



Needs

*New Sustainable Fuel Deployment Scenarios
for the European Waterborne Community*

**D5.4 The STEERER Network Description and
Remit**





Work Package	5
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1. Introduction – The NEEDS Project

The New Sustainable Fuel Deployment Scenarios for the European Waterborne Community (NEEDS) project is a Horizon Europe CSA project launched as part of the activities financed by the Co-Programmed Partnership on Zero-Emission Waterborne Transport¹ (ZEWTP cPP). Its aim is to help the Partnership members and the European waterborne transport community as a whole to find the best insights for the future deployment of sustainable alternative fuels at Union level.

Deploying sustainable energy within an existing transport network is a challenge which requires an independent and transparent analysis and overview. To be successful, it implies a timely coordination of all stakeholders, ranging from energy production capacity to storage & bunkering logistics in harbours, up to the end-users of inland waterway, maritime transport and related waterborne transport activities. Key information regarding each stakeholder and their characteristics in terms of technical readiness, emission level, actual transport capacity, costs, scalability and impact are available. Putting all parts of the puzzle together is the aim of the present project.

The NEEDS consortium will develop and subsequently apply scenario simulation techniques which will include, inter alia, regional information on transport network and hindcast data of weather conditions (for regional energy production), to simulate different scenarios of sustainable fuel deployment. Forcing certain variables as input into the model in order to study its impact on various quantities, will facilitate evaluating the viability of certain scenarios and identifying potential bottlenecks and best tactics to overcome them.

This dynamic techno-economic model is aimed at helping the Commission, the Member-States, the regional waterborne transport communities as well as the upstream (fuel/energy-related) stakeholders to evaluate the most efficient pathways towards their energy transition, for both local and regional scale. The amount of details brought into the parameters of the model will allow to run such simulation from micro to macro scale.

The model will primarily focus on variables and parameters related to the waterborne community. However, it will have an open structure that will allow to possibly include other sources of energy needs in the future, depending on the evolution of the market and sector inputs.

Moreover, the project will greatly benefit from the recommendations to be provided by its advisory body, i.e. the STEERER Network (SN), which comprises of a group of experts from various organisations across Europe, covering different segments and activities of the waterborne transport sector. It has initially functioned as the advisory body of the H2020

¹ <https://www.waterborne.eu/partnership/partnership>



project Structuring Towards Zero Emission Waterborne Transport (STEERER)². This project advised the ZEWT Partnership on updating its Strategic Research and Innovation Agenda (SRIA), thus paved the way for the NEEDS project via two main activities:

- its work on the sector's decarbonization targets by 2050;
- the proposed solutions to achieve the zero-emission targets, part of which involve the extensive uptake and use of sustainable alternative fuels (SAFs) and their associated technologies (propulsion, storage, bunkering, etc.).

The presence of the STEERER Network will therefore offer not only expertise but also a continuity in terms of how the wider waterborne transport sector is following and advising on the RD&I activities stemming from or in connection to the Partnership.

Project NEEDS has a budget of €523,437 and is coordinated by MARIN with its consortium, which spans over five European countries, consisting of six other organisations, namely SINTEF, EICB, CERTH, BALance, WaterborneTP and SEA Europe. The project is scheduled to have a duration of 18 months, beginning on the 1st of May 2022.

² <https://waterborne.eu/projects/coordination-projects/steerer/>



2. Scope of the Deliverable

To ensure a broad participation of the relevant stakeholder categories to the main project developments, a large advisory group made-up of sector representatives is to be formed. And due to the large input foreseen from the STEERER project, NEEDS is committed to take up and continue its advisory group after that project ends, under the (new) name of ‘the STEERER Network’.

As part of the project planning, the NEEDS partners will execute several workshops with the SN, to discuss and validate project developments. Concerning the general procedural approach:

- the main information from these drafts will be made available for review to the Network;
- their review will be discussed with the project partners to agree on a common approach, and
- the agreed information will be used to progress towards the final deliverable.

