

WP 2.9. IWT legal cooperation policy, certification, solutions issues

**Regulatory and incentive regimes affecting the uptake of
green and innovative inland waterway transport solutions
in Europe**

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Introduction

This report presents the results of the work carried out by the **Institut du Droit International des Transports (IDIT)**, with the support of its InnoWaTr Partners, as part of WP 2.9 (*IWT Legal cooperation policy, certification, solutions issues*).

The aim was to assess of the various national regulatory and incentive regimes (in each FFC: Sweden, Belgium, Germany, Netherlands and France) affecting the uptake of green and innovative inland waterway transport (IWT).

IDIT focused its work on the following topics:

- ❖ Regulatory framework for the use of hydrogen in inland navigation
- ❖ Regulatory framework for autonomous inland navigation
- ❖ Measures promoting modal shift from road to waterways, fleet greening and innovative vessels
- ❖ The creation of a favourable framework for urban river logistics

On the basis of the information collected, the report provides an analysis of the existing regulatory landscape and formulates a set of recommendations.

Regulatory Framework for the use of Hydrogen in Inland Navigation

Regulations governing the use of hydrogen to power inland waterway vessels are in the process of being drawn up at EU level (CESNI¹ and CCNR²).

As European technical specifications are not yet fully adapted to hydrogen propulsion, vessels must obtain a derogation from the existing rules in order to be approved and put into service.

Technical specifications being drawn up at European level

In the European Union, the approval of inland waterway vessels is regulated both by:

- **Directive (EU) 2016/1629** *laying down technical requirements for inland waterway vessels*,
- **Rhine Vessel Inspection Regulation (RVIR, CCNR)**.

These two regimes coexist with mutual recognition of inland navigation certificates on all waterways.

The issuance of an inland navigation certificate presupposes that the vessel complies with the technical requirements laid down in the **European Standard laying down Technical Requirements for Inland Navigation vessels (ES-TRIN)**, drawn up by CESNI, as specified in Annex II to Directive (EU) 2016/1629 (minimum technical requirements for vessels operating on inland waterways in zones 1, 2, 3 and 4).

In line with the CCNR and EU's objective of largely eliminating greenhouse gas and other inland navigation emissions by 2050, CESNI has initiated modifications of ES-TRIN to allow the use of alternative fuels, such as methanol or **hydrogen**, in inland vessels.

According to ES-TRIN, only internal combustion engines running on fuels with a flash point above 55 °C (i.e. diesel) may be installed (Chapter 8.01, point 3).

Since the 2023/1 edition, which came into force on 1 January 2024, ES-TRIN nevertheless provides general provisions for **low flashpoint fuels** such as LNG³, methanol or hydrogen (8.01, point 4, chapter 30⁴ and annex 8⁵). The aim is to provide legal certainty which strongly influences investment in new technologies.

In ES-TRIN 2025/1 edition, which came into force on 1 January 2026, new requirements have been introduced:

- Sketches to mark both **hazardous areas (ATEX) and spaces containing hydrogen** or methanol were added to Annex 4. They complement the existing sketch for liquefied natural gas. This will provide better information to crews on board, as well as to any emergency services who may need to act on board (ann. 4);

¹ European Committee for drawing up Standards in the field of Inland Navigation

² Central Commission for the Navigation of the Rhine

³ Liquefied natural gas

⁴ Special provisions applicable to craft equipped with propulsion or auxiliary systems operating on fuels with a flashpoint equal to or lower than 55°C

⁵ Supplementary provisions applicable to craft equipped with propulsion or auxiliary systems operating on fuels with a flashpoint equal to or lower than 55°C



- Improvements have been made to the risk assessment procedure (HAZID⁶, HAZOP⁷, FME(C)A⁸, Art. 30.04);
- Certain definitions have been added to Annex 8, in particular **Swappable tank** (*a container or rack with one or several tanks, intended for temporary storage of fuel on board, supplying fuel for the propulsion or auxiliary systems of the craft and designed for being moved outboard*). CESNI wishes to anticipate future rules on compressed hydrogen.

However, at present, Annex 8 of the ES-TRIN 2025/1 only contains requirements for the storage and supply of **LNG** (Annex 8, Section II, Chapter 1) and **methanol** (Annex 8, Section II, Chapter 2), but **not for hydrogen** (Annex 8, Section II, Chapter 3). Only requirements relating to **fuel cells** have been developed (Annex 8, Sect. III, Chap. 1).

The temporary working group on technical requirements for fuel cells aboard inland navigation vessels (CESNI/PT/FC) has yet to develop regulations:

- on the **storage of liquid and gaseous hydrogen on board ships** (Annex 8, sect. II, chap. 3): in the meantime, the players are using the ES-TRIN LNG regulations as a basis, relying on the opinion of certified bodies for validation,
- on the **use of hydrogen in internal combustion engines (ICE)** (Annex 8, sect. III, chap. 4),
- on the **distribution and processing of hydrogen**. Hydrogen rack refuelling is included in the scope of this review, but hose refuelling is not.

Consequently, in the **absence of a comprehensive regulatory framework**, the use of hydrogen to power inland waterway vessels still requires a derogation.

The need to follow a special authorisation procedure for a particular vessel

As European standards are not yet fully adapted to hydrogen propulsion, **vessels must obtain a derogation from the existing rules in order to be approved and put into service.**

There are various regulatory ways of obtaining this derogation: either on the basis of article 2.20 of the Rhine Vessel Inspection Regulation (RVIR, CCNR) or on the basis of articles 24, §1 and 25 of Directive (EU) 2016/1629. In both cases, the shipowner must apply for authorisation to derogate from the ES-TRIN.

⁶ HAZard Identification

⁷ HAZard and OPerability analysis

⁸ Failure Modes and Effects (Criticality) Analysis

In 2023, the CCNR has decided to publish the recommendations for derogations to the RVIR allowing the operation of eight innovative vessels on the Rhine and the inland waterways of the EU⁹. Five of them are hydrogen-powered vessels: *ANTONIE*, *AB INITIO*, *ZULU 6* (LIHYP FFC 8), *RHENUS MANNHEIM I* and *FPS WAAL*.

The derogation is then granted at national level by the Visiting Committee (in France, DGITM¹⁰ and DRIEAT¹¹) either on the basis of the implementing act of the European Commission (EC), following the opinion of the CESNI Committee, or on the basis of the recommendation of the CCNR. The hydrogen-powered vessel will then be able to navigate on all European waterways (unless specifically prohibited).

This alternative approval process, based on a risk assessment, involves **high costs and long lead times**, which partly explains why **very few fuel cell powered vessels are approved**.

Although SOGESTRAN's *ZULU 6* project was granted a derogation by the CCNR in June 2023, it did not obtain an inland navigation certificate until the end of 2024.

Another type of derogation exists, but only for navigation in a restricted geographical area.

Derogations for craft operating limited journeys of local interest or in harbour areas

Pursuant to Article 24(2) of Directive (EU) 2016/1629, Member States may authorise, in respect of navigation within their territory, derogations from this Directive **for craft operating limited journeys of local interest or in harbour areas**.

France has made use of this possibility offered by Directive (EU) 2016/1629. **Article D. 4220-4 of the Transport Code and the decree of 20 August 2019¹² allow innovative projects** to be developed for navigation restricted to a part of the national territory. The competent authority (the Prefect) may therefore authorise derogations from one or more provisions of the Transport Code (Title II of Book II, technical regulations) or the regulations issued for its application, for navigation in the areas referred to in Article D. 4211-1 (zones 1, 2, 3 and 4, with the exception of the Rhine), for limited voyages in a restricted geographical area or in port areas. The request must be submitted by the applicant as part of the pre-work declaration before construction or modification work is started on the vessel.

France has not yet granted any exemptions for hydrogen-powered vessel projects specifically based on this national legislation.

Lack of European obligations for the siting of hydrogen refuelling points in ports

AFIR¹³ imposes **few constraints on Member States** regarding the establishment of infrastructure for the supply of hydrogen to inland waterway vessels. It focuses mainly on the supply of **electricity** (quayside connection) or **liquefied methane**¹⁴ for seagoing ships :

⁹ [Autumn 2023 session](#), p. 125 et seq.

¹⁰ Direction générale des infrastructures, des transports et des mobilités

¹¹ Direction régionale et interdépartementale de l'environnement, de l'aménagement et des transports

¹² Arrêté du 20 août 2019 relatif à la délivrance de titres de navigation sur une zone de navigation restreinte

¹³ [Regulation \(EU\) 2023/1804](#) of 13 September 2023 on the deployment of alternative fuels infrastructure

¹⁴ LNG, liquefied biogas or synthetic liquefied methane, including blends of those fuels

Electricity recharging infrastructure : at least one shore side electricity supply facility in all inland ports on the TEN-T core network (31 December 2024) and in all inland ports on the TEN-T full network (31 December 2029),

Liquefied methane : an appropriate number of refuelling points in the TEN-T core maritime ports to enable seagoing ships to circulate throughout the TEN-T core network (31 December 2024).

AFIR is content (like AFID¹⁵) to encourage Member States to locate **hydrogen refuelling stations (HRS) at multimodal hubs** that could also supply hydrogen to other modes of transport, such as inland waterways.

Although DG MOVE has set up a sub-group within the Sustainable Transport Forum (STF) expert group to work on HRS, this work will be limited to HRS for road transport vehicles.

Annex II of AFIR lists the **technical specifications** to be complied with, in particular for refuelling stations and for the bunkering of gaseous (compressed) and liquefied hydrogen for hydrogen-powered inland waterway vessels. Nevertheless, most of these specifications have only been **announced but not yet defined**. This is partly due to the lack of regulations governing the direct refuelling of inland waterway vessels with hydrogen (see below). The few hydrogen powered vessels that are currently being tested are supplied with hydrogen using cylinders placed in containers (*swappable tank*) rather than by connecting to a shore-based station.

Nevertheless, the European Commission intends to adopt a [delegated regulation](#) to continue adopting European standards, particularly for **hydrogen refuelling for inland navigation**. The adoption of this delegated act depends on the standardisation work carried out by the European Committee for Standardization (CEN) and the European Committee for Electrotechnical Standardization (CENELEC).

AFIR stipulates that the **national policy framework** to be submitted by each Member State to the European Commission by 31 December 2024 must include an overview of the state of play, perspectives and planned measures regarding the deployment of hydrogen infrastructure in maritime ports and inland waterway transport (AFIR, art. 14). As far as **France** is concerned, the previous national policy framework sent to the European Commission under AFID made no mention of the installation of hydrogen refuelling infrastructure for inland waterway vessels. The 2019-2028 *Multiannual Energy Plan*¹⁶ foresees the installation of hydrogen refuelling stations for road vehicles only. In its draft new [Clean Mobility Development Strategy](#)¹⁷ (March 2025), France merely states that it will comply with its obligations under AFIR.

As in most European countries, the use of hydrogen in inland navigation is only at an experimental stage and is not favoured in the short term. Therefore, **national strategies do not prioritise the installation of hydrogen refuelling infrastructure for inland navigation**. Instead, transitional energies such as HVO¹⁸-XTL¹⁹ or shore-side electricity supply are favoured.

¹⁵ Directive 2014/94/EU of 22 October 2014 on the deployment of alternative fuels infrastructure

¹⁶ Programmation pluriannuelle de l'énergie

¹⁷ The Clean Mobility Development Strategy (*Stratégie pour le Développement de la Mobilité Propre - SDMP*) is part of the Multiannual Energy Plan

¹⁸ Hydrotreated vegetable oil

¹⁹ X to Liquid

Regulations on hydrogen refuelling of inland waterway vessels not fully developed

Vessels cannot currently receive hydrogen directly from the quayside or from a supply vessel (see the regulatory details below).

In practice, they take on board a **swap container** containing hydrogen cylinders (*swappable tank*). The container used by *ZULU 6* (French pilot) contains 13 hydrogen cylinders (300 kg at 300 bar).



The regulatory framework for hydrogen refuelling of inland waterway vessels is not yet fully developed. There are several regulations that complicate and even prohibit some operations:

- There are no specific regulations for **direct bunkering by lorry** (discharge by hose from the truck to the vessel's tank): ADR²⁰ regulations apply until the lorry is parked, and then port regulations apply during the bunkering phase;
- **Direct ship-to-ship refuelling** is prohibited because the ADN²¹ prohibits the transport of hydrogen in bulk. It only allows transport in packages (tanks or cylinders). The bunker vessel

²⁰ Agreement concerning the International Carriage of Dangerous Goods by Road

²¹ European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

must pass through a docking station. This rule applies to all fuels that are considered dangerous goods, with the exception of gaz oil / diesel fuel / HVO (ONU 1202), motor spirit / gasoline / petrol (ONU 1203) and refrigerated liquid gaz / LNG (ONU 1972) for which there is an exemption in ADN;

- **Storage of hydrogen alongside a quay or on a fixed pontoon:** In France, above 100 kg of stored hydrogen, the provisions of ICPE²² no. 4715 must be complied with. The permits required and the safety requirements vary according to the amount of hydrogen stored:
 - ≥ 100 kg and < 1 t: ICPE declaration
 - ≥ 1t: ICPE authorisation
 - ≥ 5t: Low Seveso threshold
 - ≥ 50t: Seveso high threshold
- If hydrogen is stored on a **mobile pontoon**, it is considered a ship or vessel (depending on the location) and the regulations for the transport of dangerous goods apply;
- In France, the refuelling of a vessel with hydrogen from a **land-based station** is in principle covered by ICPE no. 1416 (*Hydrogen gas distribution station*), but these regulations were created specifically for the refuelling of **trucks**;

In France, decree no. 2024-667 of 2 July 2024 amended ICPE Section no. 1416 and 4715 which deal respectively with the distribution and storage of hydrogen, to indicate that they now apply only to **land-based installations**. It therefore excludes marine hydrogen distribution and storage facilities from the scope of the regulations governing classified installations (ICPE). A facility is considered to be on land if it is not at sea, unless it is located within the administrative boundaries of a seaport.

- The use of a **SWAP container** (containing hydrogen cylinders) is successively subject to two regulations concerning the transport of dangerous goods: the ADN²³ regulations (for the river stage) and the ADR regulations (for the road stage). However, these two regulations impose different obligations;
- **On-board hydrogen storage** is not yet regulated. Work is ongoing at European level within CESNI which adopted in October 2024 interim guidelines for the storage of gaseous hydrogen.

²² *Installation classée pour la protection de l'environnement* : various European texts, such as the Industrial Emissions Directive (IED) and the SEVESO Directive, are taken into account in the French ICPE regulations

²³ European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

Regulatory Framework for Autonomous Inland Navigation

Nb: The term ‘*autonomous inland navigation*’ is used here in a generic sense to encompass the different levels of autonomous navigation in inland navigation (remotely controlled, automated and autonomous vessel).

This chapter does not address the issue of ‘*liability*’ (of the vessel owner, its crew or the remote operator), as this has already been extensively studied²⁴. Instead, we focus on the legal framework for **experimentation**, as this is currently at stake and will facilitate the development of the regulatory framework for liability.

Given the experimental nature of autonomous navigation for inland waterway vessels, **the European regulatory framework has not yet been established**. ES-TRIN, CCNR regulations (*Rhine Vessel Inspection Regulation – RVIR*, *Rhine Police Regulation – RPR*²⁵, *Regulations for Rhine navigation personnel – RPN*) and Directive (EU) 2016/1629 *laying down technical requirements for inland waterway vessels* need to be adapted in line with technological developments and feedback from pilot projects.

Pilot projects on the Rhine: derogation from CCNR regulations

The adaptation of the Rhine’s regulatory framework to autonomous navigation is a complex task that the CCNR started in 2018 when it adopted the first international definition of automation levels for inland navigation (*Resolution 2018-II-16*, slightly revised in 2022).

²⁴ See for example. : An-Sofie Obrie : *Legal challenges regarding autonomous shipping in inland waters*, 2021-2022 ; Camilla Domenighini : *Autonomous inland navigation: a literature review and extracontractual liability issues*, *Journal of Shipping and Trade*, 9(14), 2024, DOI:<https://doi.org/10.1186/s41072-024-00171-2> ; *Autonomous inland shipping: A contractual perspective in Belgium and the Netherlands*, *Tijdschrift Vervoer & Recht*, 6 (2024) , 2024, 183–189 ; *Autonomous inland shipping : will the barge owner be stuck ‘between the devil and the deep blue sea’?* , *Il diritto marittimo* , 2022, 752-784

²⁵ RPNR in French

	Level of automation ¹	Designation	Craft command (steering, propulsion, wheelhouse, etc.)	Monitoring of and responding to navigational environment	Fallback performance of dynamic navigation tasks
BOATMASTER PERFORMS PART OR ALL OF THE DYNAMIC NAVIGATION TASKS	0	NO AUTOMATION the full-time performance by the boatmaster of all aspects of the dynamic navigation tasks, even when supported by warning or intervention systems			
	1	STEERING ASSISTANCE the context-specific performance by a <u>steering automation system</u> using certain information about the navigational environment and with the expectation that the boatmaster performs all remaining aspects of the dynamic navigation tasks			
	2	PARTIAL AUTOMATION the context-specific performance by a navigation automation system of both <u>steering and propulsion</u> using certain information about the navigational environment and with the expectation that the boatmaster performs all remaining aspects of the dynamic navigation tasks			
SYSTEM PERFORMS THE ENTIRE DYNAMIC NAVIGATION TASKS (WHEN ENGAGED)	3	CONDITIONAL AUTOMATION the <u>sustained</u> context-specific performance by a navigation automation system of <u>all</u> dynamic navigation tasks, <u>including collision avoidance</u> , with the expectation that the boatmaster will be receptive to requests to intervene and to system failures and will respond appropriately			
	4	HIGH AUTOMATION the sustained context-specific performance and <u>fallback performance</u> by a navigation automation system of all dynamic navigation tasks, <u>without expecting a boatmaster responding to a request to intervene</u> ²			
	5	AUTONOMOUS = FULL AUTOMATION the sustained and <u>unconditional</u> performance and fallback performance by a navigation automation system of all dynamic navigation tasks, without expecting a boatmaster responding to a request to intervene			

¹ Different levels of automation may make use of remote control but different conditions to be defined by competent authorities might apply in order to ensure an equivalent level of safety.
² This level introduces two different functionalities: the ability of "normal" operation without expecting human intervention and the exhaustive fallback performance. Two sub-levels could be envisaged.

