



Online, 24 September 2021

Document title	Results of the GREEN TEAM Reporting Mechanism survey
Code	3-1
Category	CMNT
Agenda Item	3 - GREEN TEAM reporting mechanism and method
Submission date	1.9.2021
Submitted by	Secretariat
Reference	

Background

HELCOM MARITIME 18-2018 approved the establishment of the GREEN TEAM Reporting mechanism and method based on the traffic light idea and agreed on the proposal to develop a digitalized reporting system to be established on the HELCOM website as a tool. The Finnish Maritime Cluster financed the development of this tool.

GREEN TEAM 2-2018 agreed that reports should be submitted intersessionally once per year.

Following discussions by GREEN TEAM 4-2020, MARITIME 20-2020 invited Contracting Parties to nationally consider ways to best engage the relevant stakeholders in responding to the online survey for the GREEN TEAM Reporting Mechanism. The Meeting agreed that Contracting Parties should circulate the online survey to various stakeholders to increase the response rate spread. In particular, the Meeting agreed that equipment manufacturers, shipyards and other stakeholders with a low response rate so far, should be contacted and encouraged to respond to the survey. The Meeting encouraged Contracting Parties, observers and other stakeholders to contribute to the GREEN TEAM Reporting Mechanism by completing the online survey by 30 June 2021 for consideration by GREEN TEAM 5-2021 ([Outcome of MARITIME 20-2020](#), para. 2.9-2.10).

GREEN TEAM 4-2021 discussed needs for improvement of the online survey and invited participants to send proposed improvements to the survey to the Secretariat at their earliest convenience, noting however that changes to the substance and contents of the Reporting Mechanism, as developed and agreed by GREEN TEAM and approved by MARITIME 18-2018, cannot be implemented without agreement by the GREEN TEAM ([Outcome of GREEN TEAM 4-2020](#), para. 3.7-3.8).

The Meeting is invited to take note that the Secretariat has not received any additional input for improving the online survey. In compiling the results, however, the Secretariat has noted that results could become more representative and complete in case all respondents would respond to all questions, which is not currently the case. Also, consideration may need to be given to whether only the newest responses should be reported to each meeting of GREEN TEAM, or if the current approach, including also historical responses, should be continued. As the number of responses keeps growing, this is an option that may become feasible for the reporting to GREEN TEAM 6-2022.

This document is an update of the one submitted to GREEN TEAM 4-2020 ([document 3-1](#)) and contains the results of the GREEN TEAM Reporting Mechanism survey received by 30 August 2021. The results of the survey are set out below and the survey questions are found in Annex 1 for information.

Action requested

The Meeting is invited to consider the reporting received and take action as appropriate. The Meeting is further invited to consider any needs for improving the online survey.

Results of the GREEN TEAM Reporting Mechanism survey

The GREEN TEAM reporting mechanism aims at discovering the main barriers, obstacles and challenges hindering the development and investments in green technology and alternative fuels in the Baltic Sea through a structured and transparent collaboration among the public and private sector actors. The reporting mechanism is a tool to share information and experiences, and to find common, workable and sustainable solutions. for a safer, more environmentally friendly and energy efficient transport by sea.

The reporting mechanism and method is based on the zero-vision-tool (ZVT) traffic-light reporting and further developed for the HELCOM GREEN TEAM purposes:

- Red – when obstacles arise and actions are needed from the HELCOM co-operation (either industry, administrations and/or academia);
- Yellow – when guidance is required from the HELCOM cooperation;
- Green – when the issues can be solved, and results are shared.

The reported issues and outcomes belong to the following areas:

- Vessel (technology and design);
- Infrastructure (port development, alternative fuel infrastructure and fuel supply);
- Finance (financing, risk sharing, guarantees, co-funding and incentives to support investments);
- Regulation (new and updates);
- R&D (new identified areas and required pilots);

Knowledge and information are shared based on real-life cases i.e. on-going research and development, pilot and investment projects in the Baltic Sea region. The GREEN TEAM participants, HELCOM Observers (e.g. port and shipping associations), the flagship projects of the EU Strategy for the Baltic Sea Region and the identified platforms (e.g. ZVT, Green Ship of the future, Saint-Petersburg Initiative) as well as other maritime research and investment projects have been invited to report of their results, progress and the main obstacles related to green technologies and alternative fuels in the shipping sector of the Baltic Sea Region.

