

Template for the First Call of the Atlantic Area Programme 2021-2027

1. PROJECT IDENTIFICATION

1.1 Project Info

<i>Project Info</i>	
<i>Acronym (Max: 25 characters with spaces included)</i>	SMARTDEC
<i>Project Title (Max: 200 characters with spaces included)</i>	Smart Clusters for Maritime Decarbonisation
<i>Type of Project</i>	Traditional
<i>Start Date</i>	02/01/2024
<i>End Date</i>	31/12/2026
<i>Duration</i>	36 months

1.2 Area of Intervention

<i>Area of Intervention</i>	
<i>Programme Priority</i>	1. Blue Innovation and Competitiveness
<i>Programme Specific Objective</i>	RSO1.1 Developing and Enhancing Research and Innovation Capacities and the Uptake of Advanced Technologies
<i>Fields of Intervention</i>	029. Research and innovation processes, technology transfer and cooperation between enterprises, research centres and universities, focusing on the low carbon economy, resilience and adaptation to climate change

1.3 Total Budget

1.4 Project Summary

Project Summary
<p><i>1.4.1 Please provide a short project summary of the project (press release style). The project overview should start with a simple sentence on what is innovative about your project. Then you should describe:</i></p> <ul style="list-style-type: none"> - <i>the transnational challenge you jointly will tackle;</i> - <i>the project's overall objective and the expected change to the current situation;</i> - <i>the main outputs that will be produced and who will benefit from;</i> - <i>the approach you plan to take and why transnational cooperation is needed.</i> <p style="text-align: right;">(Max: 1,000 characters with spaces included)</p>
<p>EN</p> <p>SMARTDEC aims to create and develop an Atlantic network of the maritime transport sector to provide the tools, knowledge and structure needed to rapidly meet the challenge of reducing the pollutant emissions of the waterborne transportation in the Atlantic Area (AA). This joint initiative gathers key actors from different regions in Ireland, France, Portugal & Spain that will be organised as hubs with a quadruple helix approach in which research & academia, policy makers, society and the industry (clusters, SMEs & start-ups) will collaborate to develop common strategies to achieve the decarbonisation of the maritime transport sector. Even if some initiatives are being developed world-wide on this, there is still a lack of a well-structured initiative in the AA. SMARTDEC will boost the innovation capacity of decarbonisation of the maritime transport sector by promoting the adoption of promising technological solutions currently available and validated to match with relevant end-users.</p>
<p>FR</p> <p>SMARTDEC vise à créer et à développer un réseau atlantique du secteur du transport maritime afin de fournir les outils, les connaissances et la structure nécessaires pour relever rapidement le défi de la réduction des émissions du transport maritime dans l'Espace Atlantique (EA). Cette initiative rassemble des acteurs clés de différentes régions d'Irlande, de France, du Portugal et d'Espagne, organisés en hubs, avec une approche en quadruple hélice dans laquelle la recherche et le monde universitaire, les politiques, la société et l'industrie (clusters, PME et start-ups) collaboreront pour développer des stratégies afin de parvenir à la décarbonisation du transport maritime. Même si des initiatives sont déjà développées, il manque dans l'EA une initiative bien structurée. SMARTDEC stimulera la capacité d'innovation de la décarbonisation du transport maritime en adoptant des solutions technologiques prometteuses, disponibles et validées pour correspondre aux utilisateurs concernés.</p>
<p>PT</p> <p>SMARTDEC visa criar e desenvolver uma rede atlântica do sector do transporte marítimo para fornecer os instrumentos, conhecimentos e estrutura necessários para enfrentar rapidamente o desafio de reduzir as emissões do transporte marítimo no Espaço Atlântico (AA). Esta iniciativa reúne actores-chave de diferentes regiões da Irlanda, França, Portugal e Espanha, organizados em hubs, com uma abordagem de hélice quádrupla na qual a investigação e o meio académico, a política, a sociedade e a indústria (clusters, PMEs e start-ups) colaborarão no desenvolvimento de estratégias para alcançar a descarbonização do transporte marítimo. Embora já estejam a ser desenvolvidas iniciativas, falta uma iniciativa bem estruturada na EA. O SMARTDEC estimulará a capacidade de inovação da descarbonização do transporte marítimo, adoptando soluções tecnológicas promissoras que estão disponíveis e validadas para corresponder aos utilizadores em causa.</p>

SP

SMARTDEC pretende crear y desarrollar una red atlántica del sector del transporte marítimo que proporcione las herramientas, los conocimientos y la estructura necesarios para abordar rápidamente el reto de reducir las emisiones del transporte marítimo en el Espacio Atlántico (EA). Esta iniciativa reúne a actores clave de diferentes regiones de Irlanda, Francia, Portugal y España, organizados en hubs, con un enfoque de cuádruple hélice en el que la investigación y el mundo académico, la política, la sociedad y la industria (clusters, PYMEs y start-ups) colaborarán para desarrollar estrategias para lograr la descarbonización del transporte marítimo. Aunque ya se están desarrollando iniciativas, en el EA falta una iniciativa bien estructurada. SMARTDEC estimulará la capacidad de innovación de la descarbonización del transporte marítimo mediante la adopción de soluciones tecnológicas prometedoras que estén disponibles y validadas a la altura de los usuarios interesados.

1.5 Project Documents

1.6 Financing Plan

2. PROJECT DESCRIPTION

2.1 Project Overall Objective

2.1.1 Project Overall Objective

- *Make sure that it clearly contributes to the selected programme specific objective;*
- *The overall objective should provide the general context for what your project aims to achieve;*
- *It should describe the broader goal of the project for the benefit of its target group(s) and should point to the results (change) to be achieved by the project.*

(Max: 500 characters with spaces included)

SMARTDEC aims to develop a network of Atlantic hubs for an efficient implementation of decarbonisation solutions for maritime transportation. The SOs are 1) develop a platform to support technology adoption and transnational cooperation 2) provide cost-benefit and social analysis on clean technologies identified, 3) share best practices and tackle problems jointly with the preparation of future pilots. The wide community behind the shipping and port sector will mutually benefit from the project.

