rates

The co-financing rates depend on the type of the action and whether the action is financed with the amounts transferred from the Cohesion Fund, thus “transport – cohesion envelope”. Provisions on the co-financing rates shall be detailed in the work programmes through which the Programme (CEF) is implemented.

Action type	Transport - Regular envelope	Transport - Cohesion envelope
TRANSPORT	Studies	Shall not exceed 50% of the total eligible cost
	Works	Shall not exceed 30% of the total eligible cost The co-financing rates may be increased to a maximum of 50% for: <ul style="list-style-type: none"> ▪ actions relating to cross-border links, ▪ actions supporting telematic applications systems, ▪ actions supporting inland waterways, railway interoperability, ▪ actions supporting new technologies and innovation, ▪ actions supporting improvements of infrastructure for safety, ▪ actions adapting the transport infrastructure for Union external border checks purposes. For actions located in outermost regions the co-financing rates shall be set to a maximum of 70%.
		Max. co-financing rates shall be those applicable to Cohesion Fund These co-financing rates may be increased to a maximum of 85% for actions relating to cross-border links under the conditions that actions demonstrate a high degree of integration in planning & implementation of the action and actions relating to missing links .

Action type		Transport - Regular envelope	Transport - Cohesion envelope
		<p>As regards actions relating to cross-border links, the increased maximum co-financing rates may only apply to actions that demonstrate a high degree of integration in the planning and implementation of the action, for instance through the establishment of a single project company, a joint governance structure, a bilateral legal framework or an implementing act; in addition, the co-financing rate applicable to projects carried out by integrated management structures, including joint ventures (see Eligible entities), may be increased by 5%.</p>	
ENERGY	Studies	Shall not exceed 50% of the total eligible cost	N/A
	Works	<p>Shall not exceed 50% of the total eligible cost; and for works in outermost regions the co-financing rates shall be to a maximum of 70%.</p> <p>The co-financing rates may be increased to a maximum of 75% for:</p> <ul style="list-style-type: none"> for actions contributing to the development of projects of common interest which provide a high degree of regional or Union-wide security of supply, strengthen the solidarity of the Union or comprise highly innovative solutions⁸. 	N/A
DIGITAL	Studies	Shall not exceed 50% of the total eligible cost	N/A
	Works	<p>Shall not exceed 30% of the total eligible cost; and for works in outermost regions the co-financing rates shall be set to a maximum of 70%.</p> <p>The co-financing rates may be increased to a maximum of 50% for:</p> <ul style="list-style-type: none"> for actions with a strong cross-border dimension, such as uninterrupted coverage with 5G systems along major transport paths or deployment of backbone networks between MSs and between the Union & third countries <p>The co-financing rates may be increased to a maximum of 75% for:</p> <p>for actions implementing the Gigabit connectivity of socio-economic drivers. Actions in the field of providing local wireless connectivity in local communities, when implemented via low value grants may be funded by Union financial assistance covering up to 100 % of the eligible costs, without prejudice to the principle of co-financing.</p>	N/A
SYNERGIES		<p>The maximum co-funding rate shall be the highest maximum co-funding rate applicable to the sectors concerned.</p> <ul style="list-style-type: none"> In addition, the co-financing rate applicable to these actions may be increased by 10%. 	

Table 2: CEF – co-financing rates per sector, action type and envelope

⁸ Based on the evidence referred to in Article 14(2) of Regulation (EU) No 347/2013 on guidelines for trans-European energy infrastructure

Eligible costs

As for eligible costs, the Financial regulation criteria apply⁹. In addition to these criteria, eligible are only those **expenditures incurred in Member States**¹⁰ and shall not include value added tax ("VAT"). The cost of **equipment, facilities and infrastructure** which is treated as **capital expenditure** by the beneficiary **may be eligible up to its entirety**.

Example of restrictions concerning the mobile equipment in CEF Programme

[2017 CEF Transport Blending call for proposals](#): *For mobile equipment, i.e. vehicles, the grant component only covers the innovative parts, whereas for the loan component there is no such restriction. Furthermore for the grant component, the eligible costs of mobile equipment must only relate to the financial difference between a conventional solution and the use of a new technology (e.g. the additional financial effort between diesel propulsion and a fuel-cell hydrogen propulsion). The mobile equipment supported by the grant component must remain for at least 5 years registered and operated in a Member State. The capping for mobile equipment is waived for this call to facilitate/accelerate (mass) market roll-out. However, applicants should always describe in detail which infrastructure will be used to support the roll-out, regardless whether support is requested, or not, in their proposal to this call.*

4.1.6 Synergies with other Programmes and instruments

Cumulative, complementary and combined funding

An action that has received a contribution under the foreseen CEF Programme may also receive a contribution from any other Union programme, including funds under shared management, **provided that the contributions do not cover the same costs**.

The **cumulative funding** shall **not exceed the total eligible costs** and the support from the different Union programmes may be calculated on a pro-rata basis in accordance with the documents setting out the conditions for support.

Synergies with other Programmes

Synergies with **Horizon Europe** will ensure that:

- (a) R&I needs in the areas of transport, energy and in the digital sector within EU are identified and established during Horizon Europe's strategic planning process;
- (b) **Connecting Europe Facility supports large-scale roll-out and deployment** of innovative technologies and solutions in the fields of transport, energy and digital infrastructure, in particular those resulting from Horizon Europe;
- (c) Exchange of information and data between Horizon Europe and the Connecting Europe Facility will be facilitated, for example by highlighting technologies from Horizon Europe with a high market readiness that could be further deployed through the CEF.

European structural and investment funds (ESIF) are managed by Member States themselves through Partnership Agreements. The Cohesion fund and ERDF fund actions in the transport, energy and digital sectors. Currently, in 2014-2020, investments on the TEN-T Network are

⁹ Article [186] of the Financial Regulation

¹⁰ Except where the project of common interest or cross-border projects in the field of renewable energy involves the territory of one or more third countries and where the action is indispensable to the achievement of the objectives of the project concerned

supported by CEF, the Cohesion Fund and ERDF. The **overlap** between these instruments **in the field of transport** is limited. CEF has narrower eligibility focusing, in particular, on railways and inland waterways, while ESIF also covers important investments in the road sector. In addition, CEF resources are concentrated **on the core network**, while ESIF covers both the core and the comprehensive networks amongst other transport infrastructure¹¹.

Combination of grants with other sources of financing (blending operations)

Grants may be used for combination with financing from the European Investment Bank (EIB) or National Promotional Banks or other development and public financial institutions as well as from private-sector finance institutions and private-sector investors, including through Public Private Partnerships. Dedicated calls for proposals will address such combinations.

Example of CEF blending operations in 2014-2020

[MAP 2017 CEF Transport Blending call](#) addressed the implementation of transport infrastructure projects on the Core Network and support the deployment of a sustainable and efficient transport system, while promoting the decarbonisation of all transport modes along the TEN-T Core Network Corridors and nodes. It was first blending opportunity within CEF combining CEF grants with financing from the European Investment Bank, whenever possible via the EFSI, National Promotional Banks, or private sector investors, in order to maximise the leverage of private sector involvement.

[2019 CEF Transport Blending Facility](#) call supports deployment of ERTMS and alternative fuels. It is implemented via a cooperation framework between the European Commission and Implementing Partners to support Blending Operations, i.e. investments combining the use of grants and/or financial instruments from the EU budget and financing from the Implementing Partners (via a loan, debt, equity or any other repayable form of support). Project promoters can ask for advisory services related to financing and blending opportunities through EIAH.

Financial instruments linked to CEF 2014-2020

CEF Debt Instrument (a risk sharing instrument) - provides an extension of the credit enhancement of project bonds provided under the PBI (Project Bond Initiative), a new credit enhancement mechanism targeting loan financing by the banking sector (building on the experience of LGTT), as well as loans, guarantees and equity-type debt financing support to corporates

CEF Equity (an equity instrument) - provides equity or quasi-equity financing to smaller and riskier projects in the field of broadband, transport, and energy

4.1.7 Governance and programming

In order to provide transparency and predictability and to enhance the quality of the projects, the **Commission shall adopt by 31 December 2020 the first multiannual work programmes** that will include the timetable of the **calls for proposals for the first three years of the programme**, their topics and indicative budget as well as a prospective framework covering the entire programming period.

Concerning actions with synergies between sectors (transport, energy, digital), these shall be implemented **through dedicated work programmes** addressing at least two sectors. Work

¹¹ COMMISSION STAFF WORKING DOCUMENT IMPACT ASSESSMENT Accompanying the document Proposal for a Regulation of the European Parliament and the Council establishing the Connecting Europe Facility and repealing Regulations (EU) No 1316/2013 and (EU) No 283/2014

programmes will include specific award criteria and will be financed with budget contributions from the sectors involved.

The implementing organisation, responsible for technical and financial implementation of CEF Programme, is the [Innovation and Networks Executive Agency \(INEA\)](https://ec.europa.eu/inea/en)¹².

¹² <https://ec.europa.eu/inea/en>

4.1.8 Examples of relevant projects for energy transition in IWT

The following overview provides a list of selected projects addressing deployment of new technologies & innovation in IWT, with a focus on decarbonisation, safety and innovative technologies for the promotion of sustainability, operation, management, accessibility, multimodality and efficiency of the network. Other projects that can be understood as relating to the energy transition are related to digitalisation and automation. For example, RIS can contribute to the fuel reduction, thus emission reductions, thanks to the actual information about the operation and availability of IWT infrastructure (bridges, locks, etc.) and recommendations for the vessel operator to for instance reduce the speed. The RIS related projects are implemented mainly by the public entities and therefore they are not part of this overview.

ID	Title	Funding year (start-end)	Project details	Total eligible costs / CEF co-financing (EUR)	CEF theme / priority ¹³	Status ¹⁴
2017-NL-TM-0140-W (Blending Call 2017 – cut-off date 2)	ACCEL BARGE: Accelerated Electrification of Inland Waterways (BE, DE, NL)	2017 (04/2018-03/2020)	Transition towards full electric IWT, encompassing vessels, infrastructures and equipment for power supply (2 nd phase): <ul style="list-style-type: none"> • construction of 9 full-electric inland vessels with on board e-power supply equipment, “e-powerboxes” (5 multipurpose “Kempenaar”-sized vessels & 5 containerised batteries; 4 container vessels with extra width (14.2m) & 20 containerised batteries) • battery supply, storage and related shore-based infrastructure. 	€28,000,000 / €5,600,000 (20%)	Innovation	Ongoing <i>(to be checked due to the fact that previous stage 2017-NL-TM-0056-W was terminated)</i>
2017-NL-TM-0056-W (MAP Call)	Port-Liner, “zero emission” ships for	2017 (07/2017-12/2019)	To promote the uptake of zero emission shipping based on electric propulsion, targeting inland waterway vessels (1 st phase). The Action included preparatory tasks, final design, engineering and construction of “E-Powerboxes” and	€0 Planned: €34,893,003 /	Innovation	Terminated

¹³ **Innovation** = B. Ensuring sustainable and efficient transport in the long run → B.1 Deployment of new technologies and innovation in all transport modes, with a focus on decarbonisation, safety and innovative technologies for the promotion of sustainability, operation, management, accessibility, multimodality and efficiency of the network

¹⁴ Status as indicated on the official INEA website which was last modified in February 2020. Status „ongoing“ might mean that the project is finalised, but the final reporting and payment of balance is still outstanding. There is one year after the finalisation of the project for the submission of the final report together with the request of payment of balance. Afterwards still some months till the payment of balance is done.

ID	Title	Funding year (start-end)	Project details	Total eligible costs / CEF co-financing (EUR)	CEF theme / priority ¹³	Status ¹⁴
	inland waterways (BE, DE, NL)		installation in the newly built inland vessels (6 full-electric container vessels fed by batteries (1.6 MW) containerised in E-Powerboxes). The "E-Powerboxes" would power the propulsion system of the vessels and be swapped at port terminals for charging. The Action has been terminated.	€6,873,922 (19.7%)		
2017-DE-TM-0040-W (MAP Call)	LNG Rollout in Central Europe - for a greener transportation sector (CZ, DE)	2017 (01/2018-06/2021)	Roll-out of Action 2015-DE-TM-0376-M, consisting of a pilot deployment of two LNG terminals in Germany. The objective was to promote the use of LNG as fuel for inland navigation and road freight transport. It consisted of fostering the roll-out of small-scale LNG terminals in nine locations in Germany and one in the Czech Republic. These terminals combined LNG distribution hubs with fuelling facilities for trucks and bunkering facilities for inland vessels. In order to increase the efficiency and safety of the operations of the LNG fuelling stations, equipment and customers, the Action included also the design and development of an online platform to coordinate LNG truck and vessel operators, logistics companies and the infrastructure providers. These small scale and open access terminals were to be deployed at strategically important inland ports along the Core Network in Central Europe.	€0 Planned: €16,364,700 / €3.272.940 (20%)	Innovation	Terminated
2016-SK-TMC-0235-S (MAP Call)	fuelCNG	2016 (07/2017-12/2020)	To create market trust and attract new customers to use natural gas and bio-methane in transport, in order to support to achieve the national and European targets in the area of alternative fuels and in decarbonisation of transport. The Action consists of a study with pilot deployment of LNG (liquified natural gas) and CNG (compressed natural gas) technology in Slovakia. The pilot includes: 14 L2CNG stations (LNG and CNG fuelling infrastructure network supplied by	18,462,690 / 15,693,287 (85%)	Innovation	Ongoing

ID	Title	Funding year (start-end)	Project details	Total eligible costs / CEF co-financing (EUR)	CEF theme / priority ¹³	Status ¹⁴
			LNG), 3 LNG stations and a LNG liquefaction plant. The bunkering of inland vessels is envisioned.			
2015-HU-TM-0349-M (MAP Call)	PAN-LNG-4-DANUBE (HU)	2015 (06/2016-12/2021)	To foster LNG use in inland navigation sector across the Danube, therefore contributing to the European alternative fuels implementation strategy. The Action, including a study and a real-life pilot deployment, is implemented in the Core Port of Csepel-Freeport, the biggest inland port in Hungary, in the southern part of Budapest on the Rhine-Danube Core Network Corridor. Among others, the objective is to build technical, financial and commercial real-life experience related to the operations of on-shore LNG bunkering and LNG-propelled vessels on the Danube, through two pilots: one pilot for the innovative LNG bunkering and refuelling station for vessels and trucks in the Freeport of Csepel, and one pilot to retrofit and operate a freight vessel with LNG propulsion.	€7,097,150 / €6,032,578 (85%)	Innovation	Ongoing
2015-EU-TM-0404-S (MAP Call)	LNG Logistics (FR)	2015 (08/2016-10/2018)	To develop a European LNG distribution network for inland waterways with new solutions for LNG transportation and storage. The Action, which includes a case study, will be implemented in the North Sea–Mediterranean corridor, in particular, in the Rhone-Saone basin, from the maritime port of Marseille to Dijon (Pagny), including some Medlink inland ports for inland facilities such as Salaise, Villefranche sur Saône or Mâcon. The Action will deliver a package of innovative solutions for transportation and the storage of LNG in inland waterways and maritime terminals. In addition, it will also determine and evaluate the economic viability of the project and deliver a business plan intended	€1,757,085 / €878,543 (50%)	Innovation	Ongoing

ID	Title	Funding year (start-end)	Project details	Total eligible costs / CEF co-financing (EUR)	CEF theme / priority ¹³	Status ¹⁴
			to demonstrate the competitiveness of this solution with respect to a classic road distribution network (www.tl-a.net)			
2015-DE-TM-0376-M (MAP Call)	LNG for shipping and logistics in Europe (DE)	2015 (03/2016-12/2020)	<p>To promote the use of LNG as fuel for inland navigation in the German market. The scope of the action:</p> <ul style="list-style-type: none"> • A feasibility study – combining (a) demand analysis for logistics and transportation hubs including the evaluation of potential appropriate locations for LNG distribution infrastructure based on a set of standardised criteria and (b) outline for a wide-scale roll-out of the concept in Germany and other European countries along important transportation routes (inland waterway routes and road axes). • The real-life trial, incl. the construction of 2 water-site small-scale terminals (100m3) within the harbour areas of Mannheim and Duisburg. <p>www.liquind.de</p>	€8,112,000 / €4,056,000 (50%)	Innovation	Ongoing
2014-NL-TM-0394-S (MAP Call)	Breakthrough LNG deployment in inland waterway transport (BE, DE, NL)	2014 (01/2016-12/2019)	<p>The objective of the Action is to reduce the investment barrier for ship owners with the aim of facilitating large scale implementation of LNG in inland navigation. Done via:</p> <ul style="list-style-type: none"> • standardisation and type approval of the most common components and configurations (tank connection space, engines/engine rooms) resulting in an absolute reduction of the investment costs itself (estimated impact after project 20-30% reduction); 	€9,889,510 / €4,944,755 (50%)	Innovation	Ongoing

ID	Title	Funding year (start-end)	Project details	Total eligible costs / CEF co-financing (EUR)	CEF theme / priority ¹³	Status ¹⁴
			<ul style="list-style-type: none"> • application of innovative financial constructions in the business client relationship in order to avoid the need of capital investments by ship owners Pilot deployments: 3 vessels and one bunkering station			
2014-EU-TM-0210-S (MAP Call)	Pilot implementation of an Upper Rhine traffic management platform (FR, DE, CH)	2014 (07/2014-06/2018)	Implementing an innovative ICT traffic management platform for inland waterway transport. The studies improved the overall logistic processes in 9 inland ports on the Rhine-Alpine Core Network Corridor. The Action included pilot deployment: an ICT traffic management platform at three ports in France, Germany and Switzerland; the feasibility study for the roll-out of the ICT traffic management platform at six other ports along the Upper Rhine and the conceptual design for the functional and geographical extension of the platform to non-containerised cargo, rail and truck hinterland traffic. www.rheinports.net	??? / € 992,500	Innovation	Closed
2014-BE-TM-0578-S (MAP Call)	Watertruck+ (BE, FR, NL)	2014 (01/2014-06/2020)	Introduction of an innovative concept for the transport of goods on small waterways (CEMT I-IV) that can unlock the economic potential of a region through use of small, self-propelled or unpropelled, standardised barges. The Action's pilot will support the construction of fleet of 31 barges and pushers, and will develop a master plan including a financial tool box and a financing strategy for the future large-scale roll-out of 500 barges and pushers. The Action will stimulate interregional inland waterway transport by lowering costs and contribute to the reduction of congestion, greenhouse gases and noxious emissions. www.watertruckplus.eu	€23,014,800 / €11,507,400 (50%)	Innovation	Ongoing

ID	Title	Funding year (start-end)	Project details	Total eligible costs / CEF co-financing (EUR)	CEF theme / priority ¹³	Status ¹⁴
(MAP Call)	LNG Masterplan for Rhine-Main-Danube	2012 (01/2013-12/2015) TEN-T programme 2007-2013 (previous to CEF)	To create a platform for the cooperation of authorities and industry stakeholders with the purpose to facilitate the creation of a harmonized European regulatory framework for LNG as fuel and cargo in inland navigation and to promote the introduction of LNG as a fuel and cargo for inland shipping. Deliverables: various LNG terminals and bunkering stations concepts, vessel concepts. Pilot deployment of LNG terminal in Ruse, Bulgaria. Pilot deployment of 3 LNG-fuelled vessels. LNG Masterplan. www.lngmasterplan.eu	50%	Innovation	Closed

Table 3: Examples of relevant projects funded through CEF / TEN-T Programmes

4.2 Programme for the Environment and Climate Action (LIFE)

The LIFE Programme, launched in 1992, is the only EU fund entirely dedicated to environmental and climate objectives. The LIFE Programme is between EU programmes supporting research and innovation on the one hand and EU programmes financing large-scale deployment of measures on the other hand.

The main changes in the LIFE Programme 2021-2027 address improvement of coherence between the LIFE programme and other EU funds and enhancement of the catalytic role of the programme, simplification of management and changes to the strategic focus of the programme.

4.2.1 Objectives

The general objective of the new LIFE Programme 2021-2027 is to:

- contribute to the **shift towards a sustainable, circular, energy-efficient, renewable energy-based, climate-neutral and -resilient economy**,
- protect, restore and improve **quality of the environment, including air, water and soil**,
- halt and reverse biodiversity loss and to tackle the degradation of ecosystems, including through supporting the implementation and management of the Natura 2000 network, thereby contributing to sustainable development.

Specific objectives are divided into (1) Environment and (2) Climate actions as follows:

Specific objective	Sub-programme	Details	Type of action				IWT
			Strategic nature projects	Strategic integrated projects	Technical assistance projects	Standard action projects	
Environment	Nature and Biodiversity	Support for standard action projects for developing, applying and promoting best practice in relation to nature and biodiversity, as well as «Strategic Nature Projects» to support and boost the implementation of EU nature rules, and biodiversity policy objectives through mainstreaming.	X		X	X	-
	Circular Economy and Quality of Life	Supported for actions reaching major EU policy objectives such as the transition to a circular economy and protecting and improving the air quality and water quality.		X	X	X	X
Climate Action	Climate Change Mitigation and Adaptation	Support for actions which will help implement the 2030 energy and climate policy framework and meet the Union's commitments under the Paris Agreement on Climate Change.		X	X	X	X
	Clean Energy Transition	Support for actions which build capacity, stimulate investments and support policy implementation activities focusing on energy efficiency and small-scale renewables that contribute to climate mitigation and/or environmental objectives		X	X	X	X

Table 4: Objectives of LIFE 2021-2027 and applicability for the financing of the energy transition towards zero emission European IWT sector

4.2.2 Budget

The final budgetary allocations for CEF depends on the outcomes of on-going negotiations on Multi-annual Financing Framework 2021-2027. The latest allocation from July 2019 is as indicated on the figure. European Parliament proposed EUR 6.44 billion at constant 2018 prices, i.e. EUR 7.27 billion at current prices, compared to EUR 5.45 billion at current prices (EUR 4.83 billion in 2018 prices) in the Commission’s proposal.

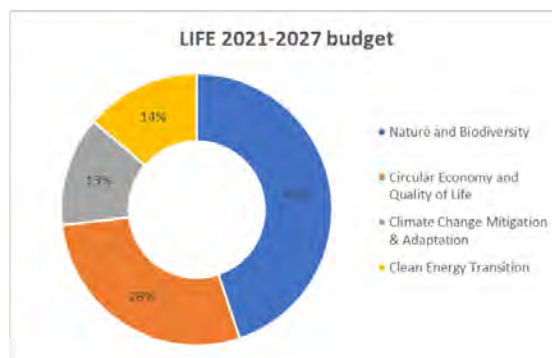


Figure 3: Proposed MFF budget for the new CEFII.
Source: Proposal from EC.

4.2.3 Eligibility

Eligible actions

Only actions implementing the general and specific objectives of LIFE Programme are eligible, whereas grants may be allocated as (a) action grants and (b) operating grants.

Type of grant	Type of projects	Definitions
Action grants	Strategic nature projects	mean projects that support the achievement of Union nature and biodiversity objectives by implementing coherent programmes of action in the Member States
	Strategic integrated projects	mean projects that implement on a regional, multi-regional, national or transnational scale, environmental or climate strategies or action plans developed by Member States' authorities and required by specific environmental, climate or relevant energy Union legislation or policy
	Technical assistance projects	supporting the capacity-building to participate or prepare projects, the preparation for accessing other Union financial instruments or other measures necessary for preparing the upscaling or replication of results from other projects funded by the LIFE Programme
	Standard action projects	projects, other than above, that pursue the specific objectives of the LIFE Programme
Operating grants	supporting and financing the functioning of non-profit making entities which are involved in the development, implementation and enforcement of Union legislation and policy	

Table 5: Eligible actions in the Programme LIFE

Eligible entities

Eligible are **all legal entities** established in a Member State or an overseas country or territory linked to it as well as any **legal entity created under Union law or any international organisation**. Natural persons shall not be eligible.

Participation of third countries

The LIFE Programme **shall be open to third countries** such as (a) European Free Trade Association (EFTA) members which are members of the European Economic Area (EEA); (b) acceding countries, candidate countries and potential candidates; (c) countries covered by the European

Neighbourhood Policy and (d) other third countries; all in accordance with general terms and conditions laid down in respective (framework) agreements and / or other specific conditions.