Furthermore, the partners can decide to organize smaller consultations with parts of the Network members, depending on specific project needs, the experts’ sector affiliation and availability, etc.

The present deliverable gives the main details concerning the organization and activities of the SN throughout the project lifetime, including its interactions with the project partners. These are presented within the following pages, namely

- the objectives of the SN, the deliverables to be reviewed and their timing (Chapter 3);
- the SN’s organization and methodology: composition, working method, meetings’ organization, duration of the expert group (Chapter 4).



3. Mandate

The SN consists of experts that had initially been nominated by carefully selected stakeholders to support the STEERER project. At the end of this project, the experts had agreed to continue their work in advising WaterborneTP and the Partnership on the relevant developments regarding the sector's decarbonization, and part of this commitment is also advising NEEDS, as the project has been developed in response to a ZEWT call.

The SN will be beneficial in exchanging opinions, experiences, best practices and other relevant issues between the different segments of waterborne transport. The work in the SN will contribute to the exchange of information, allow the identification of possible synergies, create 'economies of scale' (by involving more segments) and establish a common motivation towards a "long-term vision for a prosperous, modern, competitive and climate-neutral economy by 2050".

The SN will have to review, contribute to and validate the main project developments, and in particular those that are directly related to the developments of the Strategic Research and Innovation Agenda (SRIA) of the cPP ZEWT.

As secondary tasks, it will also advise on and help with the dissemination of the main project findings throughout the European waterborne transport community and beyond, as the sector is very international by nature.



4. Objectives, Deliverables and Timetable

4.1 Objectives and Deliverables

The main objective of the SN is to agree upon the main project developments and outputs, and in particular those that directly regard the developments of the cPP ZEWTSRIA.

In order to use the full knowledge of the SN, a number of key items will have to be discussed, improved and validated by the experts:

- the structure and functionalities of the Generic Dynamic Techno-economic model;
- the regional maritime application of the dynamic techno-economic model;
- the regional Inland Application of the dynamic techno-economic model;
- the impact analysis for different deployment scenarios.

To be able to reach these objectives, and considering the time constraints, the SN will focus on reviewing the key documents produced by the partners. The following deliverables (draft versions) will be prepared by the NEEDS Consortium before being discussed during meetings with the SN:

- D1.1 First version of the generic model for application use;
- D2.3 Scenarios for the maritime region;
- D3.3 Scenarios for the inland region;
- D4.1 Socio economic impact assessment;
- D4.2 Transposition roadmaps;
- D4.3 Methodology and guidelines for transferability.

The description of the tasks behind these deliverables as well as the advanced draft versions of the deliverables will be sent to the SN experts in advance, for their review and feedback.

4.2 Timetable

The following table provides an overview of the up-to-date timetable of the aforementioned NEEDS deliverables, as mentioned in the project’s Grant Agreement.

Deliverable N°	Deliverable Name	Due Date
D1.1	First version of the generic model for application use	Spring 2023
D2.3	Scenarios for the maritime region	Summer 2023
D3.3	Scenarios for the inland region	Summer 2023
D4.1	Socio economic impact assessment	Summer 2023
D4.2	Transposition roadmaps	Autumn 2023
D4.3	Methodology and guidelines for transferability	Autumn 2023

4.3 Description of the deliverables

D1.1 First version of the generic model for application use – for application in WP 2 and 3. Updates and fine tuning will take place with the interaction (and feedback) of following work package that will make use of the model (month 6 and further). The deliverable will consist in two items:



- a software program with a simple interface (expert use) to be used as prototype at this stage of the project. Such compiled software will be shared with the consortium partners as executable (but not made public with the source code);
- a report describing the approach and method, as well as the input parameters and variables (with their properties). Such report can be shared publicly if needed (but at this stage of the development, it may not be interesting yet, as additional fine tuning and changes are still expected within WP2 and 3).