2.2 Project Relevance and Context

2.2.1 What are the territorial common challenges/opportunities that will be tackled by your project?

Please describe which specific challenges and needs are addressed by your project and why they are relevant for the overall programme area.

(Max: 2,000 characters with spaces included)

Waterborne transportation plays an essential role in the European economy: almost 77% of European external trade and 35% of trade between EU Member States is carried out by sea. In 2018, maritime transport produced 13.5% of the European Union's (EU) total greenhouse gas emissions (Source: European Environment Agency); the volume of freight is also growing rapidly, which could increase its CO₂ emissions by around 90% to 130% by 2050 according to the International Maritime Organisation (IMO).

In this context, to reach its goal of carbon neutrality by 2050, the EU still needs to make significant efforts to reduce emissions in the maritime transport sector: meeting the neutrality target will require a reduction of 50% in emissions by 2050. At the same time, the European Parliament voted at the end of 2022 to include maritime transport in the EU ETS and to set binding standards for shipping companies to reduce their CO₂ emissions by at least 40% by 2030. Thus, for the European maritime transport sector, decarbonisation has become a major competitiveness issue, however, there is a lack of knowledge about decarbonisation technologies compatible for the sector activities and a fragmented approach to the challenge to face.

The SMARTDEC project aims at creating a network of Atlantic hubs and transnational cooperation actions to help regional maritime stakeholders to play a leading role in the decarbonisation and thus contribute to unlocking the potential of the blue economy, as the Atlantic Area represents indeed the largest maritime basin in the EU. The project will thus contribute to a sustainable and competitive maritime transport sector that will reinforce the economic development of the Atlantic Region and the development of a regional value chain for decarbonisation. In this way, the project will also contribute to the priority "Blue innovation and competitiveness" of the Atlantic Area, and more precisely under the Pillar 1-ports as gateway and hubs for the blue economy.

2.2.2 How does the project tackle identified challenges and needs and what is new about the approach of your project?

Please describe the project approach chosen to address the challenges and needs described above. Please also explain how the approach goes beyond existing practice in the sector/programme area/participating countries demonstrating the innovativeness of the approach.

(Max: 3,000 characters with spaces included)

SMARTDEC will tackle the lack of knowledge, expertise and coordination on innovative solutions for maritime transport decarbonisation by adopting a transnational, interdisciplinary, and multi-sectoral approach. It will make it possible first to generate an analysis of the state of the art of innovative energy technologies and their degree of efficiency for their cataloguing, valorisation, and implementation. This mapping will allow us to understand the barriers to the adoption of decarbonisation innovations and also the definition of the possible intermodality strategies in each region involved in the project (Ireland, France, Portugal, Spain). Second, our quadruple helix approach will allow us to build a network of various stakeholders, including maritime clusters, business networks, capitalisation actors, research institutions, shipowners, port communities, and technology companies with direct action in decarbonisation from across the Atlantic Area. This network will improve connectivity and create synergies between the different actors of the maritime transport involved in the development of decarbonisation processes (directly or indirectly) and act as a platform to share knowledge, best practices, showcase technologies, as well as to provide support for the development and implementation of decarbonisation projects. SMARTDEC network and relevant actors will also contribute to ZEWT (Zero-emission waterborne transport initiative), mostly including SMEs and research centres not active in the maritime sector.

In addition to facilitating the adoption of new decarbonisation technologies, SMARTDEC will organise calls for expressions of interest to, on the one hand, identify the needs of the actors and, on the other hand, prepare the support of targeted innovations that will make it possible to meet these concrete needs. The transfer and development of adapted decarbonisation technologies will thus be facilitated and amplified.

Finally, the SMARTDEC project will tackle the risk of a fragmented approach. The network will foster transnational and coordinated cooperation across the Atlantic Area (AA) and workshops will be organised to expand the network beyond the project partners and also additional regions. This coordinated and transnational approach will thus allow a leverage effect, the impact of each action being passed on to the whole AA.

While several projects have focused on developing solutions to improve the carbon footprint and environmental friendliness of ports, very few have sought to integrate all maritime transport actors, including ships, shipbuilding or even maritime logistics/transport actors and communities, in such a comprehensive manner. This holistic approach to the problem seems to us to be the best way to ensure the highest possible impact. Moreover, the cost economic and social analysis that will be carried out on the technological innovations identified also contributes to the high value of the project from other actions that may have been carried out previously.

2.2.3 Why is transnational cooperation needed to achieve the project objectives and results?

Please explain why the project objectives cannot be efficiently reached acting only on a national/regional/local level and describe, for the partnership and project area, what is the added value.

(Max: 2,000 characters with spaces included)

The project objectives cannot be efficiently reached acting only on a national or local level due to several factors, including:

- Complexity of the challenge: The Atlantic Area borders four Member States (Ireland, France, Portugal and Spain) together with the United Kingdom, cover a vast area with 36 regions and a container port throughput of more than 26 millions. Moreover, this territory presents a diverse range of maritime ecosystems with great variations in terms of organisation, size and activities. For example, France has a strong shipbuilding activity with 177290 GT, unlike other countries such as Portugal (9923 GT) for which this activity is marginal compared to the rest of the maritime activity. Another example is Spain, which is the only country among the 4 in the Atlantic Area to have a ship recycling activity (4940 GT) (Source UNCTADStat 2022). To ensure that these specificities are represented in the solutions provided, the project had to rely on a coordinated approach that goes beyond national boundaries and specificities. Moreover, the Atlantic ocean is the second-largest of the world's five oceans and plays a central role in the economic development of human society, globalisation and mitigation of climate change. Even if sea borders are defined, in real life the Atlantic Ocean is ONE complex ecosystem, so all the actions undertaken in one place of it will impact the rest, that is why, relevant issues as the maritime transport decarbonisation should be addressed in a transnational approach.

- Fragmented and limited access to resources and expertise: National actors will have only partial access to resources, expertise on new technologies, and innovative solutions for decarbonisation. On the contrary, a transnational approach and the creation of hubs will multiply the project's impact on the development and implementation of decarbonisation projects.