Third countries with inland waterway transport, the programme is open as follows (Feb 2020)

- Switzerland (Rhine river) is member of EFTA, however Switzerland has not joined the EEA. Switzerland is therefore understood as “other third countries” able to join the programme in accordance with the conditions laid down in a specific agreement covering the participation of the third country to any Union programme. *(MFF 2014-2020) Swiss entity is able to join the project provided that the coordinating Beneficiary is based in the EU and that evidence is provided that concrete activities to be carried out outside the EU (i.e. Switzerland) are necessary to achieve EU objectives and to ensure the effectiveness of project interventions in the territory of the Member States. Simple know-how transfer or expertise support is not sufficient¹⁵.*
- Serbia (Danube river) is a candidate country
- Ukraine and Republic of Moldova (both Danube river) are ENP countries
- Bosnia and Herzegovina (Sava river) is a potential candidate

Further details on participations are set in the work-programmes and the calls for proposals.

4.2.4 Forms of support

The LIFE Programme shall provide funding in any form laid down in the Financial Regulation, in particular **grants** (at least 85% of the LIFE programme budget), including direct grants that can be granted without a call for proposals to pre-defined bodies, **prizes** and **procurement** (in 2014-2020, this mechanism was used for targeted support for the preparation of environmental and climate legislation and policies and their implementation and enforcement) as well as financing in the form of **financial instruments within blending operations** (through central Union-wide financing/investment instrument, InvestEU, to allow synergies and economies of scale).

4.2.5 Grants

Application procedure

Depending on the sub-programme, a single stage or two-stage application procedure applies: (1) a concept note and (2) full project proposal. Single state application is the outcome of simplification procedures.

Experience from 2014-2020

Environmental subprogramme as well as integrated projects has two stage application procedure. Climate action sub-programme or capacity building projects follows a single-stage application procedure

Award criteria and selection

The award criteria shall be set out in the multi-annual work programme and the calls for proposal considering following:

- Projects financed under the LIFE Programme shall be of Union interest and shall promote the use of **green public procurement**¹⁶
- Projects shall ensure a cost-effective approach and be technically and financially coherent

¹⁵ https://ec.europa.eu/easme/sites/easme-site/files/life_faq.pdf

¹⁶ https://ec.europa.eu/environment/gpp/index_en.htm

- Projects with the highest **potential of being replicated** and taken-up by the public or private sector or of mobilising the largest investments or financial resources (catalytic potential) shall benefit from a bonus in their evaluation

LIFE projects are required to establish a **replication plan (After LIFE plan)**. Projects appearing to have a large replication potential are closely monitored and beneficiaries are advised about other funding instruments (e.g. EU funding programmes and financing instrument or regional development schemes) or private investors which might provide additional funding for up-scaling.

Co-financing rates

There are different types of projects. “Standard action projects” pursue the specific objectives of LIFE Programme whereas **projects under EUR 500,000 are rarely selected**. On the other side, the (big) “strategic integrated projects”, which rather implement **environmental or climate strategies or action plans** developed by Member States' authorities, have usually a total project budget of around EUR 17 million. The co-financing rates are as follows:

- Up to 60% of eligible costs for action grants, whereas in case of projects funded under Nature & Biodiversity sub-programme up to 75% (In 2014-2020, up to 55 % of co-funding for most LIFE projects and up to 75 % for nature and biodiversity projects),
- Up to 70% of the eligible costs, in case of operating grants,
- Up to 95% of eligible costs for technical assistance under the first multiannual work programme; later decreased to 75% under the second multiannual work programme.

Eligible costs

As for eligible costs, the Financial regulation criteria apply¹⁷. In addition to these criteria, budget allocated in the project to external assistance should remain below 35%. Using of [green procurement](#) is strongly advised (both to private & public organisations) when outsourcing the external assistance.

4.2.6 Synergies with other Programmes and instruments

Cumulative, complementary and combined funding

The Action that have already received a contribution from another Union programme may also receive a contribution under the LIFE Programme, provided that the **contributions do not cover the same costs** and that the **action pursues the environmental or climate objectives set in the LIFE Programme**, both general and specific, and does not undermine any of them.

Actions awarded a Seal of Excellence certification, or which (a) have been assessed in a call for proposals under LIFE; (b) comply with the minimum quality requirements of that call; and (c) may not be financed under that call of proposals due to budgetary constraints, may receive support under, ERDF, Cohesion Fund, ESF+ or other, provided that these actions are consistent with objectives and eligibility criteria of the programme concerned, whereas the rules of the programme concerned shall apply.

The cumulative funding **shall not exceed the total eligible costs of the action** and the support from the different Union programmes may be calculated on a pro-rata basis in accordance with the documents setting out the conditions for support.

¹⁷ Article [186] of the Financial Regulation

Experience from 2014-2020 (and applicable in 2021-2027)

Project proposals that show synergies with EU policies different from those covered by the LIFE programme and with other EU funding mechanisms will receive **bonus points in the evaluation**.

Synergies with other Programmes

Synergies, coherence and coordination is to be facilitated by Commission and Members States with other programmes, in terms of uptake and replication of solutions developed under the LIFE programme.

- **Horizon Europe** – the LIFE Programme continues to act as a catalyst for implementing EU environment, climate and relevant energy policy and legislation, including by taking up and applying research and innovation results from Horizon Europe and help deploying them on a larger scale where it can help address environmental, climate or energy transition issues.
- **Innovation Fund** under the Emission Trading System which is a cornerstone of the EU's policy to combat climate change and its key tool for reducing greenhouse gas emissions cost-effectively.
- **ESIFs** – European Regional Development Fund and Cohesion Fund continues to recognise the need for a greener low-carbon economy through a specific objective, which creates the synergies of LIFE programme and ESIF. LIFE is however focussed on demonstrative actions, whereas the ERDF/Cohesion Fund finance mainly large-scale operational actions, therefore actual overlap is less prominent.
- **Connecting Europe Facility** – there is no overlap with CEF, neither in terms of nature nor size of projects. CEF supports the investment stage, its scope addresses large-scale trans-European transport and energy infrastructure projects. Even in case of RES, the focus of CEF will remain on the cross-border projects in the field of planning, development and cost-effective exploitation of renewable energy sources.

Experience from 2014-2020

LIFE Programme does not finance research activities. LIFE project can, however, include limited and well explained research activities that improve the knowledge and data underpinning the project.

LIFE Programme does not finance large infrastructure, whereas large infrastructure stands for if actual cost of a single item of infrastructure exceeds € 500,000. A "single item of infrastructure" means all elements that are physically bound to ensure the functionality of the infrastructural investment (e.g. for an eco-duct the bridge, barriers, signposting, etc.).

Combination of grants with other sources of financing (blending operations)

Blending operations under the new LIFE Programme 2021-2027 shall be implemented in accordance with the InvestEU Fund rules.

Example of 2014-2020 financial instruments within blending operations

LIFE contributes to the large-scale funding of green solutions, where access to funding constitutes the main barrier for the large-scale deployment of a technology, approach or policy, which has already proved to be effective. Its contribution is via two pilot financial instruments managed by EIB Bank which were introduced under the LIFE 2014-20 regulation:

- [Natural Capital Financing Facility \(NCFE\)](#) - a financial instrument that supports projects delivering on biodiversity and climate adaptation through tailored loans and investments, backed by an EU guarantee. Projects financed through the NCFE need to generate revenues or demonstrate cost savings.
- [Private Finance for Energy Efficiency \(PF4EE\) instrument](#) - addresses the limited access to adequate and affordable commercial financing for energy efficiency investments. The instrument targets projects which support the implementation of National Energy Efficiency Action Plans (NEEAPs) or other energy efficiency programmes of EU Member States

4.2.7 Governance and programming

The European Commission manages the LIFE 2014-2020 programme through **direct management**, through its services Directorate-General for Environment and Directorate-General for Climate Action, and its Executive Agency for Small and Medium-sized Enterprises (EASME). This approach contributes to cost savings thanks to economies of scale for implementing large number of homogenous and standardised operations needed to manage funding/grants. The similar structure is expected in the new LIFE Programme 2021-2027.

Multi-annual work programmes for the LIFE Programme shall be adopted by the Commission, by means of implementing acts. Duration of the **first shall be 4 years** and of the second multiannual work programme shall be 3 years. The multiannual work programmes shall be developed with the help of the stakeholder consultations. In the framework of the multiannual work programmes the Commission shall publish calls of proposals.

4.2.8 Examples of relevant projects for energy transition in IWT

ID	Title	Description	Funding year (start-end)	Total budget/ LIFE budget/ co-financing (EUR)	Beneficiary type	LIFE+ theme
LIFE03 ENV/NL/000474	LNG Tanker, Demonstrating the effective and safe use of liquid natural gas as fuel for ship engines for short-sea shipping and inland waterway transport		2003 (2002-2005)	4,922,900 / 874,245	SME	Climate change
LIFE05 ENV/NL/000018	Noise Management in European Ports		2005 (2005-2008)	1,503,489 / 707,645	Local authority	Urban environment
LIFE15 ENV/NL/00217 ¹⁸	Clean INland Shipping CLINSH	Goal: Improve air quality in urban areas by accelerating emission reduction in Inland Waterway Transport. CLINSH will demonstrate the environmental impact of emission reduction technologies, in order to facilitate the implementation and enforcement of EU policy and legislation on air quality. CLINSH supports 30 vessels, equipping them with various green technologies and/or emission monitoring techniques.	2015 (09/2016-11/2021)	8,782,973 / 5,108,937	Regional authority	Air & Noise, Air pollutants

Table 6: Examples of relevant projects funded through LIFE Programme

¹⁸ http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=5782. Clinsh targets following EU legislations: Directive 2008/50/EC - Ambient air quality and cleaner air for Europe (21.05.2008), COM (2013/0918) - A Clean Air Programme for Europe (18.12.2013)

4.3 HORIZON Europe

Horizon Europe (2021-2027) is the next ambitious €100 billion research and innovation framework programme. The programme’s general objective is to deliver **scientific, technological, economic and societal impact** from the Union’s investments in R&I, to **strengthen the scientific and technological bases** of the Union and foster its competitiveness in all Member States.

The final arrangements regarding the budget, synergies and third country association is still pending, and depends on the overall negotiations for Multi-annual Financial Framework for 2021 to 2027. The Commission, however, has started preparations for the implementation of Horizon Europe.

4.3.1 Objectives

The overall objectives of new Horizon Europe are to strengthen the scientific and technological bases of the Union, boost Europe’s innovation capacity and foster its competitiveness and growth, in order to tackle and deliver on societal priorities, climate change and help achieving sustainable development goals.

This will be done through a three-pillar structure known from the previous Programme. However, the pillars will be redesigned to achieve more coherence, both between and within pillars, in support of the overall objectives of the Programme.

- **Pillar 1 “The Excellence Science”** will focus on reinforcing and extending the excellence of the Union’s science base
- **Pillar 2 “Clusters - Global Challenges & European Industrial Competitiveness”** shall boost key technologies and solutions underpinning EU policies and Sustainable Development Goals. Activities from a broad range of TRLs, including lower TRLs will be covered in this pillar of Horizon Europe.
- **Pillar 3 “Innovative Europe”** shall stimulate market creating breakthroughs and ecosystems conducive to innovation

Details on individual pillars and supported activities is provided in the table below with the budget allocations as proposed by the Commission. However, the budgetary allocations depend on the outcome of the final negotiations related to MFF 2021-2027. The last column indicates relevancy for financing the energy transition towards zero emission European IWT sector.

R&I activities addressed in Horizon Europe Pillars		Budget ¹⁹	IWT
Pillar 1: Excellent Science		€25.8	
European Research Council (ERC)	Providing attractive and flexible funding to enable talented and creative individual researchers, with an emphasis on early stage researchers, and their teams to pursue the most promising avenues at the frontier of science, regardless of their nationality and country of origin and on the basis of Union-wide competition based solely on the criterion of excellence	€16.6	N/A

¹⁹ Budget in billion EUR proposed by the Commission, May 2019.

R&I activities addressed in Horizon Europe Pillars			Budget ¹⁹	IWT
Marie Skłodowska Curie Actions (MSCA)	Equipping researches with new knowledge and skills through mobility and training	Nurturing excellence through mobility of researchers across borders, sectors and disciplines; fostering new skills through excellent training of researchers; strengthening human resources and skills development across the European Research Area; improving and facilitating synergies; promoting public outreach	€6.8	N/A
Research Infrastructures	Integrated and inter-connected world class research infrastructures which are open, and accessible to the best researchers from Europe and beyond		€2.4	N/A
Pillar 2: Clusters - Global Challenges & European Industrial Competitiveness (<i>research related to societal challenges</i>)			€52.7	
Cluster	Areas of intervention			
Health	Health throughout the life course; Environmental and social health determinants; Non-communicable and rare diseases; Infectious diseases, including poverty-related and neglected diseases; Tools, technologies and digital solutions for health and care, including personalised medicine; Health care systems		€7.7 bn	N/A
Culture, creativity and inclusive society	Democracy and governance; Culture, cultural heritage and creativity; Social and economic transformations		€2.8 bn	N/A
Civil security for society	Disaster-resilient societies; Protection and security; Cybersecurity			N/A
Digital, Industry and space	Reinforcing capacities and securing Europe's sovereignty in key enabling technologies for digitisation and production, and in space technology, to build a competitive, digital, low-carbon and circular industry ; ensure a sustainable supply of raw materials; and provide the basis for advances and innovation in all global societal challenges	Manufacturing technologies; Key digital technologies, including quantum technologies; Emerging enabling technologies; Advanced materials; Artificial intelligence and robotics; Next generation internet; Advanced computing and Big Data; Circular industries; Low carbon and clean industries ; Space, including earth observation	€15 bn	LOW
Climate, Energy and Mobility	Fighting climate change by better understanding its causes, evolution, risks, impacts and opportunities, by making the energy and transport sectors more climate and environment-	Areas of intervention: Climate science and Solutions; Energy Supply; Energy Systems and Grids; Buildings and Industrial Facilities in Energy Transition; Communities and Cities;	€15 bn	HIGH

R&I activities addressed in Horizon Europe Pillars			Budget ¹⁹	IWT
	friendly, more efficient and competitive, smarter, safer and more resilient, promote the use of renewable energy sources and energy efficiency, improve resilience of the Union to external shocks and adapt social behaviour	Industrial Competitiveness in Transport; Clean, Safe and Accessible Transport and Mobility; Smart Mobility; Energy Storage.		
Food, bioeconomy, natural resources, agriculture and environment	Protecting the environment, restoring, sustainably managing and using natural and biological resources from land, inland waters and sea to stop biodiversity erosion, to address food and nutrition security for all and the transition to a low carbon, resource efficient and circular economy and sustainable bioeconomy.	Environmental observation; Biodiversity and natural resources; Agriculture, forestry and rural areas; Seas, oceans and inland waters ; Food systems; Bio-based innovation systems in the EU bioeconomy; Circular systems	€10 bn	LOW
Joint Research Centre (JRC)	supporting EU and national policymakers with independent scientific evidence and technical support		€2.2 bn	LOW
Pillar 3: Innovative Europe			€13.5	
European Innovation Council (EIC)	Support to innovations with breakthrough and market creating potential / scale-up potential at global level	Pathfinder for advanced research, supporting future and emerging breakthrough, market-creating and/or deep tech technologies; The Accelerator, bridging the financing gap between late stages of R&I activities and market take-up, to effectively deploy breakthrough, market creating innovation and scale up companies where the market does not provide viable financing ; additional EIC activities such as prizes and fellowships, and business added-value services	€10.5 incl. up to €500 million in ecosystems	
European innovation ecosystems	Connecting with regional and national innovation actors			
European Institute of Innovation and Technology (EIT)	Bringing key actors (research, education and business) together around a common goal for nurturing innovation		€3	

Table 7: R&I activities addressed in Horizon Europe Pillars with relevancy for financing the energy transition towards zero emission European IWT sector (consolidated based on the proposal of Regulation establishing Horizon Europe)

4.3.2 Budget

The financial envelope for the implementation of the Horizon Europe Programme for the period 2021-2027 is currently set to EUR [84 013] million, of which EUR [8 608] million will be dedicated to research and innovation in food, agriculture, rural development and the bioeconomy²⁰.



Figure 4: Budget proposed for Horizon Europe. In billions EUR.

The Commission proposes a **budget of EUR 100 billion for Horizon Europe** (in current prices). This proposal includes **EUR 3.5 billion** which will be allocated under the **InvestEU Fund** and EUR 2.4 for the Euratom Research and Training Programme. The R&I window of InvestEU Fund will allow loans, guarantees, equity and other market-based instruments to mobilise public and private investment in R&I.

4.3.3 Eligibility

Eligible actions

Only actions that focus on implementing of Programme objectives are eligible for funding, whereas the Proposal for Regulation clearly states research activities that shall not be financed, in particular activities aiming at human cloning, modification of genetic heritage of human beings or creation of embryos for solely research purposes, etc.

The following types of research and innovation activities, so called "Indirect actions", may receive Union financial support:

- **research and innovation action** - means an action primarily consisting of activities aiming to establish new knowledge and/or to explore the feasibility of a new or improved technology, product, process, service or solution. This may include basic and applied research, technology development and integration, testing, demonstration and validation on a small-scale prototype in a laboratory or simulated environment
- **innovation action** - means an action primarily consisting of activities directly aimed at producing plans and arrangements or designs for new, altered or improved products, processes or services, possibly including prototyping, testing, demonstrating, piloting, large-scale product validation and market replication
- **innovation and market deployment action** - means an action embedding an innovation action and other activities necessary to deploy an innovation in the market, including the scaling-up of companies, providing Horizon Europe blended finance (a mix of grant-type funding and private finance).

Eligible entities

Basically, **any legal entity**, regardless of its place of establishment, including legal entities from non-associated third countries or international organisation may participate. Entities shall be part of a consortium that shall include **at least three independent legal entities each established in a different Member State or associated country** (based on agreement, thus financial contribution to the Programme) and with at least one of them established in a Member State.

²⁰ Point 25 of „Multiannual Financial Framework (MFF) 2021-2027: Negotiating Box with figures“ from 25 December 2019. https://www.consilium.europa.eu/media/41632/mff-negotiating-box_presidency.pdf

Further requirements will be defined as part of the call for proposals.

Participation of third countries

The Horizon Europe is open for following third countries: (i) EFTA member which are members of EEA, (ii) acceding countries, candidate countries and potential candidates, (iii) countries covered by the European Neighbourhood Policy as well as (iv) other third countries and territories that fulfil pre-defined criteria.

Third countries with inland waterway transport, the programme is open as follows (Feb 2020)

- Switzerland (Rhine river) is member of EFTA, however Switzerland has not joined the EEA → (MFF 2014-2020) as of 1 January 2017 the Association Agreement with Switzerland continues to apply and is expanded to cover the whole of Horizon 2020²¹
- Serbia (Danube river) is a candidate country
- Ukraine and Republic of Moldova (both Danube river) are ENP countries
- Bosnia and Herzegovina (Sava river) is a potential candidate

Further details on participations are set in the work-programmes and the calls for proposals.

4.3.4 Forms of support

The Horizon Europe Programme may provide funding in the form set in the Financial Regulation, in particular **grants** (including operating grants), **prizes** and **procurements**. It may also provide financing in the form of financial instruments within **blending operations**.

4.3.5 Grants

Award criteria and selection

Proposals shall be evaluated on basis of following award criteria: (a) excellence, (b) impact, (c) quality and efficiency of the implementation. Usually, a **two stage submission** procedure is applied for actions. Referring to the proposal for Regulation, applicants shall be informed about outcomes of the evaluation within maximum of 5 months from the final date for submission of complete proposals; whereas the signing of grant agreement shall be done within 8 months.

Co-financing rates

A single funding rate per action shall apply for all activities. The maximum rate per action shall be fixed in the work programme. The Horizon may reimburse up to 100 % of total eligible costs of an action, except for:

- (a) innovation actions: up to 70 % of the total eligible costs, except for non-profit legal entities where the Programme may reimburse up to 100 % of the total eligible costs;
- (b) programme co-fund actions: at least 30 % of the total eligible costs, and in identified and duly justified cases up to 70 %.

²¹ "On 16 December 2016 the Swiss Federal Council ratified the Protocol on the extension to Croatia of the Free Movement of Persons Agreement between the EU and Switzerland. That means that in accordance with Article 13(6) of the Agreement associating Switzerland to Horizon 2020, as of 1 January 2017 the Association Agreement with Switzerland continues to apply and is expanded to cover the whole of Horizon 2020, Euratom Programme 2014-2018 and activities carried out by Fusion for Energy." https://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020-hi-swiss-part_en.pdf

Indirect eligible costs shall be determined by applying a flat rate of 25 % of the total direct eligible costs, excluding direct eligible costs for subcontracting, financial support to third parties and any unit costs or lump sums which include indirect costs.

Eligible costs

The criteria for the eligible costs are those set in the Financial regulation, whereas amended for beneficiaries with project-based remuneration²², costs of personnel are eligible up to the remuneration that the person would be paid for work in R&I projects funded by national schemes including social security charges and other remuneration linked costs arising from national law or employment contract.

By derogation from the Financial Regulation, cost of resources made available by third parties by means of in-kind contributions shall be eligible, up to the direct eligible costs of the third party as well as **income generated by the exploitation of the results shall not be considered as receipts** of the action.

Beneficiaries may use their **usual accounting practices** to identify and declare the costs incurred in relation to an action.

A certificate on the **financial statements** (produced by an approved external auditor or, in the case of public bodies, issued by a competent and independent public officer) **shall be mandatory** at payment of the balance, if the amount claimed as actual costs and unit costs calculated in accordance with usual cost accounting practices is equal to or greater than EUR 325 000.

A **Mutual Insurance Mechanism** is established (replacing the fund) which shall cover the risk associated with non-recovery of sums due by the beneficiaries. Beneficiaries shall make a **contribution of 5 %** of the Union funding for the action and shall be returned at the payment of balance.

4.3.6 Synergies with other Programmes and instruments

Cumulative, complementary and combined funding

An action that has received a contribution from another Union programme may also receive a contribution under the Horizon Europe, provided that: (i) contributions do not cover the same costs, (ii) cumulative funding does not exceed the total eligible costs of the action, (iii) support from different Union programmes may be calculated on a pro-rata in accordance with applicable Programmes.

Synergies with other Programmes²³

Funding from Horizon Europe shall **only** be used **to finance research and innovation activities**. The alignment with other Programmes shall be ensured through the Strategic Planning process. Synergies with other Programmes shall ensure (below examples of programmes are listed which are of relevance for financing the energy transition towards a zero-emission European IWT sector):

- **EU Cohesion policy:** projects successfully evaluated under Horizon Europe can be funded at regional level under the European Structural Investment Funds,
- **European Regional Development Fund (ERDF),** incl. joint trans-regional/trans-national programmes: uptake of results and roll-out of novel technologies and innovative and climate-friendly solutions from Horizon,

²² Project-based remuneration means remuneration that is linked to the participation of a person in projects, is part of the beneficiary's usual remuneration practices and is paid in a consistent manner

²³ Annex IV Synergies with other Programmes

- **European Social Fund Plus (ESF+)**: people are equipped with the skills and competences needed for evolving demands of the labour market,
- **Connecting Europe Facility (CEF)**
 - identification of R&I needs in transport, energy and digital sector are identified and their integration into Strategic Planning process of Horizon,
 - large-scale roll-out and deployment of innovative new technologies and solutions in the fields of transport, energy and digital physical infrastructures from Horizon,
 - facilitating information exchange between Horizon and the new CEF, for instance identifying technologies with high market readiness that could be further deployed through new CEF.
- **Programme for Environment and Climate Action (LIFE)**
 - identification of R&I needs to tackle environmental, climate and energy challenges and their integration into Strategic Planning process of Horizon Europe,
 - uptake and applying of R&I results from Horizon Europe and help deploying them at national and (inter-)regional scale where it can help address environmental, climate or transition issues,
 - incentivise synergies awarding a bonus during the evaluation for proposals which feature uptake of Horizon results,
 - LIFE standard action projects will support the development, testing or demonstration of suitable technologies or methodologies for implementation of EU environment and climate policy, which can subsequently be deployed at large scale.
- **InvestEU Fund**
 - Horizon Europe and EIC (European Innovation Council) blended finance for innovators, characterised by a high level of risk and for which the market does not provide sufficient and viable financing,
 - Financial instruments for R&I and SMEs are grouped under the InvestEU Fund through products under (i) dedicated R&I thematic window, or (ii) SME window.
- **Innovation Fund** under the Emission Trading Scheme
 - target innovation in low-carbon technologies and processes, including environmentally safe carbon capture and utilisation, as well as products substituting carbon intensive ones

Combination of grants with other sources of financing (blending operations)

The blending operations carried out under Horizon Europe Programme shall be implemented in accordance with the **InvestEU Fund** and rules laid down Financial Regulation.