Since then, some CCNR Regulations have been adapted to allow for derogations in the context of innovative experiments.

Rhine Police Regulation (RPR)

The RPR stipulate that **the boatmaster must be on board during the journey** (1.02.4).

In 2022, a new article 1.26²⁶ was introduced into the RPR and entered into force in December 2023²⁷. Its purpose is to provide the legal framework for the implementation of innovative **pilot projects on the Rhine** for temporary experiments requiring derogations from the RPR.

On the basis of a CCNR recommendation, this article 1.26 allows the competent national authority to grant derogations from the RPR for an **experimental and limited period for a vessel on board which crew tasks are automated or for a remotely operated vessel**.

The CCNR Recommendation sets out the minimum requirements to ensure that the vessel

- (a) does not interfere with safe and orderly navigation; and
- b) provides a level of safety equivalent to that of other vessels on the Rhine.

The competent authority may include additional requirements in its permit. It shall record the exemptions and requirements in the inspection certificate of the vessel concerned or in the recognised equivalent certificate in accordance with the RVIR.

²⁶ Exemptions from these regulations for a vessel on which the crew's tasks are automated or for a remotely operated vessel

²⁷ Resolutions 2022-II-12 and 2023-I-9

Rhine Vessel Inspection Regulations (RVIR)

Article 2.20, §3 of the RVIR states: “The Inspection Commission may, on the basis of recommendations made by the Central Commission for the Navigation of the Rhine, issue a Trial Inspection Certificate for a limited period to a specific vessel with new technical requirements which **deviate from the technical requirements of the ES-TRIN**, provided that these requirements ensure sufficient safety.”

Regulations for Rhine navigation personnel (RPN)

Chapter 19 of the RPN stipulates the **minimum crew that must be on board** the various types of boats:

Article 19.02
Équipage minimum des automoteurs et des pousseurs

1. L'équipage minimum des automoteurs et des pousseurs comprend :

Groupe	Membres d'équipage	Nombre de membres d'équipage en mode d'exploitation A1, A2 ou B et pour le standard d'équipement S1 ou S2						
		A1		A2		B		
		S1	S2	S1	S2	S1	S2	
1	L ≤ 70 m	conducteur	1		2		2	2
		timonier	-		-		-	-
		maitre-matlot	-		-		-	-
		matlot	1		-		1	-
		matlot léger	-		-		1 ¹⁾	2 ^{1) 3)}
2	70 m < L ≤ 86 m	conducteur	1 ou 1	1	2		2	2
		timonier	-	-	-		-	-
		maitre-matlot	1	-	-		-	-
		matlot	-	1	-		2	1
		matlot léger	-	1	1 ¹⁾		-	1
3	L > 86 m	conducteur	1 ou 1	1	2	2	2 ou 2	2
		timonier	1	1	-		1	1 ²⁾
		maitre-matlot	-	-	-		-	-
		matlot	1	-	1		2	1
		matlot léger	-	2	1	1 ¹⁾	2 ¹⁾	-

¹⁾ Le matlot léger ou un des matlots légers peut être remplacé par un homme de pont.

²⁾ Le timonier doit être titulaire d'une patente du Rhin ou d'un certificat de qualification de l'Union de conducteur. Une autorisation spécifique au sens de l'article 13.01, chiffre 1, lettre b) n'est pas requise.

³⁾ Un des matlots légers doit être âgé de plus de 18 ans.

Minimum crew on self-propelled vessels and pushboats, RPN, art. 19.02

The new Regulations for Rhine Navigation Personnel (RPN) entered into force on 1 April 2023.

Derogations from the minimum crew requirement are now possible in order **to support pilot projects, particularly in the field of automation** (Article 17.02):

“Based on a recommendation by the CCNR, the competent authority may apply alternative minimum crew requirements to a vessel featuring technical innovations for trial purposes and for a limited period, provided these requirements ensure sufficient safety alongside the technical innovations.

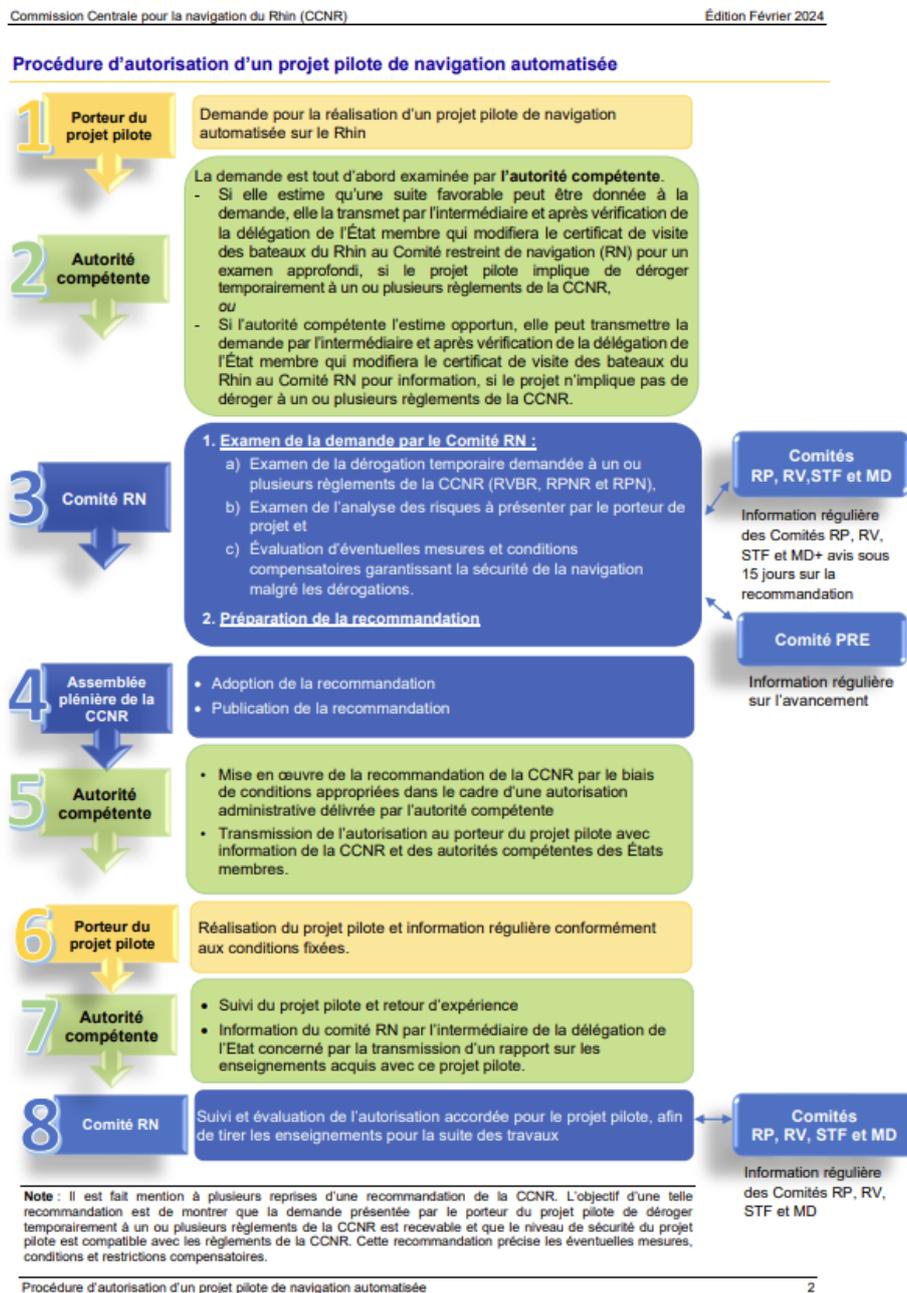
The equivalences and derogations referred to in paragraphs 1 and 2 must be recorded in the inland navigation vessel certificate.”

Authorisation procedure for an automated navigation pilot project

CCNR has established a common framework²⁸ for authorising pilot projects to carry out trials requiring **temporary derogations from the CCNR regulations**. The aim of these pilot projects is to learn lessons which will be taken into account in future work on adapting the CCNR regulations.

²⁸ Authorisation procedure for an automated navigation pilot project https://www.ccr-zkr.org/files/documents/AutomatisationNav/Procedure_auutorisation_fr.pdf

Project leaders must apply to the CCNR for a recommendation, and the examination of these applications is entrusted to the *Comité Restreint de Navigation* (Comité RN).



Authorisation procedure for a pilot project for automated navigation on the Rhine, CCNR, feb. 2024

Comité RN : Comité Restreint de Navigation

Examples of the temporary derogations recommended by the CCNR can be found in the resolutions adopted by the CCNR during

- [autumn 2023 session](#) (Page 85 et seq.), which concerned **several pushed convoys or motor vessels** temporarily being conducted remotely in Belgium (ex: pushed convoy *PRIVILEGE*; motorvessel *PERSEVERANCE* ; pushed convoy *REINHOLD DEYMANN*);

- [autumn 2025 session](#) during which new derogations have been granted for projects involving remotely operated vessels on the Rhine: motor vessel *ERNST KRAMER*; pushed convoy *PRIVILEGE*; the motor tanker *VOLHARDING 1*; the motor tanker *VOLHARDING 3*; the motor tanker *VOLHARDING 17*; the motor vessel *BLUE MARLIN*.

These resolutions recommend **temporary derogations from the following provisions:**

❖ **RPR (in accordance with article 1.26):**

- Unobstructed visibility and direct forward or rearward view (art. 1.07, chiffres 2 et 3)
- At least one qualified person must hold the steering wheel (art. 1.09, chiffre 1)

❖ **RVIR (in accordance with article 2.20) :** Compliance with the requirements of the RVIR and ESTRIN (art. 1.03), i.e. in particular: the position of the sensors in relation to the collision bulkhead and the aft peak bulkhead, the steering system, the wheelhouse, the unobstructed view, the specific requirements relating to propulsion machinery and steering systems, navigation lights, light and sound signals, navigation and information devices, radiotelephone installations for vessels with a single person in the steering position, onboard sound connections, alarm installations, stern anchor manoeuvring installations.

In general, these resolutions impose a number of obligations, such as:

- a limited navigation zone (between two-kilometre points on the Rhine),
- the vessel or convoy must have civil liability insurance, whether it is operated from the Remote Control Centre (RCC) or from the wheelhouse on board,
- a minimum crew must be present on board,
- the possibility for the driver on board to regain control of the convoy or the vessel at any time and without delay,
- the authority of the driver on board over the operator of the RCC in matters relating to the navigation of the vessel or convoy,
- the installation of a device on board to ensure the continuous presence of a crew member in the wheelhouse when the convoy or vessel is being driven remotely,
- the Remote Control Operator (RCO) must have the necessary aptitude to remotely control the convoy or the vessel. In addition, he must hold a valid certificate of competency as a vesselman in accordance with the Regulations for Rhine Navigation Personnel (RPN) for the operation of the convoy or vessel,
- Reporting: providing the Inspection Commission with an evaluation report at various intervals. These reports must include information on any irregularities observed, breakdowns, leaks, repairs and modifications, fuel consumption, incidents and accidents, potential improvements identified during the trial runs, etc.
- etc.

None of these resolutions allows for any derogation from the *Regulation for Rhine Navigation Personnel (RPN)*, which imposes a minimum crew on board inland waterway vessels, or art. 1.02.4 of the *Rhine Police Regulation (RPR)* which stipulates that a boatmaster must be on board during the journey.

The recommendations stipulate that the first results should be communicated to the CCNR in regular evaluation reports. The CCNR also intends to use the experience gained from the pilot projects to examine requests for recommendations for **phase 3** of these projects, which will involve a **reduced crew on board**.

The CCNR's *Comité RN*²⁹ *restreint de navigation* is also working on the requirements applicable to the Remote Control Centre and the link with the craft.

The **CCNR's inventory of pilot and research projects** in the field of automated navigation can be viewed [here](#).

Pilot projects on other inland European waterways

Directive (EU) 2016/1629 *laying down technical requirements for inland waterway vessels* allows Member States or the European Commission to grant derogations from its technical requirements:

☞ Pursuant to **article 24** (*Derogations for certain categories of craft*), **Member States may authorise derogations** from all or part of this Directive for:

- craft operating on **non-linked inland waterways**;
- craft having a dead weight **not exceeding 350 tonnes** or craft **not intended for the carriage of goods** and having a water displacement of **less than 100 cubic metres**, which were laid down before **1 January 1950** and which operate exclusively within their territory;
- craft operating **limited journeys of local interest or in harbour areas**.

☞ Pursuant to **article 25** (*Use of new technologies and derogations for specific craft*), in order to encourage innovation and the use of new technologies in inland navigation, **the Commission is empowered to adopt implementing acts allowing derogations or recognising the equivalence of technical specifications** for a specific craft regarding:

- the issuance of a Union inland navigation certificate recognising the use, or presence, on board a craft of other materials, installations or items of equipment, or the adoption of arrangements or design aspects other than those included in Annexes II and V, provided that an equivalent level of safety is ensured;
- **the issuance of a Union inland navigation certificate for trial purposes for a limited period** incorporating new technical specifications that derogate from the requirements of Annexes II and V, provided that an adequate level of safety is ensured.

²⁹ *Comité restreint de navigation*

Belgium

Belgium is involved in several automated and/or autonomous navigation projects, notably with the company SEAFAR.

In accordance with the above-mentioned provisions of Directive (EU) 2016/1629, Belgium's administrative regions authorise their competent authorities to grant derogations from the technical requirements applicable to inland waterway vessels. These derogations are not general but are limited to certain vessels and/or certain navigation areas.

Wallonia

Walloon Government Decree of 13 December 2018³⁰ (art. 25, §§1-2) 'transposing Directive 2016/1629/EC' authorises the Inspection Commission to grant a total or partial derogation from the technical requirements to the following vessels:

- **urban tour vessels** navigating on **interconnected** inland waterways,
- **pushed and self-propelled barge**³¹ whose route consists of limited trips of local interest or in port areas.

These exemptions are detailed in appendix 4 of the Decree.

Flanders

Flemish Government Decree of 05 October 2018³² (art. 25, §§1-2) authorises the Inspection Commission to grant a total or partial derogation from the technical requirements to the following vessels operating on inland waterways that are not linked to each other:

- **urban tour vessels** navigating on inland waterways that are **not connected** to each other,
- **pushed and self-propelled barge** making limited journeys in a restricted geographical area or in port areas.

These exemptions are detailed in appendix 5 of the Decree.

Flemish Government [Decree on navigation of 21 January 2022](#) (art. 70) allows the waterway authority (*De Vlaamse Waterweg*) or port authority to grant exemptions for experiments or pilot projects, including trial voyages, using innovative systems. These systems include automated systems on vessels or on land. The derogation may concern rules relating to the **crew and navigation of the vessel**, the **technical characteristics or equipment of the vessel**, the requirements relating to activities on board and on shore and the documents on board. The derogation is maximum one year but could be renewed for maximum five years.

The authorisation shall specify

- 1° the purpose of the experiment or pilot project;

³⁰ 13 DECEMBER 2018. - [Order of the Walloon Government](#) implementing Directive 2016/1629/EC of the European Parliament and of the Council of 14 September 2016 laying down technical requirements for inland waterway vessels, amending Directive 2009/100/EC and repealing Directive 2006/87/EC

³¹ A barge equipped with mechanical means of propulsion enabling it to make small movements when it is not part of a pushed convoy (A. 13 déc. 2018, art. 2, 21°)

³² 5 October 2018. - [Flemish Government Decree](#) laying down technical requirements for inland waterway vessels

- 2° the waterways, parts of waterways or parts of the port area where the experiment or pilot projects are to be carried out;
- 3° the period of validity of the authorisation
- 4° the rules for which derogations may be granted and, where applicable, the conditions for granting the derogation;
- 5° the safety measures taken to carry out the experiment or pilot project.

The waterway authority or the port authority may revoke the authorisation in whole or in part if, in its opinion, safety is endangered as a result of or partly as a result of the experiments or pilot projects.

All the information and forms needed to conduct experiments are available in English on this [Smart Shipping web page](#) of *De Vlaamse Waterweg*.

Project managers in Belgium have informed us that they prefer the approach of establishing a **single-window system to minimize distinctions between authorities**. At present, each authority operates with different requirements, procedures, and timelines. By creating a single window, consistency, efficiency, and streamlined processes would be ensured.

France

France has made use of Article 24(2) of Directive (EU) 2016/1629 which allows Member States to authorize derogations from all or part of this Directive for “*craft operating limited journeys of local interest or in harbour areas*”.

Article D. 4220-4 of the Transport Code and the Decree of 20 August 2019³³ allow **innovative projects** to be developed for navigation restricted to a part of the national territory.

Article D. 4220-4 allows the competent authority to grant exemptions from the technical requirements laid down in the ES-TRIN and other French regulations for navigation. These derogations may be granted for limited voyages **in a small geographical area (with the exception of the Rhine) or in port areas**.

Annex I of the decree of 20 August 2019 specifies the criteria for defining these restricted navigation zones. In this zone, the exemption must not represent a significant risk to the environment, the safety of individuals or that of navigation. If a vessel holding a navigation licence issued in accordance with this Decree is the subject of a recommendation by the CESNI or the CCNR, the restricted navigation zone may be replaced by the provisions of this recommendation when the navigation licence is renewed.

Annex II of the decree defines the possible exemptions and the conditions for granting them.

France has not yet granted any exemptions for autonomous vessel projects specifically based on this national legislation.

³³ [Arrêté du 20 août 2019](#) relatif à la délivrance de titres de navigation sur une zone de navigation restreinte

However, France has begun to adapt its legislation to automated or remote navigation by introducing definitions into the Transport Code³⁴:

- **Automated floating structure** (*construction flottante automatisée*): a boat or floating craft in which all or part of the navigation tasks are performed, to varying degrees, by automated operating systems, whether or not there are crew members on board (R. 4000-8°);
- **Remotely operated floating structure** (*construction flottante conduite à distance*): a vessel or floating craft that is operated to varying degrees by an operator from a remote-control centre (R. 4000-9°);
- **Remote control centre** (*centre de conduite à distance*): an area located on land or on another floating structure from which the operator controls another remotely controlled floating structure (R. 4000-10°);
- **Operator** (*opérateur*): a person who, from a remote-control centre, performs all or part of the navigation tasks or provides services for deck crew members on board a remotely controlled floating structure (R. 4212-1-II).