The geographical area of the project encompasses a very large zone of the Atlantic facade, from north to south, with partners from Ireland (all regions), France (Brittany & Pays de la Loire), Spain (País Vasco & Andalucía) and Portugal (all regions), allowing the specificities of the different ecosystems and dynamics to be taken into account in order to develop the most extensive and relevant network possible. By bringing together actors from this large geographical area in a single project and considering the quadruple helix approach of the project, SMARTDEC will also help to build common strategies and roadmaps for the maritime transport decarbonisation, and thus strengthen the cohesion of the Atlantic Area. Moreover, the partnership thanks to its diverse typology of actors will make it possible to develop solutions adapted to the reality and the needs of the regions in order to ensure the quality and replicability of the services provided and the efficiency of the project.

2.2.4 Who will benefit from your project outputs and results?

In the first column of each row, please select one of the pre-defined target groups from the drop-down list. In the second column explain in more detail exactly who will benefit from your project. Please ensure consistency with the target groups defined in the work plan.

Target Group	Specification
Regional Public Authorities	<p>In priority, the 14 regional authorities composing the CPMR Atlantic Arc Commission in:</p> <ul style="list-style-type: none"> - Portugal (Norte, Lisboa e Vale do Tejo, Alentejo) - Spain (Galicia, Cantabria, Navarra, Basque Country, Asturias, Andalucía) - France (Nouvelle-Aquitaine, Pays de la Loire, Brittany) - Ireland (Northern and Western Regional Assembly) - + UK (Wales) <p>The +150 regional authorities composing the whole CPMR membership will also benefit from dissemination about the project.</p>

	The national authorities engaged in the project as associated partners (the regional council of Brittany - FR, the regional council of Pays de la Loire - FR, the Donegal county council - SP and the CCDR for Lisbon & Tagus Valley region - PT) as well as the local ones involved in the project actions will be crucial for dissemination too.
Start-ups/SME	In the Atlantic area, start-ups and SMEs, able to propose technological solutions for decarbonisation that are currently positioned in or outside the maritime sector. The project will enable these SMEs and their technological innovations to be highlighted and to encourage, when pertinent, the transfer of all the innovations to the maritime sector.
Higher Education and Research Organisations	SMARTDEC will first provide an opportunity to research teams to deepen their knowledge but also to make the originality of their work better known on a large scale. The aim is also to be able to explore synergies, to look for new opportunities for collaboration, and to widespread the participative open innovation approach adopted in the project.
Business Support Organisation	The project will support clusters and incubators to achieve their goal to strengthen strategic cooperation dynamics between actors in the maritime transport sector and support the increase of competitiveness of start-ups & SMEs, also to help them find the pertinent market.
Interest Groups including NGOs	By working on the decarbonisation of the Atlantic Area, the SMARTDEC project will contribute to fight against pollution in the ocean but also for coastal populations. Associations and other social or industrial initiatives concerned by the defence and protection of marine ecosystems, and their adaptation to climate change will benefit from the project activities and results. That is why NGOs for the protection of the ocean in the broadest sense, such as Surfrider, as an associated partner of the project.
General Public	New generations are more and more aware about the relevance of the decarbonisation actions for the future. Any individual as a responsible citizen, is directly or indirectly concerned by the impact of the Maritime transport sector.

2.2.5 How does the project contribute to wider strategies and policies?

In the first column of each row, please select one of the pre-defined strategies from the drop-down list. In the second column explain in more detail in what way you will contribute.

Strategy	Contribution
The Atlantic Strategy Action Plan 2.0	By developing a network of Atlantic hubs to support decarbonisation technologies adoption, SMARTDEC contributes firstly to unlock the potential of a more energy-efficient maritime transport while preserving marine ecosystems, and secondly to contribute to greater territorial cooperation and cohesion in the Atlantic Area to climate change adoption and mitigation. SMARTDEC will contribute to pillar 1 and 2 of the Atlantic Strategy Action Plan 2.0: 'Pillar I - Ports as gateways and hubs for the blue economy' and Pillar IV – Healthy Oceans and Resilient Coasts'. SMARTDEC actions will scale up decarbonisation of maritime transport and port activities by sharing best practices and supporting technology adoption and transfer for a better and faster uptake and dissemination to all actors of the ecosystem.

<p>The EU Green Deal</p>	<p>The SMARTDEC project is part of the Blue Economy Strategy of the European Green Deal: the project aims at jointly improving environmental protection and climate change mitigation. Through the adoption of decarbonisation solutions in maritime transport, port activities and ship building, the sector will decrease greenhouse gas emissions as well as air and water pollution and underwater noise, while improving the competitiveness of players through the adoption of technological and efficient innovations, as well as supporting the development of a sustainable and resilient maritime transport sector. Moreover, SMARTDEC will have a leverage effect due to the results transferability to other European maritime areas, to the potentially large impact to a wide range of application fields of the decarbonisation technologies.</p>
<p>The EU Territorial Agenda 2030</p>	<p>The SMARTDEC project will meet the EU Territorial agenda by bringing actors from the Atlantic Area to cooperate on a response to a global environmental and societal challenge and the decarbonisation of the maritime transport sector.</p> <p>SMARTDEC will contribute to some priorities of the agenda, such as, i) Integration beyond borders by encouraging interregional cooperation in the AA, national, regional, and local development strategies targeted on their maritime transport sector; ii) Functional regions by setting a network for regional key players and decision makers in strengthening cooperation within their innovation ecosystems; iii) Healthy Environment by promoting the development and adoption of new technologies for decarbonisation of the maritime transport sector; iv) Balanced Europe by unlocking the potential of the AA regions in 4 countries, and adequately addressing the regional needs and the technology capacities through integrated and cooperative approaches.</p>
<p>Fit for 55 (Other strategy)</p>	<p>The SMARTDEC project will contribute to the FuelEU Maritime. The FuelEU Maritime proposal aims to foster the uptake of renewable and low-carbon fuel in the maritime sector, in order to decarbonise the maritime sector. To achieve its objective the proposal sets two principal objectives. As for the first, from January 2030, containerships and passenger ships at EEA ports will also have to connect to onshore power supply and use it for all energy needs while at berth (there are some exceptions). As regards the second one, the proposed regulation introduces increasing limits on carbon intensity of the energy used by vessels from 2025, with the objective of obliging them to use alternative fuels. It applies to commercial vessels of 5000 gross tons and above, regardless of flag (fishing ships are exempted).</p> <p>The SMARTDEC project will anticipate the Alternative Fuels Infrastructure Regulation (AFIR) which aims at ensuring a widespread, rapid, and coherent development of fully interoperable recharging infrastructure in all Member States. The AFIR sets out mandatory national targets for the deployment of sufficient alternative fuels infrastructure in the EU, in particular for vessels.</p>
<p>The Blue Economy</p>	<p>EU Sustainable BuE Communication from the Commission, May 2021:</p> <p>The SMARTDEC project will directly contribute to the objectives of the EU Sustainable Blue Economy strategy by renovating the EU Atlantic fishing fleet and improving technological transfer in favour of green shipping. The EU SBE Strategy indeed stipulates that the Commission will promote the use of EU funds to green maritime transport by a) increasing the uptake of short-sea shipping instead of using more polluting modes; b) renovating the EU's maritime fleet (e.g. passenger</p>

