



POWER STORAGE IN D OCEAN

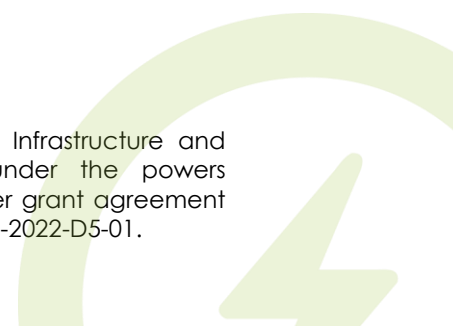
D8.1. POSEIDON Dissemination, communication and exploitation plan

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1. INTRODUCTION

The overall goal of the project is to demonstrate the applicability of 3 innovative fast-response ESS in waterborne transport (Supercapacitors, Flywheels and SMES) addressing their on-board integration, cost-competitiveness, efficiency and safety, in relevant environments. The continuous monitoring and evaluation of the communication and dissemination activities success is key to ensure that the expected results are achieved both for the general and specific audience, respectively.

The overall goal of WP8 is dissemination & Communication. In POSEIDON the dissemination, communication and achievement of the results is of outmost importance for all the partners that take part into the process, and it is an opportunity to ensure that it makes an impact. Moreover, the results from each project, and more importantly from this project must be promoted and communicated with market and industrial stakeholders, as well as social groups and citizens. To this end, a dissemination and communication plan has been prepared, to guarantee a good coordination and execution.

The Dissemination and Exploitation Plan will ensure that the expected impacts of POSEIDON are achieved through well-coordinated dissemination and exploitation activities. The Plan for the dissemination and exploitation including communication activities plans will guarantee that the different target groups are addressed in an appropriate manner, thus helping the uptake of POSEIDON results.

2. DISSEMINATION, COMMUNICATION AND EXPLOITATION

The Dissemination, Communication and Exploitation plan will ensure that the expected impacts of POSEIDON are achieved through well-coordinated dissemination, communication and exploitation activities.

2.1. DISSEMINATION, COMMUNICATION AND EXPLOITATION PLAN

The main objective of the Dissemination and communication plan is to ensure that relevant target groups, end users and the general public are informed about the project outputs. The main activities include standard dissemination and communication activities to raise awareness of the initiative among key actors and specific target groups on different levels in the sector and at a broader European level.

The Dissemination plan will: define the dissemination activities to be carried out; define objectives of dissemination activities; identify and define target groups; define dissemination tools and elaborate about their usage; exemplify dissemination work plans and provide the backbone for partner-specific work plan on a more detailed level.

Although CTN is responsible for the dissemination and communication task, support from all project partners is necessary. All consortium members have a role in dissemination and interaction with stakeholders and media through their forums at regional/national/international level, at relevant seminars, trade fairs, exhibitions, conferences etc. All project partners will be responsible to provide CTN with technical information input when requested and to keep CTN informed about the progress of the project. All partners will keep a track record of the dissemination and communication activities that have been carried out by them at regional level during the project. The promotion will be focused on informing the research, scientific, industrial audience and general public in the most progressive and advanced approaches and technologies of POSEIDON.

2.1.1. TARGET AUDIENCE

With the aim to maximize the impact of the project dissemination activities, different audiences of interest have been identified. For each of them a set of dissemination objectives have been determined. As it was already explained in previous reports, the targeted audiences are, as follows:

- Naval Industry:
 - Shipyards: The EU shipbuilding industry is a competitive sector and important from both an economic and social perspective. In fact: There are about 150 large shipyards, 40 of them are active in the global market; Employ about 120.000 people; Giving a market share of around 6 % in terms of tonnage and 35 % for marine equipment, Europe is a major player in the global shipbuilding industry (total turnover of 60 B€ in 2012).
 - Shipping company & Shipowner: There are about 50 ferry operators in EU with approximately 900 ferries (including freight and passenger transport), which accounts for more than 70% of the world's journeys. With the current fleet, fossil fuels are used in most of the ferries and cause emissions such as CO₂, SO₂, and NO_x).
- Governance & Societies:
 - Port authorities & Regional authorities: The EU is highly dependent on seaports for trade with the rest of the world and within its Internal Market. 74% of goods imported and exported and 37% of exchanges within the EU transit through seaports. There are associations of European ports that focus on the environmental part and to achieve related indicators (ESPO).
 - Classification societies (SSCC): Classification societies are making significant efforts in order to keep their standards up to date with regard to new electrical technologies. Proof of this is the Maritime Battery Forum in which SSCC of the stature of ABS or DNV have been supported to be up to date with the advances that are being made in this field.
- Citizen:
 - Tourism & Passengers: Seaborne passenger transport in Europe is mainly carried by national or intra-EU ferry services. Indeed, in 2019, the number of shipments and landings that took place in European ports exceeded 418 million of passenger.
 - Citizens of port cities: The tourist-port demands highly effective planning answers combining the expected economic development with social, environmental, and cultural sustainability.