The proposal for Regulation establishing Horizon Europe defines following blending operations “**Horizon Europe and EIC Blended finance**”. Horizon Europe and EIC blended finance shall be provided in a manner that does not distort competition.

Horizon Europe blended finance means a financial support to a programme co-funded where a joint programme of Member States and associated countries provides for the deployment of financial instruments in support of selected actions. **EIC blended finance** means a **direct financial support to for-profit SMEs (SME Instrument)** delivered under the [European Innovation Council \(EIC\)](#) to an innovation and market deployment action, consisting in a specific combination of a grant or a reimbursable advance with an investment in equity or any other repayable form of support ([first pilots were carried out already in Horizon 2020](#) as part of the EIC Accelerator).

Examples of Horizon 2020 Financial Instruments

- **InnovFin (EU Finance for Innovator)** – implemented by European Investment Bank (EIB). InnovFin can provide financing starting at EUR 25 000 for investments in research and innovation (R&I) to companies and other entities of all sizes and age. InnovFin offers a range of products (continuously updating) of tailored debt and equity products from guarantees for intermediaries that lend to SMEs to direct loans to enterprises. (www.eib.org/en/products/blending/innovfin/products/index.htm)
- **COSME (EU programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises)** implemented by the European Investment Fund (EIF) and aiming to make it easier for small and medium-sized enterprises (SMEs) to access finance in all phases of their lifecycle – creation, expansion, or business transfer. (https://ec.europa.eu/growth/smes/cosme_en)

Project Development Assistance

- **ELENA** is a joint initiative by the EIB (managed by EIB) and the European Commission under the Horizon 2020 programme. ELENA provides grants for technical assistance focused on the implementation of **energy efficiency**, distributed renewable energy and (urban) sustainable transport. It supports private and public promoters to develop and launch large-scale bankable sustainable energy investments (above €30 million), including in **sustainable transport**. It covers up to 90% of project development costs. www.eib.org/products/advising/elena/index.htm
- **PDA Horizon 2020**, helps public and private promoters develop model sustainable energy projects, focusing on small and medium-sized energy investments of at least €7.5 million and up to €50 million, covering up to 100% of eligible project development costs.

4.3.7 Governance & programming

Implementing bodies

It is expected that the implementation of Horizon Europe activities will follow the main principles established already for Horizon 2020, like management of the Programme and channelling most of the funds to be carried out through the Executive Agency (INEA), with additional actions delivered by Union or other bodies entrusted with budget implementation under indirect management.

Some changes are to be done at the level of the partnerships, presented under a new common term ‘European Partnerships’, with the focus on streamlining the current structure and number of existing entities.

Strategic Plans and Work Programmes

The strategic planning is a new programming process which shall ensure alignment with other relevant Union programmes and consistency with EU priorities and commitments, while keeping sufficient flexibility to respond rapidly to new and emerging challenges, and increase complementarity and synergies with national and regional funding programmes. Outcome of this process is a multiannual **Strategic R&I Plan** (first one for 2021-2024). The Strategic R&I Plan defines the priorities, suitable types of action and forms of implementation to use and, thus, gives a direction to the work programme. Strategic R&I Plan shall be a **Commission implementing act**.

Work programmes, for the implementation of actions under Horizon Europe, shall be adopted by means of implementing acts and shall contain (i) amount allocated to each action and mission and indicative timetable; (ii) for grants the priorities, selection and award criteria (and the weight of different criteria) and the maximum rate of funding; (iii) amount allocated to blended finance.

Horizon Europe activities shall be delivered through **open, competitive calls for proposals**, within both missions and European Partnerships.

European Partnerships

Parts of Horizon Europe may be implemented through, so called, European Partnerships. The rules for such partnerships will specify inter alia the objectives, key performance and impact indicators, and outputs to be delivered, as well as related commitments for financial and/or in-kind contributions of the partners. Horizon Europe will support the following types of **European Partnerships**:

- **Co-programmed European Partnerships** between the Commission and private and/or public partners. Based on memoranda of understanding and/or contractual arrangements,
- **Co-funded European Partnerships using a programme co-fund action** involving EU countries, with research funders and other public authorities at the core of the consortium,
- **Institutionalised European Partnerships**, like for instance public-private partnerships established under Article 187 TFEU, such as “joint undertakings²⁴” or EIT Knowledge and Innovation Communities.

Partnership is defined in the proposal Regulation establishing Horizon Europe as

“European Partnership’ means an initiative where the Union, prepared with early involvement of Member States and/or Associated Countries, together with private and/or public partners (such as industry, universities, research organisations, bodies with a public service mission at local, regional, national or international level or civil society organisations including foundations and NGOs), commit to jointly support the development and implementation of a programme of research and innovation activities, including those related to market, regulatory or policy uptake”.

One of the proposed **candidates for co-programmed European Partnerships** is the “**Zero emission Waterborne Transport Partnership**” which is currently under development, together with the Strategic Research and Innovation Agenda. Both are to be fine-tuned in cooperation with the [project STEERER funded under Horizon 2020](#)²⁵.

²⁴ Article 187 TFEU, specifying joint undertakings, has been used under the FP7 and the Horizon 2020. The members of these joint undertakings (JUs) are typically the European Union (represented by the European Commission) and, industry-led association(s), as well as other partners. JUs adopt their own research agenda and award funding mainly on the basis of open calls for proposals.

²⁵ <https://trimis.ec.europa.eu/project/structuring-towards-zero-emission-waterborne-transport>

4.3.8 Examples of relevant projects for energy transition in IWT

In addition to projects overview provided in the table below, there were few more Horizon 2020 proposals addressing powertrain for “greening the inland fleet” lost the competition from the projects targeting seagoing issues. These projects are INNOWATE or REZET. Another examples of projects address the modal shift under the Horizon 2020 topics “moving freight by water”²⁶. There were recently two inland navigation related projects accepted under this topic, Novimove, IWnet, which shall start mid-2020.

ID	Title	Funding year (start-end)	Project details	Total eligible costs / Horizon co-financing (€)	Horizon programme / priority	Status
875285	STEERER - Structuring towards zero-emission waterborne transport (CSA - coordination and support action)	12/2019-05/2022	Aiming to prepare the R&D Roadmap and implementation plan for the path towards zero-emission waterborne transport, including attention to inland navigation. Currently, elaborating the proposal for the Horizon Europe co-programmed European Partnerships is the “Zero emission Waterborne Transport Partnership” & Strategic Research and Innovation Agenda together with implementation plan towards zero emission waterborne transport. (LC-MG-1-11-2019 - Structuring R&I towards zero emission waterborne transport)	€1,498,688 / detto	H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport	Ongoing
723009	NOVIMAR - NOVel lwt and MARitime transport concepts (RIA - Research and Innovation action)	06/2017-05/2021	NOVIMAR aims to adjust inland/short-sea shipping such that it can make optimal use of the waterborne system of waterways, vessels and ports/terminals. To achieve this NOVIMAR introduces the waterborne version of 'platooning', the Vessel Train. This is in essence a number of unmanned Follower Ships with own sailing/manoeuvring capabilities being temporarily led by a manned Leader Ship. Envisaged main benefits and impacts are: Reduction of crew costs result in up to 47% total cost reduction for IWT and up to 88% crew cost reduction for short sea transport, Enhanced Logistic flexibility,	€7,923,951.25 / € 7,923,951.25	H2020-EU.3.4. - SOCIETAL CHALLENGES - Smart, Green and Integrated Transport	Ongoing

²⁶ <https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/topic-details/mg-2-6-2019>

ID	Title	Funding year (start-end)	Project details	Total eligible costs / Horizon co-financing (€)	Horizon programme / priority	Status
			10-15 % Less energy use/emissions , Solutions for overcoming barriers between transport modes and High potential for reducing road congestion and associated costs.			
633929	PROMINENT - Promoting Innovation in the Inland Waterways Transport Sector (RIA - Research and Innovation action)	05/2015-04/2018	Aimed at providing solutions which make inland navigation as competitive as road transport in terms of air pollutant emissions by 2020 and beyond; aimed to further decrease the energy consumption and carbon footprint of IWT, an area where IWT has already a strong advantage compared to road transport. PROMINENT focused on: <ul style="list-style-type: none"> • Massive transition towards efficient and clean vessels. • Certification and monitoring of emission performance and development of innovative regimes • Harmonisation and modernisation of professional qualifications and the stimulation of the further integration of IWT into sustainable transport chains. 	€6,572,616.25 / €6,249,997.75	H2020-EU.3.4. - SOCIETAL CHALLENGES - Smart, Green and Integrated Transport MG-4.4-2014 - Promoting innovation in the IWT sector	Closed

Table 8: Examples of relevant projects funded through Horizon Programme

4.4 Innovation Fund

The Innovation Fund is one of the funding instruments supporting the European Commission's strategic vision for a **climate neutral Europe by 2050** as outlined in its communication "A Clean Planet for All" of 28 November 2018.

The Innovation Fund is **established under the Directive 2003/87/EC on scheme for greenhouse gas emission allowance trading** and is financed from the revenues of the EU ETS. It is a follow up of the NER300 programme²⁷. In the context of the European Green Deal, discussions started to include the maritime shipping into the EU carbon market (EU ETS) which regulates emissions from the energy sector, industry and aviation. CO₂ emissions from aviation have been included in the EU emissions trading system (EU ETS) since 2012. The inclusion of inland waterway shipping is open.

The Fund will support the **demonstration of low-carbon technologies and processes** in energy intensive industries (including products substituting carbon intensive ones), environmentally safe carbon capture and utilisation and storage of carbon dioxide (CCU and CCS), **innovative renewable energy and energy storage technologies**.

Projects with **highly innovative technologies with European added value, sufficiently mature** (in terms of planning, business model, financial and legal structure) and **significant potential to reduce greenhouse gas emissions** are eligible. Details regarding the calculation of avoidance of greenhouse gas emissions, criteria for setting the co-financing rates, etc. are still under discussion at the time of writing of this report. **No technologies have been pre-defined**, and the Innovation Fund supports demonstrations in a **pre-commercial stage**.

In order to **cover the lower profitability** and the **higher technological risks** of the eligible projects compared to conventional technologies, a significant part of the Innovation Fund financing shall be provided in the **form of a grant**. As the risks and profitability of eligible projects may differ across sectors and activities of those projects and may also evolve over time, the **Innovation Fund support is provided as well through contributions to blending operations** under InvestEU Fund or other forms to be still defined.

The major part of the Innovation Fund support shall depend on **verified avoidance of greenhouse gas emissions**. **Substantial underperformance** on planned greenhouse gas emission avoidance will **lead to the reduction and recovery of the amount of the support** dependant on such avoidance. However, this should be **flexible enough to take into account the innovative nature of projects** supported by the Innovation Fund.

Innovation Fund is open for project from waterborne transport sector (presentation of SEA Europe from the NAIADES II Expert Group, 17 October 2019, Brussels). The exact definition of criteria is under development. Considering the scope of the Innovation Fund, the potential investments can comprise: new engines and propulsion concepts as soon as they reach the stage of implementation in real-life demonstrations (fuel cell, wind, electricity, etc.), reduction of emissions in port activities, in case a roll out on a large scale of highly innovative emission reduction technologies is identified, other technologies reducing GHG emissions.

The preparatory works are coordinated by DG CLIMA.

²⁷ NER300 programme was established under established under Directive 2003/87/EC and implemented on the basis of Commission Decision 2010/670/EU.

4.4.1 Objectives

Innovation fund shall (a) support projects demonstrating **highly innovative** technologies, processes or products, that are **sufficiently mature** and have a **significant potential to reduce greenhouse gas emissions** and (b) offer financial support tailored to market needs and risk profiles of eligible projects, while attracting additional public and private resources.

4.4.2 Budget

The EU Emissions Trading System (EU ETS), the world's largest carbon pricing system, is providing the revenues for the Innovation Fund from the auctioning of 450 million allowances from 2020 to 2030, as well as any unspent funds from the NER300 programme. The Fund **may amount to about €10 billion, depending on the carbon price**. In parallel to the Innovation Fund, the EU ETS provides the main long-term incentive for these technologies to be deployed.

4.4.3 Eligibility

Eligible actions

Currently, the Innovation Fund is one of the world's **largest funding programmes for demonstration of innovative low-carbon technologies**. The Innovation Fund focuses on:

- **Innovative low-carbon technologies** and processes in energy intensive industries, including products substituting carbon intensive ones
- Carbon capture and utilisation (CCU)
- Construction and operation of carbon capture and storage (CCS)
- Innovative renewable energy generation
- **Energy storage**
- Cross cutting projects

Eligible entities

Eligible entities will be defined as part of the work programme / calls for proposals. However, it is expected that all legal entities established in the Member States.

Participation of third countries

The information is currently not available. As of 1 January 2020, Switzerland linked its greenhouse gas emissions trading system with the EU emissions trading system (EU ETS) which is the instrument that delivers the financial resources for the Innovation Fund. Therefore, further investigation shall be done about the eligibility of Switzerland for funding through Innovation Fund.

4.4.4 Forms of support

Support is provided in the form of (a) **grants** and (b) **contributions to blending operations** under the Union investment support instrument.

4.4.5 Grants

Application procedure

In order to reduce the administrative burden for project proponents, a two-phase application procedure shall be established. The **first phase** is the **expression of interest** and contains a description of key project characteristics in line with requirements laid down in the calls. It shall include (a) project's effectiveness, (b) degree of innovation and (c) maturity. After successful assessment, the beneficiaries are invited to submit the **full application**, meaning the submission of a project's detailed description and all supporting documentation, including **knowledge-sharing plan**.

Award criteria and selection

The projects submitted via **open calls** for proposals will be assessed based on **qualitative and quantitative criteria** as displayed in the table below in a **competitive selection process**. Details for the selection criteria are currently under elaboration.

Selection criteria	Assessment basis	Expression of interest	Full application
(A) Greenhouse gas emissions avoidance compared to the benchmarks referred to in Article 10a(2) of Directive 2003/87/EC	Under elaboration	X	X
(B) Degree of innovation compared to the state of the art	Under elaboration	X	X
(C) Project maturity in terms of planning, business model, financial and legal structure as well as prospect of reaching the financial close within a pre-defined period of time not exceeding four years after the award decision	Under elaboration	(X)	X
(D) Scalability - technical and market potential for widespread application or replication, or for future cost reductions	Under elaboration		X
(E) Cost efficiency in terms of the relevant costs of the project minus any contribution to those costs from the project proponent, divided by the total projected amount of greenhouse gas emissions to be avoided or energy to be produced or stored or CO2 to be stored in the first 10 years of operation	Under elaboration		X

Table 9: Overview of selection criteria in Innovation Fund

If a project meets the selection criteria (A) effectiveness in terms of GHG emission avoidance, (B) innovativeness, and (C) maturity, this project will be invited to submit a **full application**. In case, if lacks behind in maturity but is assessed that it has a potential to meet all selection criteria if further developed, this project may be awarded with the **project development assistance**.

All submitted project proposals are selected based on the same selection criteria and are further evaluated and ranked first vis-à-vis **other projects in the same sector** and subsequently vis-à-vis **projects across sectors**.

A **specific selection procedure** may be applied for **small-scale projects**²⁸ (which might be applicable for IWT sector). The elaboration of this selection procedure is still on-going. It is not expected that the first call for proposals, likely to be launched mid-2020, will address the small-scale projects.

²⁸ Article 2 Definitions of Commission Delegated Regulation (EU)2019/856 with regard to the operation of the Innovation Fund defines 'small-scale project' as a project with a **total capital expenditure not exceeding EUR 7 500 000**.

Co-financing rates

Innovation Fund is aimed at driving low-carbon technologies to the market, by supporting **up to 60% of additional costs** related to innovative technology (**capital and operating costs for up to 10 years**).

Eligible costs

Relevant costs shall be the **additional costs** as a result of the application of the innovative technology related to the reduction or avoidance of the greenhouse gas emissions. The relevant costs shall be calculated as the difference between the best estimate of the total capital expenditure, the net present value of operating costs and benefits arising during 10 years after the entry into operation of the project compared to the result of the same calculation for a conventional production with the same capacity in terms of effective production of the respective final product.

The relevant costs of a **small-scale project shall be the total capital expenditure costs** of that project.

Project development assistance

Project development assistance is awarded in the **form of grant**. Project development assistance should in particular benefit small-scale projects and projects in lower-income Member States to help achieving a geographically balanced distribution of the Innovation Fund support.

The Innovation Fund may finance **up to 100% of the relevant costs**, thus all project development related costs. Project development assistance can fund following activities:

- a) improvement and development of a project documentation, or of components of the project design, with a view to ensuring the sufficient maturity of the project;
- b) assessment of the feasibility of the project, including technical and economic studies;
- c) advice on the financial and legal structure of the project;
- d) capacity building of the project proponent

Disbursement of grants

Grant (support from the Innovation Fund) shall be disbursed **upon reaching the pre-defined milestones**, which are based on the project development cycle, and shall be **at least: (a) financial close, (b) entry into operation**.

Up to **40% of the total amount of the grant**, shall be disbursed **upon financial close** or other specific milestone preceding financial close where such milestone has been determined.

4.4.6 Synergies with other Programmes and instruments

Cumulative, complementary and combined funding

A project that has received the Innovation Fund support **may also receive a contribution** from any other Union programme, including Funds under shared management, **provided that the contributions do not cover the same costs**. The **cumulative financing shall not exceed the total eligible costs** of the project and the support from different Union programmes may be calculated on a pro-rata basis.

Contributions under Union investment support instrument

The Innovation Fund support, when provided in the form of blending operations, shall be implemented **in accordance with the rules applicable to the Union investment support instrument, thus InvestEU Fund**. However, the **eligibility of the projects shall be assessed in accordance with criteria defined for projects submitted under Innovation Fund**.

The Commission shall adopt, after consulting the Member States, a decision specifying whether the contribution to blending operations takes a **form of non-repayable** support or **repayable** support or both and indicating the amount of the Innovation Fund support available for the disbursement through the Union investment support instrument.

Other forms of support

As in case of the Contributions under Union investment support instrument, if the support is provided in any other form as laid down in Financial regulation, the Commission shall adopt the relevant decision. In this case, projects receiving the Innovation Fund support shall **comply with the Union State Aid rules**.

Synergies with other Programmes

The Innovation Fund focuses on supporting **highly innovative low-carbon technologies and projects to reach the market once they have successfully passed the research phase**. It is not a new research funding programme as it focuses on closing the financial gap right before bringing an innovative project or technology to the market.

Therefore, the Innovation Fund is complementary to other EU funding programmes. It will **complement Horizon 2020 and Horizon Europe** funding given to the earlier stages of projects as it will support the later stages of technological development closer to commercialisation. The Innovation Fund will also be complementary to the **European Regional Development Fund** that supports wider innovation activities, as well as to the **Connecting Europe Facility** and the **European Structural and Investment Funds**, including the **Cohesion Funds**, that can support the infrastructure elements of a project.

4.4.7 Governance and programming

Governance

The implementation is done as combination of **direct management** (through executive agencies, i.e. INEA) and **indirect management** by entrusting budget implementation tasks to the European Investment Bank.

Governance model, which is still under discussion, envisages²⁹ that it will combine the expertise of INEA in grant programmes implementation, such as with Horizon Europe and the Connecting Europe Facility (CEF) programme, and the financial, engineering and advisory skills of the EIB.

Potential role of INEA, as implementing body³⁰, includes the preparation and launch of the calls for proposals, the evaluation and selection of projects, the preparation of the grant agreements, the technical and financial follow-up of projects, and eventually the preparation of a feedback to the Commission on the achievements of the Funds for future policy making.

Potential role of EIB refers in particular to the **Project Development Assistance (PDA)** that will be provided to promising but not sufficiently mature projects and may include support for investment preparation, project financing and implementation, built on the EIB experience in providing advisory service to EU programmes, such as NER300, InnovFin Energy Demo Projects and European Local Energy Assistance (ELENA).

The EIB itself can act as a provider for external funding for projects seeking such funding.

Programming and calls for proposals

Grants under the Innovation Fund will be awarded following a **competitive selection process**, via **open calls** for proposals, **launched by the Commission**. Before adopting a decision launching a call for proposals, the draft decision shall be consulted with the Member States.

The decision launching the calls for proposals shall include at least: overall amount for the call; maximum amount for project development assistance; types of projects / sectors; details on application procedure and documentation / information to be submitted; selection procedure together with methodology for evaluation and ranking; as applicable specific application and selection procedures for small-scale projects, financial amount available for small-scale projects; additional selection criteria as applicable for instance to achieve a geographically balanced distribution.

The first call is (tentatively) planned for **June 2020** with submission of Expression of interest (1st phase) by September 2020. Award of Project Development Assistance and the invitation for second phase are planned in Q1/2021 with deadline by Q2/2021 and awarding of grant by Q4/2021.

Subsequent call will be dedicated to small-scale projects (with capital expenditure smaller than EUR 7.5 million).

²⁹ Source: Meeting minutes of the 4th meeting of the Innovation Fund Expert Group from 18 Dec 2019. <https://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupMeeting&meetingId=18330>

³⁰ Article 18 Tasks of the implementing body

5 F2. Financing schemes and products with EU financial backing

Nowadays there are several different ways of investment-support existing for companies of any type, size and sector, due to a variety of different financing options. Therefore, the overall scheme on how EU financing works nowadays and how the money is allocated from different funds, which are described in the following chapters, will be elaborated in line with the information on how the benefits of EU financial support are being transferred towards the beneficiaries.

In the current Multiannual Financial Framework 2014-2020 (MFF) the available budget is being diverged via funds and programmes having different focus areas and programmes, such as the COSME Programme – focusing on Guarantees to small and medium-sized enterprises for loans mainly up to EUR 150,000³¹. Depending on the programme, the financial support is currently provided in most of the cases by local financial institutions such as banks, venture capitalists, angel investors or directly via the EIB. (The overall scheme can be seen in the following Figure 5.)

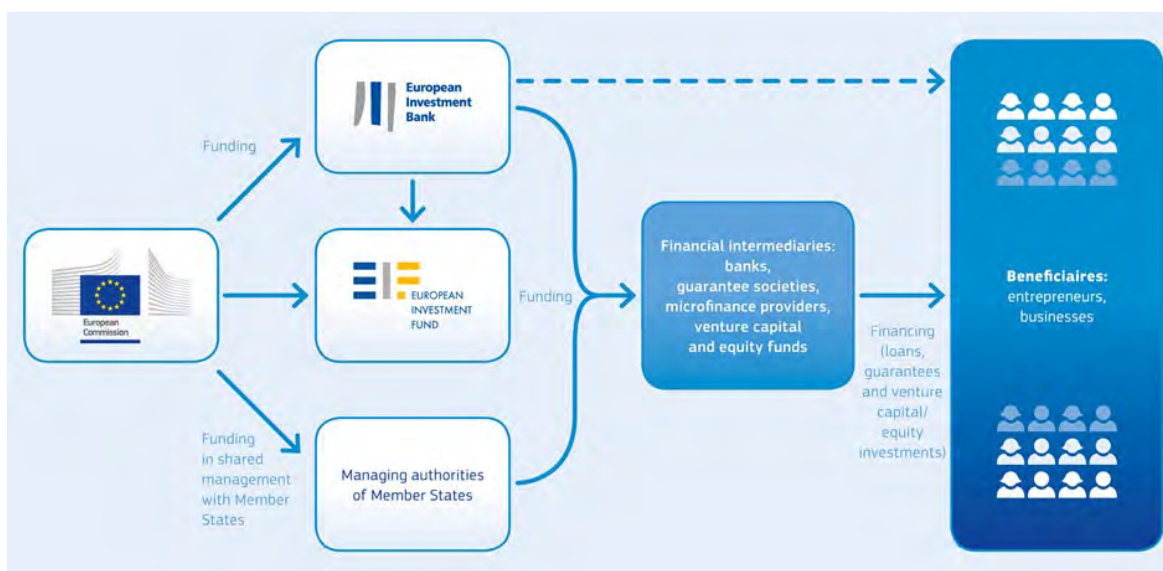


Figure 5: EU Financing: how it works; Source: Your Europe, European Union

As of the new MFF in 2021, the European Commission is planning to provide a single fund that would provide support via a wide variety of financial products, to address the problem and complexity of the current multitude of financial instruments.