	ships and supply vessels for offshore installations) to improve their energy efficiency; and c) developing the EU's highly-advanced manufacturing and technological capabilities.
The Marine Strategy	EU Mission Restore our Oceans and Waters: The SMARTDEC project is promoting decarbonisation and technology innovation support for the maritime sector and will contribute to all of the 3 Mission goals, in particular to making the blue economy carbon neutral and circular as well as in providing further developments for preventing and eliminating pollution in the water ecosystems of the EU. Additionally, here is a direct link of this project with the A-AAGORA project under the ATLantic-Arctic Lighthouse of the Mission, coordinated by UAveiro, also a partner in the SMARTDEC. By engaging both it will maximise the links between the Atlantic-Arctic lighthouse strategic endeavour and both projects goals and outputs.
Any Other Strategy(ies)	https://www.cleanshippinginternational.com/europe-outlines-zero-emission-waterborne-transport-investment-strategy/

2.2.6 How will your project use synergies with EU and other project initiatives?

Please describe synergies and the activities foreseen to ensure coordination and avoid overlaps with ongoing or past projects, also specifying the concerned EU-funded programmes (e.g., Interreg AA, other Interreg programmes and other EU-funded relevant programmes or initiatives, e.g., Horizon Europe, LIFE, national or regional programmes, etc.). Please describe how the new project intends to build on available results/knowledge for each project identified. Please provide a max. of 10 projects, prioritising the most relevant ones. (Econet's notes: You can provide less than 10 projects)

Project or Initiative	Synergies Foreseen
ASPBAN	Atlantic Smart Port Blue Acceleration Network (2020-2023) is a EMFF project focused on developing a dynamic acceleration platform for SMEs and Start-ups providing solutions to EU Atlantic ports work. By becoming the main playground for the development of new blue companies, EU Atlantic Ports have been supported in their ambition to diversify their revenue sources and work towards a sustainable ocean economy. They had the possibility to identify SMEs providing greening solutions to ports activities.
Technological innovations for decarbonation of maritime sector	SEABAT (H2020) : combining modular high-energy batteries and high-power batteries, novel converter concepts and production technology solutions derived from the automotive sector NAUTILUS (H2020): an integrated marine energy system that will use liquefied natural gas.

<p>RESTORE4Cs (HORIZON-CLS-2021-D1-01-08)</p>	<p>Restoration of natural wetlands, peatlands and floodplains as a strategy for fast mitigation benefits; pathways, trade-offs and co-benefits</p> <p>The RESTORE4Cs project aims to provide tools and methodologies to assess pressures and impacts on the status of wetland ecosystems at various scales and relate these to the climate mitigation and adaptation potential, to biodiversity, and other ecosystem service provision, and associated co-benefits, combining social, ecologic, and economic perspectives. The project aims as well to predict restoration and management effects on GHG emission/removal, biodiversity, and other ecosystem services, while maintaining functional biodiversity through conservation and/or restoration. This project includes a pilot site in the Aveiro Lagoon measuring the GHG emissions and storage in the region, which includes the port of Aveiro and maritime transport. These data will then be incorporated into an integrated app/toolbox to guide and facilitate policy recommendations and decision making. This project can feed into and create several synergies with SMARTDEC, including at the level of sharing data and best practices and insights into the cost-benefit analysis while feeding the outputs to be delivered.</p>
<p>A-AAGORA (HORIZON-MISS-2021-OCEAN-02-032)</p>	<p>A-AAGora - Blueprint for Atlantic-Arctic Agora on cross-sectoral cooperation for restoration of marine and coastal ecosystems and increased climate resilience through transformative innovation.</p> <p>The A-AAGORA project aims to demonstrate via technological, social, logistic, and economic innovation actions the reduction of pressures in coastal areas, through the application of ecosystem-based management (EBM) and nature-based solutions (NbS) to boost resilience to climate change and mitigating its impacts.</p> <p>This project includes a pilot site in the Aveiro region that will also measure and include the GHG emissions from the port and maritime transport to feed new models of decision making and scenario predictions on ecosystems. Therefore, this project can feed into and create several synergies with SMARTDEC including at the level of sharing data and best practices while feeding guidance into the catalogue of decarbonisation technologies to be delivered most suited to those insights.</p>
<p>EMERGE (H2020; N874990)</p>	<p>Evaluation, control and Mitigation of the EnviRonmental impacts of shippingG Emissions</p> <p>EMERGE is an innovative 4-year research project funded by the European Commission under the Horizon 2020 programme. The objectives of EMERGE are (i) to quantify and evaluate the effects of potential emission reduction solutions for shipping in Europe for several scenarios, and (ii) to develop effective strategies and measures to reduce the environmental impacts of shipping. EMERGE objectives will be achieved through real-world test cases involving measurements and modelling on actual vessels, along main shipping routes and in sensitive European marine regions.</p> <p>(https://emerge-h2020.eu)</p> <p>This project, which involves UAveiro team members will be relevant to SMARTDEC in what concerns the input for the catalogue of innovative clean technologies for decarbonisation and the cost-benefit analysis and impact of the choices made by the shipping sector in the decarbonisation plans.</p>