- Scientific community:
 - Technologic and scientific researchers: ESS is included amongst the priority actions of the SET plan¹⁹, funding of 75 M€ over the period 2007-2013 (FP7), about 100 M€ in H2020.
 - Environmental researchers: To ensure the increase in TRL of any project, environmental issues (including social ones) must be achieved.

The correlation between different audience categories and dissemination objectives is as follows:

- Naval Industry:
 - Shipyards: The set-up of ESS on the vessel may influence building process, department sizing and also in security measures and associated risks, both under construction as on going.
 - Shipping company & Shipowner: The development of technologies towards the electrification of ships like ESS allows to improve their maintainability and save costs. In addition, it is a differentiating factor that potential clients can consider due to environmental awareness
- Governance & Societies:
 - Port authorities & Regional authorities: The reduction of emissions associated with the development of electric vessels or those that incorporate technologies such as the innovative ESS allows European ports to reach pollution limitations.
 - Classification societies (SSCC): The development of these technologies must go together with the development of quality standards to set minimum conditions, so that the final products are capable of efficiently satisfying the needs of consumers.
- Citizen:
 - Tourism & Passengers: The increasing environmental awareness of tourism means that shipping companies have to carry out communication tasks to publicize the efforts they make in this regard.
 - Citizens of port cities: The development of cleaner ports will lead to cleaner cities, thus improving the port-city relation.
- Scientific community:
 - Technologic and scientific researchers: Update and be in the state-of-the-art of the developed of ESS technologies.
 - Environmental researchers: The quantification of the environmental impact associated with the development of marine technologies.

As it is shown, for each group of audience, some tailored messages have been defined as well as the best tool or channel to transmit it. If the target audience's needs are modified at any time, these messages will be updated to continue achieving the dissemination objectives.

Target audience	Message	Tool/Channel
<p>Shipyards</p>	<p>+ Validate and understand the performance of technologies in different operating profiles and real navigation conditions.</p> <p>+ Know-how about the needs of this technology to be able to implement them when it comes to an efficient design of their ships.</p> <p>+ Increasing the competitiveness of EU transport sector.</p>	<p>Website</p> <p>Social Media</p> <p>Digital brochure</p> <p>Newsletter</p> <p>Video</p> <p>Articles in specialized media</p> <p>Workshops and Training sessions</p> <p>Events and webinars</p>
<p>Shipping company & Shipowner</p>	<p>+ This technology allows to extend the useful life of batteries saving costs.</p> <p>+ Economic study of these technologies and the feasibility of their implementation.</p> <p>+ Validate the potential of these new technologies in a marine environment.</p> <p>+ Improving energy efficiency on-board will help to reduce operational costs</p> <p>+ Empirical verification of the correct performance of these technologies in the 2 different traffic environments</p>	<p>Website</p> <p>Social Media</p> <p>Digital brochure</p> <p>Newsletter</p> <p>Video</p> <p>Articles in specialized media</p> <p>Workshops and Training sessions</p> <p>Events and webinars</p>
<p>Port authorities & Regional authorities</p>	<p>+ When comparing an IWT with propulsion including supercapacitors (i) and hybrid battery (ii), a CO2 reduction of 18% (i) and 29% (ii) is achieved.</p>	<p>Website</p> <p>Social Media</p> <p>Newsletter</p> <p>Digital brochure</p> <p>Video</p>

Target audience	Message	Tool/Channel
	<ul style="list-style-type: none"> + Making waterborne transport more climate-neutral. + Obtain technological solutions to promote the decarbonisation of the marine environment + Reduce emissions to achieve European Standards about contamination + Facilitate the transition toward zero emission waterborne transport for their shipowners + Achieving a clean solution to passenger waterborne transport sector 	<ul style="list-style-type: none"> Articles in specialized media Workshops and Training sessions Events and webinars
Classification societies (SSCC)	<ul style="list-style-type: none"> + Obtaining conclusions for the definition of normative aspects. + Gather empirical information on the needs and dangers of these technologies. 	<ul style="list-style-type: none"> Website Social Media Newsletter Digital brochure Video Events and webinars
Tourism & Passengers	<ul style="list-style-type: none"> + Making passenger waterborne transport more environmentally friendly. 	<ul style="list-style-type: none"> Website Social Media Newsletter Video Magazines and Journals
Citizens of port cities	<ul style="list-style-type: none"> + Helping to achieve Zero emission concept in ports to improve air quality 	<ul style="list-style-type: none"> Website Social Media Newsletter Video Magazines and Journals