D2.3 Scenarios for the maritime region. Building upon *D2.1 Regional maritime application of the model* and *D2.2 Analysis of the potential of the maritime region*, and exploiting information from other key sources (e.g. the STEERER project), this deliverable will describe an appropriate number of realistic sustainable fuel development scenarios to be analysed for the region, that will be validated by a number of key regional and international experts. Boundary conditions and constraints across the different scenarios will be diversified properly and the results of a sensitivity analysis will be reported, highlighting critical parameters where priority should be given.

D3.3 Scenarios for the inland region. Building upon *D3.1 Regional inland application of the model* and *D3.2 Analysis of the potential of the inland region*, and exploiting information from other key sources (e.g. the STEERER project), this deliverable will describe an appropriate number of realistic sustainable fuel development scenarios to be analysed for the region, that will be validated by a number of key regional and international experts. Boundary conditions and constraints across the different scenarios will be diversified properly and the results of a sensitivity analysis will be reported, highlighting critical parameters where priority should be given.

D4.1 Socio economic impact assessment. The document will describe the potential impact of the techno-economic model and the data collected to carry out the assessment. It will also summarize the results of the socio economic impact assessment carried out in *T4.1 Socio-economic impact analysis*.

D4.2 Transposition Roadmaps. It will contain the lists of enablers, barriers and challenges and also the TRL and BRL of the technologies to be implemented. The second part of the deliverables will be the transposition roadmap for the deployment scenarios as developed in *T4.2 Development of transposition roadmaps*.

D4.3 Methodology and guidelines for transferability. The deliverable will describe the most impactful drivers in the transposition roadmaps. It will also explain the methodology to transfer the approach to other applications/regions. Finally, recommended guidelines for transferability will be documented.



5. The STEERER Network's Methodology and Organization

5.1 The STEERER Network's Composition

The SN is the key consultation body for the NEEDS consortium and will play a vital role in endorsing all main deliverables of the project, thus ensuring the wide-acceptance of the modelling and simulation to be performed and the resulting recommendations. It will not only be part of the partners' core activities, it will also remain as one of the project's main legacies after its end.

Consequently, a well-balanced mix of different types of stakeholders from different waterborne transport segments is represented in the SN: shipowners, ports, shipyards, equipment manufacturers, research centres and universities, etc. (see Annex, the STEERER Network Composition).

More specifically, it is made up of those experts from the Green Shipping Expert Group (GSEG) and the Scientific Committee of the STEERER project that have expressed their interest to continue their involvement in supporting the ZEWT Partnership developments, and in this particular case advise the NEEDS work. The current list of members can be updated in case the consortium observes that there are still some knowledge gaps which cannot be addressed by the advisory body in its current composition. Alternatively, the NEEDS consortium may invite experts with specific expertise with respect to a subject matter on the agenda to take part in one of the SN meetings, or on an ad-hoc basis.

Representatives of the relevant European Commission services will also be invited to all the meetings of the SN.

5.2 Working Method

The SN will be involved by means of a process of workshops developing support and commitment during the project's duration, throughout the lifetime of NEEDS. All experts will be invited to participate in the online and, where possible, hybrid and/or in-person events, to discuss the advanced draft deliverables and other relevant information produced by the project. In addition, its members will be asked to provide input via online consultations and documentation.

WaterborneTP will chair the SN meetings, with the project coordinator or its representative (MARIN) acting as the Technical Leader. The WaterborneTP and MARIN representatives will decide on the SN's exact working methods, depending on the task to be addressed. Their aim shall always be to ensure an in-depth analysis of the selected topics, thus maximising the contribution of the SN members to the project.

At the end of the project, WaterborneTP shall prepare the final report of the SN activities, based on interactions with and contributions from the SN members, and of relevant material and events provided by the experts to the consortium.



The SN members can adopt opinions, recommendations or reports by consensus. In the event of a vote, the outcome of the vote shall be decided by a simple majority of the members present, provided they are 50% of the total number of SN members. The members that voted against or abstained shall have the right to have a separate section of the document summarizing the reasons for their position annexed to the opinions, recommendations or reports.