The first reporting for annual consideration of the GREEN TEAM Reporting Mechanism was opened on 28 June 2019 and the responses submitted by 9 August 2019 were taken into account in [document 3-2](#) submitted to GREEN TEAM 3-2019. An updated report including responses received until 26 August 2020 was submitted to GREEN TEAM 4-2020 ([document 3-1](#)).

The survey will be kept continuously open for contributions by GREEN TEAM contact points, observers and other interested stakeholders and future results will be analyzed annually at GREEN TEAM meetings.

For GREEN TEAM 4-2020, a total of 23 responses were received out of which 17 were valid and used for the report (GREEN TEAM 4-2020, [document 3-1](#)). For the present report, a further 41 responses were received by 30 August 2021, out of which 16 were not considered since they did not contain any information. Therefore, this report refers to the 48 valid responses provided, of which 31 are new.

The responses are related to actions in Denmark (3), Estonia (1), Finland (26), Germany (1) and Sweden (9). A total of 8 respondents did not mention their country (see Figure 1).

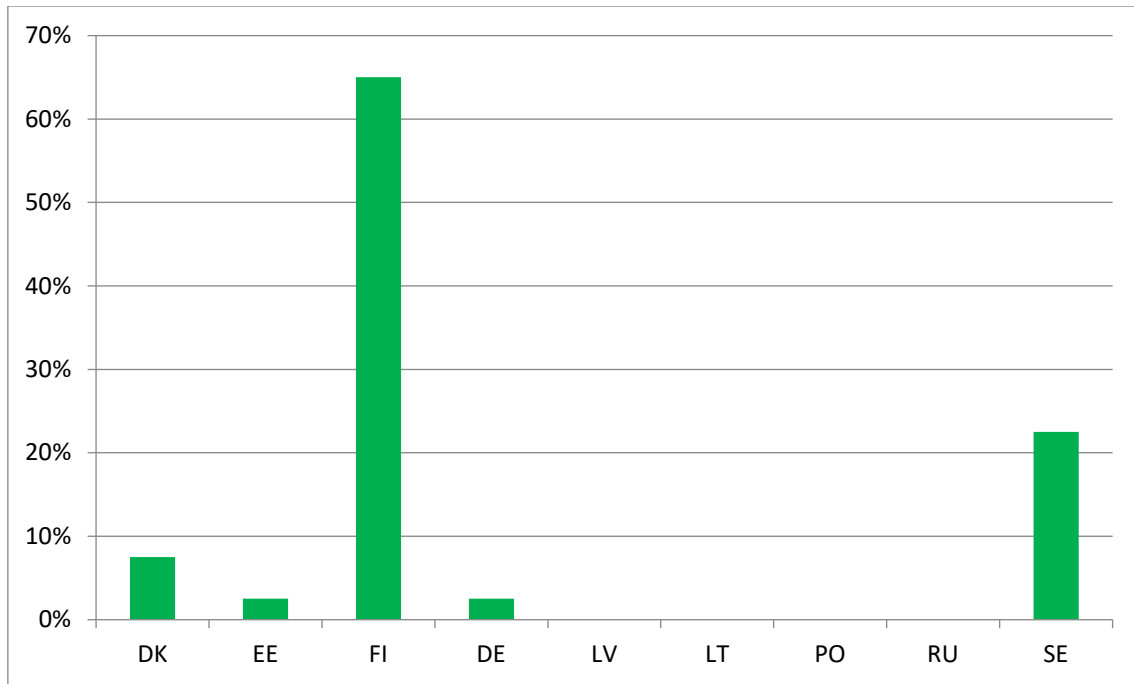


Figure 1 Number of countries (in %) where the reported project, investment, development, or plan is based in.