Target audience	Message	Tool/Channel
Technologic and scientific researchers	+ Updating state-of-the-art with the development and validation of simulations by testing the 3 technologies in the different test conditions (lab and on-board).	Website Social Media Digital brochure Newsletter Video Articles in specialized media Events and webinars
Environmental researchers	+ The development of new electric marinized technologies will make it possible to promote their application and thus will reduce emissions and discharges caused by traditional propulsion that affect to marine environment	Website Social Media Digital brochure Newsletter Video Articles in specialized media Events and webinars

2.1.2. KEY PERFORMANCE INDICATORS

The communication and dissemination activities will be monitored to assess their impact in order to improve the dissemination strategy during the development of the project. This assessment is critical to detect if any action is not being effective and to adopt the best solution to improve it as soon as possible.

The following table presents the Key Performance Indicators (KPIs) taken as minimum indicators to assess the progress of the POSEIDON communication efforts.

KPIs	Target
Number of visits to the website	>2.000
Number of followers on Twitter	>500
Number of tweets on Twitter	>1.000
Number of articles on Magazines, Journals and specialized media	>2
Number of Newsletter	>8
Newsletter open and click rate	>20
Number of events, workshops, Training sessions and webinars	>5
Number of press releases	>5
Number of impacts on media	>30

These indicators will be measured through the following evaluation tools:

Google Analytics: To track and report the project website traffic.

Twitter Analytics: To track the engagement on Twitter.

Active Campaign reports: To track the Newsletter open rate and the click rate.

Communication reporting table: Partners will report on the communication and dissemination activities, and they will save evidence of the activities and actions developed such as pictures, post on their websites and social media channels, etc.

2.1.3. Dissemination activities

The dissemination of POSEIDON's results is recognized to be an essential activity by all the partners involved in the project. The consortium's approach to dissemination planning is to adopt a systematic iterative process subject to revision as the project progresses and results are achieved.

In this framework, CTN will act as main Dissemination Leader as it offers a large trajectory in dissemination and technology transfer in the sustainable blue economy domain (more than 78 technology transfer projects during the last 10 years).

In the following table, the dissemination objective and any additional motivation for reaching the target audience and the dissemination channels are used to spread key messages to the specialized segment audience; they define 'how' the project will be communicated. The language used for dissemination activities will be English, although translations upon specific requests coming from partners will be evaluated.

Target audience	Segment audience	Dissemination objective	Dissemination channels / Means for dissemination	KPI
Scientific community	Researchers in ESS technologies	Set up the state-of-the-art of the development of ESS technologies in marine transport.	Scientific publication with the results of the simulation and integration of each ESS.	≥ 6 papers
Shipyards	Specialists in on-board electric/power systems	Provide and understand the specifications that must be taken into account to include this type of technology in the electrical and mechanical design of the ship from its design. It includes the definition of new necessary skills.	Technical reports on the results obtained and specifications for the integration of the systems in the ship, including reduction of installed power vs. energy for better efficiency of the system.	> 50 specialists
Shipyards	Associations and clusters	Deliver and understand the capacities of these ESS not only from functional point of view but environmental and taking into account risks and costs of its implementation.	Technical reports on the results of the analysis of the potential integration of these energies in the ship.	> 9 shipyards
Port authorities & Regional authorities	Specialists in environmental management	Show the possibilities of integrating these technologies in an electric/hybrid fleet, and the improvement of efficiency and environmental impact.	Workshop with validation results of these technologies when integrating in ships, as well as the gaps identified for the development of policies.	> 50 policy makers
Classification societies (SSCC)	Specialists in the development of technical standards	Understand the standardization needs to guarantee a high TRL development of these technologies.	Technical reports on the results obtained and specifications for the integration of the systems on the ship, including HAZID studies.	> 3 SSCC

2.1.4. Communication activities

POSEIDON will define a Communication Plan assuring the effective coordination and implementation of internal and external communication activities, channels, tactics and tools. More specifically, it foresees the publication of a digital and printed brochure, flyer and scientific posters. It also foresees reaching them and other target audience through social media and newsletters written in simple story-telling language. In order to actively involve also international authorities, POSEIDON foresees to organize a Final Conference to public authorities, marine regulatory organisms, private entities, industry and academy and other relevant stakeholders. The communication plan will be comprehensive with clear objectives for different target audiences including the media and the general public.