The rules regarding boat crews have not been changed, and the presence of at least one boatmaster (*conducteur*) on board remains mandatory (*Transport Code, Art. D. 4212-3 al. 1, A. 4212-2-3, A. 4212-3-2, A. 4212-3-3*) even in an experimental setting.

French National River Strategy

The draft French National River Strategy, presented in June 2025, aims in particular to promote the development of a French autonomous vessel and drone industry: call for projects for 'autonomous cargo vessels' aimed at long-distance transport but also providing for the certification of projects dedicated to urban logistics ; creation of digital twins of infrastructure to facilitate digital simulation of canals and rivers and to facilitate the configuration of autonomous boats ; ensure a regulatory framework conducive to innovation in accordance with Decree No. 2025-50.

Germany

Germany is involved in several automated and/or autonomous navigation projects. Even if its regulations have not been specifically adapted, experiments are authorised within the framework of exemptions recommended by the CCNR.

With regard to the technical requirements for inland waterway vessels, article 29 of the [Binnenschiffsuntersuchungsordnung](#) (BinSchUO)³⁵ authorises the Generaldirektion Wasserstraßen und Schifffahrt (GDWS) to authorise **exemptions from the technical requirements** of the ES-TRIN, provided that a recommendation is issued either by the CCNR or by an implementing act of the European Commission under Article 25 of Directive (EU) 2016/1629.

³⁴ [Décret n° 2025-50 du 15 janvier 2025](#) portant diverses dispositions relatives au transport fluvial et à la navigation intérieure

³⁵ inland waterways vessel inspection regulation

Article 30 of the same BinSchUO, which specifically concerns the **use of new technologies**, authorises the GDWS to issue, for trial purposes and for a limited period, a navigation certificate for a vessel with technical innovations that derogate from the provisions of Part II of ES-TRIN, provided that these innovations offer sufficient safety.

With regard to the regulations on river navigation, Germany amended its legislation in 2024 to allow for experiments with **remote control of inland waterway vessels**. [6. BinSchStrOAbweichV](#)³⁶ temporarily derogates (from 1 May 2024 to 30 April 2027) from the provisions of the Binnenschiffahrtsstraßen-Ordnung ([BinSchStrO](#)³⁷) by allowing experiments with remote control of inland waterway vessels.

Paragraph 1.28 of the 6. BinSchStrOAbweichV provides that, for trial purposes, the competent authority may grant revocable **exemptions** from the requirements of the BinSchStrO for a specified period and for a specific section of waterway, for a vessel whose navigation tasks are carried out by remote control.

Approval may be granted only on the basis of an assessment carried out by the body responsible for the technical approval of vessels. This assessment must specify the minimum requirements with regard to the crew, the installation, equipment and operation of the vessel, as well as the installation and equipment of the Remote Control Centre (*Fernsteuerungszentrale*) and the operation of the vessel by the remote control centre, in order to ensure that the vessel, when performing remotely controlled navigation tasks:

- (a) does not impede the safety and flow of traffic or the safety of navigation;
- (b) has a level of safety equivalent to that of other comparable vessels operating on the waterways (1.28.2).

The Remote Control Centre shall be mentioned by the competent authority in the vessel's certificate (1.28.2). It shall be located in Germany (1.28.3).

The boatmaster (*Schiffsführer*), the owner (*Eigentümer*) of the vessel and the operator (*Ausrüster*) must each ensure that the vessel has the minimum crew prescribed by article 1.28.4.a of the BinSchStrO:

- a) **The vessel must be manned by the minimum crew prescribed in the vessel's certificate** (1.28.4.a),
- b) **The boatmaster** prescribed in the vessel's certificate **shall continue to be solely responsible** without limitation for navigating the vessel, in particular for steering the vessel, and for operating the vessel (1.28.4.b),
- c) **The boatmaster:**
 - must be able to take control of the vessel at any time and without delay (1.28.4.c.aa),
 - is authorised to give instructions to the Remote Control Operator (RCO) of the vessel regarding the operation of the vessel (1.28.4.c.bb),

³⁶ Sechste Verordnung zur vorübergehenden Abweichung von der Binnenschiffahrtsstraßen-Ordnung ([6. BinSchStrOAbweichV](#)) vom 2. April 2024

³⁷ Inland Waterways Code

- must ensure that **a member of the crew is permanently present in the wheelhouse** (1.28.4.c.cc).

The Remote Control Centre must hold all the necessary certificate or authorisations : boatmasters' certificate (*Schiffsführerzeugnis*), specific authorisations if the vessel is operating on waterways identified as stretches of inland waterways with specific risks, specific authorisation for sailing with the aid of radar (1.28.4.d).

The Remote Control Centre must not be affected by fatigue, the effects of alcohol, medication, drugs or for any other reason (1.28.4.e referring to article 1.03.4 of BinSchStrO).

The Remote Control Centre must be able to perceive all sound signals from other vessels at all times and in such a timely manner that he can respond to them in order to operate the craft safely in traffic. He must use the equipment and devices available on board for navigating and for communicating with other vessels and shore radio stations (1.28.4.f and g).

The installations used for remote control of the vessel must offer the Remote Control Centre visibility conditions equivalent to those specified in Article 7.02 ES-TRIN for on-board control stations. In particular, visibility equivalent to that specified in Article 1.07(2) must be ensured (1.28.4.h).

The Remote Control Centre shall immediately hand over control of the vessel to the skipper :

- in the event of a longer-lasting impairment or failure of the transmission of information from a device necessary for the safe participation of the vessel in shipping traffic to the Remote Control Centre,
- in the event of a longer-lasting impairment or failure of a device necessary for remote control in the RCC, or
- if it is not possible to perceive all sound signals from other vessels at all times, or only with a time delay (1.28.4.k).

The owners and operators of the vessel must ensure and prove to the competent authority that they have taken out **civil liability insurance** covering the vessel when it is being operated by remote control (1.28.4.l).

They must authorise the competent authority to participate in trips and grant access to the remote control centre (1.28.4.m).

All these conditions and obligations are based on those prescribed by the CCNR when it grants an exemption from the provisions of the Rhine Police Regulation (RPR) and the Rhine Vessel Inspection Regulations (RVIR) (*see above p.14*).

It is important to note that exemptions granted by RIVR, RPR and/or CCNR, while valid, are not universally applicable. Riverways belong to different jurisdictions, oftentimes even within the same city such as Hamburg, with their own parameters of approval or rejection regarding innovative pilots.

Difficulties arise on borders between inland waterways and inland waterways which are preemptively assigned to seafaring zones, naturally with very different regulations between them³⁸.

³⁸ Tony PERKOVIC, Logistik-Initiative Hamburg

Netherlands

Netherlands is involved in several automated and/or autonomous navigation projects.

Rijkswaterstaat recently commissioned the Maritime Research Institute Netherlands (*MARIN*) to conduct an exploration of the safety risks associated with remote-controlled navigation in inland shipping. The aim of this assignment was to create an overview of the risks involved in operating a vessel remotely, whether or not in combination with crew reduction and/ or the support by means of Track Pilot-automation (TGAIN) onboard. Additionally, the objective was to obtain an overview of the measures that need to be taken to ensure safe and efficient navigation. This research has provided a detailed assessment of the safety risks associated with remote navigation of inland vessels.³⁹

Article 1.23 of the [Binnenvaartpolitiereglement - BPR](#) (Waterways Policy Regulation) requires authorisation by the competent authority for any practical trials of **highly automated navigation**⁴⁰ where there is a risk of compromising the safety or smooth operation of navigation.

Made pursuant to Article 1.23 of the Binnenvaartpolitiereglement, a Regulation of 12 September 2018⁴¹ lays down rules for experiments in highly automated navigation on national waterways.

Under this text, an application for a derogation must be submitted to the General Director of Rijkswaterstaat. Authorisation may only be requested for an **experiment involving one or more national waterways**. It must be accompanied by an experimental plan including the identification of the vessel, the purpose and context of the experiment, the mode and level of automation, the area over which the experiment will be carried out and an assessment of the risks and the measures taken to minimise them.

The derogation will be granted subject to two conditions:

- if, in the event of a malfunction or failure of the automated application, it is possible to take the vessel out of service in complete safety;
- if the crew members on board and any person cooperating in the experiment, whether on board or elsewhere, have sufficient and appropriate knowledge of the automated system to be tested.

The experiment ends on the date indicated in the authorisation, unless the General Director of Rijkswaterstaat agrees to an extension. This authorisation may be subject to additional rules.

Within three months of the end of the experiment, an evaluation report must be submitted and must include:

- The results in terms of the aims, objectives and working method set out in the experimental plan;
- Any other relevant observations made during the trial;
- If the experimenter does not wish to continue the experiment, the reason why it is not advisable to continue;

³⁹ [Exploration of safety risks in remote controlled sailing](#), MARIN, Final Report, November 2025

⁴⁰ Highly automated sailing (een praktijktest met vergaand geautomatiseerd varen): sailing on a vessel where certain human tasks are performed by one or more automated applications (BPR, art. 1.1.)

⁴¹ Regulation of the Minister for Infrastructure and Water of 12 September 2018, [No. IENW/BSK-2018/183049](#) laying down rules for experiments with highly automated navigation on national waterways

- If the experimenter wishes to continue the experiment, the reason why it is desirable to continue.

A recent legislative development⁴² in force since 16 April 2025 has introduced **an article 1.26 directly into the BPR** allowing the authority to grant an exemption for a period of up to two years from one or more provisions of the BPR, in order to facilitate the large-scale operation of **highly automated or remotely piloted** vessels:

“The competent authority may grant an exemption for a period of up to two years from one or more of the provisions of Articles 1.02(4), 1.07(2), 1.09(1), (3) and (4), 1.10, 1. 11, 1.20, 3.13, 3.25, 4.05, first, third, fourth and eighth paragraphs, 4.06, first and second paragraphs, 4.07, fourth, fifth and seventh paragraphs, 6.19, second, third and sixth paragraphs, 6.32 or 6.33 and 9.04, second paragraph.” (BPR, art. 1.26).

The competent authority will be able to assess requests ‘on a case-by-case basis’ according to necessity and safety, after which an exemption may be granted. The authority may also impose additional requirements.

The **exemption** may concern in particular:

- **Article 1.02(4)**⁴³ of the BPR which requires the **presence of a boatmaster on board** during navigation;
- **Article 1.09(1) (3) and (4) of the BPR** which deal with the **steering of the vessel**. Article 1.09(4) provides in particular that *“vessel may not sail if the person steering is unable to hear and give all information and instructions entering or leaving the wheelhouse. In particular, he must have a sufficiently clear direct or indirect view to all sides and be able to hear sound signals. If an unobstructed view is not possible, this may be compensated for by an optical aid that provides a clear and undistorted image over a sufficiently wide field of vision, or by a lookout. If special circumstances so require, a lookout or listening post must be present to provide information.”*

This amendment to the BPR will enable automated vessels to navigate not only on CCNR waterways (Aktewateren) but also on other national waterways.

This amendment to the BPR has the advantage of providing all competent authorities with **a single, standardised framework** setting out the conditions under which they may grant exemptions. This framework promotes consistency in the assessment of exemption requests. Competent authorities will have a clear understanding of the conditions under which an exemption for highly automated driving may be granted.

It will not affect the technical requirements applicable to vessels. If it proves necessary to deviate from these technical requirements, an appropriate certificate will have to be requested for this vessel. This is an established practice that does not differ, for example, from navigation with alternative fuels.

This Dutch legislative development differs from other national developments (France, Belgium, Germany) in that **it allows for an exemption from the requirement to have a boatmaster on board** (High and Full Automation levels). However, this exemption from Article 1.02(4) shall be rejected if the

⁴² [Wijziging van het Binnenvaartpolitiereglement](#) (BPR) in verband met het faciliteren van vergaande geautomatiseerde vaart + [Regeling ontheffingsmogelijkheid ter bevordering van vergaandgeautomatiseerde varen](#), van 21 maart 2025, nr. IENW/BSK-2025/59252

⁴³ “De schipper moet tijdens de vaart aan boord zijn; de schipper van een drijvend werktuig moet tevens aan boord zijn, wanneer het werktuig in bedrijf is.”, BPR, art. 1.02.04

vessel is used for the transport of **dangerous goods** or if the vessel is used for the commercial transport of **passengers**⁴⁴. And, according to the information gathered, such exemptions will initially only be granted by Rijkswaterstaat to **vessels under 20 meters**, i.e. drones in particular.

Sweden

There are some experiments with autonomous boats sailing on Swedish inland waters. An **autonomous electric ferry** sailing in Stockholm can carry up to 30 passengers ([ZEAM](#) Stockholm and the ferry company *TORGHATTEN*, *ZEABUS technology*)

No information on the Swedish regulatory framework for autonomous or remote inland navigation has been found. One is concentrating on the development of autonomous seagoing vessels instead.

Feedback from InnoWaTr project partners

The partners of the InnoWaTr project made the following comments on the regulatory framework for autonomous inland navigation:

➤ Lack of a comprehensive framework for fully autonomous navigation

While remote-controlled operation is now conditionally permitted, the absence of a legal definition or regulatory structure for fully autonomous vessels continues to hinder long-term planning and system integration.

➤ Liability and insurance uncertainties

The current regime does not fully address how liability should be allocated in scenarios involving partial or full autonomy. This creates uncertainty for both technology providers and vessel operators, especially in the case of incidents arising from system failures or operator interactions with AI-driven systems.

➤ Interoperability and standardisation deficits

A lack of harmonised communication protocols and navigation standards poses significant risks to safe and efficient integration of automated vessels into existing inland waterway traffic. It refers to the absence of uniform protocols for data exchange and navigation used by autonomous vessels. This results in interoperability issues where different systems may not communicate effectively, leading to potential safety risks and operational inefficiencies. For instance, autonomous vessels might have varying standards for sensor data formats, communication frequencies, and navigation algorithms, complicating their integration into existing maritime traffic systems.

This remains a critical barrier for cross-border trials and commercialisation.

(Semi-)autonomous sailing means also that the connection between the vessel and the remote control should be stable and reliable. In a city environment, this is also very crucial (signal should be reliable when passing under a bridge, or when passing other passenger vessels/canoes/...) (*T. Pauwels*).

⁴⁴ Regeling ontheffingsmogelijkheid ter bevordering van vergaandgeautomatiseerd varen, van 21 maart 2025, art. 1.6

➤ **Administrative and approval procedures**

Although the temporary regulation allows derogations, the required coordination with various authorities, including the national waterways authorities and the technical approval bodies, may still prove administratively burdensome. Further streamlining and predictability in the approval processes would support broader adoption.

In summary, the approach seems constructive. Nonetheless, further legislative development is essential to provide legal certainty and operational feasibility for higher levels of automation

➤ **Satus quo-bias**

It is not easy to convince local shippers to participate in test sailings. It is very difficult to introduce a new logistics organization, in case there is already a running system (via road). Some shippers are afraid to change habits.

Measures promoting Modal Shift from Road to Waterways, Fleet Greening and Innovative Vessels

Modal shift from road to waterways

Belgium

In Flanders, where Ghent is located, the waterways are managed and operated by De Vlaamse Waterweg nv⁴⁵. De Vlaamse Waterweg nv is developing initiatives to convince companies to switch to river transport. It has also developed a support measure for waterway transport companies.

Kaaimuren / Quays in public-private partnership (PPP)

The Flemish government encourages companies to use inland waterways as a means of transport for their goods. To this end, it has set up a subsidy scheme based on public-private partnership⁴⁶.

Companies that wish to use the waterway and are looking for a place where they can load or unload have several options, such as existing quays or logistics operators. However, in most cases, a new transshipment facility specific to the company is required. This facility can be created through a public-private partnership (PPP) between the waterway manager and a private partner.

The public-private partnership (PPP) system makes it possible to **combine the expertise of the waterway manager and the private partner, while sharing the financial burden**. The waterway manager finances 80% of the infrastructure and the company 20%. The company is also responsible for equipping the quay and the loading and unloading facilities. This investment is offset by the **company's commitment to transport a fixed quantity of goods by waterway over a period of 10 years**.

The Flemish Region can only invest in infrastructure that remains or becomes its full property. After construction, the waterway manager therefore enters into a concession contract with the private partner or grants them a licence to use the infrastructure. The private partner pays a fee for this.

The PPP programme applies only **to loading and unloading facilities located along Flemish waterways, outside port areas**. Any private or public company, regardless of nationality or activity, is eligible.

Terminal and transshipment infrastructure operators are not eligible for the PPP scheme. The use of quays is focused on business-related activities.

In general, **only projects that guarantee a partnership return of at least 6% are eligible**. This PPP return is based on the ratio between new river traffic and the government's share.

Types of projects concerned

- Projects of strategic and/or general economic interest: The minimum rate of 6% does not strictly apply here. Lower percentages may be set by the waterway manager. This may be the case for projects involving the transport of dangerous goods or 'Seveso' products by waterway, exceptional transport (heavy, large or indivisible objects), etc.

⁴⁵ <https://www.vlaamsewaterweg.be/nl> : "De Vlaamse Waterweg nv strengthens inland waterway transport, ensures water management and increases the attractiveness of waterways for recreation, tourism and nature experiences."

⁴⁶ <https://www.vlaamsewaterweg.be/sites/default/files/2024-11/2018-0603%20Handleiding%20PPS%20kaaimuren%20remake%20lr.pdf>

- Projects involving the relocation of a quay wall that is incompatible with the required ecological or spatial integration: The 6% threshold continues to apply, but existing and new transshipments are invoiced. If the PPP yield is not achieved, the competent minister may still approve of the project after giving reasons;
- Projects to rebuild or upgrade an old quay wall or a virtually non-existent transshipment site: Here too, the 6% threshold applies, but existing and new transshipments are considered in calculating the PPP yield.
- Projects on tidal rivers: The construction of a transshipment facility along a tidal waterway is more expensive. The waterway operator bears these additional costs. They are therefore not included in the PPP project. At each stage of the application process, the waterway manager independently determines the estimate and extent of the additional costs based on approximate estimates and informs the applicant accordingly.