<p>AIRSHIP (FCT; PTDC/AAG-MAA/1581/2014; POCI-01-0145-FEDER-016708)</p>	<p>Impact of maritime and port emissions in the air quality of Portugal: present and future scenarios.</p> <p>The AIRSHIP project, funded by FCT during the period 2018-2020, aimed to evaluate the impact of maritime transport emissions on the air quality in Portugal and, with greater detail, in the Porto urban area.</p> <p>In particular, the main goals achieved with the AIRSHIP project were the development of present and projected future maritime transport emissions scenarios for Portugal and the evaluation of the impact of these scenarios on air quality using numerical modelling. Besides Portugal domain, for the case study of Port of Leixões,</p> <p>measures/strategies to mitigate adverse effects on the air quality around the port area, were developed and tested.</p> <p>(http://airship.web.ua.pt/en/)</p> <p>This is a project that has end in 2021, but the results will be crucial for the Pilot in Port of Aveiro, as means of data sets for comparison and evaluation of time series in SMARTDEC.</p>
<p>CISMOB (Interreg Europe Programme, PGI01611)</p>	<p>CISMOB - Cooperative information platform for low carbon and sustainable mobility” Interreg Europe project (coordinated by the Centre for Mechanical Technology and Automation of the University of Aveiro). The main vision was to promote innovative ways to reduce carbon footprint and increase the sustainability of urban areas by improving the efficiency in the use of urban transport infrastructure through ICT. In a context of increasing availability of sensor technology to monitor and record large amounts of data, a common challenge to policy makers is to identify the best practices to take advantage of these new sources of data and use them to prioritize intervention areas, to manage efficiently current road system, to inform citizens and motivate them to choose more sustainable mobility options. TEMA was responsible, in particular, to identify and classify the main ICT applications on road transport; by the dissemination actions with the aim of exchanging local experiences, learning best practices of the other consortium partners; by establishing contacts with local and regional stakeholders. The experience gathered in the field of ICT applications for road vehicles as well as on the projects’ communication will be useful for this proposal.</p>

<p>PriMaaS (Interreg Europe Programme, PGI05830)</p>	<p>PriMaaS: Prioritizing low carbon mobility services for improving accessibility of citizens” (2019-2023) is an Interreg Europe project in which the main vision is to promote the integration of traditional collective transport modes with personal and innovative ones by creating equitable mobility services truly focused on citizens' needs. Regional and national policy instruments should be adapted to promote a fully integrated intermodal approach between all transport services, namely by using data provided and gathered in real time about both travel demand and travel supply. At the same time, multiscale policy instruments should ensure that the more comfortable and affordable travel options for any individual to get from A to B has also minimum carbon levels. PriMaaS aims at increasing inter-organizational collaboration and building trust among key stakeholders (transport authorities, operators, providers of mobility services and consumers protection organizations). This will be achieved by promoting thematic regional and interregional exchange of experience events.</p>
<p>FAN-BEST</p>	<p>Interreg Atlantic Area project that will be completed in June 2023. SMARTDEC will build upon the services towards blue economy entrepreneurs and a dedicated training programme introducing the blue economy sectors delivered during FAN-BEST to further support innovative entrepreneurs developing solutions for a sustainable port and shipping sector.</p>
<p>WATERBORNE TECHNOLOGY PLATFORM</p>	<p>SMARTDEC will encourage synergies with the project the waterborne technology platform, especially those under the following category, energy efficiency and zero emissions: https://waterborne.eu/projects/energy-efficiency-and-zero-emissions</p>

2.2.7 How does your project build on available knowledge?

Please describe the experiences/lessons learned that your project draws on, and another available knowledge your project capitalises on. If relevant, please specify the projects to be capitalised and which project partner(s) have been involved.

(Max: 2,000 characters with spaces included)

SMARTDEC will build upon the AspBAN project which has been a piloting experience of twinning SMEs/Start ups and Ports, notably supporting the greening ports activities. Although AspBAN concentrated on port greening and not greening waterborne transport per se, the AspBAN project has developed interesting contacts and methods of twinning between SMEs and Ports, via calls and a Bootcamp allowing the matchmaking with ports. These matchmaking activities could feed into SMARTDEC piloting activities, when they cover green shipping. This link should be supported by the participation of three AspBAN partners in SMARTDEC, namely Forum Oceano (FO), Irish Maritime Development Office/Marine Institute (IMDO/MI) and The Conference of Peripheral Maritime Regions (CPMR).

SMARTDEC will make sure to harness the results of previous INTERREG Atlantic Area programmes, especially the HYLANTIC project. It will ensure this capitalisation via its WP5 and will ensure exchanges with the project and deepen the Atlantic community of stakeholders engaged in green shipping.. Although the project envisages to foster the adoption of hydrogen technologies for many different uses and local transportation, it has developed an activity on waterborne transport. In parallel, SMARTDEC will not only focus on Hydrogen, and will enable more technologies for greening waterborne transport.

2.3 Project Partnership

2.3.1 Partnership

Describe the structure of your partnership and explain why these partners are needed to implement the project and achieve project objectives. The description should focus on the complementarities between partners and clearly explain the structure of the partnership, avoiding individual descriptions of partners. Moreover, please describe how the associated partners will be involved. Individual roles and competences of partners are to be detailed in Section Project Partners.