Category of audience	Target audience	Type of information / material	Channels / tools	Objective of the communication	KPI
Scientific community	Technologic and scientific researchers	Papers or proceeding	Scientific journal or congress	Extend the state-of-the-art of the development of ESS technologies in waterborne applications	≥ 1000 researchers
	Marine Environment Researchers	Papers, proceeding or reports	Scientific journal, congress or conference	Increase visibility on the environmental improvement impact of ESS technologies	> 500 researchers
Naval Industry	Shipyards	Target information about developed ESS technologies	Site visits (LinkedIn) and outreach videos	Understand the performance of technologies in different operating profiles and real navigation conditions.	> 9 companies (almost 5 of SeaEurope's members)
	Shipping company & Shipowner	Technical and summary reports	Presentations in dedicated meetings with workshops	Economic and environmental awareness of these technologies and the feasibility of their implementation in the market.	> 10 operators
Governance & Societies	Port authorities & Regional authorities	Summary reports and roadmaps	Presentations in dedicated meetings	Environmental awareness of ESS technologies and electric ships compared with other propulsion.	> 50 policy makers
	Classification societies (SSCC)	Technical and summary reports	Presentations in dedicated meetings with workshops	Gather empirical information on the needs and dangers of these technologies.	> 3 associations
Citizens	Tourism & Passengers	Reports about main outputs reached	Press release and newsletter	Educational. Increase socio-environmental awareness about marine traffic.	> 1000 interested parties
	Citizens of Port Cities	Marketing material, materials for science experiments	Website and social media (Twitter, Facebook, Instagram)	Gaining confidence with novel marine port transport.	> 10.000 interested parties

2.1.5. Exploitation OF RESULTS

As a result of the activities and tasks developed by the POSEIDON project, three FRESS technologies will be developed. Others outputs will be a refined metrics: Levelized Cost of Storage (LCOS) tool for ESS cost assessment and comparison; a LCC and LCA analysis of FRESS technologies applied to the waterborne segment; and a disruptive technologies

assessment: complementarity with hydrogen and solid sails. The owners of each result, and according to the achievements reaches will evaluate the possibility to patent it with the objective of its commercialization. This will allow the members of the Consortium to recover the investment made, and benefit from the knowledge they acquire.

The exploitation activities of POSEIDON results will be the following ones:

Project output	Involved partners	IPR strategy	Exploitation Route / Strategy	Time to market
Innovative Outcome 1. Marinized SMES based on CERN high-field superconducting magnets	CIEMAT; CIYCLOMED; ANTEC; OCEM; CERN	Utility model	Use as a background for future projects, to demonstrate the technology in relevant environment (TRL6), with synergies from Outcome 2 and 3, that is expected to achieve in POSEIDON project.	1-2 year after the end of the project
Innovative Outcome 2. Slow Flywheel for waterborne transport	CIEMAT; ANTEC; OCEM	Utility model	Use as a background for future projects, to demonstrate the technology in operating environment (TRL7).	2-3 year after the end of the project
Innovative Outcome 3. Supercapacitor based ESS for marine applications	CIEMAT; OCEM	Utility model	Use as a background for future projects, to demonstrate the technology in operating environment (TRL7).	2-3 year after the end of the project
Innovative Tool 1. A refined metrics Levelized Cost of Storage (LCOS) tool for ESS cost assessment and comparison. Applicability report of FRESS to different waterborne segments.	CTN; CIEMAT; BALEARIA; DAMEN; TPH	License	Results used in developing, creating and marketing a commercial product of a Levelized Cost of Storage (LCOS) tool for ESS cost assessment and comparison.	1-2 year after the end of the project
Innovative Tool 2. LCC and LCA analysis of FRESS technologies applied to the waterborne segment.	CTN; CIEMAT; BALEARIA; DAMEN; TPH	Copyright	Results exploited by other organisations by the transfer of ownership.	1-2 year after the end of the project
Innovative Tool 3. Disruptive technologies assessment: complementarity with hydrogen and solid sails	CTN; CIEMAT; TPH; UPM	Industrial designs and models	Results used either to develop new standardisation activities and to contribute to on-going standardisation works.	3-5 year after the end of the project