Characteristics of the PPP

The PPP may be public or private.

- In the case of a PPP for a **public transshipment quay**, the partner acts as the manager of a facility accessible to all users;
- In the case of a PPP for a **private transshipment quay**, the partner has the right to use the facility on a priority basis for the loading and unloading of its own goods. However, it is also required, if capacity remains, to allow third parties to use the facility under certain conditions.

Aid for the transport of waste by inland waterway

De Vlaamse Waterweg NV developed this support measure to stimulate the transport of waste by inland waterway. The measure was intended to benefit the mobility and sustainability of transport.

Companies could apply for investment and/or operating aid. This aid had to comply with the de minimis rule⁴⁷ and was limited to **€200,000 per consignor over a three-year period**. De Vlaamse Waterweg NV allocated €1.8 million for this purpose. This measure **ended in 2023**.

Financial assistance: subsidy scheme

The Flemish decree⁴⁸ to promote connectivity between the hinterland and Flemish seaports through new corridor shuttles and increased frequency of terminal hub shuttles, establishes a subsidy scheme (within the limits of the budget for the period from 1 January 2022 to 31 December 2025) for groups of at least two land terminals located along the same corridor that set up a corridor shuttle. The subsidy consists of a fixed part and a variable part (calculated based on the number of return trips, occupancy rates, charter costs, etc.; Art. 4§1 of the decree). The fixed part of the subsidy amounts to a maximum of 80% of the additional cooperation costs.

⁴⁷ RÈGLEMENT (UE) 2023/2831 de la Commission du 13 décembre 2023 relatif à l'application des articles 107 et 108 du traité sur le fonctionnement de l'Union européenne aux aides de minimis.

⁴⁸ https://etaamb.openjustice.be/fr/arrete-du-gouvernement-flamand-du-14-janvier-2022_n2022040127.html

In accordance with the decree, the consortia and terminal hubs eligible for the subsidy are shown on maps in the annexes to the decree.

France

PARM (Modal shift assistance plan)

The PARM⁴⁹ is financed by **public funds**. It is managed by *Voies Navigables de France* (VNF), a public body whose missions include the promotion of river logistics. The State and the Regions contribute to PARM.

PARM supports companies wishing to integrate inland waterway transport into their logistics chains by providing financial incentives at each stage of setting up an IWT project:

- Support for **logistics/feasibility studies** (Part A): Grants for studies on the use of IWT (logistics, market, quay construction or strength, bathymetry, trajectory studies). The aid amounts to a maximum of 50% of the eligible costs, with a ceiling of €25,000 per project for the duration of the plan. The other 50% can be supplemented by the ReMoVe programme (see below) up to a maximum of €40k;
- **Experimentation with inland waterway transport** (Part B): The scheme covers the **cost gap** between inland navigation and road transport used until now:
 - For **non-urban logistics traffic**: subsidy of 100% of the additional costs (up to a maximum of €100,000) for **a maximum of ten shipments** over a maximum period of six months,
 - For **urban logistics**: 100% subsidy of the extra costs for the first six months and 50% for the following six months, up to a maximum of €200,000;
- **Financing of transshipment equipment** (Part C): This part of the plan provides for aid to create or develop IWT by supporting investment in loading and unloading infrastructure or superstructure. The aid is proportional to the tonnages transported, the type of packaging of the goods and the geographical nature of the origin and destination of the flow. The aid ceiling is 50% of the investment amount, up to a maximum of €500,000.

Several river logistics experiments are currently benefiting from the French PARM.

Aid for the operation of regular combined transport services.

There is another aid scheme in France that is not limited in time as it has been in existence since 1994. The [Aid for the operation of regular combined freight transport services as an alternative to road transport](#), commonly referred to as 'clamp aid' (*aide à la pince*), is allocated in the form of subsidies to combined transport operators or freight forwarders who, as part of regular services open to several customers that they organise, transfer **intermodal transport units** (ITUs)⁵⁰ in open multimodal terminals located in mainland France, whether these are road-to-rail, **road-to-inland waterways** or

⁴⁹ Plan d'aide au Report Modal

⁵⁰ Loading unit (container, swap body, semi-trailer) or a road vehicle (lorry, trailer, road train, articulated vehicle)

road-to-short sea shipping operations, excluding feeder services. The aim of this support programme is to reduce the environmental, health and social impacts of freight transport by supporting the development of combined freight transport so that it becomes a genuine alternative to unimodal road transport and contributes to the modal shift towards rail, inland waterway and short sea shipping. It aims **to offset all or part of the additional costs associated with transshipment between modes of transport, which are not borne by unimodal road transport**. It thus aims to enable combined transport service operators to offer competitive prices in order to promote the development of this mode of transport.

The distance between the two terminals must be at least 80 km. The unit amount of aid paid for regular combined transport services provided during 2025 is **€23.00** per eligible transshipment (€27.00 in 2024).

The total amount of aid allocated per operator is capped, in accordance with the European Commission's decision, at the lesser of the following amounts:

- 30% of the total cost of transport, excluding pre- and post-transport road costs;
- 50% of the external costs avoided for combined rail-road or short sea shipping transport, or 88% of the external costs avoided for combined river-road transport.

Unfortunately, the French clamp aid available to operators to offset additional handling costs is being reduced to meet European Commission requirements, which will have some retroactive effects.

Inclusion of barge handling costs within the scope covered by THC

Among the obstacles to modal shift to waterways, France stands out for its practice, specific to certain French container terminals, of charging river operators for the cost of barge handling (CSC for Container Service Charge).

More specifically, and contrary to the practice in the ports of the Northern Range (Antwerp, Rotterdam), the custom in Le Havre and Fos sur Mer (port of Marseille) is that negotiations between companies and stevedores do not take river transport into account in the 'Receipt and Delivery' section. The handling service covered by THC (Terminal Handling Charges) ends at the quay where the barge is moored. As a result, the cost generated by the dockers and **the gantry crane loading the barge from the quay (and vice versa) is invoiced separately (CSC: container service charge) and sent directly to the river operator by the stevedore**.

This practice weakens the economic model of river operators given the strong competition from land-based modes of transport, and it slows down the development of river transport services.

The problem was resolved in the middle of the decade for flows transiting through the Grand Port Maritime de **Dunkerque**. However, the system tested could not be replicated in **Le Havre and Fos sur Mer (Marseille)**. Since 2022, only CMA CGM has committed to covering the additional cost of handling full containers transported by its ships to French ports.

In order to eliminate this specific billing without penalising the stevedores, who have demonstrated that loading a barge is objectively more expensive than loading a trailer or a wagon, it is proposed⁵¹ to include this service in the terminal handling charges (THC) billed by shipping companies to shippers. Discussions are therefore underway on a legislative amendment that would require stevedores to bill all handling costs to shipping companies, even in the case of merchant haulage where transport is organised by their competitors, the freight forwarders.

This proposal to include all container handling within the scope of THC would therefore make it possible to meet the objective of securing the economic model of river operators without penalising the attractiveness of the port. It would restore their confidence, which is a necessary condition for attracting new investment and convincing financiers. Furthermore, by making competition between modes more equitable, it would encourage transport operators to design more resilient logistics solutions based on the complementarity between modes.

ReMoVe Programme

The ReMoVe Programme⁵² is financed by **private funds** through the Energy Saving Certificate Scheme (C2E⁵³) which aims to ensure that energy efficiency measures in industry, services and transport are financed by energy suppliers.

The ReMoVe programme aims to accelerate the large-scale development of a modal shift from road to river, sea (coastal shipping) and rail.

It offers two types of assistance for shippers, freight forwarders and carriers:

- **AAP ReMoVe** is a call for projects aimed at granting financial aid to modal shift projects (e.g. construction materials, general and daily consumer goods), particularly from road to river transport (studies, project manager salaries, software, training, overall transport costs or transport invoicing (pre/post-transport costs associated with the cost of bulk transport). Investments in transport equipment (swap bodies, wagons, etc.) and infrastructure (quays, storage warehouses, etc.) are not eligible for funding. The aid intensity rate depends on the size of the company (up to 25% of all eligible costs for a large company, 35% for a medium-sized company and 45% for a small company). The aid is capped (€800,000 with the possibility of derogation) and has a limited duration (**24 months**);
- **REMO scheme** is a scheme that provides support in the planning and implementation of modal shift projects (technical support and expertise): assistance in identifying eligible flows, methodological support from planning to implementation by engineering consultancies.

In 2024, 36 projects that promote the shift to river and rail transport were selected in response to this call for projects. Among these projects are the **OBD and PAPREC flows involved in the FFC8**. The

⁵¹ *Mission THC, Propositions visant à encourager le report modal vers le fleuve à l'échelle de l'axe Méditerranée Rhône Saône (MeRS), rapport final, Eric LEGRIGEOIS, Juill. 2025 ; Projet de Stratégie Nationale Fluviale française, juin 2025*

⁵² *REport MOdal et VERdissement des flottes de transport massifié. [Arrêté du 25 mars 2022](#) relatif à la création de programmes dans le cadre du dispositif des certificats d'économies d'énergie*

⁵³ Certificats d'économie d'énergie

winning projects will collectively deliver energy and environmental savings of 568 GWh and 107,600 tCO₂e⁵⁴.

The ReMoVe programme, which was due to end in 2025, has been extended until **31 December 2027**⁵⁵.

For experimentation with inland waterway transport, the PARM and ReMoVe programmes cannot be combined over the same period.

Operation No. TRA-SE-117 - River freight

New subsidies for modal shift (financed by private funds: Energy Saving Certificate Scheme) have been introduced from **2025** by a decree of 30 December 2024. The aid provided for in C2E sheet no. **TRA-SE-117** is granted to **shippers** and concerns the **implementation of a service contract** for the transport of goods previously transported by road or for which there is an alternative to road transport. Eligible goods are tonne-kilometres transported by conventional inland waterway transport (parcels, solids, liquids or gases) and tonne-kilometres transported by container.

The equipment used (barges or intermodal transport units) must not have received any other funding from the Energy Saving Certificate Scheme.

The duration of the contract must be a minimum of three months and a maximum of twelve months. This aid applies to operations undertaken before 1 January 2030.

Public procurement

Public tenders are considered as one of the tools that can help shifting freight transport from road to inland navigation⁵⁶.

Public procurement for **waste transport or major construction projects** can be a major lever for river logistics.

Governments (on different levels) are involved in construction works (buildings, roads...) that need material to be supplied or removed. In case inland navigation is a viable alternative, the public tender might contain motivations to at least consider inland navigation to be included in the offer. This could range from soft to mandatory conditions. In this context, governments might consider not to use price as the main decision factor.

In **France**, VNF⁵⁷ has produced a "[Practical Guide to Sustainable and Climate-Responsible Public Procurement](#)", a legal toolkit to demonstrate the possibility of **including appropriate clauses in the tender documents** for contracting procedures **to integrate a river link into the logistics of tenders for major public works**. The inclusion of inland waterways in public tenders can be either an incentive or a requirement. You can include an "incentive" clause, for example: "*It is recommended that priority be*

⁵⁴ <https://www.ademe.fr/presse/communique-national/2eme-releve-de-lappel-a-projets-remove-annonce-des-laureats/>

⁵⁵ [Arrêté du 19 juin 2025](#) portant modification de programmes dans le cadre du dispositif des certificats d'économies d'énergie

⁵⁶ *Workshop 3: Role of government(s)*, Innowatr Transnational sharing of experiences at Bremen Workshop, March 25th 2025, Presenter: Tom Pauwels (POM Oost-Vlaanderen)

⁵⁷ *Voies Navigables de France*

given to a logistical organisation for the removal of building rubble and the routing of construction materials that makes it possible to limit transport and the associated greenhouse gas emissions".

On its own, however, such a clause is no more than an appeal to the tenderers' good will. To make it effective, the public purchaser has several options:

- choose criteria for the evaluation of tenders that are likely to encourage the use of river transport (criteria related to transport or to the reduction of pollution),
- provide for the presentation of a variant that is likely to favour river transport (making it possible to compare the relative merits of several solutions for carrying out the work),
- or provide for the application of the "right of preference". Under the provisions of *Law No. 2015-992 of 17 August 2015 on the energy transition for green growth* (LTECV), in the case of public contracts for the transport of goods, in the event of equal prices or equivalent tenders, a right of preference is introduced in favour of tenders that promote the use of rail transport, inland waterway transport or any "non-polluting" mode of transport.
- Purchasers will also be able to require the inclusion of a river connection in tenders. In this way, they can include river transport as a contractual obligation.

Non-financial reporting

In 2021, Law No. 2021-1104 of 22 August *on combating climate change and strengthening resilience to its effects* (Art. 138, I and III) amended the requirements for the non-financial performance statement, making shippers more accountable. For financial years beginning on or after 1 July 2022, the statement must include information on direct and indirect greenhouse gas emissions relating to transport activities in the supply chain, as well as **an action plan to reduce these emissions, particularly by using rail and river transport** (amended Commercial Code Art. L 225-102-1; Law Art. 138, I and III). The measure aimed to generalise the obligation to consider greenhouse gas emissions by placing it on shippers (i.e. those who order transport services from carriers or freight forwarders for their business), rather than solely on carriers. However, this obligation was repealed in 2023⁵⁸.

Germany

In Germany, the Federal *Generaldirektion Wasserstraßen und Schifffahrt* (GDWS) is funding loading/unloading infrastructure & assets for combined transport, including IWT. The GDWS currently approves subsidies for investments in combined transport transshipment facilities⁵⁹.

In some cases there is regional funding available on state level, which includes IWT as mode of transport, e.g, "NeueWege.IN.NRW – Innovative Mobilität und Logistik" in North-Rhine Westphali⁶⁰.

⁵⁸ Ordonnance n° 2023-1142 du 6 décembre 2023 relative à la publication et à la certification d'informations en matière de durabilité et aux obligations environnementales, sociales et de gouvernement d'entreprise des sociétés commerciales, art. 4, 4°.

⁵⁹ <https://fibi.wsv.bund.de/fibi/form/display.do?%24context=1D291C00E551A0864817>
<https://www.elwis.de/DE/Service/Foerderprogramme/Foerderung-Kombinierter-Verkehr/Foerderung-Kombinierter-Verkehr-node.html>

⁶⁰ <https://www.foerderdatenbank.de/FDB/Content/DE/Foerderprogramm/Land/NRW/neue-wege-in-nrw.html>

IWT is increasingly being integrated into public procurement processes. For example, the *Verordnung über die Vergabe öffentlicher Aufträge – Vergabeverordnung-VgV* (Public Procurement Regulation, 12.04.2016⁶¹) allows for the consideration of environmental and sustainability criteria, which can include the use of inland waterway transport⁶².

Netherlands

In the Netherlands, there is a **subsidy programme**⁶³ designed to encourage a shift in modes of transport from road to water or rail.

To be eligible for this subsidy, the following conditions must be met:

- Be a freight forwarder or freight agent,
- Transport goods mainly by inland road and switch to transport by waterway or rail,
- The modal shift must be structurally embedded in the business,
- Transport an average of at least three containers (or equivalent units) per day, counting 250 sailing days per year, switching from road to water or rail over a distance of at least 35 kilometres,
- Be active on parts of the route between the Port of Rotterdam and Germany via the Arnhem-Nijmegen region (Eastern Corridor) and/or via Venlo (South-Eastern Corridor), and on the Amsterdam-Antwerp route (Southern Corridor).

To benefit from this subsidy, complete and submit a subsidy application form⁶⁴ to Connekt in Dutch **before 1 October 2025**. Must also be sent a proposal and a summary explaining the reasons for the modal shift.

Sweden

According to the information gathered⁶⁵, there are four main obstacles to modal shift towards inland waterway shipping (IWS) in Sweden.

The first barrier is the **regulatory barrier**, consisting of fees and legislation. This barrier is heavily dependent on governmental policies and decision making to enable changes.

The second barrier is the **financial barrier** and constrains the modal shift to IWS by requiring heavy investments in the development of ports and quays, as well as a high risk for the ship operator related to the vessel.

The third barrier is related to the **service quality** and is directly impacted by frequency and reliability of the transportation.

⁶¹ Transposition of Directive 2014/24/EU on public procurement

⁶² Thomas VOIGT (FFC2)

⁶³ <https://wetten.overheid.nl/BWBR0047654/2024-10-16>

⁶⁴ <https://ondernemersplein.overheid.nl/subsidie-verandering-transport-van-weg-naar-water-of-spoor/>

⁶⁵ Arvin Alipanah, Mary Morcos, *Innovative Green Inland Waterway Shipping Developments in Ghent and Le Havre - Learning Outcomes for Sweden*, Master's thesis in Supply Chain Management, Gothenburg, Sweden 2024

Market characteristics is the fourth and last barrier to a modal shift to IWS in Sweden, where the importance of establishing continuous goods flows were highlighted in order to conduct businesses. The market for IWS in Sweden however is very limited, thus it is needed to conduct proof-of-concept runs and engage with various actors in the industry, including ports, shippers, shipping companies, forwarders, and haulers.

Those interviewed for Arvin Alipanah and Mary Morcos Master's thesis indicated that one of the challenges is to implement the right regulations to encourage modal shift to inland waterway.

Support for greening the fleet

By 'support for greening the fleet', we mean financial, tax and technical assistance aimed at **converting the motorisation** of the existing inland navigation fleet to use low-emission energies/fuels.

There is also the question of:

- the **availability** of alternative fuels or energy (AFIR⁶⁶). Project leaders emphasise that the lack of alternative fuel infrastructure is a hindrance⁶⁷,
- the **tax treatment** of alternative fuels⁶⁸.

Belgium

Green Deal Binnenvaart (Flanders)

Launched in 2023, the *Green Deal Binnenvaart*⁶⁹ is a four-year programme (2023-2025) aimed at reducing emissions produced by the propulsion of inland waterway vessels (CO₂, NO_x, PM) in the medium and long term (2030–2050). It aims to initiate public-private partnerships between various stakeholders involved in waterborne transport (inland shipping entrepreneurs, ports, suppliers, government).