Based on the experiences gained in the last years via public consultation for the next MFF and the mid-term evaluations of the EU, and in order to have a more clearly structured, modern and well managed investment programme for the EU, it was decided to build up a single, simplified investment support mechanism, the InvestEU programme.

All existing financing programmes and instruments (e.g. EFSI, COSME, CEF Debt Instruments, etc.) will be streamlined and covered within the single roof of InvestEU Fund which has to be followed by IWT stakeholders.

The following chapters will analyse existing and future financing instruments and products. First there is an overview of some ending financial support programmes backed by the EU which are

³¹ European Union, Access to finance: https://europa.eu/youreurope/business/finance-funding/getting-funding/access-finance/index_en.htm

relevant for inland vessel owners / operators and for energy transition towards zero-emissions in IWT. This analysis will be complemented by the upcoming possibilities within the Multiannual Financial Framework starting with the year 2021, namely within the InvestEU Programme (chapter 6.3). Last but not least, a short analysis on the relevance for an energy transition towards zero-emission inland waterway vessels (chapter 6.4) is included in the report and finally some best practice examples from other sectors, but related to the study have been collected for further inspirations.

5.1 Existing funds and financing schemes (until 2020)

Based on the existing and maturing financing schemes, which will run out with the end of 2020, proven practises as well as priorities within the different schemes, can be seen. Since most of the programmes will be integrated into the InvestEU programme, the information can be used to gain a view in which direction it will continue within the next financial period.

5.1.1 EFSI 2.0 - European Fund for Strategic Investment

The European Fund for Strategic Investment (EFSI) was created to support additional investment within the European Union via financial guarantees, which are managed via the EIB.

Which means that the EFSI is an EU-budget guarantee providing the EIB Group with a first loss protection for “high risk projects”. Based on the EU budget providing a guarantee of EUR 26 billion the EIB Group (additional EUR 7.5 billion allocation) can provide financing to higher-risk projects than they normally would and unlock the potential of at least EUR 500 billion of additional investments into the European Union.

The independent Investment Committee decides on eligibility for EFSI support; the key areas of strategic importance are infrastructure, energy efficiency and renewable energy, research and innovation, environment, agriculture, digital technology, education, health and social projects. There are no quotas – by sector or by country. Financing is purely demand-driven.^{32 33}

As of 2021, the “InvestEU Programme” will supersede EFSI and will bring together main EU financial instruments; more information can be found in the following chapter 6.3.

5.1.2 COSME Programme

The COSME Programme supports and improves the Competitiveness of Enterprises and Small and Medium-sized Enterprises running from 2014 - 2020 with a planned budget of **EUR 2.3 billion**.

The programme shall facilitate support to small and medium-sized enterprises (SMEs) in the following areas: Access to finance; Access to markets; Creating better framework conditions for competitiveness; Encouraging entrepreneurship.

Therefore, the overall objective of COSME is to **provide access finance to SMEs in all phases of their lifecycle**: creation, expansion, or business transfer. Thanks to EU support within this programme, businesses have easier access to guarantees, loans and equity capital. **The individual conditions are defined by the financial intermediaries and sub-intermediaries.**^{34 35}

³² EIB Homepage, EFSI: <https://www.eib.org/en/efsi/what-is-efsi/index.htm>

³³ European Commission on EFSI: https://ec.europa.eu/growth/industry/innovation/funding/efsi_en

³⁴ COSME Leaflet: <https://ec.europa.eu/docsroom/documents/9783>

³⁵ European Commission Homepage, COSME <https://ec.europa.eu/growth/smes/cosme/>

5.1.3 EIB – European Investment Bank & EIF - European Investment Fund

The European Investment Bank (EIB) is the lending arm of the European Union, it **lends to the public and private sectors**. If projects to be financed are complying with the high technical, environmental and social standards, the bank supports within four priority areas: Innovation and skills, Small businesses, Infrastructure and Climate and environment. As a basic principle the EIB is financially autonomous (raising money on international capital markets).

The excellent credit rating is leading to good rates, which can be passed further to the clients. However, the **maximum financial support is limited to 50 %** (with some exceptions to this general rule) on the respective investment, in order to provide the benefits to a broader spectrum of projects.³⁶

In order to provide support also towards small businesses and mid-caps, the “EIB Group” is also consisting of a second part next to the EIB itself, the **European Investment Fund (EIF)**. By offering an “Integrated Risk Finance Product Range” of SME finance to the intermediaries, the European Investment Fund is **complementing the products offered by the EIB via partner organisations** acting as financial intermediaries (banks, guarantee, leasing and microfinance institutions, private equity and venture capital funds, among others).

The provided products are mainly **inclusive finance** (venture capital, etc.) **equity products** (guarantees, etc.) and **debt products** (Credit enhancement / Securitisation, etc.).³⁷

5.1.4 ESI funds / ESIFs - European Structural and Investment Funds

The European Union’s five “European Structural and Investment Funds” are supporting the goals of the Europa 2020 Strategy as well as the goals of the European Cohesion Strategy, with a joint set of rules and based on the following funds (schematic illustration in Figure 6):

- ERDF - European Regional Development Fund
- ESF - European Social Fund
- Cohesion Fund
- EAFRD - European Agricultural Fund for Rural Development
- EMFF - European Maritime and Fisheries Fund

All these funds are **managed by the EU countries** themselves, based on **developed partnership agreements agreed with the Commission**. Those programmes are further developed to the “investment programmes”, therefore all Member States prepare an agreement, in collaboration with the European Commission.

³⁶ EIB Homepage, About EIB: <https://www.eib.org/en/about/index.htm>

³⁷ EIF – European Investment Fund; What we do: <https://www.eif.org/>

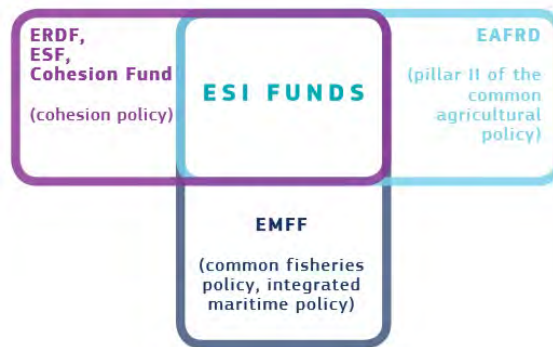


Figure 6: ESI Funds overview; Source: based on the blue nook guideline on EUROPEAN STRUCTURAL AND INVESTMENT FUNDS 2014-2020

Within the Member States programmes there is a relative flexibility, therefore funding and / or financing possibilities for the energy transition of IWT can be established, whereas relevant financing solutions might be fed with money coming from funding solutions. However, the determination of co-funding rates is regulated by the European Commission, within the Common Provisions Regulation (CPR), which will be updated within the upcoming MFF.³⁸

Therefore, the actual and upcoming maximum co-funding rates, potentially relevant for greening in the field of IWT, are highlighted in the following:

According to COM(2018) 375 final; Draft regulation the rates will be in the upcoming MFF: *“The co-financing rate for the Cohesion Fund at the level of each priority shall not be higher than 70%. The co-financing rate for Interreg programmes shall be no higher than 70%”*

In the current MFF 2014-2020, based on REGULATION (EU) No 1303/2013³⁹, the rates have been: 85 % for the Cohesion Fund and a maximum of 85 % for ERDF programmes.

Moreover, the proposal for the **CPR creates flexibility** for the ERDF, Cohesion Fund and ESF+; it is foreseen that **only the first five years are programmed**, then a mid-term review will lead to a reprogramming in 2025 for the finalisation of the last two years within the overall MFF.

Member States have the **possibility to allocate a contribution to the InvestEU programme** from ERDF, ESF+, EMFF and Cohesion Fund, delivering the goals of the Partnership Agreement via budgetary guarantees. However, the amount contributed to InvestEU shall **not exceed 5%** of the total allocation per Fund.⁴⁰

Main conclusion:

Within the existing financing schemes, running out within 2020, the following funds could have had the potential to provide financing support in different ways towards the energy transition in IWT:

- COSME Programme:
 - Guarantees to small and medium-sized enterprises for loans mainly up to EUR 150 000
 - Equity (growth and expansion stage)

³⁸ EUROPEAN STRUCTURAL AND INVESTMENT FUNDS 2014-2020 , Blue book guideline:

https://ec.europa.eu/regional_policy/sources/docgener/guides/blue_book/blueguide_en.pdf

³⁹ Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund

⁴⁰ COM(2018) 375 final; Draft regulation CPR, Article 10: https://eur-lex.europa.eu/resource.html?uri=cellar:26b02a36-6376-11e8-ab9c-01aa75ed71a1.0003.02/DOC_1&format=PDF

- ESI funds / ESIFs - European Structural and Investment Funds:
 - Loans, guarantees, equity financing or business grants
 - Support is provided from multi-annual programmes (of the Member States) co-financed by the EU
- EIB – European Investment Bank & EIF - European Investment Fund:
 - Business loans, microfinance, guarantees and venture capital
 - Maximum 50 % co-financing of overall investment

5.2 Impact assessment of current MFF (until 2020) and transition towards InvestEU

The impact assessment of the current MFF, including public consultation, was mapping out the route for the development of the InvestEU programme, in the following the main conclusions of the assessment should be mapped out in order to understand the objectives and methodologies foreseen for the upcoming financial period.

In order to improve effectiveness and efficient use of EU money, the following measures have been elaborated, within the impact assessment in regards of the proposal for the InvestEU Programme regulation, in order to transform the actual financial instruments towards the InvestEU fund:

- *“Less budgetary resources to achieve the same objectives.*
- *More efficient due to economies of scale and diversification compared to several ring fenced budgetary guarantees: less provisioning needed for the same level of protection from the EU budget.*
- *Overcomes fragmentation, overlaps and inconsistencies.*
- *Higher capacity to redeploy resources and to develop new products according to the demand.*
- *For financial intermediaries and final beneficiaries: **single set of rules and reporting requirements, cross-reliance on audits.***
- ***For implementing partners: single contractual framework.***
- *For the EU Budget, risk remuneration and limited fees.*
- *Higher impact with fewer resources.*
- *Better respect of the subsidiarity principle.*
- *More efficient allocation of budgetary resources.*
- *Qualitative upgrade of interventions.*
- **Synergies.**
- *Lower need for combinations, but when needed: **single set of rules.***
- *Diversification of pipelines and wider coverage of policy objectives. Enhanced coordination and negotiation capacity.*
- **Simplification.**
- *Single brand. More effective democratic control. ”*
- *Technical assistance will be streamlined under a single framework⁴¹*

The schematic simplification process of several funds and programmes having different priorities is also displayed graphically within Figure 7, showing the actual heterogeneous and fragmented portfolio of EU financial instruments and the EFSI. This simplification process is leading towards the four main policy areas; Sustainable Infrastructure, Research and Innovation, SMEs, Social, Skills and Human Capital).

⁴¹ Impact assessment in regards of the proposal for the InvestEU Programme regulation (Table 3): <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=SWD%3A2018%3A0314%3AFIN>

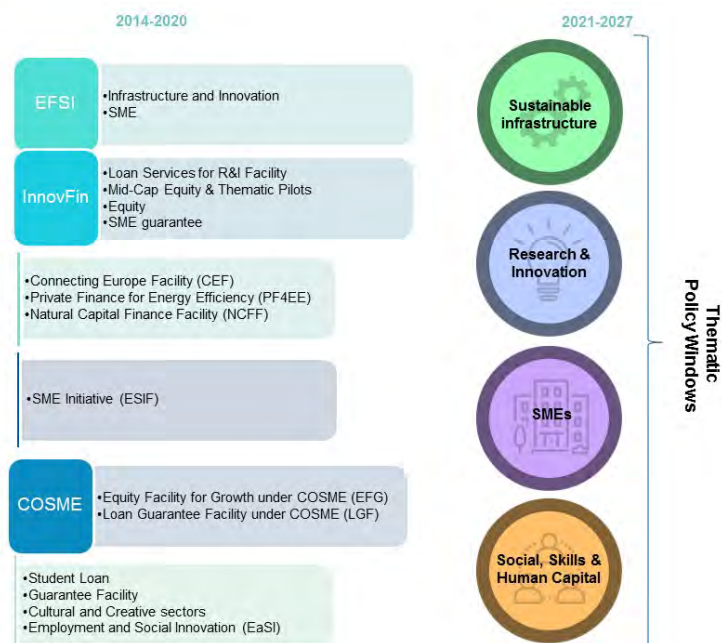


Figure 7: Simplification processes; Source: Impact assessment on InvestEU Programme

The budget shall be used more flexible within the given framework, however the priorities towards research, innovation and digitalisation have been aligned slightly. Therefore, in the following Table 10 the actual budget split (2014-2020) over the different policy areas compared towards the foreseen share in the new InvestEU Fund can be seen. It has to be noted, that it is planned to have a flexibility of adjusting the shares within the different policy windows up to 15%, in line with changing market demands in the future.

	2014-2020		2021-2027		Weight of windows (based on the budgetary guarantee/FIs)	
	(EUR m)	(Baseline: EFSI + FIs)	(InvestEU Fund)		2014-2020	2021-2027
Thematic Policy Windows	Budgetary guarantee / FIs	Investment mobilised	Budgetary guarantee	Investment mobilised		
Sustainable Infrastructure	12.215	216.370	11.500	185.000	39%	30%
Research, Innovation and Digitisation	7.560	148.250	11.250	200.000	24%	30%
SMEs	9.413	171.848	11.250	215.000	30%	30%
Social, Investment and Skills	2.233	26.520	4.000	50.000	7%	10%
Total	31.421	562.988	38.000	650.000	100%	100%
EU Budget	14.521		15.200			

Table 10: investment budget allocation MFF2014-2020 compared to MFF2021-2027; Source: Impact assessment on InvestEU Programme

5.3 InvestEU Programme - single investment support instrument

The upcoming Multiannual Financial Framework of the European Union 2021-2027 will bring additional and new possibilities for investments in Europa, especially for projects contributing to the objectives of the European Green Deal for the European Union. However, since the new MFF and the according legislation for the aligned funds are not yet final, the following information shall give an overview over the IWT relevant investment support tools coming up in the future.

As mentioned before, the conditions of the single EU investment support mechanism in the upcoming MFF will be created within the **InvestEU Programme**. InvestEU Programme is based on four main pillars:

- I. the **InvestEU Fund** providing for the EU guarantee,
- II. the **InvestEU Advisory Hub** providing in particular project development-related technical assistance,
- III. the **InvestEU Portal** providing an easily accessible data-base for promoting projects in search for financing,
- IV. **blending operations**.

The Commission's **objective** is to have a **single scheme acting both as a policy instrument as well as delivery tool**, being **demand-driven** in order to support in an effective and efficient way the policy areas and its objectives, via **attracting private investment**.

The InvestEU Programme shall **trigger at least EUR 650 billion** on additional investment within the policy areas; in the following the applicability for IWT as well as the methodology of the programme will be described and evaluated based on the currently available information (Q1 2020). In addition, it has to be stated that most of the information are based on the **Proposal for a Regulation** of the European Parliament and of the council **establishing the InvestEU Programme** (COM(2018) 439 final).^{42 43 44}

5.3.1 Objectives

The general objective of the InvestEU Programme is to support the internal policy objectives of the Union by means of financing and investment operations contributing to⁴⁵:

- the **competitiveness** of the Union, including **research, innovation and digitisation**;
- **growth and employment** in the Union economy, its **sustainability** and its **environmental and climate dimension** contributing to the achievement of the SDGs and the objectives of the Paris climate agreement and to the creation of high-quality jobs;
- the **social resilience, inclusiveness and innovativeness** of the Union;
- the promotion of scientific and technological advance, of culture, education and training
- the **integration of the Union capital markets** and the strengthening of the Single Market, including solutions addressing the fragmentation of the Union capital markets, diversifying sources of financing for Union enterprises and promoting sustainable finance
- the promotion of **economic, social and territorial cohesion**

⁴² EC InvestEU Factsheet; What will it finance: https://ec.europa.eu/commission/sites/beta-political/files/budget-june2018-investeu-finance_en.pdf

⁴³ EC InvestEU Factsheet; What is the InvestEU programme: https://ec.europa.eu/commission/sites/beta-political/files/what_is_investeu_mff_032019.pdf

⁴⁴ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2018%3A439%3AFIN>

⁴⁵ COM(2018) 439 final, Proposal for InvestEU Regulation, Article 3

The InvestEU Programme interventions shall be channelled through **four thematic policy windows** that shall **address market failures** or **sub-optimal investment situations** within their specific scope. The policy windows and areas of investments that are eligible under each window are summarised in the table below.

Policy window	Areas of investments	IWT
Sustainable Infrastructure	Sustainable investment in the areas of transport , including multimodal transport, road safety, also in line with the EU objective of eliminating fatal road accidents and serious injuries by 2050, renewal and maintenance of rail and road infrastructure, energy, in particular renewable energy, energy efficiency in line with the 2030 energy framework, buildings renovation projects focused on energy savings and the integration of buildings into a connected energy, storage, digital and transport system , improving interconnection levels, digital connectivity and access including in rural areas, supply and processing of raw materials, space, oceans, water, including inland waterways , waste management in line with the waste hierarchy and the circular economy, nature and other environment infrastructure, cultural heritage, tourism, equipment, mobile assets and deployment of innovative technologies that contribute to the environmental climate resilience or social sustainability objectives of the Union, or to both, and meet the environmental or social sustainability standards of the Union	X (infrastructure and assets)
Research, Innovation and Digitisation	Research and innovation ; Taking research results to the market; Digitisation of industry ; Scaling up larger innovative companies; Artificial intelligence and more	X (R&I)
SMEs	Access to and availability of finance primarily for SMEs , including innovative ones and those operating in the cultural and creative sectors, as well as for small mid-cap companies	X (SME support)
Social Investment and Skills	Microfinance, social enterprise finance and social economy and measures to promote gender equality skills, education, training and related services; social infrastructure (including health and educational infrastructure and social and student housing); social innovation; health and long-term care; inclusion and accessibility; cultural and creative activities with a social goal; integration of vulnerable people, including third country nationals	X (soft aspects)

Table 11: InvestEU Policy Windows and areas of investments eligible under each thematic window

Each of the four thematic windows entails two compartments, one at EU level and one under ESIF, the Member State (MS) compartment. The **MS compartment** shall address specific market failures or suboptimal investment situations in one or several regions or Member States to deliver the policy objectives of the **contributing Funds under shared management** in particular to strengthen economic, social and territorial cohesion in the European Union by addressing imbalances among its regions. The **EU compartment**, on the other hand, addresses **Union wide and/or Member State specific** market failures of sub-optimal investment situation, or those related to **Union policy priorities**.

5.3.2 Budget

The **budgetary guarantee provided by the InvestEU Fund will be in total EUR 38 billion**, the split over the four thematic policy windows and the potential on mobilised investments can be seen in the previous Table 10.

In order to provide those guarantees **40% have to be provisioned by the European Commission budget**, which are **EUR 15.2 billion** allocated for the programme; 14.725 billion for the fund itself and additional EUR 0.525 billion for project development assistance and other accompanying measures, conterminous for the InvestEU Advisory Hub and the InvestEU Portal. In addition, EUR 1 billion out of the overall provision is covered by revenues and repayments generated by existing financial instruments from the EFSI, which shall also be followed up by revenues and recoveries within the InvestEU Fund in the upcoming MFF, used as additional contribution to provisioning for investments.^{46 47}

The **flexibility** of the programme is as mentioned also covering the possibility of budget modification up to 15 % for each objective. Moreover, **additional amount** can be provided **by the Member States** based on the budget flexibility within the Funds regulated under the **Common Provisions Regulation (CPR)**. More information on the Funds regulated under CPR can be found in the chapter elaborating the ESIFs. **Third countries can also contribute** and be involved to the InvestEU Fund and its objectives under specific conditions to be laid down in special agreements; Those potential contributions by any third country shall also increase the EU guarantee accordingly⁴⁸.

5.3.3 Eligibility

Eligible financing and investment operations

The InvestEU shall only support financing and investment operations that:

- Comply with the requirements regarding **market failures and sub-optimal investment situations** detailed in the Annex V of the Proposal for the Regulation establishing InvestEU Programme
- Contribute to the **Union policy objectives** and **fall under the scope of the areas eligible for financing and investment operations under the appropriate window** in accordance to the Annex II of the Proposal for the Regulation establishing InvestEU Programme

Having in mind the scope of the study “Financing of the energy transition towards a zero-emission European IWT sector”, the Annex II defines the following eligible areas for financing and investment operations under InvestEU.

Eligible area	through ...
Development of the energy sector in accordance with the Energy Union priorities , including security of energy supply, clean energy transition and the commitments taken under the Agenda 2030 and the Paris Agreement	<ul style="list-style-type: none">• production and supply of sustainable synthetic fuels from renewable/carbon neutral sources, and other safe and sustainable zero- and low emission sources; biofuels, biomass and alternative fuels, including for all modes of transport, in line with the objectives of Directive 2018/2001 (RES Directive)

⁴⁶ InvestEU Q&A, European Commission homepage: ec.europa.eu/commission/presscorner/detail/en/MEMO_18_4010

⁴⁷ COM(2018) 439 final, Proposal for InvestEU Regulation; Chapter 4 Budgetary Implications & 5 Other elements: eur-lex.europa.eu/resource.html?uri=cellar:319a131d-6af6-11e8-9483-01aa75ed71a1.0002.03/DOC_1&format=PDF

⁴⁸ COM(2018) 439 final, Proposal for InvestEU Regulation, Article 4 & Article 5

Eligible area	through ...
Development of sustainable and safe transport infrastructures and mobility solutions and equipment and innovative technologies in accordance with Union transport priorities and the commitments taken under the Paris Agreement	<ul style="list-style-type: none"> • projects supporting development of the TEN-T infrastructure, including infrastructure maintenance and safety, and its urban nodes, maritime and inland ports, airports, multimodal terminals and their connection to the main networks and the telematic applications laid down in Regulation (EU) No 1315/2013 (TEN-T) • smart and sustainable urban mobility projects, including inland waterway and innovative mobility solutions, (targeting low-emission urban transport modes, non-discriminatory accessibility, reduced air pollution and noise, energy consumption, smart cities networks, maintenance, or increase of safety levels and decrease of accidents, including for cyclists and pedestrians); • supporting the renewal and retrofitting of transport mobile assets with the view of deploying low-emission and zero-emissions mobility solutions, including the use of alternative fuels in vehicles of all transport modes; • railway infrastructure, other rail projects, inland waterway infrastructure, mass transit projects and maritime ports and motorways of the sea; • alternative fuels infrastructure for all modes of transport, including electric charging infrastructure; • other smart and sustainable mobility projects, targeting: emission reduction as well as the development and deployment of new transport technologies and services such as in relation to connected and autonomous modes of transport or integrated ticketing;

Table 12: Eligible areas for financing and investment operations under InvestEU applicable for energy transition in IWT sector

Eligible types of financing

The Proposal of Regulation establishing InvestEU Programme defines in the Article 13 “Eligible types of financing” provided by implementing partners covered by EU guarantee:

- a) *loans, guarantees, counter-guarantees, capital market instruments, any other form of funding or credit enhancement, including subordinated debt, or equity or quasi-equity participations, provided directly or indirectly through financial intermediaries, funds, investment platforms or other vehicles to be channelled to final recipients;*
 - b) *funding or guarantees by an implementing partner to another financial institution enabling the latter to undertake financing activities referred to in point (a).*
- and *Financing and investment operations through funds or other intermediate structures shall be supported by the EU guarantee in accordance with provisions to be laid down in the investment guidelines [...].*

Blending and consistency with other Union policies

In addition to the InvestEU Programme’s actions addressing market failures or sub-optimal investment situations, the programme is planned to provide a possibility to **operate complementary to grant financing** (e.g. Horizon Europe, CEF, etc.; further information in Sub-question F1) through blending operations. Moreover, the programme is a **complementary with the European Structural and Investment Funds** (e.g. ERDF, ESF+, Cohesion Fund, etc.) operating under shared management, which enables easier facilitation of the deployment through financial products as the Member States can rely in the InvestEU Programme and its simply set of rules applying in all cases.