(Max: 2,000 characters with spaces included)

Aware of the ambition of SMARTDEC and its vast geographical area, we have brought together a consortium of actors able to not only represent the different value chain key players but also make the link between the different stakeholders of the maritime transport sector to ensure a strong and lasting impact. In concrete SMARTDEC partnership gathers:

- 3 maritime clusters: PMBA (FR), CMMA (ES) and FO (PT). The role of these actors is to leverage multiple stakeholders representation while strengthening strategic cooperation dynamics between actors (companies, RTD centers, higher education institutions, Public Administration organisations) to promote innovation, and competitiveness with focus on blue economy. Within the SMARTDEC project, they will naturally play their role of supporting innovation, relaying needs and issues of maritime actors and promoting innovations implementations;
- 1 academic and research partner: UA (PT): this partner, in support of other partners, will contribute to the foreground mapping and decarbonisation technology profiling of SMARTDEC allowing the identification of the best clean technologies also mapping gaps, needs, stakeholders and technology providers/users and thus providing a solid basis for the building of our work;
- 2 actors from business support area: AT (FR) and BPL (SP): these partners will participate in the mobilisation of technological innovation providers and in the evaluation of these innovations in view of the identified needs;
- 2 associations of regional authorities, specialists in capitalisation activities: IMDO - Irish Maritime Development Office (IMDO) operates in and is part of the Marine Institute (IR) and CPMR (FR) will play their role in participating to analysis and maximise SMARTDEC's impact by raising awareness about SMARTDEC's results, with actions to foster engagement within Atlantic stakeholders, regional and EU policy makers.

Our 5 associated partners, regional public authorities (Brittany council, Pays de la Loire council, Donegal council, Lisbon & Tagus valley council and NGO (SURFRIDER), will contribute to the dissemination of SMARTDEC results, each toward their audience, and to the mobilisation of regional stakeholders in the activities of the project.

2.4 Long-term effects and durability

2.4.1 Ownership/durability

Please describe who will ensure the financial and institutional support including maintenance for outputs and, if applicable, for the most important deliverables developed by your project.

(Max: 8,000 characters with spaces included)

SMARTDEC will develop a Sustainability Plan as part of WP5 to ensure that the project results can be used beyond the EU co-financing period. With the contribution of all partners, the Sustainability Plan will identify actions to put in place to ensure a financial and institutional support for the sustainability of the project, in particular, the creation of Maritime Decarbonization Atlantic Hub gathering all relevant stakeholders of the shipping sector and foster new technologies and innovations development and uptake.

The SMARTDEC project partners will provide the financial and institutional support required to ensure the appropriate availability and exploitation of the following project outputs after the its end:

- Portfolio of needs, challenges and ideas generated during the WP1 & WP2 workshops (Owner: All project partners) – The project partners are willing to organise participative workshops and co-creation or matchmaking events with the outcome of those done during the SMARTDEC project. Most partners are already regularly targeting different groups among their regional communities, thus the outcomes of the project could feed their institutional roadmaps with the challenge-driven approach used in SMARTDEC and contribute to the interregional community, fostering the development of a common strategy for the decarbonisation of the maritime transport sector in the Atlantic Area.

- SMARTDEC innovation Catalogue, interactive platform and social networks accounts (Owner: PMBA) – The Joint Resources Catalogue will be integrated in the data storage systems of ES UVIGO, and its maintenance and regular update will be ensured by its Information Technologies Services. Similarly, the operation of the communication tools created for the new network will be supported by the ES ULPGC Communication & Image Services.

- Collaboration Agreements (Owner: All interested partners) – The project partners willing to further exploit and renew the SMARTDEC agreements, establishing new partnerships with sound European and International Institutions working in maritime decarbonisation, will assume the related commitments.

- Long-term roadmap (Owner: interested partners) - Based on the project results, the governmental associated partners (Brittany council, Pays de la Loire council, Donegal council, Lisbon & Tagus valley council) or the NGOs (SURFRIDER) could ensure the post-project follow up with the regional authorities (eventually supported by CPMR and other regions of the Atlantic Arc) in position to adopt the main strategies defined and roadmap for the decarbonisation of the maritime transport sector provided by SMARTDEC.

2.4.2 Lasting effects

Outputs and deliverables should be made available and used by relevant target groups (project partners or other stakeholders) after the project's lifetime to have a lasting effect on the territory. Please describe how the outputs and deliverables will stay available and will be taken up or upscale by the project partners.

(Max: 8,000 characters with spaces included)

SMARTDEC project will allow not only to map and build a greater knowledge on the available greening technologies for the shipping sector, but also provide a cost-benefit analysis and environmental profile to each one, maximising their regional suitability and desired impacts. Furthermore, it will not only support SMARTDEC partners activities of boosting technology adoption on green shipping, but also offer support to Atlantic stakeholders and regional policy-makers to comply with the EU legislations on the matter, and foster the green transition in their territories.

For SMARTDEC clusters - the project will offer a coordination of actions among Atlantic clusters and ensure that technologies developed in one part of the Atlantic area can be transferred and used by a shipbuilder located in another part of the Atlantic Area. It will boost their capacity to act as a platform for their members.

For SMARTDEC academic and research partners - the project will allow the development of further scientific capacity and knowledge, building on existing carbon-neutrality innovation mapping and green mobility expertise

while contributing to training young scientists in the relevant field of environmental economics. With SMARTDEC the scientific and academic partners will exchange data, best practices and knowledge on the analysis of the state of play of green shipping technologies and further build on the impact of their studies with direct stakeholders engagement. The results of the WP2 and the data produced within SMARTDEC will allow the publication of several relevant technology and scientific reports and papers, but also contribute to essential policy briefs and policy recommendations relevant for the impact desired from the project.

For SMARTDEC Incubators- the project will ensure that incubators can engage with more SMEs and end-users (shipbuilding companies) in the Atlantic to boost technology transfer and business development.

For SMARTDEC regional authority network (CPMR)- the project will ensure that Regions can compare experiences of supporting green shipping with the final aim of contributing to the development of an Atlantic value chain on greening waterborne transport. The project results will be used by the network, beyond the EU cofinancing, thanks to the work developed in CPMR working groups and policy recommendations to be endorsed and promoted by CPMR representatives.