Four areas of action have been identified:

- **Technology for green inland waterway transport:** alternative fuels and the infrastructure needed to bunker and store them, engines and propulsion systems, after-treatment systems, etc.,
- **Financial solutions for green inland shipping:** Building a **greening European fund** with contributions from various stakeholders,
- **Policies supporting green inland shipping:** address regulatory barriers,
- **Implementation of green inland shipping:** building a 'community' by communicating with and facilitating partnerships between actors in the sector, supporting inland waterway operators (and inland waterway entrepreneurs in particular) in the implementation of greening measures.

With regard more specifically to the first area of action (**Technology for green inland waterway transport**), the strategic objectives are as follows:

- Carrying out **pilot projects** (retrofit and new building) for a variety of ship types and capacities and disseminating the results,
- Use a **uniform system for emission measurement and reporting** in line with European frameworks,

⁶⁶ Regulation (EU) 2023/1804 of the European Parliament and of the Council of 13 September 2023 on the deployment of alternative fuels infrastructure, and repealing Directive 2014/94/EU

⁶⁷ Tom PAUWELS, Peter GEIRNAERT, FFC 5, FFC 6 and FFC 7

⁶⁸ Proposal for a directive restructuring the Union framework for the taxation of energy products and electricity (recast), COM (2021) 563 final, 14 July 2021

⁶⁹ Begeleiding bij het ontwerp en de lancering van de Green Deal Binnenvaart

- Encourage the transition to a multi-fuel situation by **guaranteeing the availability of sustainable alternative fuels** (including electricity) for a variety of sailing profiles; accelerating the availability of infrastructure for storing and bunkering sustainable alternative fuels for all relevant inland shipping stakeholders; coordinating around regulatory barriers and developing a common framework for the use and bunkering of sustainable alternative fuels,
- Continuously improving the **energy efficiency of inland shipping**: Evaluate existing opportunities for reducing energy consumption on the ship and during sailing and translate this into a manageable overview

With regard more specifically to the second area of action (**Financial solutions for green inland shipping**), one interesting objective is **to obtain substantial efforts on the part of every actor in inland shipping** (shippers, financial institutions, ports, inland shipping operators, etc.) to make a significant difference in reducing the cost of greening:

- **Shippers**: concluding **long-term contracts** with inland shipping operators or paying a **higher freight price** for ships that have invested in green technologies,
- **Financial institutions**: issuing loans for greening projects that are accessible to companies with a small fleet,
- **Ports**: rewarding inland waterway vessels that meet certain emission standards with a significant price difference (differentiated port tariffs, longer concessions ...),
- **Suppliers**: reducing the price of green technologies (e.g., through standardisation or collaborating in development, etc.)

It is also a question of **creating a feasible and attractive business case** for green investments by inland shipping operators, whereby they receive financial support:

- Improving access to existing Flemish support measures (e.g., simpler application procedure, revision of criteria, etc.) and opening up new Flemish support measures for greening solutions,
- Demonstrating the impact of greening measures in inland waterway transport on the functioning of various Flemish policy areas (such as the environment, mobility and public works, the economy, science and innovation, etc.) and explicitly linking these to subsidy mechanisms in various Flemish policy areas (e.g., VLAIO instruments),
- Representing the interests of Flemish inland waterway operators at European institutions in order to facilitate access to European funding. This includes support measures, loans, etc.

And with regard to public policy, (third action: **Policies supporting green inland shipping**), the aim is to develop a policy that provides the sector with short- and long-term guidance (2030 and 2050):

- Developing a policy-wide **roadmap** (aligned with European policy) that covers the various policy areas and provides long-term direction for the greening of inland waterway transport,
- Developing and **implementing action plans** for specific niches in the fleet (e.g. a particular sailing profile, type of vessel, type of route, etc.),

- Making the **Flemish Government and port authorities pioneers** in greening inland shipping by applying this throughout their operations, or by integrating the ambition for greening into **public procurement** for transport by adjusting the questions and criteria.

Another interesting objective of this third action of the *Green Deal Binnenvaart* are:

- **Revising regulations** (port regulations, legislation to develop or use alternative fuels) that hinder greening and to formulate regulations that encourage greening. Regulatory barriers that fall outside the Flemish competence will be discussed with other policy levels. It is also a question of **harmonising fuel regulations** across ports and Member States,
- Developing one (or more) **tax incentive(s)** that will temporarily make certain green technologies economically viable and can be withdrawn once the green technology has become commonplace in the sector.

Finally, the fourth action (**Implementation of green inland shipping**) aims in particular to bring about **a change in mindset** among all (current and future) actors in Flemish inland waterway transport (in particular inland waterway transport companies and shippers) so that they are convinced of the importance and added value of greening, and are prepared to take measures themselves to this end: regular and transparent communication, regular information on the progress and activities of the *Green Deal Binnenvaart*, creation of a testing ground with at least five pilot and demonstration projects, networking days, support for inland waterway transport companies (and subsequently shippers), etc.

France

PAMI (Part A)

Through its **Modernisation and Innovation Support Plan (PAMI)**⁷⁰, *Voies Navigables de France* (VNF) is supporting the energy transition of professional boat operators. This assistance is intended for operators and owners of IWT vessels (boatman or shipowner) and passenger and rental pleasure boats, and for its innovation component, for design offices, shipyards or other technical service providers (under certain conditions).

The Part A of the **PAMI** enables operators and owners of IWT vessels to obtain public financial support **to improve the environmental performance of their fleet**. Various organisations contribute to this funding (Regional Councils, *Compagnie Nationale du Rhône*, HAROPA PORT⁷¹ and ADEME).

Eligible projects are those that reduce fuel consumption, emissions and pollutant discharges, use renewable energy and optimise on-board energy management:

- Purchase and installation of low or zero emission energy generation systems: full or hybrid electrical refit (aid ceiling: 40.000 to 500.000€), installation of photovoltaic panels, ... (aid ceiling: 40.000€)

⁷⁰ Plan d'aide à la modernisation et à l'innovation de la flotte

⁷¹ HAROPA PORT is the major river and maritime port on the Seine axis. It comprises the ports of Le Havre, Rouen and Paris

- Reduction and treatment of discharges to water or waste (aid ceiling: 20.000 to 250.000€): tank installation, ...
- Improvement of the energy efficiency of the propulsion and therefore the hydrodynamics of the vessel (aid ceiling: 20.000 to 250.000€): energy-saving system (eco-pilot, track pilot), nozzle⁷², spoiler, etc.
- Purchase and installation of a stage V engine for freight transport (aid ceiling: 100.000€).

Since 2023, 312 applications have been approved, including 97 for environmental modernisation (69 repowering projects, 11 photovoltaic panel installations and 16 energy-saving projects).

The aid ceilings **increased significantly** between the first (2018-2022) and second PAMI (2023-2027) in terms of purchase and installation of low or zero emission energy generation systems. On the other hand, the aid ceiling **has been lowered** for the purchase and installation of a **stage V engine** for freight transport

GATE Platform (ReMoVe Programme)

As part of the "support" part (LOG-te) of the ReMoVe Programme⁷³, the GATE platform is administrated by *Entreprises Fluviales de France*⁷⁴ (E2F) and la *Communauté Portuaire de Paris*⁷⁵ (CPP). It helps river operators to green their fleet by **putting them in touch with a Project Management Assistant**⁷⁶ (PMA) to guide them through each stage of their projects to repower existing vessels. PMA is a technical service provider able to manage all aspects of the project (batteries, electric motors, energy management, site supervision, detailed technical specifications, etc.). He is in direct contact with the river transport company. Together, they are steering the project.

GATE wishes to promote the deployment of the following technical solutions (this is a non-exhaustive list):

- innovative motorisation optimised and adapted to the boat's navigation profile,
- hybridisation of the propulsion chain (or auxiliary propulsion systems, such as bow thrusters),
- alternatives to the use of a generator,
- adaptation of boats to electrical terminals (e.g. isolation transformer),
- on-board energy storage (including batteries),
- on-board energy management system (EMS/BMS),
- development of on-board solar energy.

It applies to passenger vessels, cargo vessels, push boats, work boats and service vessels.

The **support process** is as follows:

⁷² A nozzle is designed to accelerate the flow of water around the propeller, thereby increasing the thrust generated by the propeller

⁷³ The ReMoVe Programme is financed by private funds (energy suppliers) through the Energy Saving Certificate Scheme (C2E) which aims to ensure that energy efficiency measures in industry, services and transport are financed by energy suppliers

⁷⁴ Entreprises Fluviales de France (E2F) is a professional organisation representing French river transport companies at national level, recognised by the Ministry of Transport

⁷⁵ The Paris Port Authority (CPP) is a professional organisation which was created to meet the specific needs of Parisian operators, whether they work on the Seine or its banks

⁷⁶ Assistant à Maîtrise d'Ouvrage (AMO)

- Tailor-made analysis: Personalised analysis of the boat's operation, energy assessments,
- Technical recommendations: List of technical recommendations, evaluation of investment and operating costs, identification of the roadmap, etc.,
- Feedback: Analysis and feedback.

Operation C2E No. TRA-EQ-126

Operation No. TRA-EQ-126 of the Energy Savings Certificate Scheme (C2E⁷⁷) provides financial support for the repowering of inland waterway vessels with **100% electric or hybrid propulsion** to replace thermal or diesel-electric propulsion (using non-road diesel or petrol).

Suramortissement Scheme

Introduced in 2020, the *Suramortissement Scheme* (under Article 39 decies C of the General Tax Code) allows companies to **deduct from their taxable income** a percentage of the costs associated with converting the vessel to use low-emission energy or fuel.

This applies to **specific equipment that enables the use of hydrogen, ammonia, electricity and wind** propulsion as the sole or main mode of propulsion, or for the production of electrical energy intended for the sole or main propulsion of ships and boats used for the transport of goods or passengers.

More specifically, this includes fuel cells, hydrogen or ammonia storage and compression equipment, electric motors and storage batteries that power these motors, accumulators, hydrogen or ammonia-powered engines, sailing equipment (masts, wings, rotors, kites and their control systems, sails, ropes, fittings, rigging, keels and ballast which are installed in addition to the ballast used when the vessel is not loaded).

This equipment, which must be purchased new, may be installed on new or second-hand cargo or passenger ships or boats, or on ships and boats already in service with the company.

This exceptional deduction applies to equipment purchased, leased or rented with an option to purchase from 1 January 2024 until 31 December 2027.

The profession considers this to be crucial support that must be continued.

Germany

Since 2021, Germany has an aid programme for the sustainable modernisation of inland waterway vessels: **Förderprogramm zur nachhaltigen Modernisierung von Binnenschiffen**⁷⁸. It consists of several aid schemes, including *Guidelines on the promotion of zero- or low-emission propulsion systems and the sustainable modernisation of inland waterway vessels*⁷⁹ : 100% electric propulsion, hybrids, dual fuel, etc.

This programme subsidises measures that lead to emission-free or lower-emission operation of the vessel. This includes, in particular, the **conversion of conventional diesel engines to alternative**

⁷⁷ Certificats d'Economie d'Énergie

⁷⁸ <https://bmdv.bund.de/SharedDocs/DE/Artikel/WS/foerderrichtlinie-nachhaltige-modernisierung-binnenschiffe.html>

⁷⁹ Richtlinie zur Förderung emissionsfreier und emissionsarmer Antriebe sowie der nachhaltigen Modernisierung von Binnenschiffen des Bundesministeriums für Digitales und Verkehr

propulsion technologies (e.g. diesel-electric and purely electric propulsion systems or hydrogen-based solutions).

However, other measures that can improve energy efficiency or shipbuilding modifications (e.g. the replacement or optimisation of the bow or stern) for better operability in low water conditions are also subsidised with attractive funding rates.

As of 14.11.2025, the program has received additional funding of 35 M€ as of 2026⁸⁰.

According to some of the partners interviewed⁸¹, it would be necessary **to increase subsidies or incentives for alternative fuels or energies** and for the installation of **infrastructure delivering such fuels or energies**. Authorisation procedures for the installation of such infrastructure would also need to be simplified. They also point the slow bureaucratic approval processes for the approval process for alternative fuel systems, which often requires extensive documentation and testing to meet stringent safety and environmental standards.

Conclusion

The Flander's *Green Deal Binnenvaart*, described above, is particularly interesting in that it **tackles the issue of greening inland waterway fleets in every possible way**: motivating and involving all stakeholders (river transport companies, shippers, ports, government); informing and supporting them; testing different decarbonisation solutions; identifying regulatory barriers; considering desirable tax measures to promote alternative fuels and the greening of boats; finding financing; sharing the burden between stakeholders; integrating river transport into public procurement criteria; setting up a testing ground; and communicating, etc. We believe this is a good approach that acts on all levers and is not limited to financial aid.

⁸⁰ https://www.hafen-hamburg.de/de/presse1/news/mehr-foerdermittel-fuer-die-nachhaltige-modernisierung-von-binnenschiffen/?utm_source=chatgpt.com

⁸¹ FFC2 (Greening Container Transport between Bremerhaven and Hamburg) - Thomas Voigt

Support for innovative vessels

Belgium

See above p. 32: *Green Deal Binnenvaart (Flanders)*.

France

PAMI (Part D)

Part D of the *Aid Plan for fleet Modernisation and Innovation*⁸² (PAMI) administrated by *Voies Navigables de France* aims to encourage the emergence of innovative solutions by supporting :

- **basic research** (aid ceiling: 500.000€)
- **industrial research** (aid ceiling: 500.000€)
- **experimental development** (aid ceiling: 500.000€)
- **feasibility studies** (aid ceiling: 100.000€)

Since 2023, 91 innovation applications have been approved, including 9 experiments with autonomous boats and new fuels, and 78 feasibility studies.

The aid ceilings **increased significantly** (+200.000€) between the first (2018-2022) and second PAMI (2023-2027), except for feasibility studies.

Call for expressions of interest: Autonomous freight on the navigable network (2025)

One of the measures included in the draft *National River Strategy* currently being developed is the promotion of the development of a French autonomous boat and drone industry.

In September 2025, *Voies Navigables de France*, in partnership with *CARA*, launched a call for expression of interest (AMI) on autonomous boats⁸³. The aim is to identify parties interested in collaborative innovation on autonomous cargo boats and facilitate the formation of groups around innovation projects on the French navigable network.

The next step will be to encourage collaborative projects between these entities, particularly:

- Forming groups of entities capable of bringing together the various areas of expertise required for collaborative innovation projects on autonomous cargo vessels (technology, operations, scientific research, regulation, socio-economics, etc.).
- Developing innovation projects on automated cargo ships that will be certified by *CARA* and submitted to sectoral, regional, national or European funding schemes

⁸² Plan d'aide à la modernisation et à l'innovation de la flotte

⁸³ [Appel à manifestation d'intérêt \(AMI\) pour l'innovation collaborative autour du fret autonome sur le réseau navigable français](#)

(ADEME, France 2030, ERDF, etc.), as well as to the Plan to Support the Modernisation and Innovation of the River Fleet (PAMI).

- To develop, as part of these innovation projects, at least one operational demonstration of an automated cargo vessel for the French navigable network.

Germany

Germany has an aid programme for the sustainable **modernisation of inland waterway vessels** (*Förderprogramm zur nachhaltigen Modernisierung von Binnenschiffen*⁸⁴). This programme includes a component promoting the sustainable modernisation of inland waterway vessels in order to shift freight transport from road to waterways („*Richtlinie zur Förderung der nachhaltigen Modernisierung von Binnenschiffen zur Verlagerung von Güterverkehr von der Straße auf die Wasserstraße*“). It provides for the modernisation of river transport (e.g. improved hydrodynamics and propulsion to reduce energy consumption, assistance systems for energy-optimised driving, optimised navigation capacity during low water periods, bridge collision warning systems, collision warning systems, systems for automated or partially autonomous driving, adaptations to loading equipment, for example special cranes, special facilities for dangerous goods, loading devices for vehicles, etc.) and the reduction of pollutant emissions⁸⁵ (catalytic converters, particulate filters, combined systems and fuel-water emulsion systems, etc.). The program has received additional funding of 35 M€ as of 2026⁸⁶.

Another programme in force since 24 June 2024 concerns **innovative shipbuilding (seagoing vessels and inland waterway vessels)**: “*Richtlinie Innovativer Schiffbau sichert wettbewerbsfähige Arbeitsplätze*” (Innovative shipbuilding securing competitive jobs). It is possible to apply for a grant covering up to 50% of the costs associated with the planning, preparation and implementation of an innovative project. Subsidy ceilings range from 15% to 50% of eligible costs and depend on the size of the company applying for the subsidy and the reason for the subsidy (development or application).

	Produktinnovation (Typschiff/Komponenten)	innovative Verfahren		
		Entwicklung	Anwendung	
kleine Unternehmen	max. 45 %	max. 45 %	max. 50 %	KMU
mittlere Unternehmen	max. 35 %	max. 35 %	max. 50 %	
große Unternehmen	max. 25 %	max. 25 %	max. 15 % ^{*1}	
Zuwendungshöhe	max. 15 Mio. Euro	max. 15 Mio. Euro	max. 7,5 Mio. Euro	

*1 nur förderfähig, wenn beteiligte KMU mindestens 30 % der förderfähigen Kosten tragen

⁸⁴ <https://bmdv.bund.de/SharedDocs/DE/Artikel/WS/foerderrichtlinie-nachhaltige-modernisierung-binnenschiffe.html>

⁸⁵ Richtlinie zur Förderung der Nachrüstung von Emissionsminderungseinrichtungen von Binnenschiffen, 9 February 2024

⁸⁶ https://www.hafen-hamburg.de/de/presse1/news/mehr-foerdermittel-fuer-die-nachhaltige-modernisierung-von-binnenschiffen/?utm_source=chatgpt.com

The creation of a Favourable Framework for Urban River Logistics

Actors wishing to develop urban river logistics face various difficulties: natural and architectural barriers to urban river logistics, different authorities and regulations, lack of quays, transshipment facilities and space for logistics operations.