Most of the responses were submitted by shipowners (24) showing the interest of shipowners in the development of green technologies and alternative fuels investments. The contribution from the other respondents was in the same order of magnitude: port authorities (5), research and development organizations (2); technology or software supplier (2); authority, administration (2); non-governmental organization (4); cargo-owner (1); fuel supplier (2); other (2), of which one came from a port authority and port operator, the other one from a consultancy; and port operator (1). It is to be pointed out that 3 respondents did not specify the type of organization they represented (see Figure 2).

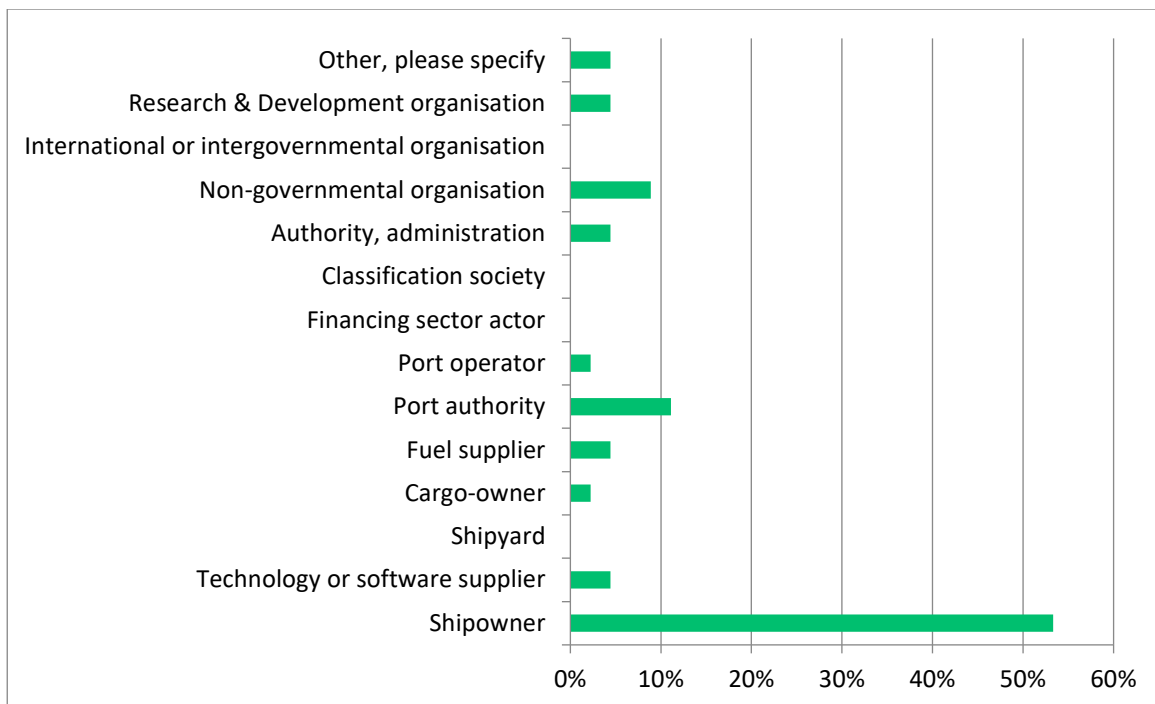


Figure 2 Type of organizations (in %) the respondents represent.

The reported projects or investments were related to vessel new-building (25), retrofit (11), piloting of new technology (7), port infrastructure (7), bunkering infrastructure (3), academic research (5), regulatory development (1), and other types of projects (5). The five projects categorized as other were related to:

- on-shore power;
- an academic research as partner in a research project, but not conducting the research themselves;
- guidelines;
- co-funding; and
- LNG and automooring.

Some of the respondents informed about several projects or investments. Eight respondents did not reply to this question (see Figure 3).