5.3 Meetings

Experts’ meetings shall be held, in principle, online. Where appropriate, meetings may also be organised hybrid or fully in-person; in such cases, the preferred meeting place will be Brussels, but partners may decide on other locations. In all cases, the SN members will be duly informed in advance of the time, date, duration and location of the meetings.

The SN shall meet at least four times during the duration of the project. The proposed timing (months) of these meetings are outlined in the table below; however, the actual dates will be subject to the project progress and the availability of a majority from the SN members and the concerned NEEDS partners. WaterborneTP and MARIN will be in regular contact with the members to ensure progress and smooth running of the group. Ad-hoc external experts and observers may be invited to attend specific meetings to provide appropriate information and orientations.

Deliverable N°	Deliverable Name	SN Meeting Time
D1.1	First version of the generic model for application use	March 2023 (M11)
D2.3	Scenarios for the maritime region	May 2023 (M13)
D3.3	Scenarios for the inland region	May 2023 (M13))
D4.1	Socio economic impact assessment	June 2023 (M13)
D4.2	Transposition roadmaps	Sept 2023 (M17)
D4.3	Methodology and guidelines for transferability	Sept 2023 (M17)

Participants in the activities of the SN shall not be remunerated for the services they offer. Travel and subsistence expenses incurred by participants in the activities of the SN may be reimbursed by the NEEDS project should the budget allow it.

5.4 Duration

The SN will formally come to life once the descriptions and mandate described herein have been reviewed and accepted by the experts, and shall continue until the project ends. However, it is intended that the SN will stay active following the conclusion of the project and potentially advise on other future activities, related both to NEEDS as well as to other initiatives that may be developed in the framework of the ZEWTP CPP.



6. Conclusion

The SN composition, mandate and foreseen planning will enable the NEEDS partners to fulfil their tasks with the highest quality and provide valuable input to WaterborneTP and its members for the activities of the ZEWT Partnership.

This will also ensure that the SN members will be both aware of the project developments and able to contribute to them. Such an approach will ensure filling in any potential knowledge gaps, solving problems, dissemination of information and, last but not least, a wider acceptance of the project outcomes by the relevant waterborne transport stakeholders.

Finally, the SN work in the context of NEEDS also has to be understood in the wider context of the experts' support for and involvement in advising the ZEWT Partnership on its future developments, in particular the SRIA updates, as it had been discussed and broadly agreed during the last experts' meeting of the STEERER project (September 2022).



7. Annex – the STEERER Network Composition

The STEERER Network consists of the following members.

N°	Expert Name	Organization
1	Sandro Vidas	Cluster of intermodal transport, Rijeka
2	Dirk Degroote	Cognauship B.V.
3	Pieter Huyskens	DAMEN
4	Benjamin Friedhoff	Development Centre for Ship Technology and Transport Systems
5	Fanny Lossy	European Community Shipowners' Associations (ECSA)
6	Turi Fiorito	European Federation of Inland Ports (EFIP)
7	Mario Dogliani	Fondazione CS MARE
8	Josep Sanz Argent	Fundación Valenciaport
9	Hossein Ghaemi	Gdańsk University of Technology
10	Wolfram Guntermann	Hapag-Lloyd AG
11	Selma Ergin	Istanbul Technical University
12	KETIL O. PAULSEN	Kongsberg Maritime AS
13	Åsa Burman	LIGHTHOUSE
14	Ada Jacobsen	Maritime CleanTech
15	Jogchum Bruinsma	Nedstack fuel cell technology B.V.
16	Sander den Heijer	Netherlands Maritime Technology (NMT)
17	Wassim Daoud	PONANT
18	Juan-Manuel Suarez	PortEco
19	Richard Bucknall	University College London (UCL)
20	Sebastiaan Bleuanus	Wärtsilä