It is important, in order **to avoid undue distortions of competition in the internal market**, to be in line with **EU State aid rules**, therefore all actions supported by the InvestEU Programme have to explicitly address market failures or sub-optimal investment situations, **without duplicating or crowding out private financing**.⁴⁹

Blending as defined within 2018/0229 (COD) Proposal for InvestEU Programme regulation Article 2, point 1 is quoted in the following:

“blending operations’ means operations supported by the Union budget combining non-repayable forms of support or repayable support or both from the Union budget with repayable forms of support from development or other public finance institutions, as well as from commercial finance institutions and investors; for the purposes of this definition, Union programmes financed from sources other than the Union budget, such as the EU Emissions Trading System (ETS) Innovation Fund, can be assimilated to Union programmes financed by the Union budget;”

Blending operations with financing and investment operations covered by the EU guarantee and combining support under this Regulation with support provided under one or more other Union programmes or by the EU Emissions Trading System (ETS) Innovation Fund shall be **consistent with the policy objectives and comply with eligibility criteria set out in the rules of the Union programme under which the support is provided** as well as shall **comply with** the (Proposal for a) Regulation establishing InvestEU.

Blending operations including a financial instrument fully financed by other Union programmes or by the ETS Innovation Fund **without use of the EU guarantee** shall comply with the policy objectives and eligibility criteria set out in the rules of the Union programme under which the support is provided.

Therefore, the InvestEU rules as well as the eligibility criteria of other EU programmes (incl. Innovation Fund) have to be applied in order to facilitate blending within a project. Support decisions and reporting activities shall also always comply towards the rules of the programmes under which the support is provided.⁵⁰

InvestEU Advisory Hub

As mentioned in the introductory text, the InvestEU Advisory Hub, shall be established within the coverage of the InvestEU programme. The Advisory Hub shall be available for public and private entities (project promoters and other intermediaries), building upon the expertise of the Commission and the implementing partners; it is stated that fees for the defined services may be charged. It is stated in the regulation, that all implementing partner, independently of the projects size, shall propose to the project promoters a request for support.

The overall aim of the InvestEU Advisory Hub is to provide support in the field of identification, preparation, development, structuring, procuring and implementation of investment projects at any stage of the project’s life-cycle and promote the possibilities of financial support via the InvestEU Fund towards investment projects. The tasks are detailed in the (Proposal for a) Regulation establishing InvestEU Programme⁵¹.

⁴⁹ COM(2018) 439 final, Proposal for InvestEU Regulation; LEGISLATIVE FINANCIAL STATEMENT, chapter 1.4.4 & Explanatory Memorandum chapter 1 “Consistency with other Union policies”

⁵⁰ 2018/0229 (COD) Proposal for InvestEU Programme regulation Article, 6

⁵¹ 2018/0229 (COD) Proposal for InvestEU Programme regulation, Article 20

Contribution towards climate change actions

Since one of the overall objectives of this study is to find options for *Financing the energy transition towards a zero-emission European IWT sector*, which is contributing towards the fight of the European Union against climate change, the respective contribution of the InvestEU Programme is being analysed.

Within the proposal for the InvestEU regulation (COM(2018) 439 final) as well as explicitly within the Commission's communication on The European Green Deal (COM(2019) 640 final) the expected contribution of the InvestEU Programme towards **fighting against climate change shall be at least 30%**. The Green Deal explicitly highlights the example of the possibility for Member States to use the EU budgetary guarantee, to deliver on climate-related cohesion policy objectives in their regions. (The overall target of climate actions contribution of Union budget expenditures supporting climate objectives is 25%, which has to be tracked through an EU climate tracking system.)

Main conclusion:

- EUR 14.2 billion allocated to the programme, leading to
- EUR 38 billion total budgetary guarantees split over four policy windows:
 - Sustainable infrastructure: € 11.5 billion
 - Research, innovation and digitisation: € 11.25 billion
 - SMEs: € 11.25 billion
 - Social investment and skills: € 4 billion
- **Blending operations** with other grant financing options shall ensure complementarity with other programmes; the project has to be aligned with all policy areas of the InvestEU programme and comply with the criteria set out in the regulations of the respective grant financing funds.
- **InvestEU Advisory Hub** will be available for public and private entities with consulting services, supporting in any stage of the project idea
- 30% of the overall budget shall be allocated towards **climate change activities**
- Relevant elements for IWT within the predefined eligible areas for financing and investment operations are being mentioned explicitly: **renewal and retrofitting** of transport mobile assets and the development of sustainable **inland waterway infrastructure** including ports

5.4 Conclusion - Relevance for an energy transition towards zero-emission inland waterway vessels

Based on the predefined policy windows it can be expected that investments, supporting a transition towards zero-emission IWT, are covered within the scope of the InvestEU Fund (aligned with innovation activities and increasing the environmental sustainability standards of the Union). In addition, it is stated that all policy windows have to address specific market failures or sub-optimal investment situations on European level; or on Member State level, if covered by contributing Funds under shared management.

In the case of inland navigation, given the international nature of this mode of transport, support to address the market failures and sub-optimal investment situation in this sector, since they are not limited to single Member States, should rather come from the EU compartment. However, it would also be possible to align between two or more Member States and conclude on a joint contribution agreement, established by the Commission and applying a set of specific rules.

It also has to be stated, that the foreseen allocation towards supporting the fight against climate change has to be at least 30 % within the InvestEU Programme financial support actions. This fact can be seen as a positive signal for greening actions, within the European inland navigation sector, in order to be supported by financing options backed up by guarantees provided by InvestEU Fund. Moreover, this signal is not limited to InvestEU Programme but can also be seen in EU funding programmes, (the proposed minimum contribution per programme is 25%) hence fostering the blending possibilities in that domain.

Finally, it can be concluded that the awareness of banks is a major factor within the possibilities of green investments backed up by the EU via guarantees. Most of the investment projects would principally fit to the policy windows, objectives and strategies of the financing programmes; however, the basic principle is to have a **bankable project idea** prior to the question of eligibility and the focus on specifications in potential financing schemes. That **gap of financial feasibility of green investments** in the inland navigation sector has to be closed **via funds, offering non-repayable subsidies** aligned with financing schemes, in order to close the funding gap and provide liquidity towards the fleet owners for a proper energy transition in IWT.

5.5 Examples from other economic sectors (if applicable)

Within the following sub-chapters interesting EU backed financing examples in the waterborne sector are summarised. The first one shows how blending of financing guarantees, backed by European funds, with funding programmes such as CEF can provide interesting possibilities to support the development and implementation of sustainable transport in Europe. Afterwards, two sector specific funding programmes, backed by EIF / EFSI are described briefly, in order to get an understanding on how sector specific programmes, backed with EIB guarantees, can work in theory.

Those best practices can also play a role in the upcoming InvestEU programme, where the fund provides the possibility to establish a sector specific programme; E.g. an investment programme in order to have EIB backed financing options with favourable financial terms for fleet owners operating on European inland waterways, enabling investments into greening technologies, thus financing the energy transition towards a zero-emission European IWT sector. When creating a sector specific financing instrument, the scale of loan tickets and possible alternatives to circumvent a “limitation” for a sector which is composed, to a large extent, by small scale barge owners shall be taken into consideration.

5.5.1 EIB: Financial support towards LNG bunker vessel in Greece

In December 2019, EIB and Public Gas Corporation of Greece SA (DEPA) agreed on financial support for the first LNG bunker vessel in the Eastern Mediterranean Sea stationed in Piraeus, Greece. The proposed **EIB finance is EUR 20 million, which will cover 50%** of the total vessel’s CAPEX. The EIB loan is guaranteed by the European Fund for Strategic Investments (EFSI / Juncker Plan).

The vessel will have a capacity of 3,000 m³ LNG and will be supplied via the LNG terminal Revithoussa, which was 50% co-funded by the EU within the Poseidon Med II project. It is foreseen that the bunker vessel, which is the first one in the Eastern Mediterranean Sea will supply mainly the port of Piraeus, but also other ports in Greece and the wider region.

The planned bunker vessel is one of the two planned ones within the **30% funded CEF** Transport project “BlueHUBS” (LNG and CNG supply chains upgrading Core TEN-T ports in the Eastern Mediterranean). The aim of the Motorways of the Sea (MoT) project is it to establish a supply chain for the distribution of natural gas to port users. It contains the following Actions:

- 2 LNG Bunkering Vessels registered in Piraeus and Lemesos
- Supply of mobile LCNG Stations in the Port of Heraklion (200 m³) and two mobile LCNG stations (60 m³) in the Port of Lemesos
- The supply of 8 LNG Tanker Trucks (50 m³) with bunkering equipment (5 based Heraklion and 3 in Lemesos)

Main conclusion:

Ideal combination of funding and financing of sustainable infrastructure, supporting the transition towards the usage of alternative fuels. The LNG bunker vessel is financed via:

- 20% own resources DEPA
- 50% bank loan from the EIB guaranteed by EFSI
- 30% CEF funding via CEF Transport MoT

5.5.2 BlueInvest Fund

The European Commission and European Investment Fund launched on the 4th of April 2020, the BlueInvest Fund Initiative, in order to provide **equity funding to SMEs in the blue economy sector**. The new programme is backed by **EUR 75 million** by the European Fund for Strategic Investments, the financial pillar of the Investment Plan for Europe.

The basic idea is to create financial support towards this industry in order to provide them with easier access to finance economic activities related to oceans, seas and coasts.

European Commissioner for Environment, Oceans & Fisheries (Virginijus Sinkevičius) is specially highlighting the contribution towards *“the **European Green Deal and ensuring economic growth of European SMEs developing innovative and sustainable products and services.**”*

5.5.3 Green Shipping Guarantee Programme

The Green Shipping Guarantee Programme (GSGP) is a **sector specific risk bearing facility** supported by Connecting Europe Facility and European Fund for Strategic Investments (EFSI). It is designed for projects that will improve the environmental performance of transport vessels via guaranteed intermediated loans. This will have the effect that the agreed framework guarantee agreement will ensure that **promoters can benefit from favourable financial terms** as a result of the EIB's AAA rating. The facility is open for both retrofitting of existing shipping as well as for projects that envisage the construction of new vessels with a green innovation aspect, **it applies to both inland shipping and seagoing operators**. However, it was initially designed to fit the needs of the maritime sector, hence, the eligibility criteria not being targeted to inland waterway project.

The total financial support foreseen in the programme is a **EUR 750 million guarantee**, based on EUR 250 million from CEF and EUR 500 million allocated from the EFSI fund. The minimum project size is planned to be EUR 25 million, which can be a too high threshold for investments in the IWT sector. It is foreseen to provide up to **50% of debt financing on new vessels and up to 100% of green components of retrofitting operations** (e.g. sulphur scrubbers, dual fuelled engine technology, propulsion technology, hull treatment, ballast water treatment systems and similar) for project promoters **via a Partner Financial Institution (PFI)**. Potential partners currently operating under the framework agreement are for example Société Générale or ING, where the individual transactions are originated, screened and assessed and further presented to the EIB for internal review (have to be eligible according the EIB Transport Lending Policy) and pricing with an EIB accelerated/short approval cycle. Currently, no inland waterway projects have received support from this guarantee programme.

Main conclusion on the Green Shipping Guarantee Programme:

Sector specific programme focusing on the maritime sector and supporting investments in “greener shipping” that require favourable financial terms. Co-financing rates via financial institutions in the sector, guaranteed by the EIB via the EFSI, are as following:

- Up to 50% of debt financing on new vessels
- Up to 100% of green components of retrofitting operations
- Minimum project budget is foreseen to be EUR 25 million
- Could be used as a basic starting point and approach for a programme specifically focusing on greening IWT (incl. lower threshold and more specified towards IWT)

6 F3. Instruments for pay-per-use

6.1 Introduction into “pay-per-use” / “energy-as-a-service” solutions

The characteristic of leasing or pay-per-use schemes is different towards the conventional investment methodology in the IWT sector. The transition from capital expenditures towards operational expenditures implies also a different cash flow, as well as different funding and financing options.

Based on the experience, that the provider of leasing or pay-per-use schemes prefer to provide a standardised asset with a properly estimated residual value, e.g. fixed for a transferable containerised energy providing system, funding and financing schemes would be rather attractive for the provider of those systems. In addition, the required shore infrastructure could be co-financed in order to support the implementation process where required. The devolvement of such infrastructure is based on the assumption, that the potential of vessels worth to be considered for using pay-per-use and leasing schemes in the current market circumstances, is rather limited.

Details on pay-per-use and energy-as-a-service solutions can be found in research question D.

6.2 Funding and financing schemes relevant for pay-per-use / energy-as-a-service solutions

According to the current limited knowledge and experience with pay-per-use solution(s) it might be too early to state concrete options.

Using the potential pay-per-use schemes from the perspective of the vessel owner / operator shall be considered as operational expense. As such, it is not the subject of eligible costs in the current funding and financing schemes.

However, the build-up of the infrastructure offering energy-as-a-service solutions might be subject of the future schemes. Whereas it needs to be pointed out that in this case, the target group of the funding and financing is not only the vessel owner / operator, but the one(s) building up and hosting / providing the (fix and / or mobile) infrastructure shall also be considered as beneficiaries of a potential project. Thus – if this solution will be applied – special attention needs to be paid to promote these services and motivate all stakeholders to supply and to use those. In this setup, the additional investment on the vessel (e.g. electro motor, electric installations) shall be made eligible for funding or financing, whereas the funding and financing of the infrastructure elements can be organized as currently being done e.g. in CEF for the alternative fuels infrastructure deployment. As regards the infrastructure deployment, the currently planned Innovation Fund initiative can / shall be followed by the stakeholders where both CAPEX and OPEX can be made eligible (details are not yet published officially, please see chapter 5.4 on available information).

The market potential of the pay-per-use solution is being investigated in research question D3, where the preliminary conclusion is that there is a limited applicability.

7 F4. Accessibility for IWT

This chapter deals with providing an overview in terms of the level of visibility and accessibility of the IWT sector to funding programmes and financing products facilitating the transition to a green and efficient fleet. In case of visibility, several projects and initiatives have been appraised for their positive influence on providing the necessary information to the interested stakeholders. For both topics (visibility and accessibility) additional feedback and recommendations for improvement were collected from several representatives of the sector (branch organisations, financial institutions, technology providers, fleet operators, transport ministries) by means of an online questionnaire. In case of visibility, the level of satisfaction is considerably high, for accessibility - several recommendations have been mentioned in line with the needs and expectations of the industry.

7.1 Lessons learnt from existing and past funding programmes and financing products

Measuring the success of implementation of funding and financing programmes and products by calculating their **absorption rate** is a common and acceptable practice. Specific factors from both the supply side and the demand side have significant influence on the absorption capacity of EU funds. The absorption capacity on demand side means the actual ability of the project applicants to generate acceptable projects and is largely dependent on (a) administrative capacity – the ability of applicants and project beneficiaries to prepare and implement good eligible projects and to properly manage the projects and (b) financial capacity – the co-financing capacity of the beneficiaries. The absorption capacity on supply side largely depends on the institutional system created in each member state to manage the EU funds and can be derived from their macroeconomic, financial and administrative capacities. The absorption rate is also highly dependent on the attractiveness of the different funding programmes and financing products. Under **attractiveness** beneficiaries understand: simplified application procedures, availability of pre-finance, proper balance between sound management of funds and financial control mechanism, harmonization of personnel cost methodologies, simplified timesheets and time-recording mechanisms, uniform interpretation of rules and development of synergies with other programmes/products/instruments, reduced administrative burdens for project management and reporting, etc.).

At the same side, receiving **reliable information** on the existence of relevant funding (e.g. grants from CEF, Horizon 2020, national operational programmes) and financing options (loans) and dedicated conditions to access, use and blend these means is of utmost importance. Therefore, ensuring a proper visibility among all stakeholders involved (funding/financing source, management body, implementation body/beneficiaries) is a key (vital) element in targeted promotion activities, be it at EU, regional or national level. During the financial period 2014-2020, several targeted initiatives have helped potential beneficiaries identify a wider range of sources of finance. These have been directly supported by the (a) European Commission for each of the funding programmes made available (e.g. information on several dedicated websites, high visibility events and Info Days such as the TEN-T Days), (b) ministries and dedicated national agencies/authorities, (c) national contact points, (d) chambers of commerce, (d) city halls, (e) national, regional and EU wide initiatives (e.g. EIBIP- European Inland Barging Innovation Platform, Waterborne TP, EuroAccess Macro Regions, etc.), (f) business associations (e.g. EBU, ESO, IWT Platform, INE, Pro Danube), by (g) means of EU projects (PLATINA, GRENDDEL, etc.) as well as by financial institutions (banks – e.g. EIB).

Relevant for most of the Danube Region countries, in 2017 the Council of the European Union has adopted its conclusions on making **cohesion policy more effective, relevant and visible** to its

citizens and highlighted the need to make use of the best available communication tools and techniques to increase the visibility of the policy actions and related funding opportunities. At the same time, for **more accessibility** the conclusions stressed the need of simplification of the policy post 2020, a.o. in terms of management and audit systems. In this respect, it is crucial to find the right balance between the result orientation and the level of checks and controls as well as simplification of procedures, including for the audit process.

The ministers pointed out that cohesion policy is an essential policy of the EU, important now and in the future as a stable and predictable investment and cooperation framework to reduce the disparities between levels of development of Europe's regions.

Analysing concrete examples (i.e. cases of France, Austria and the Czech Republic with their state aid schemes dedicated to fleet modernization), one can argue that effective communication and targeted promotion campaigns are an important pillar in reaching out to interested beneficiaries. The conditions such as funding rates and eligibility conditions are clearly communicated to external stakeholders with the support of reliable communication channels, both online and offline. Proper visibility is an essential aspect during the entire information process chain managed by the funding / financing bodies, i.e. from initial promotion, during the implementation phases and towards the very end of the program / action. The proper visibility shall ensure that all type of entities – independently from their size, location, staffing etc. – have the same information on all relevant possibilities. Valuable feedback from beneficiaries was collected during info days and know-how transfer events and contributed to shaping up the follow-up actions and initiatives.

Indeed, all these promotion and information sharing initiatives require considerable efforts and financial support. Therefore, the European Commission has funded the **sector initiative EIBIP** together with its three regional centres covering Germany, France and the Danube Region to conduct awareness-creation activities and facilitate the update of innovation by the IWT sector. Complementary, the innovation platform has provided an overview of funding possibilities (previously developed by PLATINA 2 project) across 4 key policy areas dealing with fleet modernisation, human resources development, logistics services development and port & shipping modernization. The three centres were very active dealing with know-how transfer initiatives at regional level as well as providing dedicated advice on funding opportunities on a case-by-case basis. As such, several sector organizations from the Danube region countries (fleet operators, logistics service providers, terminal operators) agreed to further investigate on possibilities to modernize the Danube fleet and started the **project GRENDEL**, which receives financial support from the Interreg Danube Transnational Programme. The project's overall goal is the improvement of the environmental and economic performance of the Danube fleet. This will be achieved through three specific objectives, namely: (i) Know-how transfer for Danube fleet operators with the help of intensive transnational collaboration between private & public stakeholders and targeted know-how transfer activities; (ii) Elaboration of innovative technical vessel concepts and improved transport & logistic management processes of fleet operators; (iii) Supporting development of favourable regulatory framework & well-designed public support measures by introducing Model State Aid Scheme & innovative financial instruments.

Another important sector organization **WATERBORNE TP** has been set up as an industry-oriented technology platform to establish a continuous dialogue between all waterborne stakeholders, such as classification societies, shipbuilders, shipowners, maritime equipment manufacturers, infrastructure and service providers, universities or research institutes, and with the EU Institutions, including Member States. Its strategic objectives are to (i) develop a common medium- and long-term R&D Vision and a Strategic Research Agenda and to (ii) contribute to the appropriate mobilisation and allocation of the necessary financial resources (private/regional/national/EU sources).

All in all, by means of all the existing initiatives and organisations, the needs of the sector are well represented and in return the stakeholders receive useful and reliable information. Funding and financing possibilities have a good visibility, the level of absorption being influenced more by their accessibility dominated by aspects such as eligibility criteria, application and implementation criteria, etc. A few solutions on how to improve these aspects will be presented in the following chapters.

7.2 Recommendations for raising awareness of funding and financing options (visibility)

The transition towards an energy-efficient and low-carbon economy as well as the increasing integration of inland waterway transport into multimodal supply chains are therefore two lasting trends and challenges for inland waterway transport sector. Continuous research and development in shipbuilding, ship machinery (e.g. engines, fuels, alternative propulsion, and ship equipment), innovations in logistics (loading units, transshipment equipment and digitalisation of logistics processes), river information services but also infrastructure maintenance is needed to maintain inland navigation as a competitive transport mode. Funding and financing options play an important role in facilitating these policy objectives and support stakeholders in adopting innovative and green technologies.

For the scope of this report, consultations with relevant stakeholders have been conducted in order to assess the factors shaping their level of participation in funding programmes and/or use of financing products. By means of a dedicated questionnaire, interviewees from several industries (fleet operators/owners, cargo owners, logistics service providers, training institutions, technology providers, sector associations, public authorities, financing institutions) have shared based on their experience insights on improving the awareness and accessibility to dedicated funding and financing options. The questionnaire was developed around three main areas dealing with (a) problem identification, (b) visibility and (c) accessibility. It was launched with the help of EU Survey service and collected feedback in the timeframe between the 8th and the 24th of April 2020.

In terms of VISIBILITY, the questionnaire touches on topics such as (i) information channels used and reactions generated, (ii) efficient promotion campaigns, (iii) foreseen innovative activities, (iv) role of social media in sharing relevant information, (v) further ideas on improving visibility of funding/financing.

According to the returned feedback, various communication channels are being used based on the content and the variety of target groups. The preferred information channels are:

- official programme websites and/or their newsletters
- Commission's Access to Finance website, Advisory Hub website
- websites of (regional) promotional / branch organisations and/or their newsletters
- participation at national/international events
- bilateral consultation meetings
- EIBIP Funding Database
- official social media channels (LinkedIn, Twitter, Facebook)
- bilateral consultations with financial institutions (banks)

Barriers to information visibility and information transparency hindering the effective flow of information between the stakeholders have been greatly reduced in the last 5 to 10 years, also due to the improvement of online communication/collaboration tools.

All in all, it can be concluded that from the visibility point of view, funding and financing programmes and products are well presented. The questionnaire participants had a very positive feedback in this respect, being satisfied with the existing level of information and the way it's channelled towards the targeted audience. At the same time, respondents advised for a more visible promotion of the sector's success stories. Success stories shall be used as tools to share knowledge and lessons learnt, offering interested parties another reliable source of reference and information. Therefore, a significant (noticeable) promotion phase shall be considered post-project especially in case of the IWT sector, dominated as it is by small and medium-sized companies which are more prone to relate and react to good practice examples.

7.3 Recommendations for better accessibility of funding and financing options

In terms of accessibility, the topic is more debatable. The questionnaire proposed touches mostly on aspects regarding the (i) application process and the (ii) capacity of vessel owners/operators to prepare and execute projects making use of the funding opportunities available. Also, for the scope of this report other factors such as (iii) project management and reporting requirements as well as (iv) funding rates and pre-finance level have been brought into discussion.

After deciding which program/product best fits the investment intention, stakeholders need to go through the project application process. In this regard, there is clear tie between the stakeholders preferring (a) a single stage application process, requiring applicants to submit a full project documentation by a given deadline and the ones (b) favouring a two-stage process consisting of expression of interest (based e.g. on a less than 10-page concept note) followed by the screening of pre-selected applications (based on complete project proposals). In terms of harmonization and simplification of application procedures, some respondents clearly indicated that more consideration shall be given in case of applications blending grants and loans. As good practice examples, two programs have been indicated, namely the CEF Transport Blending Facility as well as the Flemish support scheme for small vessels and greening (De Vlaamse Waterweg NV).

Another aspect debated lies with the applicants, i.e. the capacity of vessel owners/operators to prepare and execute projects. According to the respondents, many vessel owners/operators fall short when it comes to mobilizing in-house resources to put together a new project application. Some decide to work together with consultants, but others prefer to get advice directly from regional promotional entities, branch organizations or associations, chambers of commerce, etc., supporting them in obtaining the proper investment for their projects. Another option mentioned was the creation of a pool of experts with expertise in funding/financing and technical aspects as well as in project preparation and execution. When looking from the project engineering perspective, one might advise that several applicants team up to create synergies when approaching a consultant and / or other providers for projects.