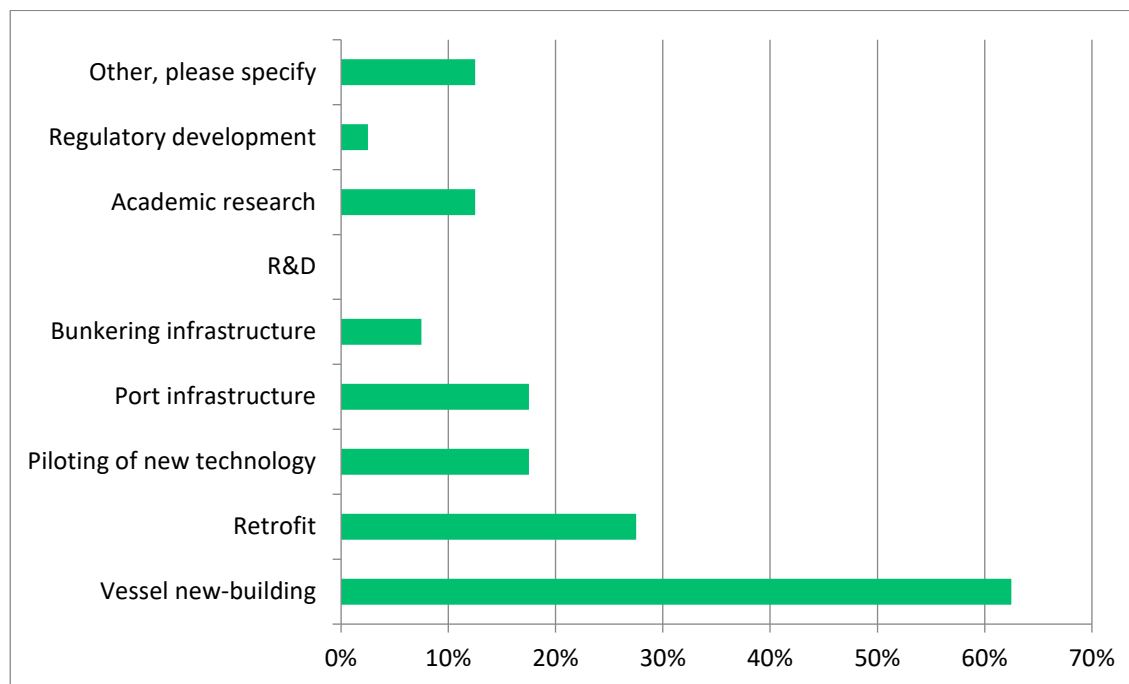


Figure 2 Type of reported projects (in %).

Regarding the identification of the most challenging areas, 10 respondents skipped this question, while the input provided by the remaining 38 respondents is contained in Table 1.

Table 1 Areas (% and number of replies) where the challenges were experienced most.

	%	n.
Vessel (e.g. technology, design)	21.1%	8
Finance (e.g. lack of financing, risk sharing, guarantees, co-funding, incentives)	26.3%	10
Infrastructure (e.g. port development, port infrastructure, alternative fuels, infrastructure and fuel supply)	26.3%	10
Regulation (e.g. regulation, recommendations, standards, guidelines)	21.1%	8
R&D (e.g. research and/or piloting new technologies or fuels)	5.3%	2

Additional information on how the above-mentioned challenges are rated according to a traffic light scale is contained in Table 2. It gathers information from 38 replies (10 respondents skipped this question). Please note that:

- green – refers to issues that can be resolved and which results are shared within the HELCOM public & private co-operation;
- yellow – refers to the requirement of guidance from the HELCOM public & private co-operation; and
- red – refers to obstacles that arise and actions that are needed from the HELCOM public & private co-operation;
- blue – non applicable.

It is to point out that the main challenge reported as a red traffic-light is related to the lack of financing.

Table 2 Traffic-light rating of the challenges identified by the respondents where, for an easier visualisation, the views expressed by the majority are highlighted in green, yellow, red or blue.