2.4.3 Transferability

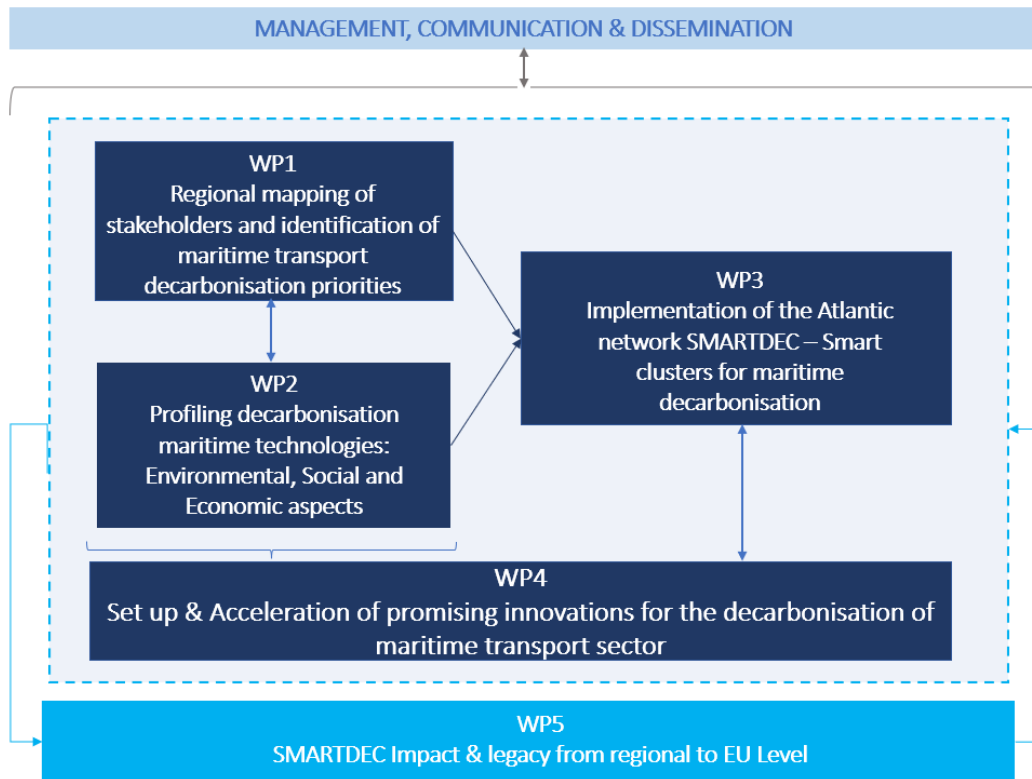
Please describe how outputs and deliverables could be adapted or further developed to be used by additional target groups or rolled out in other territories beyond the partnership. How will communication activities ensure that relevant groups are aware of the available outputs and deliverables to be used?

(Max: 8,000 characters with spaces included)

The decarbonisation challenges are common to all the blue economy sectors, and, in particular, the development needs of greener and innovative technologies that can facilitate this process are key elements to many sectors' neutrality plans. By mapping out the current status and needs in regards to more efficient and greener technologies of waterborne transportation in the 4 interreg regions, and also, developing the catalogue of services and innovation tech transfer models for this pilot regions, SMARTDEC will easily be used as a model to be propagated and scaled up into similar maritime EU regions leveraging the broader effect of this decarbonisation innovation scheme into other stakeholders and EU countries.

The challenge of reducing greenhouse gas emissions is the same for the entire maritime transport sector; the solutions developed within the consortium can therefore easily be duplicated on a wider scale for the entire European maritime transport sector, outside the Atlantic area. Furthermore, considering that ports and transport in general play a central role in promoting sustainable development and the transition to a carbon-free economy, the results of the SMARTDEC project will have an impact beyond the maritime transport sector alone.

3. WORK PLAN



Work Package 0

WP Number	WP Title		
0	Preparation		
<i>Start Date</i>	12/12/2022	<i>End Date</i>	03/03/2023

3.1 Implementation Summary (Max: 8,000 characters with spaces included)

Project idea and planning Lead

PMBA as leader has developed the concept work bringing forward the project idea, innovative approach, ambition and work plan. A first identification of relevant EU initiatives for maritime transport decarbonisation (Smartship, Green ports, etc) has been done and PMBA has approached the relevant partners to build the consortium. Then all partners have contributed to further an advanced and detailed version of the project during the proposal writing until the submission of the application. First meetings with each partner and weekly meeting of the consortium consisted in brainstorming sessions and collaborative discussions to develop the proposal.

The PMBA team attended the info day sessions organised by the joint secretary of the Interreg Atlantic Area programme and by the national authorities.

Partners Search and Consortium build up

During the ideation of the project, PMBA identified relevant actors that could contribute and participate in the project as beneficiary partners and associated partners. The holistic approach of the project expect the engagement of partners from the 4 Atlantic Area countries and involved in the quadruple helix of the innovation ecosystems, so PMBA has reach partners from France, Ireland, Portugal & Spain:

Business: Maritime cluster (CMMA, FO) ;business support organisations (Atlanpole, Bilbao Port lab)

Research & Academia: University of Aveiro & IMDO/MI

Policy: Policy interface organisations, CPMR, the regional council of Brittany, Pays de la Loire, Libon & Tagus valley and Donegal

Society: NGOs as SURFRIDER

Then, the consortium held the first discussions of project objectives, work plan and expected results, as well as the activities foreseen in each region and each partner role.

Proposal development, administrative documents and application submission

Once the consortium had been defined, an online document was shared in order to advance in the development of the proposal. To ensure the quality of the proposal and the alignment of the ideas and resources, one month before submission PMBA has organised weekly meetings with the consortium from the 23rd of January/2023 until the 27th of February. The consortium focused on the capitalisation of outputs and results from previous and ongoing projects, involving or not the SMARTDEC partners, in order to ensure valuable additional contributions building on current best practices, and to explore potential synergies.

All administrative documents were shared and an individual follow-up has been undertaken with each partner.

The consortium Fully developed the application form.

3.2 Project Specific Objective (Max: 250 characters with spaces included)

To submit a competitive project proposal focus on the creation of a transnational network gathering all relevant stakeholders in maritime transport decarbonisation to foster new technologies and innovations development and uptake.