Once projects are started, project management practices and reporting requirements tend to use many resources of the applicants. Therefore, a considerate harmonization and simplification of all administrative processes (excessive and rigid bureaucracy – for example in case of tenders and acquisitions procedures) is very much deemed as necessary and highly expected. The participants call for a “trust-based” approach for those beneficiaries with a proven history of successful project implementation. Increased trust could include broader reliance on the internal controls and external audits already conducted. A further simplification of the time recording and timesheets methodology is also appraised. For example, timesheets could be simplified to exclusively record

the time spent on the project or be replaced by a declaration (e.g. Person A dedicated XX hours to this project over the project duration/reporting period).

Funding rates and pre-finance availability are two other aspects taken into account by applicants when deciding to file a project proposal under a dedicated funding programme. A minimum of 50% funding rate is preferred. The higher the funding rate, the more attractive the funding programme becomes for potential applicants. To kick-start the project and support beneficiaries to begin the implementation of works, an initial financial contribution has proved to be an extremely useful solution. This is either offered by the programme itself, or facilitated by a financial institution.

8 F5. National and regional funding

Research question F5 delivers the overview financial support for the transition towards zero-emissions IWT in European countries, as well as an inventory of existing and planned financing support schemes available at the national and regional levels per country. Beside this inventory, interviews with country representatives have been carried out concerning their plans, use of structural funds in countries where these are accessible, incl. the progress on elaboration operational programmes for the use of structural funds (is IWT included and how).

8.1 Methodology

Cumulative research has demonstrated that the effects of global warming are serious and widespread, are getting worse and are partially related to transport activities. With transport being an indispensable pillar of the global economy, producing substantial socioeconomic benefits, reducing its environmental footprint is essential in creating a well-defined balance between its economic and environmental efficiency. The keyword in this regard is sustainability – securing the mobility needs of the society in a manner that is not damaging the environment and that does not impair the essential mobility needs of a globalized society.

The rapid increase of resource consumption and consequently of transport operations has raised concerns related to the ability of governments to sustain such a growth without a possible environmental breakdown. In order to meet these enormous challenges, the European Union has responded by creating adequate policies that sustain the development of a transnational transport system that is having less to no harmful effects on the environment.

It is a widely acknowledged fact that IWT is compared to other modes of transport by far the most environmental-friendly one in terms of energy consumption and greenhouse gas emissions. Moreover, IWT is in terms of infrastructure maintenance and related external costs one of the most economical modes of transport. However, despite its obvious advantages, IWT is by far not exploited at its full potential.

The reasons for this specific situation are manifold. While the development of IWT is strongly supported at the European level – see for instance the NAIADES action programme – on the national level it seems to be, with few exceptions, a rather neglected issue. Upgrading and adapting the IWT system to a future-oriented transport system also depends on complementary funding opportunities from national budgets. Hence, an interaction between national and supranational financial instruments is of outmost importance in providing adequate investment capacities.

Looking at the European transport landscape, it becomes more than evident that general investments in IWT have been disproportionally low compared to those in road and rail. This is because technological development is much faster incorporated in rail, road and air transport. It has to be furthermore kept in mind that inland vessels usually are extremely expensive pieces of equipment. While many operators – particularly in the Danube Region – are able to successfully run the day-to-day operations of their vessels, they lack the necessary skills and expertise to monitor markets and analyse them in depth. The low amount of available capital furthermore hampers innovation uptakes of vessel operators.

With Europe's commitment to adhere to the provisions of the Paris Agreement, the release of the European Green Deal, which is intended to paw the way towards a climate-neutral society by 2050, IWT may get a unique chance to get access to more generous European and national financing instruments. The aim of this chapter therefore is to provide an overview on the current situation of the readiness of national governments to provide financial instruments or incentives that actively support the transition towards zero-emission IWT.

Investigating the readiness of national governments to provide financial support for the transition towards zero-emission IWT requires comprehensive data collection and analysis. The methodology used to adequately answer the formulated research question is a mix of different approaches: desk research, survey and the use of secondary data collected in the framework of the GRENDEL project and information elaborated within the official co-operation with the CLINSH initiative.

Starting point of the GRENDEL project is the fact that vessel operators severely lack the necessary fleet investment capacities that are vital to adapt the outdated Danube fleet to a modern, well connected European transport system. GRENDEL addresses various fleet modernisation aspects, one of which - the creation of a widely harmonised state aid scheme for fleet modernisation - is of particular interest for this study.

While state aid schemes for fleet modernisation aren't a novelty in IWT – see for instance the cases of the Czech Republic or France – proposing a widely harmonised financial instrument at the regional level comprising several neighbouring states is Europe-wide a unique approach. During the ongoing elaboration process of the model state aid scheme, valuable first-hand information about the concrete level of governmental readiness to financially support the development of IWT was collected. The therefore used research method was the distribution of a comprehensive questionnaire to the responsible national authorities of the Danube Riparian countries. These data, paired with complementary information collected via desk research, will generate valuable information to analyse the current stage and effectiveness of financial support provided by national/regional authorities in reaching zero emission IWT.

It has to be noted, that the authors cannot guarantee that all programmes have been identified; moreover, some programmes are not restricted to inland navigation and some support schemes are based on tax concessions or other incentives and are therefore not directly paid out to the beneficiaries.

8.2 National and Regional funding opportunities supporting IWT

8.2.1 Netherlands

Inland shipping plays an important role for distribution and logistics in the Netherlands, partly because of the closely branched waterway network. Particularly the presence of the port of Rotterdam, which plays a major and important role in the supply and distribution of goods to the hinterland in Western Europe have made the inland shipping sector in the Netherlands one of the largest in Europe.

Based on the objectives of the Dutch government aimed at improving air quality and energy sustainability and energy efficiency, the range of schemes for sustainability in inland shipping is relatively large. The Dutch national government currently offers support for both investments in the inland shipping sector and for innovation that should lead to sustainability in inland shipping.

Green Deal Zeevaart, Binnenvaart en Havens (Green Deal on Maritime and Inland Shipping and Ports)

An important step that has been taken in this context concerns the Green Deal Zeevaart, Binnenvaart en Havens concluded in 2019. With this Green Deal the national government, provinces, ports, maritime sector organizations, shippers, carriers, banks and knowledge institutions join forces to make shipping more sustainable. Dozens of actions have been proposed in the Green Deal to significantly reduce the emissions of CO₂ and other harmful substances from inland shipping and maritime shipping. Among other things this should lead to inland shipping emitting at least 40% less CO₂ in 2030 and in 2050 being “virtually climate neutral”. € 15 million is being made available for the period 2020-2021 for the inland shipping sector to stimulate

innovations and, among other things, the purchase of clean engines. There will also be a new sustainability label for inland vessels that will allow skippers in the future to receive a discount on port dues and use the label to finance their ship. No further information is currently available about the opening up and the conditions of this scheme.

Stikstofreductie Binnenvaart (Nitrogen reduction inland waterway transport)

In April 2020 the Dutch Minister of Agriculture, Nature Management and Food Quality announced a number of measures to reduce nitrogen emissions. One of these measures concerns the provision of € 79 million until 2030 for the greening of inland vessels. This measure focuses on the installation of SCR catalytic converters on existing inland vessel engines to reduce engine nitrogen emissions. A nitrogen reduction of more than 80% can be achieved per ship. As the measure is only aimed at reducing the nitrogen emissions from the engine particulate filters are therefore in principle not covered by this measure, just like installing a completely new Stage V engine. The budget that was already available within the Green Deal for Inland Shipping and Ports (€ 15 million) can be used for such applications. No further information is currently available about the opening up and the conditions of this scheme.

Milieu Investeringsaftrek/Versnelde afschrijving milieuinvesteringen (Environmental Investment Deduction / Accelerated Depreciation)

Specific emission-reducing techniques can be subsidized from the Environmental Investment Deduction / Accelerated Depreciation (Milieu Investeringsaftrek/Versnelde afschrijving milieuinvesteringen, for short 'MIA/VAMIL) with which the skipper obtains a **tax benefit** (approx. 3-12%) because part of the investment amount can be deducted from the profit and/or accelerated depreciation. Examples of eligible investments are:

- Sustainable hull of an inland vessel;
- Anti-fouling system for a ship's skin;
- Durable propulsion for a vessel (an engine that complies with Euro VI or a hybrid system);
- Very durable motor for a vessel;
- Electric ship propulsion;
- Automatic lubricating oil partial change unit for a marine engine;
- NOX reduction system for a ship;
- Closed particulate filter for an inland vessel;
- Degassing installation for ship tanks;
- Shore power connection on board a ship.

MIA/VAMIL work on the basis of the principle "first come, first serve".

Energie Investeringsaftrek (Energy Investment Allowance)

Similar to the way in which environmental investments are eligible for MIA/VAMIL, inland shipping companies that invest in specific energy-saving techniques can obtain a **tax advantage** for such investments via the Energy Investment Allowance (Energie Investeringsaftrek, for short 'EIA'). The advantage to be achieved with EIA amounts to about 11% of the amount invested. Example of eligible investments are:

- Energy-efficient marine engine;
- Heat pump for ships;

- Fuel cell in means of transport;
- Heat recovery on an inland waterway vessel;
- Hydrodynamic anchor vaults and anchors;
- Extension of an existing inland waterway vessel.

Just like MIA/VAMIL also EIA work on the basis of the principle "first come, first serve".

Subsidieregeling Duurzame Scheepsbouw (Sustainable Shipbuilding Subsidy Scheme)

In addition, there is the Sustainable Shipbuilding Subsidy Scheme (SDS) which is intended for shipyards that want to implement a shipbuilding innovation project that contributes to sustainable development. This must be new or to build inland vessels or sea ships with a gross weight above 100 tons or tugboat with a capacity of more than 365 kW. Fishing vessels are not eligible. It has been announced that this subsidy scheme will be reopened in 2020. The available budget is not yet known. In 2019, a maximum of € 1,250,000 per project was available and the total budget was € 4,600,000.

Stimuleringsregeling Schone binnenvaart en duurzame logistiek in Rotterdam (Clean inland shipping and sustainable logistics in Rotterdam)

At a regional level, the port of Rotterdam has created an incentive scheme called Stimuleringsregeling Schone binnenvaart en duurzame logistiek in Rotterdam (Clean inland shipping and sustainable logistics in Rotterdam). With this scheme the Port of Rotterdam provides financial contributions to new projects that lead to a reduction in fuel consumption, greenhouse gases (CO₂, CH₄) and air emissions (NO_x, PM) by inland shipping. The maximum contributions are 25% for eligible research projects, and 75% for projects aimed at concrete implementation of tangible demonstration projects. Applications will be assessed and ranked on the basis of the expected environmental return (i.e. reduction in fuel consumption, greenhouse gas emissions and air emissions) per euro invested in the initiative until 2025. In addition, the project will be examined to see how unique it is compared to similar projects. € 500,000 was available for 2019/2020. The scheme was closed in January 2020, it is not clear whether there will be a follow-up to the scheme.

Demonstratie klimaattechnologie en -innovatie (Climate Technology and Innovation transport scheme)

In order to stimulate innovative and climate-friendly developments and demonstrations in the transport sector, the Dutch government has introduced the Demonstratie klimaattechnologie en -innovatie scheme, for short DKTI (Climate Technology and Innovation transport scheme). DKTI-Transport supports sustainable transport demonstration projects whose innovation is not yet on the market, has a strong business case and is viable. The scheme focuses on transport solutions with low or no CO₂ emissions and themes such as electric driving and sailing, efficient ships, driving on hydrogen, biofuels in aviation, shipping and heavy road traffic. The DKTI-Transport focuses on the following 5 types of projects:

- Development of new products;
- Living lab projects where new technologies, ideas and concepts are developed and tested together with users;
- Feasibility studies in which the potential of a project is investigated and analysed;
- Facilitating innovation clusters that promote innovations in sustainable transport by sharing facilities and exchanging knowledge and expertise;
- Co-financing of local infrastructure for alternative fuels.

The scheme will be opened in the years 2020 and 2021. Project contributions ranges from 25% to 100% of the eligible costs depending on the type of activity and type/size of organisation with a subsidy minimum of € 500,000 and a subsidy maximum of € 2,000,000. The budget available for 2020 has not been announced yet (as a reference: the total budget in 2019 was ultimately € 34.5 million).

Green Award

Finally, it is worthwhile mentioning the Green Award incentive system. Green Award is a quality mark for ships that meet high requirements in the field of safety and the environment. Green Award operates according to a Schedule of Requirements covering engines and issues such as fuel, pollution prevention, safety, technical equipment on board and crew behaviour. A minimum number of points must be achieved on these aspects. Depending on the number of points achieved, a ship will receive a Bronze, Silver, Gold or Platinum certificate. Only ships whose main engines are equal to the emission standard NRMM Stage V are eligible for the "Gold". They must also score on other points. Depending on the score, they receive either "Gold" or "Silver". Ships whose main engines comply with the CCR-2 emission ceiling can qualify for "Bronze" and "Silver". The certificate is valid for 3 years after the inspection date. The Green Award certificate gives a ship access to multiple incentives, including discounts on port dues in the Netherlands (and in Ghent, Belgium), products and services. A list of incentive providers can be found via this link: <https://www.greenaward.org/inland-shipping/nl/faq/>

8.2.2 Belgium

Inland shipping plays an important part in the economy of Belgium. The presence of the Port of Antwerp plays an important part in this. It's the second largest harbour in Europe and a big part of the goods that arrive in the port are transported through inland shipping to the rest of Europe. It is also seen as a greener and less sensitive to traffic jams than transport on the road. The European regulation 2016/1628 for the 'Non-Road Mobile Machinery' (NRMM) is a great stimulant. Greening is also seen as an economic opportunity, making inland shipping a cheaper way of transporting goods than moving them over the already busy road system.

What makes Belgium stand out is it's complex institutional organization, based on regions and linguistic grounds. There are three distinct regions: Flanders, Wallonia and Brussels, all of these regions have a large amount of autonomy and are responsible for, amongst many others, economic affairs. Within the context of the greening of inland shipping, only Flanders and Wallonia play an important part. Both regions have created schemes to promote this. Firstly, the schemes from the Flanders region will be mentioned, after this the schemes from the Walloon region will follow.

Flanders

The organization Vlaamse Waterweg is responsible for maintenance and exploitation of the waterways in the Flanders region. They have two schemes available; both are for greening existing inland ships. The goal is to adapt existing ships so that they comply with the NRMM Stage V norm EU 2016/1628. Important is that these schemes are available for entrepreneurs that are active on the Flanders waterways for at least 60 days in a year and are able to prove this. Both schemes will run until 31-12-2020 and have 1 million euro available per year as long as the scheme runs.

Hermotorisatie kleine schepen (Repowering small ships)

The first scheme is the Hermotorisatie kleine schepen. This is for ships that are able to navigate waters smaller than CEMT class IV and will help with the retrofitting of new engines that will comply to the NRMM guidelines. 50% of the investment costs can be compensated with a maximum of € 50,000 per ship.

Nabehandelingstechnieken (After treatment techniques)

The second scheme is Nabehandelingstechnieken. Here the purchase and placement costs of an after-treatment system will be compensated. This scheme is available for larger ships that are able to navigate all CEMT classes. The system has to be part of the ship and improve the ecological performance of the ship. 80% of the investment costs can be compensated with a maximum of € 50,000 per ship.

Ecologie+ (Ecology+)

From the Flanders Innovation and Entrepreneurship agency a wider scheme is available. The Ecologie+ scheme is not just for the greening of inland shipping but a financial reimbursement for entrepreneurs in the Flanders region who want to make an ecological improvement in their business. With this the Flanders government wants to stimulate entrepreneurs to improve the production processes. The goal is to make them more energy efficient and environmentally friendly. A list of technologies is created, only the technologies mentioned on this list can apply for financial aid. For inland shipping Technology nr. 201049: 'changing to a natural gas engine for inland ships' is applicable. Technology nr. 201057: changing to a hydrogen fuel cell for transport means. This applies to several different transport means, but of course is applicable to inland shipping. This scheme is only available for enterprises who invest in the Flanders region. 15% to 55% of the investment cost can be claimed and up to € 1 million per applicant per three year can be received in aid.

Wallonia

The Operational Directorate General for Mobility and Waterways is responsible for the managing of the Walloon waterways, amongst many other responsibilities. In this role they offer two schemes to make the inland shipping industry more sustainable. The goal is to let ships comply with the emission norms for pollution set out by the Central Commission for the Navigation of the Rhine.

Prime à l'acquisition d'un bateau de navigation intérieure d'occasion (Bonus for the acquisition of a used inland navigation vessel)

The scheme Prime à l'acquisition d'un bateau de navigation intérieure d'occasion promotes the purchase of a secondhand ship that will be retrofitted with an engine that complies with the emission norms mentioned before. This has to be done within 6 months after purchase. The applicant has to be a master captain for less than two years and 30% of the investment cost are available for reimbursement. The minimum investment should be € 12,500. The maximum amount funded is € 200,000 over 3 years.

Prime pour l'adaptation technique de la flotte de navigation intérieure Wallonne (Premium for the technical adaptation of the Walloon inland waterway fleet)

The Prime pour l'adaptation technique de la flotte de navigation intérieure Wallonne scheme stimulates the technical adaptation and improvement of the Walloon inland fleet. Exclusively for new equipment that will modernize the ship and improve its ecological footprint. 30% of the total investment will be reimbursed for small and medium sized companies, 20 % for big companies. The minimum investment should be € 12,500. The maximum amount funded is € 200,000 over 3 years.

8.2.3 Luxembourg

Despite the modest size of the inland shipping sector in Luxembourg, the Luxembourg authorities have drawn up 2 schemes available to inland shipping to invest in making their industry more sustainable. One of these has even been specifically developed for inland shipping.

Aides publiques en matière de navigation fluviale (Public aid for inland waterway transport)

With the subsidy scheme Aides publiques en matière de navigation fluviale Luxembourg has a specific subsidy scheme for the inland shipping sector (both freight and passenger transport) intended to stimulate navigational safety, environmental protection, fleet productivity and the promotion of transportation by navigable waterways. The aid provided by this scheme covers part of the total cost of the eligible expenditure with a € 20,000 cap per applicant and per vessel (in the event of the acquisition of inland waterway vessels) or per applicant and per inland waterway infrastructure/superstructure (for inland waterway infrastructure or superstructure projects). The subsidy covers part of the total cost of the expenditure meaning 30% of the eligible costs related to the purchase of inland navigation vessel equipment and 30%-50% of the eligible costs related to inland waterway infrastructure or superstructure projects. Financial aid for inland waterway vessel equipment is granted to owners of inland waterway vessels listed, or in the process of being listed in the Luxembourg register of inland waterway vessels. Projects require a minimum investment of € 2,500 for inland waterway vessel equipment and € 10,000 for inland waterway infrastructure or superstructure projects.

Aide à l'investissement en faveur de la protection de l'environnement (Investment aid for the protection of the environment)

From a more generic climate improvement perspective (i.e. not specifically aimed at inland shipping), Luxembourg has the grant scheme Aide à l'investissement en faveur de la protection de l'environnement aimed at businesses that invest in eco-technology or environmentally friendly processes. The financial aid is available to any business or natural person holding a business permit.

The scheme provides for several types of investment (schemes) which may be eligible for public financial aid in the form of a capital grant or interest relief:

- Investments enabling businesses to exceed EU environmental protection standards or to increase the level of environmental protection despite the absence of such standards;
- Early adaptation to future EU standards;
- Investments in energy efficiency measures;
- Investments in high-efficiency cogeneration;
- Investments in the production of energy from renewable energy sources;
- Investments in the remediation of contaminated sites;
- Investments in the district heating or cooling distribution network;
- Investments in the recycling or re-use of waste;
- Investments in energy infrastructures;
- Aid for environmental studies.

If the costs of investment in environmental protection can be identified as a separate investment in the total investment costs, these costs related to environmental protection constitute the eligible costs (e.g. an additional gas treatment component which makes it possible to further lower the level of polluting emissions). In all other cases, the costs of investing in environmental protection are determined by reference to a similar investment, less respectful of the environment, which would have been plausible in the absence of aid. The difference between the costs of the two investments represents the costs related to environmental protection and constitutes the eligible costs. The amount of aid varies between 10 % to 100 % of the investments, depending on the type of project and the type of business applying for aid.

8.2.4 France

In the overall modernisation process of the transport system, France has reserved a prominent place for IWT on the national investments agenda.

Between 2013 and 2017, France introduced a fleet modernisation and innovation incentive program **PAMI (Plan d'aide à la modernisation et à l'innovation de la flotte / Aid plan for fleet modernization and innovation)**. The budget of this 4-year program was € 22.5 Mil., accessible to French stakeholders, covering the following eligible costs:

- Modernising the fleet and strengthening the environmental performance of IWT;
- Encourage IWT new lines and improve cargo security;
- Support the establishment and development of IWT companies;
- Encourage the uptake of innovation.

Based on the above-mentioned experience, a new cycle of actions, measures and incentives was introduced in order to support the modernisation and technological uptake of the French IWT fleet. The new PAMI program started in 2018 and is supposed to end in 2022. Compared to the first program, the current one has a slightly longer duration and an increased budget. It furthermore covers a larger scale of eligible costs. The selection procedure is organised via calls, twice yearly (with the exception of 2018 and 2022) and has a total budget of € 26.2 Mil. Potential beneficiaries are any natural or legal person belonging to a State of the European Union as long as they are trading inland waterway goods in France. The same is valid for any legal person belonging to a State of the European Union having its registered office, branch or subsidiary in France as long as they carry transport goods by inland waterways on its territory.

Eligible items are structured as follows:

Part A: improve the IWT fleet's environmental performance

- Reduce pollutant consumption and emissions (rate: 50 % (engine has to comply with NRMM/stage V specifications));
- Reduce and treat water or waste releases (rate: 30 %);
- Adapt barges for better hydrodynamics (rate: 30%);
- Optimize on-board energy management (rate: 30%).

Part B: strengthen IWT integration in the supply chain

- Adapt boats to catch new businesses or secure existing traffic (rate: 30 %);
- Build or acquire boats to catch new traffic (rate: 50 % for the studies / 20 % construction);
- Build or adapt units to serve seaports (rate: 50 % for the studies / 20 % construction);
- Acquisition of sailing assistance instruments or software (rate: 30 %).

Part C: attract new skippers & shipowners

- Purchase of the first boat.

Part D: facilitate innovation in IWT (open to non-freight barges operators, provided innovation may be transferred to freight units)

Rate: 50 %, max. 100 000 €

- Eligible projects may cover the following activities:

- The experiment of a new or existing technology, not implemented in the IWT industry yet;
- Research and development based upon new technologies to address specific issues in the IWT industry.

8.2.5 Germany

In the 'Klimaschutzplan 2030' (Climate Protection Plan 2030) the German Federal Government has presented the key points regarding climate protection measures towards 2030. Inland navigation is also believed to play an important role in this plan. In this respect the German Federal Government is to continue and expand the funding of environmentally friendly inland navigation vessels.

Förderprogramm nachhaltige Modernisierung von Binnenschiffen (Funding program for the sustainable modernization of inland waterway vessels)

The Förderprogramm nachhaltige Modernisierung von Binnenschiffen (for short "FnMB") has been pursuing the goal of reducing pollutant, noise and greenhouse gas emissions from inland waterway vessels and improving their energy efficiency and safety. In December 2019 it was decided that this grant programme will be continued in 2020. The FnMB grant programme focuses on reduction of contaminant, noise and greenhouse gas emissions of inland waterway vessels as well as improvement of their energy efficiency and safety. Actions to be supported via FnMB are:

- The installation of low-emission engines, i.e. engines that fall below the emission limit value of EU regulation 2016/1628;
- Engines powered with alternative fuels such as LNG, CNG, LPG, hydrogen or methanol as well as electric, diesel and gas electric propulsion and hybrid propulsion;
- Measures to reduce the emission of pollutants (e.g. installation of diesel particulate filters, SCR-Catalysts, Water-Fuel Emulsion equipment);
- Measures to reduce noise emissions;
- Measures aimed at improving energy efficiency (reduction of fuel consumption) that lead to at least 10% fuel savings compared to the installed engine.