	Green		Yellow		Red		N/A	
Emission abatement technology	43.3%	13	26.7%	8	16.7%	5	13.3%	4
Energy efficiency measures	56.3%	18	28.1%	9	6.3%	2	9.4%	3
LNG	59.4%	19	9.4%	3	15.6%	5	15.6%	5
Methanol	13.3%	4	23.3%	7	20.0%	6	43.3%	13
Biofuels	13.3%	4	43.3%	13	16.7%	5	26.7%	8
Hydrogen	8.3%	1	33.3%	4	25.0%	3	33.3%	4
Fuel cell applications	8.3%	1	50.0%	6	8.3%	1	33.3%	4
Liquified biogas (LBG)	33.3%	4	41.7%	5	8.3%	1	16.7%	2
Electric and/or hybrid vessels	50.0%	6	41.7%	5	0.0%	0	8.3%	1
On-shore power supply	39.4%	13	27.3%	9	24.2%	8	9.1%	3
Other alternative fuel or energy source	23.3%	7	30.0%	9	16.7%	5	30.0%	9
Bunkering infrastructure	36.7%	11	33.3%	10	10.0%	3	20.0%	6
Bunkering supply	33.3%	10	33.3%	10	10.0%	3	23.3%	7
Port infrastructure (e.g. quay structure, draught)	43.3%	13	26.7%	8	6.7%	2	23.3%	7
Port reception facilities	33.3%	10	33.3%	10	13.3%	4	20.0%	6
Access to information (e.g. just-in-time arrival, optimisation, information sharing)	20.0%	6	33.3%	10	13.3%	4	33.3%	10
Digital solutions	23.3%	7	40.0%	12	3.3%	1	33.3%	10
Regulatory gaps	17.2%	5	37.9%	11	17.2%	5	27.6%	8
Harmonised rules	19.4%	6	35.5%	11	32.3%	10	12.9%	4
Lack of financing	9.4%	3	31.3%	10	34.4%	11	25.0%	8

When further invited to shortly describe the challenges encountered as well as suggesting ways to overcome them, 19 respondents skipped these questions, whereas the other 29 provided the input contained in Table 3.

Table 3 Description of the challenges encountered as well as suggested ways to overcome them.

Description of the challenges	Proposals for addressing the challenges
New technologies are difficult to implement, guidance from HELCOM is required.	HELCOM to propose the industry to implement new technology.
Common banks are not interested in shipping or activities related to shipping.	Not provided.
New investment in ports, adapting to vessel size. Future supply of fossil free fuel i.e LBG.	Political pressure and support in order to kick start production of bio fuel
We are in an early stage, so we are unaware of which challenges will eventually prove to be the greatest.	Too early to give an educated opinion
It is usually quite difficult for the authorities to release financial means for research projects.	<ul style="list-style-type: none"> – Vessel: the development of new technologies requires investments, supportive regulations and Incentives. – Infrastructure: the development of port infrastructure and alternative fuels requires as well financial investments, research, but also co-operation of several stakeholders. – Finance: the core problem for the development of new technologies and alternative fuels; More investments are needed; well designed incentive mechanisms could also be helpful. – Regulation: regulatory gaps should be eliminated, regulations should be simplified and harmonised. – R&D: This requires financing and Incentives as well; piloting of new technologies would require in addition flexible regulations, that do not hamper new solutions.
With the new demands of reducing CO2 emissions, it will be a challenge to re-arrange the infrastructure and the demand of bio-fuel is increasing in all segments of transportation	With more and more looking to alternative fuels, it needs to be addressed on how we should meet these demands.
Construction of new bunkering vessel and new ro-ro ferry prepared for alternative fuels (LNG) new port infrastructure to meet the market demands for alternative fuel and longer vessels.	Not provided.
The cost is not justifiable against the result gained.	Better and easier ways for ship owners to get funding for projects.
The status of Bio-oil is not very clear even if it is the most sustainable fuel presently used.	GHG issue should be taken more seriously.
The challenges are the bottlenecks which are currently preventing eco-efficient operation of the vessels (and throughout their life cycle); e.g. lack of 1) customised solutions in digital performance monitoring, 2) harmonised processes in shipyard environment, 3) cargo stowaging	The challenges which I have flagged with red traffic light concern e.g. the industry-wide regulation, information sharing and harmonised rules which all require industry-wide transnational cooperation, thus top-down approach from the policy level in order to secure level (and sustainable) playing field for all.