Natural and architectural barriers to urban river logistics

Some inland ports are subject to **tidal effects**, which complicate access to quays and loading / unloading operations (e.g. river Elbe in Hamburg⁸⁷, river Seine in Rouen).

The tidal current can massively influence the needed power and speed of an electric urban IWT vessel, including power consumption and maximum range of a battery load. The tide difference in port of Hamburg is 3,9m, which also is an operational challenge for unloading (**FFC3**).

Urban river logistics often requires the use of vessels with a shallow air draft (to pass under bridges) and a shallow draught, especially during periods of low water. In Ghent, for instance, the clearance height of many bridges is insufficient for boats carrying containers or integrated handling cranes⁸⁸.

There is concern present over detrimental effects of climate change in regards to IWT. In **Hamburg** specifically, “Niedrigwasser”, or **Low-Water Events** are already part of day-to-day life⁸⁹. Certain floodgates can remain closed for 3 hours at a time due to these events, requiring very specific planning.

The length of the **FFC8's ZULU 6** (50 metres) means it can access most quays and travel almost anywhere, especially as it has a very shallow air draft. Its shallow draft also means it can navigate when other vessels can't.

Dealing with different authorities and regulations

Those involved in urban river logistics have to deal with **several regulations and several types of authorities**, each of which has its own jurisdiction over certain sections of waterways or quays. This means that they have to contact each of these authorities, obtain the necessary permits and comply with their specific regulations. Simplifying procedures, adapting regulations and establishing a single window to facilitate river logistics projects are all efforts that should be made.

Belgium

FFC6 (*City waste logistics - Gent*) indicated that they have to fill in forms for “use of public space” at the city of Ghent (for use of the landside) and the Flemish waterways (for the use of the water). It can take months before they can get approval.

⁸⁷ FFC3 City retail logistics in Hamburg, Thomas BRAUNER, Tom PAUWELS, Peter GEINAERT

⁸⁸ Arvin Alipanah, Mary Morcos, *Innovative Green Inland Waterway Shipping Developments in Ghent and Le Havre - Learning Outcomes for Sweden*, Master's thesis in Supply Chain Management, Gothenburg, Sweden 2024, p. 53

⁸⁹ <https://www.umweltbundesamt.de/themen/wasser/fluesse/nutzung-belastungen/schifffahrt>

France

Inland navigation on the Seine River and loading /unloading of vessels are subject to various regulations :

- [General Police Regulations for Inland Navigation](#)⁹⁰ (C. transp., art. R. 4241-1 et s.) : These rules apply to all French inland waterways. They are supplemented by special regulations for certain waterways.

For the Seine:

- [Special Police Regulations for Inland Navigation on the Seine-Yonne Route](#)⁹¹
- [Notice to Skippers No 1/2020 for the Seine basin \(VNF\)](#)⁹²
- [Special Police Regulations for Inland Navigation on the Paris River Network](#)⁹³ : Regulations applicable to the St Martin, St Denis and Ourcq canals
- [Special regulations governing inland navigation on the Seine-Yonne route](#)⁹⁴
- [Notice to skippers n° 2025-1 for the Paris river network \(Ville de Paris\)](#)⁹⁵

These special police regulations adapt the general rules as required by local circumstances, in particular due to the characteristics of the waterways concerned.

Other regulations must also be complied with **in the port district**:

- [Regulations for the transport and handling of dangerous goods in seaports](#)⁹⁶ (also applicable in inland ports accessible to seagoing vessels)
- *Regulations concerning the transport and handling of dangerous goods at loading, unloading and transshipment points located on inland waterways (RPF)*⁹⁷
- [Special Police Regulations for the Port of Le Havre and the Port of Le Havre-Antifer](#)⁹⁸
- [Special Police Regulations for traffic and parking in the waters of the Grand Port Maritime de Rouen](#)⁹⁹

⁹⁰ Règlement général de police de la navigation intérieure (RGPNi)

⁹¹ Règlement particulier de police de la navigation intérieure sur l'itinéraire Seine – Yonne (RPP Seine-Yonne)

⁹² Avis à la batellerie n° 1/2020 (VNF)

⁹³ Règlement particulier de police de la navigation intérieure sur le réseau fluvial de la ville de Paris ([Arrêté inter-préfectoral n° 2014238-0013 du 26 août 2014](#))

⁹⁴ Règlement particulier de police de la navigation intérieure sur l'itinéraire Seine-Yonne ([Arrêté inter-préfectoral modifié du 23 mai 2019](#))

⁹⁵ Avis à la batellerie n° 2025/01 (Ville de Paris)

⁹⁶ Règlement pour le transport et la manutention des marchandises dangereuses dans les ports maritimes

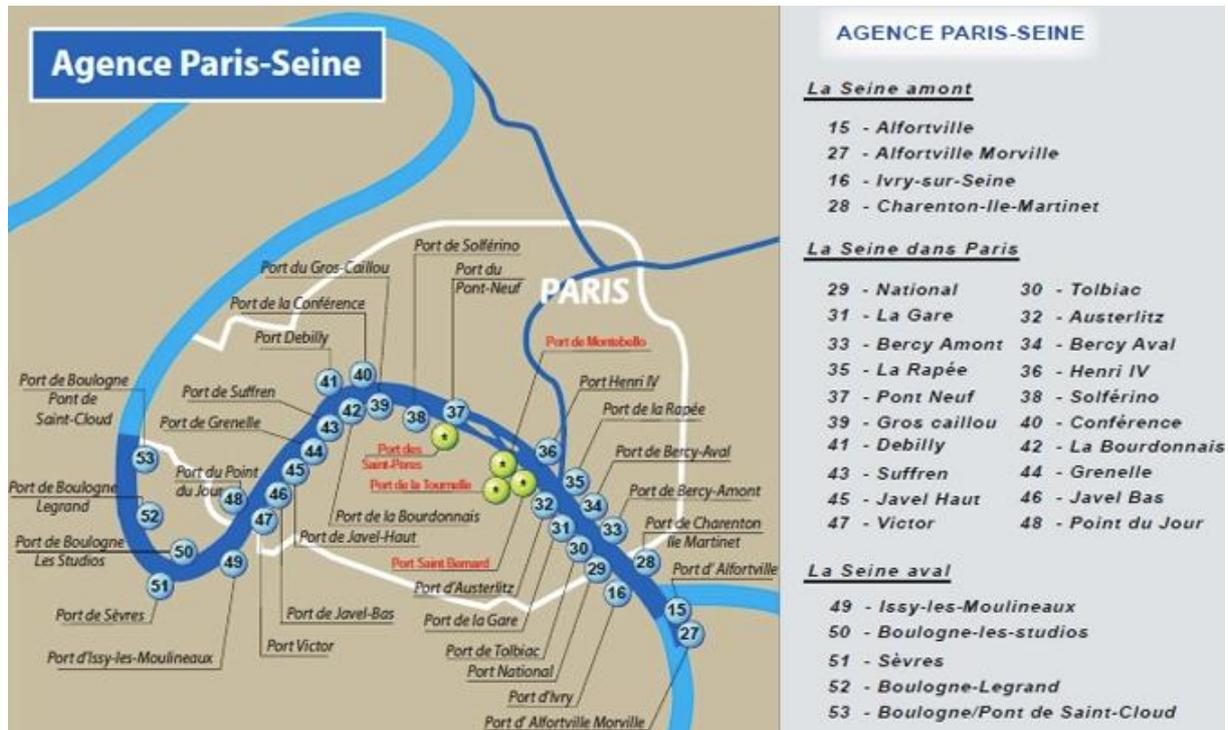
⁹⁷ Règlement relatif au transport et à la manutention des marchandises dangereuses dans les lieux de chargement, de déchargement et de transbordement situés dans les eaux intérieures (RPF), [Annexe V de l'arrêté du 29 mai 2009 relatif aux transports de marchandises dangereuses par voies terrestres](#)

⁹⁸ Règlement particulier de police du port du Havre et du port du Havre-Antifer

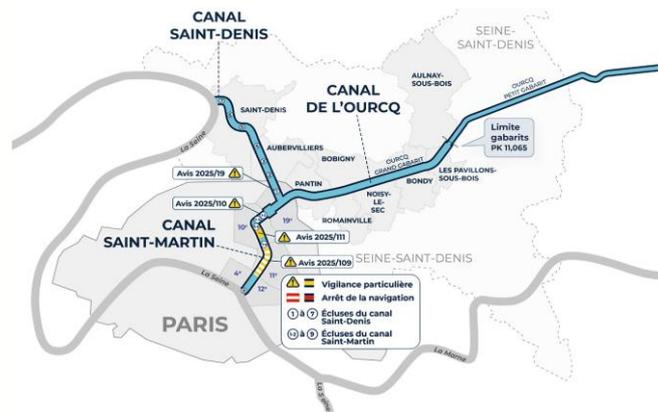
⁹⁹ Règlement particulier de police pour la circulation et le stationnement dans les eaux du Grand Port Maritime de Rouen

Navigation on the Seine, as well as loading / unloading operations on the quays, are thus carried out under the control of **various authorities**: *Voies Navigables de France* (VNF) and its various Itinerary Territorial Units (*UTI Boucles de la Seine, UTI Seine Nord* and *UTI Seine Amont*), port authorities (ports of Le Havre, Rouen and Paris) and the port police, City of Paris Canals Department (*Service des canaux*)¹⁰⁰, etc.

HAROPA-Ports de Paris manages the ports and quays in Paris, with the exception of the Port des Champs-Élysées which is managed by VNF.



The City of Paris manages the canals in Paris (Canal de l'Ourcq, Canal de Saint Denis, Canal de Saint Martin).



Les canaux de Paris, Source : Service des canaux, Ville de Paris

¹⁰⁰ The *Service des canaux* is a technical service of the City of Paris's Roads and Transport Department.

River logistics operations must be carried out within this regulatory framework, and those involved must know these regulations and obtain the necessary authorisations from the various authorities concerned.

Germany

InnoWaTr FFC3 (City Retail Logistics Hamburg) and WaCaBa (Water Cargo Barge) study¹⁰¹ clearly show the diversity of applicable regulations and competent authorities on different sections of waterways in Hamburg.

The **tide-independent canals** are the responsibility of the respective city districts, while the **Elbe area** is a seaport and is managed as a national waterway by both the Port Authority and the National Waterways Authority.

Different rules apply depending on where the vessel is sailing:

- Maritime Waterways Regulations: *Seeschiffahrtsstraßen-Ordnung (SeeSchStrO)*
- Inland Waterways Regulations: *Binnenschiffahrtsstraßen-Ordnung (BinSchStrO)*
- In the Port of Hamburg and on other waters: *Hafenverkehrsordnung (HfVerkO HA)*¹⁰²
- On Alster River : *Alsterschiffahrtsverordnung*¹⁰³

The quayside facilities at Überseequartier are public, while the mall itself is privately managed.

Availability of quays, transshipment facilities and space for logistics operations

One of the main difficulties in urban river logistics is **finding public quays** where the vessel can dock, where the goods can be loaded or unloaded, and where there is enough space on the quay to organise the transfer of the goods to the vehicles that will make the final delivery. This is not complicated when these operations take place in a port, but it is when they have to be carried out elsewhere, especially in a city¹⁰⁴.

Public quays are often not, or no longer, suitable. In many European countries, urban quays where vessels used to be unloaded have given way to **quays used for walking or shopping**. So there is often a conflict of use. (Un)loading facilities, such as cranes, may be considered as visual pollution. Meaning a conflict between economic interest and spatial interest.

European cities with a river running through them are currently **more or less well equipped to handle these river logistics operations**. The need for handling equipment is often cited as a difficulty for urban river logistics (e.g. FFC4, FFC5, FFC6, FFC7). It depends on the **willingness of local authorities** to act in favour of urban river logistics by developing existing quays and establishing shared use of quays.

¹⁰¹ Endbericht Machbarkeitsstudie Water Cargo Barge (Wacaba), Fraunhofer-Center Für Maritime Logistik Und Dienstleistungen Cml, Fraunhofer-Institut Für Materialfluss Und Logistik Iml, 2022

¹⁰² Verordnung über den Verkehr im Hamburger Hafen und auf anderen Gewässern (Hafenverkehrsordnung) Vom 12. Juli 1979

¹⁰³ Verordnung zur Regelung der Benutzung der schiffbaren Alster durch maschinenangetriebene Fahrzeuge

¹⁰⁴ See for ex. : Gothenburg

The best-equipped docks are those that are **privately owned**, for example by cement manufacturers, or those on the edge of construction sites.

Nevertheless, there are some public policies and public-private partnerships that support the implementation of the necessary resources for river logistics operations.

Belgium

Flanders

PPP “Samenwerking kaaimuren”

The Flemish government encourages companies to use inland waterways as a means of transport for their goods. To this end, it has set up a subsidy scheme based on public-private partnership¹⁰⁵.

Companies that wish to use the waterway and are looking for a place where they can load or unload have several options, such as existing quays or logistics operators. However, in most cases, a new transshipment facility specific to the company is required. This facility can be created through a public-private partnership (PPP) between the waterway manager and a private partner.

PPP Kaaimuren is a support measure for companies **wishing to build loading and unloading facilities** along Flemish waterways outside maritime, public or company-related port areas (no terminal activities or transshipment infrastructure), to be able to use inland waterway transport (ongoing).

The public-private partnership (PPP) system makes it possible to **combine the expertise of the waterway manager and the private partner, while sharing the financial burden**. The waterway manager finances 80% of the infrastructure and the company 20%. The company is also responsible for equipping the quay and the loading and unloading facilities. This investment is offset by the **company's commitment to transport a fixed quantity of goods by waterway over a period of 10 years**.

The Flemish Region can only invest in infrastructure that remains or becomes its full property. After construction, the waterway manager therefore enters into a concession contract with the private partner or grants them a licence to use the infrastructure. The private partner pays a fee for this.

The PPP programme applies only **to loading and unloading facilities located along Flemish waterways, outside port areas**. Any private or public company, regardless of nationality or activity, is eligible.

Terminal and transshipment infrastructure operators are not eligible for the PPP scheme. The use of quays is focused on business-related activities.

In general, **only projects that guarantee a partnership return of at least 6% are eligible**. This PPP return is based on the ratio between new river traffic and the government's share.

¹⁰⁵ <https://www.vlaamsewaterweg.be/sites/default/files/2024-11/2018-0603%20Handleiding%20PPS%20kaaimuren%20remake%20lr.pdf>

City of Ghent

In its 2023 Mobility Plan, the **Ghent** transport region reaffirms the objective of the Flemish Energy and Climate Plan to increase the modal share of rail and waterways from around 26% to 30%. To achieve this, the mobility plan sets out to develop a robust river network further, particularly by creating logistics hubs for transshipment to inland waterways and consolidating freight flows. The actions taken by the Ghent region to this end are:

- developing logistics platforms;
- the development of urban distribution centres along waterways;
- using regional transshipment points for purposes other than those originally intended, such as first and last mile logistics.

Outside the scope of urban planning documents, the city of Ghent can subsidise innovative river logistics projects. One such project is **Bioboot**¹⁰⁶, **which combines river logistics, sustainable delivery and short supply chains**. It is a boat that transports crops directly from the production site to Ghent city centre. Equipped with an electric sail powered by solar energy, the boat travels from Goedinge along the Lys to the city centre of Ghent (approximately 8 km). Subsidies reduced the investment costs for the Goedinge farm. Once the fresh vegetables arrive in the city centre, the final kilometre to the recipient is covered by bicycle trailer, or the vegetables can be collected directly from the quay. The boat makes one weekly crossing with vegetables. **The subsidy from the City of Ghent was provided via the Ghent Food Council** which supports projects that implement the food strategy: reducing waste, increasing the use of short-chain products, and improving access to fair and sustainable food.

The city has a webpage listing the subsidies that can be applied for to promote sustainability¹⁰⁷.

France

French policy on logistics and river logistics

Since the adoption of the 2019 Mobility Law¹⁰⁸, logistics has been clearly included in the list of topics to be addressed (in terms of objectives) by the **Regional Plans for Development, Sustainable Development and Territorial Equality**¹⁰⁹ (*General Code for Local Authorities, Art. L. 4251-1*).

Since 2020¹¹⁰, **Local Urban Planning Schemes**¹¹¹ may designate areas in urban or urbanisable zones where the preservation or development of logistics infrastructure and facilities is necessary and, where appropriate, define the nature of these facilities and the requirements for achieving this objective (*Urban Planning Code, Art. L. 151-16*).

The **French National River Strategy Project**, presented in June 2025, aims to further integrate river transport and access to waterways into local authority policies, particularly with a view to developing

¹⁰⁶ <https://goedinge.be/bioboot.html>

¹⁰⁷ <https://stad.gent/nl/mobiliteit-openbare-werken/mobiliteit/mobiliteit-voor-bedrijven/duurzame-stedelijke-logistiek-gent#ondersteuning-en-subsidies>

¹⁰⁸ Law No. 2019-1428 of 24 December 2019 on mobility

¹⁰⁹ *Schéma régional d'aménagement, de développement durable et d'égalité des territoires (SRADDET)*

¹¹⁰ Law No. 2019-1428 of 24 December 2019 on mobility

¹¹¹ *Plans locaux d'urbanisme*

urban river logistics. This would involve, for local authorities that wish to do so, drawing up a **regional river charter**¹¹².