The eligible expenses for installing a low-emission engine and for measures to reduce pollutant emissions are calculated on the basis of flat rates. For measures to reduce noise emissions and to improve energy efficiency, the proven expenditure for the purchase and implementation of the measures is used as a basis. The funding rate varies from 30 % to 65 % of the eligible expenses.

Companies that are eligible for the subsidy from FnMB should be located in Germany under private law as owner of an inland waterway vessel (cargo and passenger vessels), which is professionally used for the inland waterway transport particularly on federal waterways or public waters.

Versorgung des Verkehrs mit alternativen Treibstoffen (Providing traffic with alternative fuels)

On a regional level NBank in the state of Lower Saxony offers the grant scheme Versorgung des Verkehrs mit alternativen Treibstoffen which aims at the supply of transport with alternative fuels in order to reduce CO2 emissions in the transport sector (road, rail, inland waterway). Funding includes the development and expansion of tank infrastructure to supply among others inland navigation with alternative fuels (e.g. LNG refuelling facilities) and the establishment and expansion of infrastructure for supplying inland waterways with shore power. The funding is granted as a non-repayable grant in the form of share financing (up to 50% of the eligible expenditure, 60% for region

Lüneburg). Eligible costs must be at least € 50,000 and may not exceed € 3 Mil. amounts. Legal persons who offer or will offer utilities for alternative forms of energy for propulsion can submit applications. If ERDF funds are used, the latest project end is on June 30th, 2022.

Innovativer Schiffbau sichert wettbewerbsfähige (Innovative Shipbuilding Ensures Competitive Jobs)

In a more indirect way, the inland shipping sector can benefit from a scheme called Innovativer Schiffbau sichert wettbewerbsfähige Arbeitsplätze. Shipbuilding in Germany is distinguished from other industries by certain characteristics, such as small production runs or one-off production, as well as the size, value and complexity of the units manufactured and the general commercial use of prototypes. Innovations are an increasingly important factor for customers in the shipbuilding market, for example with regard to environmentally and climate-friendly technologies in shipping (so-called "green shipping"). The risks of technical or economic failure are particularly high in shipbuilding and exist with every innovation measure. The promotion of innovation to be agreed with the common market therefore provides shipyards with the necessary incentives to take and bear, in justified cases, the risks related to the industrial application of innovative projects. By investing in innovation, smarter and possibly also financially financeable green / sustainable solutions for inland shipping are introduced to the market.

Through this grant scheme existing shipbuilding, ship repair, ship conversion yards or their subsidiaries (if the yard directly or indirectly holds more than 25% of the shares in this company) can receive a non-repayable grant. Applicants must have a permanent establishment or branch in the Federal Republic of Germany at the time of application and approval. Costs resulting from the planning, preparation and implementation of a specific innovative project are eligible for funding. These costs must result directly from the first industrial application of innovative products and processes. These innovations must be new or significantly improved compared to the state of the art in the shipbuilding industry in the EU Member States and bear the risks of technical or industrial failures. The following type of shipbuilding innovation projects are eligible for funding:

- New type ships or offshore structures (development, design and construction of prototypes);
- New components and systems of a ship or an offshore structure;
- The development of new processes in shipbuilding;
- The application of new processes in shipbuilding.

Innovation grants are granted by way of share financing (project funding) as non-repayable grants. The funding rates range from 15% to a maximum of 50% of the eligible costs. The respective funding rate depends on the size of the company (e.g. SMEs), the performance of the applicant company and the type of innovations in shipbuilding. Up to a maximum of € 7.5 million (demonstration of innovative processes) and up to € 15 million (development of innovative processes or products) can be obtained.

8.2.6 Switzerland

Switzerland does not have direct subsidy options for sustainability measures for inland shipping, but there are two subsidy options that inland shipping in Switzerland can make use of: one aimed at the implementation of energy policy, the other at the implementation of (the sustainability of) the traffic policy of the Swiss government. Both schemes are briefly explained below.

BFE Pilot-, Demonstrations- und Leuchtturmprojekte (BFE Pilot, Demonstration und Lighthouse projects)

The BFE Pilot-, Demonstrations- und Leuchtturmprojekte (BFE = Bundesamt für Energie) focuses on energy efficiency and renewable energy. This subsidy scheme stimulates projects with the aim of developing and testing new energy technologies in the field of energy efficiency and renewable energy, technically and economically. Projects are intended to bring Swiss energy innovations to market maturity and to develop a national, if possible, also cross-border, appeal. The funding areas include:

- Pilot projects: Technical system testing on a scale that enables the determination of scientific, technical, economic or social data under real conditions.
- Demonstration projects: System testing on a 1: 1 scale, including technical, economic and social assessment with regard to the effective market launch.
- Lighthouse projects: Special, exemplary demonstration projects that make the future of energy tangible.

Applications can be submitted through private and/or public partners.

Project financing, subsidies and intellectual property regulations are financed up to 40% (in exceptional cases up to 60%) of the eligible project costs. Eligible project costs are the non-amortizable additional costs of the project compared to the costs for the implementation of a conventional technology or solution. Permitted cost types include procurement, manufacturing, optimization, operating, monitoring, documentation, technology transfer, and communication costs. The BFE contributions are between CHF 30,000 (approx. € 28,300) and CHF 5 million (approx. € 4,730,000) per project.

Energiestrategie 2050 im öffentlichen Verkehr (Energy strategy 2050 in public transport)

In order to maintain the environmental advantage of public transport the Swiss government launched the Energiestrategie 2050 im öffentlichen Verkehr (ESöV 2050) program with the goal to improve the energy efficiency of public transport and further increase the share of renewable energy. As part of the program, the Bundesamt für Verkehr (BAV) supports the public transport industry in the selection and implementation of projects that aim at the rational use of energy and the use of renewable energy. Thanks to this dynamic, innovative projects can be realized that would not have gone beyond the stage of ideas without the ESöV 2050 program. From 2014 to 2020, the BAV will have around CHF 3.5 million (around € 3.310.000) a year to implement the ESöV 2050 successfully. The subsidy is made as an investment contribution and amounts to 40%, in justified exceptional cases up to 60%, of the non-amortisable additional costs (NAM) of the energy part of the project. Series equipment and basic research are not eligible for funding. The transport companies supported by the BAV contribute to this with more than equivalent in-house contributions, which multiplies the effectiveness of government expenditure. The application process consists of 2 steps: in the first step, a pre-notification of the project must be described. If the pre-proposal is approved, an elaborated project plan may be submitted, which will be assessed again.

8.2.7 Austria

Similar to France, Austria also introduced in 2013 a state aid scheme for the modernisation of inland waterway freight transport vessels. The program ended in 2017 and had a total budget of € 2 Mil. The following items were considered eligible:

Modifications of the hull

- Improvement of hydrodynamics and energy efficiency of vessels;
- Reduction of draught of pushing vessels.

Environmentally friendly vessel equipment and adaptation

- Optimised propulsion and steering systems;
- Environmentally relevant telematics;
- Environmentally relevant adaptation for the transport of dangerous goods;
- Exhaust aftertreatment facilities;
- Sloptanks;
- Environmentally relevant electrotechnical equipment, fire protection;
- Bow Thruster;
- Application of new technologies.

The program was accessible to natural and legal persons under civil-law and commercial-law as well as legally independent undertakings held by a local authority with an establishment in a Member State of the European Union, in Iceland, Liechtenstein, Norway or Switzerland carrying out inland waterway transport on the Austrian Danube through a branch, agency or fixed establishment. The co-financing rate was between 10% and 40% depending on the subsidised subject and size of the company. The impact of the program on the modernisation process of the fleet was low. The reasons for this are manifold: the expected funding rate was relatively low, proving the concrete environmental effects was difficult and last but not least the technological innovation rate in the sector was also problematic – this is an issue that is affecting the overall situation of IWT.

There is currently no financial support for the transition towards zero emission IWT in place in Austria.

8.2.8 Slovakia

No programmes/incentives available to provide financial support towards zero emission IWT.

8.2.9 Hungary

No programmes/incentives available to provide financial support towards zero emission IWT.

8.2.10 Croatia

No programmes/incentives available to provide financial support towards zero emission IWT.

8.2.11 Bulgaria

No programmes/incentives available to provide financial support towards zero emission IWT.

8.2.12 Romania

No programmes/incentives available to provide financial support towards zero emission IWT.

8.2.13 Czech Republic

The Czech Republic is the only country behind the former Iron Curtain that introduced a state aid scheme for fleet modernisation financed via the Cohesion Fund. The support can therefore reach 75% (for medium sized companies) and 85% (for small companies) of eligible costs. Total budget comprises approximately € 16 Mil. The program is running until 31 December 2021. Its objectives are grouped according to 3 subprogrammes:

Subprogramme 1: Reduction of the environmental footprint of waterway transport

Eligible costs are the following:

- Replacing the engines of vessels;
- Remodelling the stern of vessels;
- Modernising the propulsion equipment.

Subprogramme 2: Modernisation of vessels to increase multi-modality of freight transport

Eligible costs are the following:

- Purchasing lightweight stacking covers for the hold;
- Raising hatchways;
- Horizontally extending hatchways;
- Purchasing transportation frames for passenger cars;
- Broadening/prolonging a vessel.

Subprogramme 3: Modernisation of vessels leading to increased safety of IWT:

- Fitting vessels with bow steering equipment;
- Purchasing and replacing outer plating;
- Adding radar equipment;
- Replacing the coating of submerged parts;
- Reconstructing the electrical wiring.

8.3 Recommendations for structuring the funding schemes

Increasing the effectiveness of financial support for the transition towards zero emission IWT decisively depends on the level of innovation that is relevant for the sector. It is of outmost importance to incorporate technological innovations in IWT at the same speed as in other modes of transport. This is an essential precondition to secure the implementation of effective financial instruments that efficiently promote the transition towards zero emission IWT.

As it could be learned from the Austrian experience, the funding rate should be set as high as possible. Investments in IWT usually require significant amounts of money. In order to counteract the limited investment capacities of the sector, incentives should be made as attractive as possible by providing a high rate of funding. As the example of the Czech Republic shows, this is something that can be quite easily implemented in the Danube Region via the Cohesion Fund. Introducing fleet

modernising financial incentives in regional operational programmes have the capacity to reach a funding rate of up to 85%.

The structure of the funding schemes should take also various other aspects into consideration. In order to decisively reduce the environmental footprint of IWT, investments in port infrastructure and proper fairway maintenance are of crucial importance. Focusing on engines or vessels alone is not sufficient.

By comparison, there are striking differences among Eastern and Western Europe with regard to IWT financing incentives. While Western European countries heavily invest in the development of IWT and its efficient integration into the intermodal transport chains, Central and Eastern European countries lack any kind of financial instruments (with the noticeable exception of the Czech Republic) to proactively support the modernisation process of inland vessels.

8.4 Overview

The following table provides a brief overview on the existence of financial support schemes provided by the analysed countries.

Country		Total Budget in €	Funding Rate	Beneficiary	Timespan
Netherlands	Green Deal Binnenvaart	15 Mil.	40-60%	(NL?) companies	2020-2021
	Schone binnenvaart en duurzame logistiek in Rotterdam	500,000	25-75%	Companies and public law entities or combinations thereof	2019-2020
	Subsidieregeling Duurzame Scheepsbouw	4.6 Mil. ⁵²	25%	Shipyards	2020
	Demonstratie klimaattechnologie en innovatie	34.5 Mil. ⁵³ (not exclusively for IWT projects)	25%-100%	Company, grouping of companies, or a grouping of a company with a research organization or a non-governmental organization	2020
	Retrofit Binnenvaart	79 Mil.	unknown	Companies	2020-2030
	Hermotorisatie kleine schepen	1 Mil.p/a	50%	Companies	01/09/2018 - 31/12/2020
	Nabehandelingstechnieken	1 Mil.p/a	80%	Companies	2020
Belgium	Ecologiepremie+ ⁵⁴		15%-55%	Companies	

⁵² Budget 2019, budget 2020 not announced yet

⁵³ Budget 2019, budget 2020 not announced yet

⁵⁴ Concerns budget for all investments listed on the Ecologiepremie+ list 2020 so not just for inland waterway transport

Luxemburg	Prime à l'acquisition d'un bateau de navigation intérieure d'occasion		30%	IWT companies		
	Prime pour l'adaptation technique de la flotte de navigation intérieure wallonne		20%-30%	Natural and legal persons		
	Aides publiques en matière de navigation fluviale		30%-50%	Private persons domiciled or having their registered office in Luxembourg		
	Aide à l'investissement en faveur de la protection de l'environnement		10%-100%	Companies		
		26.2 Mil.		20%-50%	EU/inland fleet operating in France	2018-2022 (ongoing)
France	Innovativer Schiffbau sichert wettbewerbsfähige Arbeitsplätze		15%-50%	Companies registered in Germany	1-1-2020 30-6-2021	
	Förderprogramm nachhaltige Modernisierung von Binnenschiffen		30%-65%	Companies located in Germany under private law as owner of an inland waterway vessel	2020	

Germany	Förderprogramm Versorgung des Verkehrs mit alternativen Treibstoffen		50%-60%	Legal persons who develop or build or operate supply facilities for alternative fuels or for the climate-friendly energy supply of ships for Lower Saxony's	Until 2022 ⁵⁵
	Bundesamt für Verkehr (BAV) - Energiestrategie 2050 im öffentlichen Verkehr (ESöV 2050)	CHF 3.5 million a year (around € 3.31 million)	40%-60%	Companies and research institutes	2014- 2020
	Bundesamt für Energie (BFE) – Pilot-, Demonstrations- und Leuchtturmprojekte	CHF 26 million (around € 24.6 million)	40%-60%	Private and public organizations	2020
Switzerland		2 Mil.	10%-40%	EU/inland fleet operating in Austria	2013-2017 (closed)
		n/a	n/a	n/a	n/a
		n/a	n/a	n/a	n/a
Austria					
Slovakia		n/a	n/a	n/a	n/a

⁵⁵ If ERDF funds are used the latest project end is on June 30th 2022.

Hungary	n/a	n/a	n/a	n/a
Croatia	~16 Mil.	75%-85%	EU/inland fleet operating in the Czech Republic	2014-2020 (ongoing)
Romania				
Czech Republic				

Table 13: Brief overview on the existence of financial support schemes provided by national and regional governments

9 F6. Combining funds and blending options

In the following subchapters, the combination possibilities of funding programmes and financing products will be outlined in general. Details within the different funding programmes are elaborated within research question F1, the specific blending possibilities within the new InvestEU Programmes are outlined in F2.

The main point of reference for the principles and procedures governing the establishment, implementation and control of the EU budget, including grants, are laid down in the **Financial Regulation (FR)**.⁵⁶

Within the EU there are some general rules applying for grants, which have to respect the following overall principles:

- equal treatment of all applicants or beneficiaries
- non-cumulative: each beneficiary may not get more than one grant per action or per financial year
- non-retroactive: actions already completed are excluded from EU funding
- co-financing: the Commission and the beneficiary will share the costs
- non-profit: grant beneficiaries may not generate profit with the EU grant they receive.⁵⁷

The following graph illustrates the potential structure of the financial setup of a project that is detailed further in the below chapters:



Figure 8: Combination of financial solutions⁵⁸

⁵⁶ EU Financial Regulation, Regulation (EU, Euratom) 2018/1046: https://ec.europa.eu/info/publications/financial-regulations_en

⁵⁷ European Commission, “EU Grants and procurement”: https://ec.europa.eu/info/strategy/eu-budget/how-it-works/annual-lifecycle/implementation/grants-and-procurement_en

⁵⁸ Eleftherios TSIAVOS, 2016, Financial Instruments, GD International Development and Cooperation “EU Blending framework”

9.1 Cumulation rules in funding programmes and financing products

The general applicable cumulation rules are laid down in the Financial Regulation, TITLE VIII *GRANTS*, CHAPTER 2 *Principles*, Article 191 “Principle of non-cumulative award and prohibition of double funding”:

1. *Each action may give rise to the award of only one grant from the budget to any one beneficiary, except where otherwise authorised in the relevant basic acts.*

A beneficiary may be awarded only one operating grant from the budget per financial year.

An action may be financed jointly from separate budget lines by different authorising officers responsible.

2. *The applicant shall immediately inform the authorising officers of any multiple applications and multiple grants relating to the same action or to the same work programme.*
3. ***In no circumstances shall the same costs be financed twice by the budget.***

Further combination possibilities for beneficiaries, besides sources from EU budget can be found in Article 190, regulation co-financing of grants, financed from the EU budget:

1. ***Grants shall involve co-financing. As a result, the resources necessary to carry out the action or the work programme shall not be provided entirely by the grant. Co-financing may be provided in the form of the beneficiary’s own resources, income generated by the action or work programme or financial or in-kind contributions from third parties.***
2. *[...]*

9.2 Blending possibilities between funding programmes and financing products

9.2.1 Definition of blending and its benefits

Blending means the combination of grants (non-repayable forms of support) with non-grant resources such as loans, equity and guarantees from financial institutions as well as commercial loans and investments in order to achieve a leveraged development impact.

The **leveraging effect** of EU budget, supporting projects via grants, can close the funding gap (amount of money needed to fund the ongoing operations or future development of a project) and can therefore enable the planned implementation. After closing the funding gap, the projects are supposed to be bankable projects, ready to receive financial resources from public and / or private financial institutions. Those financial resources, can be backed-up via budgetary guarantees provided by the EU.

Within the upcoming MFF the InvestEU Programme (as described in research question F2) will enable financial support and blending operations, which are defined as following:

'blending operations' means operations supported by the Union budget combining non-repayable forms of support or repayable support or both from the Union budget with repayable forms of support from development or other public finance institutions, as well as from commercial finance institutions and investors; for the purposes of this definition, Union programmes financed from

sources other than the Union budget, such as the EU Emissions Trading System (ETS) Innovation Fund, can be assimilated to Union programmes financed by the Union budget;

The **World Economic Forum** is characterising the benefits of blending operations, in their report produced jointly with the **OECD** on “How To Guide for Blended Finance” as following:

- **Leverage:** *Use of development finance and philanthropic funds to attract private capital*
- **Impact:** *Investments that drive social, environmental and economic progress.*
- **Returns:** *Returns for private investors in line with market expectations based on perceived risk*

However, there is also an evaluation on the current problems and limitations for institutions using blending possibilities and similar support. The main obstacles to overcome in future, for a better uptake of blending operations by the private organisations **are limited awareness, institutional constraints** and also the **organizational capacity**; specially for SMEs not having the technical expertise and capacity of staff to develop projects using blended finance.⁵⁹

9.2.2 Existing programmes with blending and future possibilities

As it can be seen in the following Figure 9, the Commission offers a variety of financial instruments and blending possibilities within the current MFF, which will be replaced by the InvestEU Programme. For a better overview over all blending possibilities, of existing funding programmes relevant for greening IWT, they are listed within RQ F1 (chapter 5). There the specific options under each funding programme are separately listed under the subchapters “**Synergies with other Programmes and instruments**”.

Within the upcoming MFF the InvestEU Programme (details in chapter 6.3) will act as single scheme and policy instrument. It is planned to provide a possibility to operate complementary to grant financing (e.g. CEF) through blending operations. Moreover, the programme is a complementary with the European Structural and Investment Funds (e.g. ERDF, CF) operating under shared management, which enables easier facilitation of the deployment through financial products. For all blending activities the InvestEU rules as well as the eligibility criteria of other EU programmes (incl. Innovation Fund) have to be applied in order to facilitate blending within a project.

⁵⁹ World Economic Forum, 2015 “A How-To Guide for Blended Finance”:
http://www3.weforum.org/docs/WEF_How_To_Guide_Blended_Finance_report_2015.pdf



Figure 9: Programmes replaced by the InvestEU Fund; Source: European Commission, DG Economic and Financial Affairs.⁶⁰

In addition to the existing and future programmes, the “**2019 CEF Transport Blending Facility**” has to be mentioned, which was explicitly implemented in order to support blending operations in the transport sector. The CEF Transport Blending Facility is a cooperation framework between the European Commission and Implementing Partners, focusing on supporting two areas: the implementation of alternative fuels infrastructure as well as mobile assets and ERTMS (European Rail Traffic Management System).

The rolling call for proposals has been published on 15 November 2019. It includes **quarterly cut-off dates until March 2021**, unless the budget would be exhausted earlier.⁶¹

The relevant alternative fuel technologies for greening the inland fleet funded within the programme are LNG, Electricity and Hydrogen. The co-funding rate diverges for the several eligible actions, in the case of mobile assets, the co-funding rate will apply to the eligible costs, which are the costs directly related to the innovative technology solution (difference between the costs of a conventional solution and the costs of an equivalent innovative technology solution):

- LNG: 10% for infrastructure implementation and 20% for mobile assets (/vessels) in IWT [for maritime vessel the co-funding rate is 15%]
- Electricity: 15% for infrastructure implementation and 20% for mobile assets (/vessels)
- Hydrogen: 20% for infrastructure implementation and 20% for mobile assets (/vessels)

⁶²

Moreover, within the CEF multiannual work programme there are minimum contributions foreseen, which could be difficult to meet for companies in the IWT sector:

- *The CEF grant per Action shall be in excess of EUR 1 million.*

⁶⁰ Filippo Munisteri, Economic Analyst, DG Economic and Financial Affairs, European Commission; “The InvestEU Programme: an instrument to support investment in the next MFF”: <https://www.fi-compass.eu/publication/event-material/presentation-investeu-programme-instrument-support-investment-next-mff>

⁶¹ European Commission, CEF Transport Homepage “Blending Facility”: <https://ec.europa.eu/inea/en/connecting-europe-facility/cef-transport/apply-funding/blending-facility>

⁶² European Commission, CEF TRANSPORT BLENDING FACILITY 2019, “Call text”: https://ec.europa.eu/inea/sites/inea/files/2019_cef_transport_bf_call_text_final.pdf

- The **minimum size of the Implementing Partners financing** to a project supported by the Blending Operation shall be **EUR 5 million**.⁶³

9.3 Lessons learnt from elaboration of streamlined, harmonised and region-wide funding scheme(s) for the modernisation of inland vessels (GRENDEL project)

Within the GRENDEL (“**Green and Efficient Danube Fleet**”) project the consortium and representatives of Danube countries work together on the elaboration of a state aid model programme promoting sustainable modernisation of inland waterway vessels in the Danube region. Main goal of GRENDEL is to trigger **innovation uptake in the sector** in the Danube region by establishing an encouraging **framework of a variety of public support measures** going beyond national borders and to help national governments to prepare well-designed and targeted public support measures.

In general, it can be stated that the European Commission / DG Competition appreciates to have **one streamlined and harmonised State Aid scheme for several countries** and to establish a regional approach.

The “state aid model programme promoting sustainable modernisation of inland waterway vessels in the Danube region”, developed within the GRENDEL project, addresses five pillars (priorities), as illustrated below.

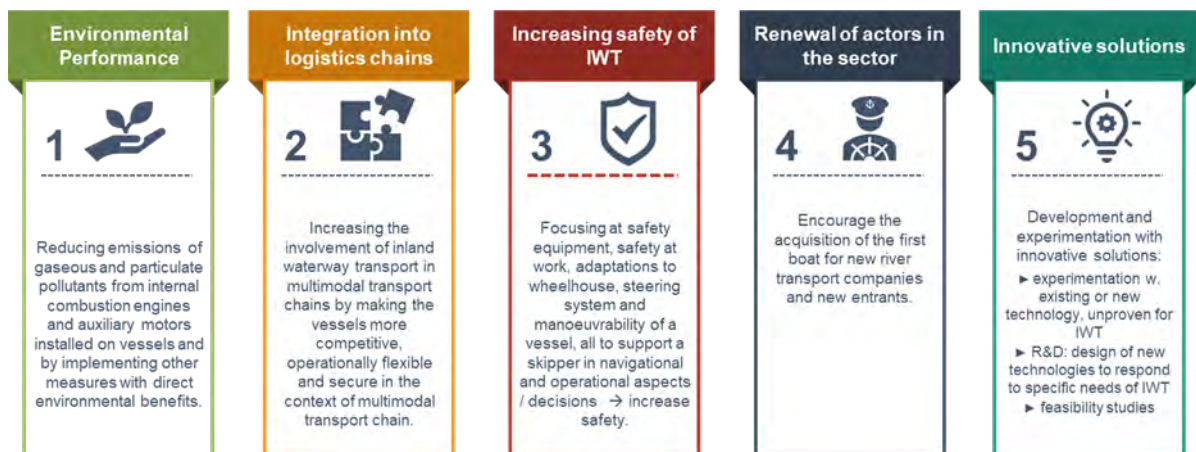


Figure 10: Priorities of the new state aid model promoting sustainable modernisation of inland waterway vessels in the Danube region; Source: DTP GRENDEL Project, Model State Aid Scheme

The model state aid scheme constitutes a tool at the disposal of the Danube Member States for the financing period 2021-2027, which shall later be implemented as national state aid scheme by relevant ministries in as many Danube countries as possible. Of course, the model can also be implemented by other interested EU Member States having relevant inland waterways. Nevertheless, it is a model which needs to be adapted to each national situation. For its implementation in a concrete state aid scheme, the usual assessment work and steps, in particular in the case of a notification, will need to be pursued by the Member States, in cooperation with the

⁶³ CEF C(2019) 2743 final, Annex amending the multiannual work programme 2014-2020 on the financing of the Connecting Europe Facility -Transport sector: https://ec.europa.eu/inea/sites/inea/files/c2019-2743_annex_to_commission_decision.pdf

European Commission (DG COMP), as for any state aid scheme. After all, it depends on the Member States to decide on the available budget and eligibility criteria of the State Aids. ⁶⁴

In case that a Member State offers a state aid possibility to the IWT sector, the potential state aid contribution can be part of a properly blended financing structure for the relevant vessel / fleet owners / operators. During the elaboration of the GRENDEL deliverables and outputs, this type of combination of financing solutions was confirmed to be possible.