optimisation. These are all challenges that our project is addressing, and solving.	
Ramping up the fuel supply (LNG) has been a challenge.	Not provided.
Not provided.	Supply of LBG.
The bank and the finance world are not yet ready to fund less profitable projects in the beginning. Even if these ships income better in the future than the current old technology ships.	Zero emission in ports.
Not provided.	One issue we have is with conflicting legislation when it comes to port reception facilities. The primary aim would need to be to lobby the national government. No real research needed, as such.
Not provided.	Industry and technology providers/manufacturers need to develop their OPS systems at discharging ports of liquid cargo to handle power requirement.
Simultaneous cargo operations (SIMOPS) LNG bunkering is not allowed in all ports. SIMOPS operations reduce time a ship is staying in a port and avoid operational delays. It increases efficiency of transport.	Simultaneous cargo operations (SIMOPS) LNG bunkering is not allowed in all ports. SIMOPS operations reduce time a ship is staying in a port and avoid operational delays. It increases efficiency of transport. The LNG bunkering guidelines should be harmonised and simultaneous cargo operations and LNG bunkering should be possible in ports if not causing any safety risks.
There is a need for ship financing instruments to finance the additional costs to build more environmentally friendly ships beyond the existing legislation. The environmentally friendly vessels are about 20 % more expensive than conventional ones. The Nordic banks have not signed the EIB's Green shipping guarantee programme and that causes problems for Nordic shipowners. The support for green ship investments should be developed (cheaper loans, guarantees, co-funding). Member states should guide national state owned banks to develop solutions for green shipping and co-operate with EIB.	There is a need for ship financing instruments to finance the additional costs to build more environmentally friendly ships beyond the existing legislation. The environmentally friendly vessels are about 20 % more expensive than conventional ones. The Nordic banks have not signed the EIB's Green shipping guarantee programme and that causes problems for Nordic shipowners. The support for green ship investments should be developed (cheaper loans, guarantees, co-funding). Member states should guide national state owned banks to develop solutions for green shipping and co-operate with EIB.
EU's investment co-funding (CEF) for environmentally friendly and energy efficient maritime transport and port infrastructure is moving towards blending and co-funding only a difference between alternative technology and conventional one. Blending requires involvement of the financing institution (EIB or possible other commercial bank). This causes higher administrative burden. The very low co-funding rates do not encourage to apply co-funding due to the high bureaucracy.	EU's investment co-funding (CEF) for environmentally friendly and energy efficient maritime transport and port infrastructure is moving towards blending and co-funding only a difference between alternative technology and conventional one. Blending requires involvement of the financing institution (EIB or possible other commercial bank). This causes higher administrative burden. The very low co-funding rates do not encourage to apply co-funding due to the high bureaucracy. At EU and/or HELCOM level the co-funding possibilities for environmentally friendly ship investments and R&D projects should be developed to accelerate the investments on green technologies and alternative fuels.

The port infrastructure has to be modified in order to fit the new vessel in 2020.	Ports and other stakeholders in the maritime transport sector should meet and change information on best practices and agree upon certain standards. The business should apply with the same regulations and methods in the Baltic Sea Area at least.
Not provided.	More interactions and discussions between stakeholders. Common demonstration projects.
Too many organisations involved and stiff bureaucracy.	Someone to look into how infrastructures and shoreline & local laws can be easier to manage with expertise.
Financing for investments beyond today's rules, cooperation between ports and ship/ cargo owners is a bottleneck.	Initiative from authorities to start cooperation.
Lack of LNG / LBG terminals.	Speed up the building rate of LNG / LBG terminals, and also give government funding for building bunker vessels, so we do not need to have all our bunker suppliers to be on the road.
Battery technology is expensive and slowing down investments of smaller shipping companies	Compensation.
Stricter emissions regulations motivating / forcing towards energy efficiency investments would be welcome.	Stricter emissions regulations motivating / forcing towards energy efficiency investments would be welcome.
Not provided.	Too little research has been done on alternative fuels. The supply of alternative fuels is very limited at present.
For most cases real-life technical solutions are still missing and regulation is lagging/not considering issues holistically	More co-operation between regulation responsible bodies and industry.
Not provided.	The taxation challenge regarding energy provided through OPS is a real bottle neck.
Unless incentives are given to the shipping industry all alternative fuels and CO2 emission reduction measures will not be competitive against conventional fossil fuels.	International and global cooperation is needed.