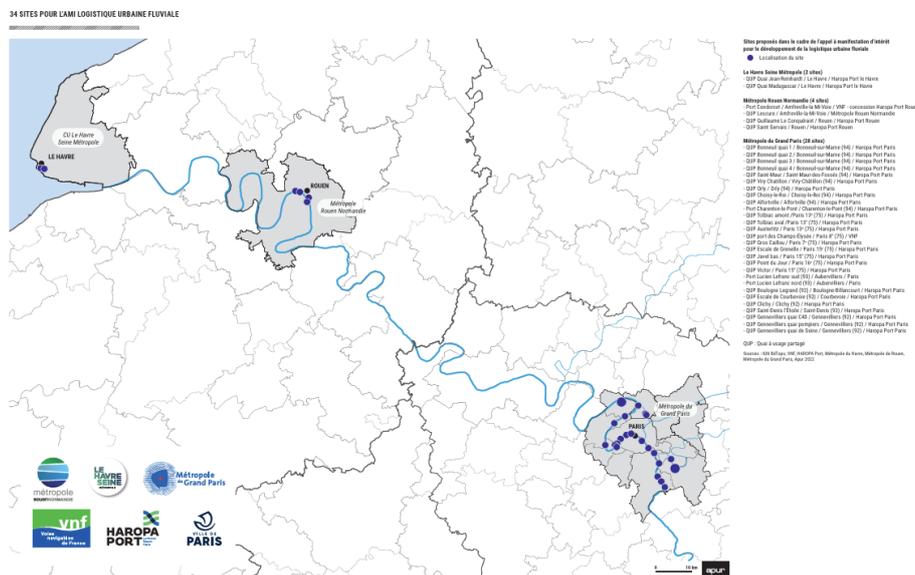
Mobility Organising Authorities¹¹³ (regional councils, metropolitan areas, municipalities) are authorised by Article L. 1231-1-1 of the Transport Code to organise or contribute to the development of freight transport and **urban logistics services**, in the event of a lack, insufficiency or inadequacy of private provision, in order to reduce urban congestion and pollution and nuisances affecting the environment.

Since 2021¹¹⁴, the **Mobility Plan** to be drawn up by urban areas with more than 100,000 inhabitants may include, where the urban area is served by a waterway, a river transport plan¹¹⁵ identifying in particular the quays that can be used for urban transport of goods and passengers by water (*Transport Code, Art. L. 1214-2-2*). The French National River Strategy Project proposes providing local authorities with a tool for integrating this river transport plan into their mobility plan.

The French National River Strategy Project aims to develop the supply of **logistics real estate connected to waterways** on the edge of low-emission zones for order preparation and, ideally, ‘turnkey’¹¹⁶ offers including the provision of a quay in the city and a rear base. It also plans to **analyse regulations** to facilitate urban river logistics using small river units.

Shared-Use Quays (QUP) in urban areas

In France, there is a growing desire to develop share-use quays¹¹⁷ in urban areas along inland waterways.



The shared-use quays available on the Seine corridor

¹¹² Charte fluviale de territoire (Mesure 9)
¹¹³ Autorités organisatrices de la mobilité (AOM)
¹¹⁴ Law No. 2019-1428 of 24 December 2019 on mobility
¹¹⁵ Schéma de desserte fluviale (Mesure 9)
¹¹⁶ « clés en main »
¹¹⁷ Quai à usage partagé

QUP on the River Seine in Paris

Paris (and its inner suburbs) seems to be a city where, in recent years, there has been a political will to create space for river logistics operations. All along the Seine in Paris, there are "ports" (Port National, Port de Tolbiac, Port de Bercy, Port de la Bourdonnais, Port de Grenelle, Port de Charenton, Port de Billy, Point du Jour, etc.) where regulations allow the loading and unloading of cargo vessels.

The [SIF website](#) provides a map showing the location of the quays and related information.

On these quays, the regulations set a maximum **right-of-way**¹¹⁸ (24 metres), unless a smaller right-of-way is set by article 29.2 of the Seine-Yonne RPP. The right-of-way is the width of the quay that logistics operators can use to carry out loading/unloading operations, light logistics and the movement of vehicles. At the Port of Grenelle, for example, the right of way is 126 metres from 140 metres upstream of the Grenelle bridge. At the Port de la Bourdonnais, it is 12 metres for the entire length upstream of the Debilly footbridge.

These quays are "**shared-use quays**" (QUP¹¹⁹). QUP are waterfront sites made available on a one-off basis to any business wishing to use the river to move goods. They allow materials and goods to be transhipped on the river, helping to reduce road congestion and improve air quality. QUP may be open to pedestrians outside of operating hours, in which case they must be cleared and cleaned at the end of the period of use.

- QUP port de Charenton (94)
- QUP port de Tolbiac (Paris 13e) – poste amont
- QUP port de Tolbiac (Paris 13e) – poste aval
- QUP port de Bercy Aval (Paris 12e)
- QUP port d’Austerlitz (Paris 13e)
- QUP port de Javel-Bas (Paris 15e)
- QUP port de Victor (Paris 15e)
- QUP port de Point du Jour (Paris 16e)
- QUP port de Boulogne Legrand (92)



QUP in and near Paris

In Paris and the Paris region (on the Seine and Marne rivers), there are around twenty QUP. HAROPA PORT and VNF regularly invite tenders for the operation of various QUP.

These QUP are located either on the quays of the Seine (e.g. ports de Charenton, Austerlitz, la Bourdonnais with FRANPRIX, De Billy, Javel, Point du Jour) or in ports (e.g. Port de Gennevilliers, Port de Limay, Port de Clichy, Port de Nanterre, etc.).

¹¹⁸ « Emprise » in French

¹¹⁹ Quais à usage partagé

The operation of a QUP is subject to an **agreement on temporary occupation (COT¹²⁰)** for the quay. for a period of 2-3 years. This COT can be for a period of several years or for a short period for one-off "spot" work. For spot loading/unloading operations, the operator must make a request at least 30 days before the date on which the QUP is to be used¹²¹.

In heavily urbanised areas, a "**Charter of Use**"¹²² aims to set out the rules and best practices that must be implemented to ensure shared use that is beneficial to all. The Charter of Use is based primarily on compliance with applicable legal and regulatory obligations and contractual requirements. It is intended for stakeholders, in particular all holders of port occupancy agreements, local authorities, residents and quays users.

For the river logistics operators interviewed (FFC8), the use of these QUP currently faces constraints that are more terrestrial than nautical: risk of accidents with pedestrians or cyclists, presence of cycle paths, chains, posts limiting access, etc.

Possible improvements could be:

- Allowing last-mile load vehicles (cargo bike, light commercial vehicles, small and medium trucks) to **stay overnight in the city** (instead of returning to suburban warehouses). This is the case for IKEA traffic at Bercy port and FRANPRIX traffic at La Bourdonnais port;
- **Small logistics areas** for order picking and replenishment. There are some in underground car parks, but they are unsuitable: for cycle logistics, once loaded, the bikes cannot go up the slope, and the draught limits access for 3.50 to 4-metre high trolleys;
- Provide **charging points** for electric vehicles;

Similar recommendations were made by the Expert Group on Urban Mobility¹²³.

QUP on the River Seine in Rouen

In June 2024, the Metropole Rouen Normandy (comprising 77 municipalities around Rouen) adopted a charter for sustainable urban logistics, which includes a plan to develop river logistics using the Seine, which flows through Rouen.

As part of a call for projects (2023) to develop inland waterway logistics along the Seine between Le Havre and Paris, a project has been selected for the creation of an **urban distribution platform** at the foot of the Guillaume le Conquérant bridge, on the right bank of the Seine. It will be **the first Rouen's shared-use-quays (QUP)**. This platform will be dedicated to the handling of light parcels, which will be distributed using electric cargo bikes. Goods will be transported from a logistics base located upstream of Rouen (land belonging to HAROPA PORT), using barges equipped with a self-unloading crane. The quays will be reinforced and electric charging points will be installed for ULS barges (800.000€). At the rear of the quay, a plot of land will be made available to the service provider (*Urban Logistic Solutions -ULS*) responsible for occupying the Rouen quay, where a base and storage area will be set up. Traffic

¹²⁰ Convention d'occupation temporaire

¹²¹ VNF Notices to Skippers No 1/2020, 2.1.3-5

¹²² See, for example, the [Charter of Use](#) for the ports of Grenelle, Javel Bas, Javel Haut, Victor, Auteuil, Passy and Point du Jour.

¹²³ [Sustainable urban logistics planning \(SULP\)](#) adopted by the EGUM Plenary on 05.12.2024, Action R2.1: Integrate urban logistics in local strategies and city policies beyond mobility and transport sector (p. 10)

will be developed through partnerships with players in the distribution, parcel and e-commerce sectors.

Logistics hotels

Logistics hotels are being created in certain French cities with waterway access, notably the “[Les Amarres](#)” logistics hotel on the Seine in Paris and the [Gerland urban logistics hotel](#) on the Rhône in Lyon.



“Les Amarres” logistics hotel project in the former general warehouses on the Quai d’Austerlitz (13th arrondissement of Paris)



Gerland urban logistics hotel project in the Edouard Herriot port in Lyon

These projects involve the redevelopment of existing buildings or the construction of new buildings along waterways that are specially adapted for urban logistics but which can also accommodate various activities, such as those related to the social and solidarity economy, recreation and workspaces.

Germany

The study *Endbericht Machbarkeitsstudie Water Cargo Barge (Wacaba)*, which examined the conditions required for trialling river logistics in **Hamburg**, shows that very few locations are currently available for docking and river handling operations, unless major development work is undertaken (see points 6.1 and 6.2). Bureaucratic overhead is significant. Docking facilities are unfit or privatized, both institutional and private actors generally require a longer period of time to provide approval. To this end, the report recommends the involvement of municipal authorities (districts or ‘Bezirke’).

Thanks to the Binnenschiffahrtsstraßen-Ordnung (BinSchStrO), there is at least some legal basis present for inland waterway elements.

Netherlands

Province of Utrecht

The province of Utrecht manages a total of nearly 69 kilometres of waterways, namely the Eem and the Merwede Canal.

The Aanpak 2030 study¹²⁴ includes **a pilot measure taken by the city of Utrecht** concerning the transport of goods by waterway. This consists of expanding the network of **transshipment points (hubs)** in the province of Utrecht, starting with a pilot site comprising four transshipment points in the MerwedeKanaalZone (MWKZ) in the municipality of Utrecht, to establish an efficient system for transporting goods by waterway and road.

Utrecht has long experimented with river logistics.¹²⁵ In the 2000s, following a ban on lorry deliveries in the streets of Utrecht, four brewers began supplying the city by river¹²⁶. A boat delivers beer kegs to establishments and collects empty barrels and packaging in return. Once a week, fresh and frozen products are also distributed by river. However, this system is now reaching saturation point. In addition, from 2026, the municipality of Utrecht¹²⁷ will further restrict access for goods traffic to the city centre to improve quality of life, accessibility and air quality. Loading and unloading hours will be limited, and only electric vehicles will be allowed outside these hours. The municipality is also encouraging deliveries via urban platforms and wants more delivery boats to be made available on the water. The new rules are part of the 2023-2026 Freight Transport Implementation Programme.

Supply by water is receiving particular attention because its total capacity has been reached. The municipality is working to increase the capacity for freight transport via canals. This should make it possible to replace part of the road freight traffic.

The action programme consists of five lines of action, all of which contribute to the objectives:

- Space for logistics with measures to integrate urban logistics more effectively into public spaces, new area developments, business parks, infrastructure redevelopment and through sufficient loading and unloading areas and parking spaces.
- Access policy with measures to organise access for urban logistics in different areas of the city, through windows, vehicle restrictions and an exemption policy.
- Modal shift with measures to shift from lorry or van transport to cleaner modes of transport that relieve road congestion, such as electric cargo bikes and waterway transport.
- Consolidation with measures to consolidate and therefore transport goods more efficiently, through neighbouring hubs and parcel depots and by providing subsidies for sustainable freight transport.
- Smart logistics: measures to apply information and communication technologies (ICT) to urban logistics, such as smart loading and unloading systems.

¹²⁴ The objective of the [2030 Approach](#) is to contribute to the accessibility of the region by 2030, to further stimulate the mobility transition and to enable the desired urbanisation.

¹²⁵ Utrecht Goods Transport Implementation Programme (UPGV Utrecht)

¹²⁶ « Dossier fluvial. La logistique urbaine fluviale en Europe se développe sur de nouvelles filières », Journal de la marine marchande n° 4852, 07/12/2012 - p. 15-30.

¹²⁷ [Letter from the City Council: Implementation of the policy on access to urban logistics in the city centre](#)

Utrecht is one of the first cities in the Netherlands to standardise its logistics system on water. The result is a comprehensive multimodal system. A network where roads, waterways and transshipment points are connected.

The concrete measures of this action line are for waterway transport: studying mooring and transshipment locations for waterway transport and integrating a single logistics system for road and water

The City of Utrecht is also focusing on smart logistics, enabling the establishment of smart loading and unloading zones for river logistics. To this end, trials have been conducted on smart loading and unloading zones with different suppliers and types of systems. Depending on the results, the solution will become permanent.

City of Amsterdam

In Amsterdam, the modal shift towards urban logistics has been achieved through the city's participation in the Amsterdam Vaart! project¹²⁸.

The project was part of the Ministry of Infrastructure and Water Management's 'Smart and Sustainable Mobility' programme. Launched in 2018, Amsterdam Vaart! involved a consortium comprising the municipality of Amsterdam, the Netherlands Organisation for Applied Scientific Research (TNO), Waternet and the Port of Amsterdam. The project tested and measured the effects of this modal shift with the consortium's support for experimentation in nine living labs. The nine sites involved provided encouraging insights into the potential of inland waterway transport in this logistics segment. The modal shift to inland waterways resulted in a 37% reduction in CO2 emissions, 1,600 fewer truck journeys in the city and 19,700 fewer journeys outside the city in 2019.

The InnoWaTr project partners¹²⁹ mentioned the lack of infrastructure for handling goods and energy loading.

Sweden

Vinova / DenCity

Vinnova is a Swedish government agency whose mission is to promote sustainable growth in Sweden. It is a state public authority under the Ministry of Climate and Enterprise. It is the national contact authority for the EU Framework Programme for Research and Innovation. It administers public funding for research and development. The government has defined the agency's mission as promoting the development of efficient and innovative Swedish systems in the fields of technology, transport, communication and work. Innovation encompasses not only the creation of new products and services, but also the development of new ways of working and living.

Vinnova is funding a project called '**DenCity**'. The DenCity system addresses the challenges and needs arising from the different perspectives of stakeholders using five different complementary concepts.

¹²⁸ <https://publications.tno.nl/publication/34640871/oyNydT/TNO-2023-R10574.pdf>

¹²⁹ FFC4, Peter DE BRUIJN

- Mobility Broker
- Full-service ownership
- District-based pooling
- Zero-emission transport
- **Urban waterways**

Regarding urban waterway transport, the project aims to establish favourable conditions for using the waterways, particularly the quays. This involves clarifying the purpose of each quay and establishing a **standardised permit process for companies wishing to use the waterways and quays**.

The investment requirements for quays must also be identified and linked to the intended use of a specific quay. Bringing quays up to standard requires considerable financial resources, whether for quay renovation, quay equipment, or waterway dredging. However, these costs can be justified by researching and demonstrating the societal and social benefits. The city must also ensure that adequate resources and skills are available for developing waterways and water transport.

As part of the **DenCity pilot** project in **Gothenburg**, a [recycling waste barge](#) was used and moored at five quays along the river Göta Älv. Although the project ended in 2020, it was decided that the barge would be a **permanent addition to the city's waste and recycling management system**. Using waterways has shifted traffic away from the road network and reduced emissions, since the barge runs on biodiesel.

In their master's thesis¹³⁰ Arvin Alipanah and Mary Morcos state that in **Gothenburg** one of the main obstacles to the [recycling waste barge](#) operating in a sustainable manner in the city was the availability of quays for loading and unloading, even though there are plenty of quays around the city and along the canal. They point out that there are many actors involved in the quays that prevent the waste barge from loading and unloading. One actor can own the quay, another can own the property itself and a third actor can be responsible for managing the quay. Having **multiple stakeholders involved in the quay's ownership** makes it difficult according to the municipality worker to find quays for barges to operate in the city: *"When ownership and management of quays are divided, it causes inefficiencies and hinders businesses' ability to utilize quays for barge operations"*. This also complicates planning for their renovation.

The difficulties with the quays is a reflection of the organization of the departments in the city. Different departments are "land lords" for specific quays. However, the Urban environment department is overall responsible for the infrastructure itself. This complicates all matters regarding the quays as there is no vision or direction on how to use the quays. However, the urban environment department is broadly responsible for the infrastructure itself. This complicates all issues relating to the quays, as there is **no vision or guidance on how to use them**.

Nevertheless, the recycling waste barge is still an integral part of the city's permanent waste management system, at least for the next few years¹³¹.

¹³⁰ Arvin Alipanah, Mary Morcos, *Innovative Green Inland Waterway Shipping Developments in Ghent and Le Havre - Learning Outcomes for Sweden*, Master's thesis in Supply Chain Management, Gothenburg, Sweden 2024, p. 44 and 73

¹³¹ Alexandra BAKOSCH, Project Manager Urban logistics and waterways, City of Gothenburg

Analysis and Recommendations

➤ Innovation: Facilitating Experimentation

The work carried out within the framework of the InnoWaTr project highlights a number of difficulties faced by stakeholders involved in innovative projects, particularly in urban river logistics and automated or remote navigation.

The partners interviewed in InnoWaTr point out:

- High initial investment costs with limited access to funding,
- Inadequate support for research and development in innovative vessel construction,
- Slow bureaucratic approval processes for new vessel designs and technologies:
 - time-consuming certification process for new vessel designs and technologies,
 - approval process for alternative fuel systems, which often requires extensive documentation and testing to meet stringent safety and environmental standards,
- The need for pilot programmes and test areas for autonomous navigation.

Project developers are faced with a multitude of regulations and competent authorities depending on the location of the planned experiments. Quays are often managed by different authorities or departments, which prevents a comprehensive strategy for their use. Project leaders often highlight the administrative burden and obstacles resulting from this fragmentation.

Furthermore, regulations designed for the navigation or handling of inland vessels are not always suited to smaller-scale or innovative experiments.

Natural, architectural or technical obstacles (malfunctioning equipment or infrastructure, lack of suitable platforms or handling equipment, etc.) often hamper experiments.

It would be beneficial **to create a service or appoint a competent representative** in the relevant areas to organise, monitor and streamline experiments (urban river logistics, automated or remote navigation, innovative boats). This representative would be **the sole point of contact** between project leaders and the various local authorities. It would play a facilitating role in the implementation of these experiments. The various **regulatory and technical obstacles** could be identified and addressed in a more effective and sustainable manner.

Handling charges, port fees, public domain occupancy fees and tolls should treat these trials favourably.

Finally, a **European roadmap** promoting innovation in the river transport sector would be welcome, in order to provide financial support for experiments and facilitate their implementation.