⁶⁴ GRENDEL Project, Interreg - Danube Transnational Programme: Deliverable 5.2.1. "Model State Aid scheme & public support measures" (<http://www.interreg-danube.eu/approved-projects/grendel>)

10F7. Possibilities of hedging to secure price advantages

10.1 Introduction

Investments in greening technologies are often characterized by relatively higher CAPEX compared to conventional solutions. In many cases, with higher CAPEX, a certain price gap between alternative (cleaner) fuels/energy and diesel fuel is a precondition for financial and economic feasibility. Due to a significant saving on fuel costs, the additional investments (capital costs) can be offset within a reasonable time period (e.g. 8 years). However, fuel prices and thus these price advantages are not predetermined and the commodity market for conventional and greening fuels can display high volatility, leading to an uncertain business case for vessel owners.

Solutions securing the price advantage and keeping energy costs within a predictable range can provide a more secure business case for investments into alternative green technologies in the IWT sector. One of these solutions is hedging. In this research chapter, hedging is analysed as an opportunity for securing the price advantage on a European level between conventional diesel and cleaner fuels. The analysis is performed through a desk study and interviews with vessel owners and financial institutions.

10.2 Are there price advantages to be secured?

Research question C (RQ C) displayed that for the greening technologies of LNG and electricity, significant savings on fuel costs can offset the additional investments (capital costs) within a reasonable time period⁶⁵. Looking at the fuel price difference between LNG and electricity and conventional measures, there exists large volatility which leads to uncertain price advantages and increased competitiveness between different technologies.

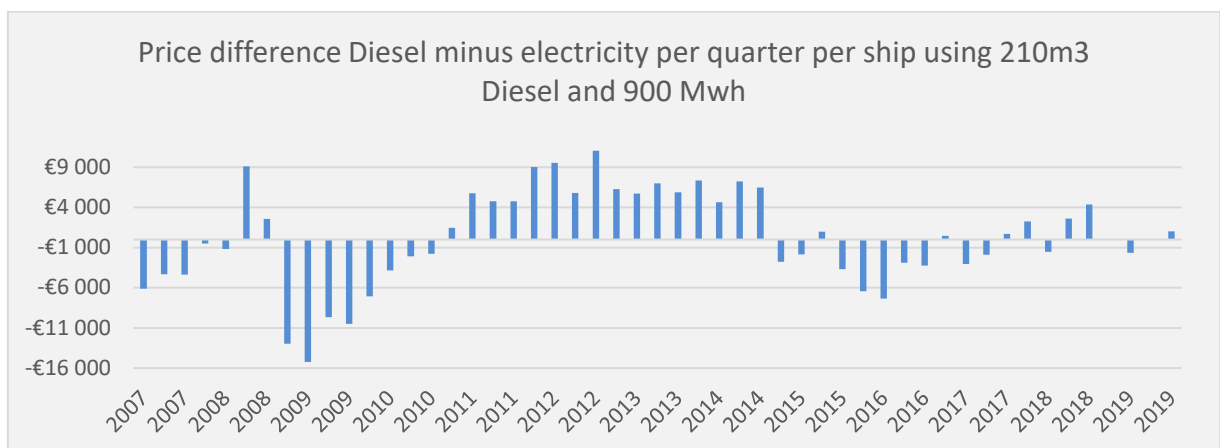


Figure 11 | Source: Diesel: <https://www.zandmij.nl/logistiek/cbrb> (2020) & Electricity: Central Bureau for Statistics (CBS, 2020).

⁶⁵ Subproject II focuses on 'assessment of technologies': the economic assessment of the technical solutions, it covers research question C.

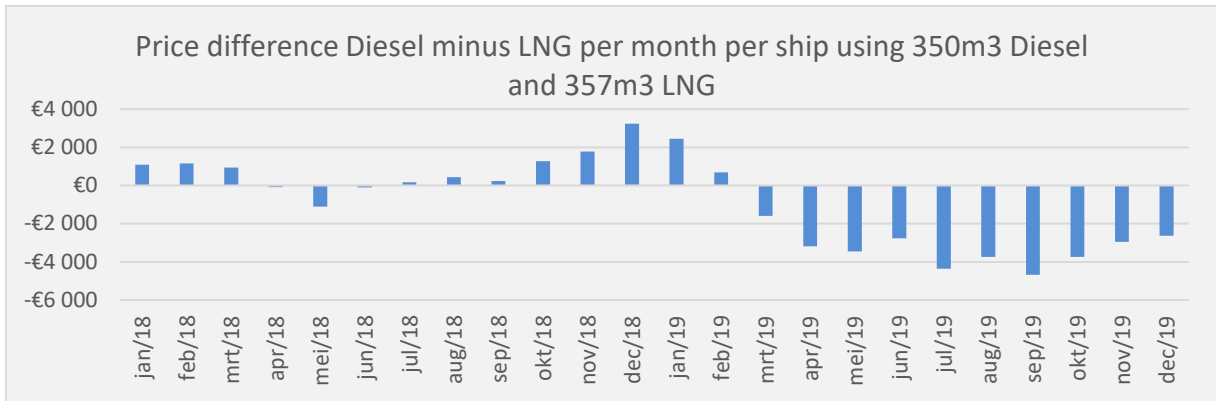


Figure 12 | Source: Diesel: <https://www.zandmij.nl/logistiek/cbrb> (2020) & LNG: study “Breakthrough LNG deployment in Inland Waterway Transport” (2019)

The price of diesel, LNG and electricity all fluctuate substantially. Because of a low correlation, the monthly fuel cost difference between LNG and Diesel within 7 months measured in 2018/2019 was €7900 for motor vessels (>110 meters) with average fuel consumption of 350m³ per year.

The quarterly fuel cost difference between Diesel and electricity within 3.5 years measured in 2009-2012 was €26.000 for motor vessels (80 - 109 meter) with average fuel consumption of 210m³ per year.

Securing a price advantage between clean energy/fuel(s) and diesel through hedging could diminish this risk and thus make the business case more stable and lower the bottleneck for the greening investment.

10.3 Hedging: a proven solution to offset price fluctuation risk

A hedge is an insurance on the price level of a commodity or different kinds of financial products and is used to offset the potential losses of fluctuating prices. A fuel price hedge can, therefore, be used to diminish the risk of potential losses of fuel prices unexpectedly increases.

Fuel hedging is already a common practice in the sea shipping sector because of their long geographic distances, shipping durations, and offtake volumes. A containership leaving Rotterdam and arriving in Singapore for a contract does not want to have any unexpected fuel prices increases which reduces its profit from the pre-agreed upon contract. Therefore, to offset price fluctuation between locations and time, sea shipping companies take on a hedge position which sets a fixed or capped fuel price for a specific period or point in time. During this period, exposure to the spot market is neutralized and the fuel price for this specific contract is guaranteed.

10.3.1 Multiple possibilities to hedge fuel price fluctuations:

Future contracts

A future contract is a standardized financial product that gives the buyer the right to buy a certain product in the future for a specific price. Future contracts in oil are traded in high quantities (120+ m³ or 1000 barrels) and require a periodically ‘margin’ payment of a percentage of the initial contract. Future contracts can have short term and long term (multiple years) durations. The longer the future contract, the higher the risk and thus the higher the premium on the expected future price that needs to be paid

Call and put options

A shipowner can buy a call or put option on the financial market to have the right to, respectively, buy or sell an asset or commodity like diesel on a predetermined date for a fixed price. For instance, by buying a call option a shipping company has the right to buy a specific amount of diesel for an agreed-upon price on an agreed-upon date. A put option is used the other way around by selling the right to another party that they can buy a specific amount of diesel for an agreed-upon price on an agreed-upon date. To buy options, a risk premium or margin is paid on top of the current spot price which can be relatively costly, especially the longer the expiration date of the option. Because options only give the 'right' to buy and sell, potential losses are limited to the paid risk premium. Options are often only used within time frames of weeks and months, they are less suited for long term hedges because of the higher risk premium.

Price swaps

With a price swap, the fluctuation of a commodity is traded with a fixed price with a second party, mostly a financial institution. The vessel owners agree to pay a fixed price for a longer period and the difference with the spot price is settled by or to the second party. By doing this, there is a risk that if prices decline, the shipowner still pays the relatively high fixed price. However, if the prices rise, the vessel owners receive the differences between the fixed price and spot price. Price swaps can be made for time frames of 3-5 years with a risk premium often below or around 1%. To execute a commodity price swap, there is a minimal requirement of around 1-2 million total contract value.

10.4 Securing the price advantages between two commodities

Financial institutions do not readily offer products or hedges to secure the price difference between diesel and new greening technologies. However, while it is theoretically possible, some creativity is needed. Securing the price difference can be done by buying a call option for the greening technology commodity (LNG or electricity) and in the meanwhile selling a put option on the conventional diesel fuel. This fixes the price advantages between the two commodities and if the price difference decreases, the hedge partner pays the difference. If price differences increase, the options are not executed, and the risk premium is born as an extra cost.

These trades can be made on a relatively small scale in the financial markets. However, they do require financial knowledge and are not costless. Therefore, the suitability of fuel hedging in the IWT needs to be assessed for different types of vessel owners.

10.5 Suitability of fuel hedging in the IWT

Despite being a common practice in sea shipping, fuel hedging is not commonly used in the inland waterways transport sector. The main reason for this is the lower shipping time and less distance travelled thus lowering the price fluctuation risk. In the transition to greening technologies, there are opportunities for hedging the price difference between green and conventional solutions if the greening technologies present lower OPEX. From the research question C, the greening technologies of LNG and electricity meet these requirements⁶⁶.

⁶⁶ Subproject II focuses on 'assessment of technologies': the economic assessment of the technical solutions, it covers research question C.

10.5.1 Spot market operators

Currently, vessel owners working on the spot market have a relatively low exposure to fuel price risk and have little incentive for fuel hedging. This is mainly because all vessel owners operate single cargo within short time frames and a relatively small geographic area. Therefore, they are subject to the same fuel prices and increases and decreases affect all vessel owners and will eventually be incorporated (partly) into contract prices. There are examples of vessel owners who use hedging by means of agreeing on price contracts with local bunker stations (a price swaps) for a minimal quantity and a certain time frame. This is mostly done to maximise profit in speculation of increasing oil prices in the near future and can be hazardous.

Investing in a greening technology means that, for vessel owners working on the spot market, securing the price advantage over a long period can determine the success and competitiveness of the vessel owner a hedge could potentially fixate the price advantages. However, the method of doing this requires some level of financial knowledge and is time-consuming for shipowners. Furthermore, there are few to no options to secure the price differences over a longer period of time or suitable for individual ship owners because of the low scale. Therefore, traditional hedging might not suitable for spot market operators.

But why does hedging work in the aviation or sea shipping industry? This is mostly because there are no alternatives to conventional fuel. If the prices of fuel in these industries rise, all competitors are exposed. There is not a competitor who uses different fuels and can undercut the prices of their competitors. Hedging is therefore used to give economic certainty to already established contracts or give more stability to cash flows.

10.5.2 Contract market operators

In contrast to spot market operators, vessel owners working on contracts do have to manage their fuel price risk. These contracts often have a longer time frame during which fuel price fluctuation can significantly affect the profitability of the contract. Diminishing the fuel risk is often done with a 'fuel clause' through which the price fluctuation risk is transferred or divided with clients. In general, a fuel clause gives a bandwidth in which the shipowner bears the risk of fuel price fluctuation, if fuel prices are driven outside of this bandwidth, the difference in price is transferred or shared with the client.

Investing in greening technologies that have lower OPEX, the same fuel clause agreements can be used to diminish the price fluctuation risk. And, since there already exists a contract securing future revenues, there is no need to hedge the price advantages with conventional fuels. If the client is not willing to implement fuel clauses for greening technologies, a shipowner can choose to engage in a price swap with a third party. This swap fixates the price of the greening technology for the duration of the contract and this price can be used in negotiations with clients to ensure economic profitability. However, these swaps have a minimum contract value of 1-2 million euros. Therefore, multiple ship owners need to be participating and cooperating in the swap.

10.5.3 Hedging in the IWT on a European scale

The different possibilities of hedging often require quantities on a larger scale than individual vessel owners operating on the spot market. Therefore, a larger scope, possibly on a European scale could make hedging possible. However, the methods of hedging are often only on relatively short-term bases; days, weeks or months. There exist contracts for longer periods, but these lead to higher risks and thus higher risk premiums that needed to be paid. Securing the price advantages for greening technologies with repayment periods of 8 years are therefore not economic feasible. Furthermore, to hedge on a European or larger scale; an organization or cooperation is needed to take hedging position in large quantities and divide profits and losses between individual vessel

owners leading to large overhead costs. These overhead costs combined with risk premium or margin costs could make hedging on a larger scale unnecessary costly.

For contract market vessel owners, hedging with price swaps is an interesting possibility to ensure economic profitability with greening technologies. These swaps do have a minimum contract value of 1-2 million euros. On a European scale, arranging price swaps on specific bunker locations could be an interesting opportunity to offer greening technologies for a fixed or maximum price cap to individual vessel owners without them needing to enter contracts. A consortium needs to combine demand and guarantee the offtake to meet the swap contract's minimal requirements. It can be expected that with larger volumes, there are possibilities to attain economies of scale.

One important notion to be made regarding the price swap is that the price fluctuation of conventional diesel is not taken into account. There is a possibility of a long term drop in the diesel price which can lead to diesel fuel undercutting the greening technology fixed swap price and thus diminishing the competitiveness of the greening technologies. Because most contracts are (re)negotiated on a yearly basis, there is still no guarantee that the additional investment costs of greening technologies can be offset within a reasonable time period (e.g. 8 years).

10.6 Conclusion

Despite the commonly used principals of fuel hedging in sea shipping, fuel hedging is not common practice in the inland waterways. For individual vessel owners working in the spot market, current hedging possibilities are cumbersome, potentially costly and not suitable for individual vessel owners to secure the price advantages in the long term.

Hedging in terms of price swaps can be used by vessel owners working on contracts for a longer period securing the price advantages of a greening technology. To be feasible, multiple vessel owners need to be participating and cooperating in the swap. On a European scale, price swaps on a specific location could be an interesting opportunity to offer greening technologies for a fixed or maximum price cap to individual vessel owners. However, the price fluctuation of conventional diesel is not taken into account with the price swap. Therefore, in order to stimulate the transition towards greening technologies, hedging is not a solution on its own.

10.7 Recommendations

The competitiveness of new greening technologies compared to conventional diesel fuel *fuels* the successful transition towards a zero-emission European IWT sector. Price fluctuation risk is one of the factors of competitiveness. Hedging this price fluctuation can be beneficial to a certain extent within a part of the market. However, it cannot be used to fixate the competitiveness of greening technologies on a European scale. Therefore, other methods need to be analysed in comparison to and in synergy with hedging to secure the competitiveness of greening technologies on a European scale.

11F8. Options for specific IWT programme / instrument

11.1 Background

There are several existing programmes, financial instruments and other products which provide the possibility to receive funding and / or financing for inland waterway transport. The available amount of the potential support sounds significant; however, the resources are mostly granted to infrastructure projects under the IWT priorities (fairways, locks, river information services, underbridge clearance etc.) and it is extremely difficult to retrieve those resources on vehicles / inland vessels. In some calls in the past in the TEN-T / Connecting Europe Facility, there was the option to apply with an action containing IWT vessels, but the proportion for that option in the action was very limited.

Even before opting for the limited level of resources, the administrative hurdles for an IWT fleet / vessel owner / operator are very high. The situation is somewhat different concerning sea-going or short sea shipping vehicles.

It is very difficult to define exactly how many vessels have been funded in EU/nationally-funded actions, projects and other facilities, but it can be stated that it is a very minor amount compared to the European IWT fleet and does not make any tangible difference for greening the fleet.

11.2 Need and possibility

Before coming to the possibility of developing a scheme, it can be stated that the need is high to have a possibility for the IWT sector where funding and / or financing is available with relatively simple procedures, low requirements and / or relatively high funding rates. This need is also derived from the different environmental requirements, whereas those can hardly be met by only using the own resources of the owners / operators. Thus coordinated, transparent and fair support is needed as well for the stakeholders.

When it comes to the possibility of developing the scheme, the following principles have to be declared from the very first moment of planning:

- All applicable legislation have to be respected and applied.
- The scheme has to be transparent for all stakeholders, and as inclusive as possible.
- The scheme shall provide reasonable, well-justified and fair support to all stakeholders to qualify for that, ensuring a level playing field.

11.3 Recommendations for a tailor-made IWT scheme

It shall be the overall goal of the scheme to support the European IWT sector in arriving to zero-emission waterborne transport by 2050. In addition, the scheme shall collect all available resources in order to provide / promote them to the stakeholders. The support of the newly developed scheme can be provided in the form of the following or their combination:

- non-repayable grant
- bank guarantees
- loans

The scheme shall offer these facilities in an effective way – meaning that the maximum emission reduction is achieved with using the minimum amount of investment.

The detailed recommendations for the characteristics of a tailor-made IWT scheme are listed below.

- **The scheme shall promote:**
 - The use of inland waterway transport as part of the complete logistics chains
 - The use of the fund itself
 - The possibilities, solutions and products offered by financing institutions
- **Governance**
 - Shall be transparent and lean
 - Shall be cost-effective
 - Run under either an existing institution or a potential agency for IWT in Europe
- **The application procedure**
 - Shall consider good practises from already existing procedures
 - Shall be transparent and cause the lowest administration needs
 - Shall be open for all stakeholders after checking the defined eligibility and admissibility criteria
 - Applicants shall receive reasonable consultancy during the application procedure free of charge
 - In the ideal case the application is a one-stage process for the applicant, with an open call procedure, meaning that the submission of an application is always possible
 - Evaluation of the applications can take place e.g. two times per year at pre-defined dates or after the receipt of a pre-defined number of applications
 - The documents shall not exceed the documentation to be submitted for a loan agreement with a bank
 - The application forms shall be simple and there shall be no need to describe a complex project, but the new-build / upgrade shall stand for the project itself, focussing on the technical details of the deployment with the very minimum of general description

- Having the above limited need for application documents, the preparation of an application shall not incur high costs, thus does not necessary be financially supported

- **Eligible elements**
 - As principle, the investment costs of applying greening technologies shall be supported for vessels using the inland waterways of Europe
 - It is important to mention here that – to ensure the levelled playing field – the same legislation and requirements shall be applied to all vessels using the inland waterways of Europe independently from country of registration, country of the owner, country where the vessel is certified etc. Specific attention should be paid to apply the same requirements for vessels from non-EU or non-CCNR Member States.

The scheme shall not set eligibility criteria that would influence the capacity of IWT. Thus, a potential scheme shall consider these when drafting the eligibility criteria.
 - The costs of applying greening technologies shall include the deployment of innovative solutions in new-builds and retrofits, but no research activities
 - Applicants shall provide adequate descriptions of the technology to be applied together with a reasonable business plan
 - Solutions shall be supported on the technology neutral basis, however, the solutions to be applied and supported shall be certified solutions, as well as the emission reduction potential shall be proven

12 Conclusion

As of the status of May 2020, there are the following existing grant schemes available in Europe relevant for inland waterway transport project opportunities, including greening of the fleet:

- The **Connecting Europe Facility (CEF)** is currently the largest scheme with the following main framework conditions:
 - CEF is mostly targeted to shore infrastructure actions (e.g. alternative fuels infrastructure) implementing the TEN-T corridors, whereas
 - significantly lower focus is placed on mobile assets (vehicles) in general.
 - Based on experiences from the past 7 years, the current CEF grant scheme is not the tool to achieve significant greening of the IWT fleet from the vehicle perspective.
- The current **Horizon 2020** programme is the largest research and innovation (R&I) funding scheme ever including some calls open for IWT fleet R&I; however, due to the type of the programme, R&I is limited to research and testing on a very low number of vehicle units.
- **Interreg programmes** are in general not addressing deployment of mobile assets (vehicles). In a few of the Interreg programmes, pilot deployments and tests are eligible, however, this is also not a tool to achieve significant greening of the IWT fleet.
- The **LIFE programme** offers possibilities that are limited to testing and showcasing greening technologies, but is not there to support the deployment on a broader scale.
- There are existing **national and regional schemes** with concrete and tangible priorities to green IWT vessels (e.g. in France), however, the shortcoming of these schemes is the very limited budget and geographic scope. Thus, these schemes are currently also not the tools to roll out large-scale greening activities.

The current budgetary framework of the European Union ends in 2020. Thus, no changes are expected on the short term in the above listed schemes.

Negotiations regarding the next multi-annual financial framework have started, however, due to the Corona crisis, the focus in Q2/2020 of the Member States have been retargeted which means that the draft regulations prepared in the topic are not yet finalised and approved. However, these drafts show that the main framework conditions of the follow-up of the above listed schemes will not be altered significantly (e.g. CEF 2 will also focus on land infrastructure, Horizon Europe will focus on R&I etc.). The frame amount of grants of these next schemes are available in drafts on the high level (e.g. € 12.8 billion for transport), whereas currently (May 2020) it cannot be stated what share could be made available / absorbed for greening IWT. Additionally, it can also be assumed that none of these schemes will fund changes of fleets on a large scale.

A potential new element might be, if more Member States decide for national / regional schemes, such as dedicated state aids for greening the IWT fleet. In the Danube Region, a model state aid scheme is being prepared in the GRENDL project (Interreg – Danube Transnational Programme) which might be implemented in some Member States.

Outlook on the Corona crisis stated interventions

With the Corona crisis of 2020, it can be assumed that the investment in the fleet will be even more reduced to the absolutely necessary investments in the coming years. A state aid scheme would constitute an incentive in this context. Due to the mentioned crisis, several aids have been issued in several European countries, but they are not dealing explicitly with the greening of the fleet. In general, companies shall pay attention to the national legal framework in place in the area of state aids, as there might be special cases that can derive benefits for IWT companies as well. There are ongoing discussions with the European Commission, the CCNR, the Danube Commission and the relevant European branch organisations (EBU, ESO, INE, EFIP, Pro Danube) with regard to the exit and recovery strategy from the Corona crisis where the more flexible use of state aids is one of the topics on the agenda. The European Commission advises the Member States to enable the use of these aids for the recovery from the current situation.

Study consortium:



In partnership with:



Throughout the project there were exchanges with the CCNR, the steering Committee composed of representatives of CCNR member States and a stakeholder group consisting of :

European Commission (DG MOVE)
Danube Commission
Mosel Commission
European Investment Bank (EIB)
European Investment Advisory Hub (EIAH)

Clinsh
European Barge Union (EBU)
European Federation of Inland Ports (EFIP)
European Shippers' Council (ESC)
European Skippers Organisation (ESO)
IWT platform
Shipyards and maritime equipment association of Europe (SEA Europe)
Association for inland navigation and navigable waterways in Europe (VBW)

Imprint: July 2021

*Published by the Central Commission for the Navigation of the Rhine (CCNR)
Palais du Rhin - 2, place de la République - CS10023 - F-67082 Strasbourg Cedex*