Finally, Table 4 summarizes the opinions of the respondents (32 out of 48) in relation to the responsible body for implementing the above suggested actions (see Table 3). EU (21), followed by IMO (16) are identified as the main actors playing a role on this issue.

Table 4 Responsible bodies identified for implementing suggested actions as contained in Table 3.

	%	n.
Industry	43.8%	14
Classification society	12.5%	4
Port authority	21.9%	7
National administration	43.8%	14
EU	65.6%	21
International Maritime Organization (IMO)	50.0%	16
HELCOM (e.g. Green Team, Maritime)	31.3%	10
Academia	6.3%	2
Financing sector	15.6%	5
Other, please specify	6.3%	2

Annex 1 Survey on the HELCOM MARITIME GREEN TEAM Reporting mechanism

HELCOM MARITIME GREEN TEAM - Reporting mechanism

Background information

1. An organization you are representing

- Shipowner
- Technology or software supplier
- Shipyard
- Cargo-owner
- Fuel supplier
- Port authority
- Port operator
- Financing sector actor
- Classification society
- Authority, administration
- Non-governmental organisation
- International or intergovernmental organisation
- Research & Development organisation
- Other, please specify

2. Optional background information

(only for the use of the HELCOM Secretary/GREEN TEAM, not presented in the survey results)

Name of the project,
investment,
development or plan

Implementation time

Other project partners,
if any

Summary of the
project, investment or
plan

Expected outcome

3. In which country is the project, investment, development or plan based in?

- Denmark
- Estonia
- Finland
- Germany
- Latvia
- Lithuania
- Poland
- Sweden
- Russian Federation
- Other, please specify

4. Type of the project

- Vessel new-building
- Retrofit
- Piloting of new technology
- Port infrastructure
- Bunkering infrastructure
- R&D
- Academic research
- Regulatory development
- Other, please specify

Bottlenecks and challenges in green shipping investments

* 5. In which of the following areas have you experienced challenges the most?

-  **Vessels (e.g. technology, design)**
-  **Finance (e.g. lack of financing, risk sharing, guarantees, co-funding, incentives)**
-  **Infrastructure (e.g. port development, port infrastructure, alternative fuels infrastructure and fuel supply)**
-  **Regulation (e.g. regulation, recommendations, standards, guidelines)**
-  **R&D (need for e.g. research and/or piloting new technologies or fuels)**

* 6. Regarding the area chosen in question 5, how would you specify the challenges and rate them according to a traffic light scale?

Green – issues can be resolved and results are shared within the HELCOM public&private co-operation

Yellow – guidance is required from the HELCOM public&private co-operation

Red – obstacles arise and actions are needed from the HELCOM public&private co-operation

	Green	Yellow	Red	N/A
Emission abatement technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energy efficiency measures	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LNG	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Methanol	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Biofuels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hydrogen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fuel cell applications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Liquified biogas (LBG)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Electric and/or hybrid vessels	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On-shore power supply	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other alternative fuel or energy source	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bunkering infrastructure	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bunkering supply	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Port infrastructure (e.g. quay structure, draught)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Port reception facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Access to information (e.g. just-in-time arrival, optimisation, information sharing)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital solutions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regulatory gaps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Harmonised rules	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lack of financing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other, please specify

7. Please describe shortly the challenges above.

Actions to overcome the challenges

* 8. What would you propose should be done for addressing the challenges? Please identify in your answer which specific challenge(s) your proposals are related to.

9. In your opinion which is the responsible body for implementing these actions?

- Industry
- Classification society
- Port authority
- National administration
- EU
- International Maritime Organization (IMO)
- HELCOM (e.g. Green Team, Maritime)
- Academia
- Financing sector
- Other, please specify