➤ Autonomous Inland Navigation: A European Framework for Experimentation

In recent years, driven in particular by the CCNR, which has been working hard on these issues, most of the states and regions involved in InnoWaTr project have amended their legislation to allow for trials of navigation with varying degrees of automation.

If we look at these European, regional and national regulations, we can see that although there is a regulatory framework, for the time being it only provides a framework for carrying out experiments by temporarily derogating from **regulations that are still ill-suited** to autonomous navigation, often for certain types of vessels and in a limited geographical area.

Certain national regulatory frameworks (notably those in the Netherlands and Belgium) are sufficiently adapted and detailed to allow experiments to be carried out under relatively favourable conditions. But experimental project operators are currently facing significant challenges due to these varying regional approaches.

It might be appropriate to draw inspiration from these national regulatory frameworks to create a **European framework for experimentation** that would be **applied by all EU national authorities** responsible for inland navigation.

Collaboration with the **insurance sector** would also be beneficial in order to enable insurers to understand and assess the risks of different degrees of automation and to offer adequate insurance coverage for these experiments. This evolution will also require changes to the regulatory framework governing the civil liability of those involved (shipowners and remote control centres). It is necessary to know at all times who is responsible for the conduct of the vessel and at what time. Even in the case of automated vessels, responsibility for compliance with applicable regulations must be clearly assigned.

In this regard, work has been initiated by the IVR on **legal liability** in the event of damage caused during the operation of automated vessels. This work aims to strengthen the legal basis necessary to support the development of automated navigation (CCNR autumn session 2023).

All this legislative development represents a positive and pragmatic step toward enabling innovation within the existing legal framework. It provides a clearer path for trials while maintaining a focus on safety, oversight, and accountability.

➤ Better consideration for Urban River Logistics

Urban river logistics in local policies

River transport is often overlooked in urban logistics.

Local authorities (municipalities) have invested heavily in converting quays (often neglected by economic actors and port authorities who have moved economic activities outside cities) for leisure or commercial purposes and may be **reluctant to return to an economic and logistical use of urban quays**.

It is therefore essential that local authorities recognise the importance of urban river logistics and actively engaged in its development. **Better dialogue between local authorities and waterway managers** can help to preserve waterway rights-of-way to accommodate river logistics platforms or even to develop public urban river transport services, such as the establishment of public transport services using inland waterways (e.g. municipal bulky waste collection service in Gothenburg, public passenger transport).

Or even through the implementation of **regional aid schemes** that complement national support mechanisms, particularly for short-distance traffic or urban logistics services that are not covered by national aid for combined transport.

Under the impetus of national regulations, **territorial planning documents and town-planning documents** should take into account the development needs of urban river logistics and set objectives for improving the conditions for its implementation (development and maintenance of quays and waterways, etc.).

The **local urban development plan can therefore designate land** for the various functions required for this activity. This land may be earmarked for the preservation or development of urban ports or quays, including areas for handling operations, storing goods and providing road access for pre- and post-transport activities. It may also include zones specifically dedicated for logistics activities.

In urban areas crossed by an inland waterway, the development of a **river transport plan** should be mandatory. This would give shippers and freight forwarders a clear idea of the technical possibilities for using the waterway.

An **assessment** of how urban river logistics is addressed in national regulations, regional planning instruments and urban planning documents should be carried out in major European cities with river access in order to decide whether **more restrictive European regulations** should be developed.

Sustainable Urban Logistics Plans (SULPs) appear to be less widespread than Sustainable Urban Mobility Plans (SUMP), even though both plans would benefit from being developed jointly.

Waterways should systematically be assessed as a transport option in urban construction projects, as their environmental performance can strengthen their attractiveness in public procurement procedures.

Deploy Shared-Use Quays

In cities, leisure and recreational activities have progressively replaced the economic and industrial activities that were once at the heart of city centres. Loading/unloading and storage facilities have consequently disappeared.

As demonstrated by the development of shared-use quays (QUP) in France, local authorities are attempting to reverse this trend and **allow IWT to reclaim part of the quays**. The development of shared-use quays should be encouraged and facilitated while respecting other users and local residents (Charter of Use).

Nevertheless, with the development of leisure activities, the use of quays has become much less straightforward than in the past, numerous safety measures must be taken by logistics operators and **the space reserved for logistics operations has been reduced**.

In order to develop urban river logistics, it would be necessary to provide not only quays and handling equipment, but also **logistics spaces** for delivery preparation, parking areas for last-mile load vehicles (cargo bikes, light commercial vehicles, small and medium trucks) and charging infrastructure for electric vehicles and cargo bikes.

It would be beneficial to encourage the development of a **denser network of small-scale terminals** close to urban areas in order to provide local access to intermodal options.

The use of public-private partnerships appears to be an attractive solution (see PPP ‘*Samenwerking kaaimuren*’ in Flanders).

➤ Supporting the Greening of Inland Waterway Transport

Greening of the fleet

It is important to adapt European technical requirements (ES-TRIN) quickly in order to enable inland waterway vessels to **retrofit** their engines and/or use **alternative fuels**, such as biogas and hydrogen. A comprehensive and stable regulatory framework would encourage research and development (R&D) and investment.

Tax breaks and incentives should also support the green transition of vessels. In this regard, the Suramortissement Scheme, which has been in place in France since 2020, has been positively received by the sector. It allows companies to deduct from their taxable income a percentage of the costs associated with converting the vessel to use low-emission energy or fuel.

Another interesting incentive is **tax exemption on capital gains** from selling an inland water vessel, provided the seller commits to acquiring a low-emission vessel. In France, this tax exemption is currently limited to €100,000, regardless of the level of pollution of the vessel purchased.

Finally, although ETS¹³² does not apply to IWT, it would nevertheless be important for the green transition of this mode of transport to be financially supported by a portion of its revenues.

It would be beneficial to join forces by promoting the creation of a **European cluster** bringing together shipyards, suppliers, engine manufacturers, shipowners and institutions in order to meet the needs of river shipowners, particularly in terms of alternative energies.

Taxation applicable to alternative fuels

The most commonly used fuel in IWT today is non-road diesel (NRD), which has the same environmental drawbacks as road diesel.

¹³² Emission trading system resulting from the 2023 revision of ETS Directive (Directive 2003/87/EC establishing a system for greenhouse gas emission allowance trading within the Union, as amended by Directive (EU) 2023/959)

Energy Taxation Directive (ETD)

The proposed revision¹³³ of ETD¹³⁴, as part of the *Fit for 55* package, is proving difficult to implement.

With regard to the taxation of inland waterway fuels, ETD currently requires Member States to **exempt from taxation** « *energy products supplied for use as fuel for the purposes of navigation within Community waters (including fishing), other than private pleasure craft, and electricity produced on board a craft* » (ETD, art. 14§1, c). Fuels other than electricity, whether fossil fuels (non-road diesel) or renewable alternative and sustainable fuels (e.g. HVO¹³⁵), which are used in IWT are therefore currently exempt from taxation by Member States¹³⁶.

The proposed revision of ETD intends to remove « *outdated exemptions* » and other incentives for the use of fossil fuels, while promoting the uptake of sustainable fuels. It therefore provides for **minimum tax rates to energy products supplied for use as fuel to vessels** (gas oil, heavy fuel oil, non-sustainable biofuels, naturel gas, non-sustainable biogas, non-renewable fuels of non-biological origin) and to electricity used directly for charging electric vessels, for the purposes of intra-EU¹³⁷ waterborne regular service navigation, fishing and freight transport. In practise, the proposal would introduce a minimum taxation on fuel of approx. 0,036 € per litre once it enters into force whereas such fuels are currently exempt.

The proposed revision also provides that over a transitional period of ten years, **minimum rates of zero shall apply** to renewable alternative and sustainable fuels (biofuels and biogas, low-carbon-fuels, renewable fuels of non-biological origin, advanced sustainable biofuels and biogas and electricity).

These amendments to ETD should therefore lead to a reduction in the price differential between fossil fuels and renewable alternative and sustainable fuels.

However, IWT risks being penalised by this regulatory change **if it does not have sufficient low-carbon fuels (e.g. biofuels, HVO if considered as a low-carbon fuel) to replace fossil fuels**, which will become subject to minimum tax rates. It is therefore important to make these low-carbon fuels available to commercial river navigation as soon as possible.

Even though the proposed amendment to ETD aims to reduce or eliminate taxation on alternative fuels for 10 years, it is not certain that this will be enough to make them competitive with fossil fuels if other measures are not taken.

¹³³ Proposal for a Council directive restructuring the Union framework for the taxation of energy products and electricity (recast), art. 15, COM/2021/563 final

¹³⁴ Council Directive 2003/96/EC of 27 October 2003 restructuring the Community framework for the taxation of energy products and electricity

¹³⁵ Hydrotreated Vegetable Oil : made from residual oils (vegetable and animal oils and fats from the recycling industry)

¹³⁶ See, for example, in France, Articles L. 312-54 and L. 312-48 of the Code des impositions sur les biens et services (Tax Code on Goods and Services)

¹³⁷ Navigation between two ports located in the Union, including domestic navigation.

Renewable Energy Directive (RED3)

In most Member States, in accordance with RED2¹³⁸, the production of alternative fuels is encouraged in particular through tax measures that favour the incorporation of renewable energy in transport fuels.

In countries such as France, for example, these measures take the form of a **tax¹³⁹ levied on fuel distributors**, which varies according to the proportion of renewable energy used to produce the fuel distributed. These measures encourage the production of renewable fuels. Only those that meet strict sustainability criteria can be taken into account when calculating the tax reduction rate. Often, a double counting mechanism, particularly for biofuels derived from certain types of waste and biomass, allows for further tax relief.

However, this does not yet appear to prevent **significant differences in the price per litre of these fuels** (such as HVO) between countries, with these differences perhaps being linked to national production capacities.

Another explanation may lie in the fact that in some countries, such as France, regulations exclude fuels that are exempt from excise duty, such as those used in commercial IWT, from these tax incentive schemes.

RED3¹⁴⁰ contains strengthening targets to increase the share of renewable energy and reduce greenhouse gas intensity in the transport sector. It applies to all modes of transport, including IWT, which did not seem to be the case before its amendment in 2023. Member States will have to strengthen their incentives for the production of these alternative fuels, and it is to be hoped that IWT will face less competition from other modes of transport in accessing these fuels at an economically acceptable price.

Nevertheless, solutions should also be identified to encourage shippers to accept **slightly higher transport prices** due to their service providers' use of alternative fuels.

Alternative Fuels Infrastructure

AFIR¹⁴¹ **does not contain any binding targets** for alternative fuel infrastructure in inland ports, with the exception of shore-side electricity, for which the targets remain modest:

- at least one installation providing shore-side electricity supply to inland waterway vessels is deployed at all TEN-T core inland waterway ports by 31 December 2024;
- at least one installation providing shore-side electricity supply to inland waterway vessels is deployed at all TEN-T comprehensive inland waterway ports by 31 December 2029.

Furthermore, AFIR still lacks **technical requirements for refuelling points and bunkering** of certain fuels in inland ports (gaseous or liquefied hydrogen, methanol, ammonia).

¹³⁸ Dir. (EU) 2018/2001 on the promotion of the use of energy from renewable sources

¹³⁹ La Taxe incitative relative à l'utilisation de l'énergie renouvelable dans les transports (TIRUERT) en France

¹⁴⁰ Directive (EU) 2018/2001 as amended by Directive (EU) 2023/2413

¹⁴¹ Regulation (EU) 2023/1804 on the deployment of alternative fuels infrastructure

The modernisation and greening of the European river fleet undoubtedly lacks a strong and clear long-term commitment from both of Member States and the European Union.

➤ Involving Shippers and Freight Forwarders in Modal Shift

One of the challenges identified as relevant for several InnoWaTr FFCs and across geographical areas concerns the so-called **status quo bias**, whereby it remains easier to using truck solutions rather than changing to waterways¹⁴². The information gathered from InnoWaTr partners shows that for a shipper to commit to the river mode, **the river link must be transparent**. In particular, the additional cost of river transport must not exceed 10%.

Because non-road modes generally offer lower unit transport costs **only over longer distances**, these extra costs often outweigh savings for short and medium-distance flows. This explains the persistent dominance of road transport even where alternative modes are available.

We know that river transport of packages (containers, pallets, barrels, etc.) involves additional costs due to the **intermediate transhipment** (compared to road transport). In order to compete with road transport, inland waterway transport still needs certain incentives or public aid.

It should be noted that all **national support schemes for modal shift are temporary** (usually one or two years) and although they allow shippers to experiment with river transport, their temporary nature may act as a brake on the long-term use of this mode of transport. Their nature as **state aid** may even lead to it being called into question or at least reduced, which may seem anachronistic.

Funding for modal shift should certainly be permanent, especially for non-bulk goods.

It is a matter of political choice: decarbonising transport comes at a cost. The question is how should it be financed and who should ultimately bear the cost?

One solution would be to **increase the cost of road transport** (through road pricing policies or higher fuel and energy prices) in order to finance improvements to inland waterways and multimodal platforms, and reduce the cost of IWT. However, the **acceptability** of such measures is questionable. Indeed, such measures are generally reflected in the transport costs paid by shippers and, ultimately, by consumers.

It should be noted in this regard that, in its Work Programme for 2026 published on 21 October 2025, the European Commission indicated that it was withdrawing its proposal for amending the **Combined Transport Directive**¹⁴³ which sets out the terms and conditions for State aid for combined transport, particularly transport involving a river phase (Inland Waterway / Road). This proposed revision was presented in 2023 and aimed to make support for intermodal transport more effective. In particular, it was envisaged to extend it to national combined transport. This was the third attempt at revision and the third failure.

¹⁴² *Challenges in attracting stakeholders*, InnoWaTr Transnational sharing of experiences at workshop 25 March 2025, Presenter: Sarah Rogerson, RISE

¹⁴³ [Directive 92/106/EEC](#) on the establishment of common rules for certain types of combined transport of goods between Member States

We must continue to ‘acclimatise’ shippers and freight forwarders to the use of IWT, in particular through **subsidies to offset any additional costs** involved in using this mode of transport, especially on short journeys.

It is necessary to encourage the **emergence of transport organisers specialising in this mode** of transport in order to scale up by increasing traffic and thus reduce costs.

The inclusion of IWT, as a less polluting mode of transport, in **public procurement criteria or calls for tenders**, or even in **extra-financial reporting objectives**, would help to promote the use of this mode of transport. Unfortunately, the revision of the **CSRD** as part of the *Competitiveness Compass* announced in January 2025, which aims in particular to reduce the scope of the CSRD, does not appear to move in this direction.

Nevertheless, States are free to create legislative tools to involve shippers more in modal shift. For example, in France, there is a proposal to introduce a **financial contribution for shippers**, which would be based on the CO₂ emissions generated by the freight transport operations they commission, whether on their own account or on behalf of others. In order not to undermine small and medium-sized enterprises, this contribution would only apply to companies with more than 250 employees. By internalising the cost of CO₂ emissions, this levy would boost demand for more carbon-free engines and rail and river freight transport and encourage the massification of road freight transport. The proceeds would be used to finance measures to support the decarbonisation of road freight transport.

Another proposal¹⁴⁴ is to impose a **legal obligation on transport organisers (freight forwarders and shippers) to inform clients** subject to the CSRD directive about the multimodal transport solutions available when the characteristics of the flow allow it. This information should be provided at the time of competitive bidding through the drafting of the tender, which should contain a comparative analysis of the various logistics solutions in terms of economics (total cost of each solution, including transshipments and ancillary services), environmental (particularly in terms of greenhouse gas emissions) and operational (delivery times and associated service levels, conditions of access to combined transport terminals).

➤ A Genuine European IWT Policy

At European level, IWT appears to be **the ‘poor relation’ of transport**. Compared to other modes of transport, it is rarely mentioned in transport roadmaps and is often assimilated to maritime transport. European ambitions for its decarbonisation and innovation remain modest.

Regardless of their level of adoption (European, national, regional, local), **roadmaps or strategies** promoting IWT will be important in motivating and engaging all stakeholders towards a common goal.

Urban river logistics and urban river passenger transport are specific activities that must be distinguished from bulk river transport. These activities should therefore benefit from a **specific and adapted regulatory framework** enabling their development independently.

¹⁴⁴ *Mission THC, Propositions visant à encourager le report modal vers le fleuve à l'échelle de l'axe Méditerranée Rhône Saône (MeRS), rapport final, Eric LEGRIGEOIS, Juill. 2025 ; Projet de Stratégie Nationale Fluviale française, juin 2025*

Roadmaps or regional plans such as the *Green Deal Binnenvaart* in Flanders are useful in that they bring together in a single instrument all the aspects (greening of the fleet, technological innovation, regulatory barriers, involvement of all stakeholders, etc.) that will enable IWT to truly take its place in the European transport network.

List of abbreviations

ADN : European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

ADR : Agreement concerning the International Carriage of Dangerous Goods by Road

AFID : Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure

AFIR : Regulation (EU) 2023/1804 of 13 September 2023 on the deployment of alternative fuels infrastructure

ATEX : Explosive atmospheres

BinSchStrO : Binnenschiffahrtsstraßen-Ordnung

BinSchUO : Binnenschiffsuntersuchungsordnung

BPR : Binnenvaartpolitiereglement

CCNR : Central Commission for the Navigation of the Rhine

CEN : European Committee for Standardization

CENELEC : European Committee for Electrotechnical Standardisation

CESNI : European Committee for drawing up Standards in the field of Inland Navigation

ES-TRIN : European standard laying down technical requirements for inland navigation vessels

GDWS : Generaldirektion Wasserstraßen und Schifffahrt

HRS : Hydrogen refuelling station

HVO-XTL : Hydro-treated vegetable oil – X to liquid

IED : Industrial emissions directive

IWT : Inland waterway transport

LNG : Liquefied natural gas

QUP : Shared use quay

RCC : Remote control centre

RCO : Remote control operator

RPN : Regulations for Rhine navigation personnel

RPR : Rhine police regulations

RVIR : Rhine vessel inspection regulations

TEN-T : Trans-european transport network

VNF : Voies Navigables de France

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