3.3 Communication objective(s) and target audience (Max: 500 characters with spaces included)

To engage Project Partners, from different regions of the 4 Atlantic Area countries relevant for the development of the project and involved in maritime transport decarbonisation

To engage Associate Partners, policy makers and NGOs of the Atlantic Area involved in economic development, innovation and adoption & mitigation of climate change

To ensure all the Interreg Atlantic Area requirements were respected, contact with national authorities and the JS of the programme.

3.4 Overall description of this Work Package and responsibilities (Max: 500 characters with spaces included)

This WP focused on all the preparatory activities needed for the submission of the SMARTDEC project proposal, including the project idea, the constitution of the consortium and the proposal preparation. PMBA as Lead Partner,

has led all the contacts and discussions with the potential project partners. The project partners have contributed with the development of the proposal and engagement of the most adequate associated partners.

Some deliverables has been produced:

For the project idea, D01: project concept note

For the constitution of the consortium, D02: project partners and associate partners.

For the development of the proposal, D03: project proposal and support documents.

Milestone: application submitted.

Work Package 1

WP Number	WP Title		
1	Regional mapping of stakeholders and identification of maritime transport decarbonisation priorities		
Start Date	M1	End Date	M30

3.1 Implementation Summary (Max: 8,000 characters with spaces included)

This work package will focus on the mapping of all the stakeholders involved in maritime transport (shipbuilding, ports, and related industries) in the Atlantic Area and the identification of the regional priorities in terms of maritime transport decarbonisation. These priorities and potential end-users will provide key elements for the development of the activities within the project (input for WP2 to WP5).

In order to achieve knowledge of the current maritime transport decarbonisation status as well as the identification of priorities for the regions, WP1's starting point is a deep desktop "state-of-the-art" aiming at defining the maritime transport framework and the relevant actors involved directly or indirectly in the maritime decarbonisation challenge. The objective is to identify opportunities, barriers, needs and related aspects that should be tackled for a smart and effective decarbonisation of the waterborne transportation sector. Moreover, this WP seeks to define the barriers and potentials for promoting smartships and smartports and to provide a mapping of their status in order to then establish development paths and innovation roadmaps.

The main objective of this WP1 shall be reached through the following specific items:

- Scoping exercise to map a wide range of literature, and to envisage where gaps and innovative approaches may lie as well as define the core components and main characteristics of the Atlantic area Maritime transport sector.
- State of the art on the current situation of the maritime transport sector in terms of decarbonisation in the regions involved in the project and identify the mainstream pollutant emissions in the regions in the maritime transport sector, thus the project will have a start point status of the emissions.
- Develop a comprehensive set of reports gathering the information on wide decarbonisation initiatives and actors involved.
- Identify regional blue economy stakeholders involved in maritime transport and hence in maritime decarbonisation (shipbuilding industry, ports, associations, governmental institutions, etc) to support the identification of the regional gaps, needs and challenges.
- Analysis of the possible intermodality strategies in each region involved in the project (Ireland, France, Portugal, Spain).

This WP will be divided into the following 3 activities:

1.1 Deep desktop review and state-of-the-art of the Atlantic maritime transport sector: Therefore, a state-of-the-art analysis will be carried out starting from what has already been done (beyond the proposed research), similar projects already funded and other similar initiatives at a regional and national level.

1.2 Stakeholders' mapping and assessment of sector priorities: This foreground mapping will allow the identification of gaps, needs, and the current status of the maritime transport sector. To further refine and focus this mapping, a series of surveys, expressions of interest and interviews. The expected results will be integrated in the establishment of the SMARTDEC Atlantic network for maritime decarbonisation, and thus provide the necessary basis for a roadmap on innovation pathways for the decarbonisation of the sector which is quite relevant to the blue economy sustainability and resilience.

1.3 Stakeholder's interaction and mapping validation: 4 workshops with key regional stakeholders will be planned and jointly organised to collect direct feedback from regional potential end-users and facilitators on innovation needs and development towards carbon neutrality in the near future for the regions.

3.2 Project Specific Objective (Max: 250 characters with spaces included)

The WP1 aims to map the stakeholders from the maritime transport sector and identify current initiatives and regional needs for maritime decarbonisation. It will contribute to the specific objective n°1 aiming at developing the SMARTDEC platform

3.3 Communication objective(s) and target audience (Max: 500 characters with spaces included)

To engage with stakeholders of the maritime transportation sector that are involved directly in the decarbonisation of the sector challenge.

Tools: 4 Workshop, 1 per country; clipping, publication and social media engagement; content for the project newsletter; technical Reports (2)

Target audience: Port communities and regions, Shipping companies, Technological centres, Research groups, Innovative - technological - logistics companies, Public and Regional administration, policy support groups.

3.4 Overall description of this Work Package and responsibilities (Max: 500 characters with spaces included)

WP1 deals with understanding the current status of the decarbonisation of maritime transport in the Atlantic Area. It will be divided into 3 main activities: 1.1 Deep desktop review and state-of-the-art of Atlantic waterborne transportation lead CMMA & IMDO, all partners will contribute. 1.2 Stakeholders' mapping and assessment of sector priorities, lead IMDO, also all partners will contribute. 1.3 Stakeholder's interaction and mapping validation, lead CMMA and BPL, all partners contribute.

3.6 Result Indicators

Select an option

RCR79 - Joint strategies and action plans taken up by organisations

RCR104 - Solutions taken up or up-scaled by organisations

Result Indicator #1.1	RCO 79 - Joint strategies and action plans taken up by the organisations		
<i>Description</i>	The aim is to carry out an in-depth review of the state of the art of maritime transport in the Atlantic Area, resulting in a synthesis report consisting of a joint analysis of the different strategies and the base for future coordinated actions plans to tackle maritime transport decarbonisation in the Atlantic area.		
<i>Baseline</i>	0	<i>Target</i>	1

3.7 Activity List

Activity 1.1	Desktop scoping review and state-of-the-art of Atlantic waterborne transportation <i>(Max: 8,000 characters with spaces included)</i>		
3.7.2 Start Date	M1	3.7.4 End Date	M5
3.7.2 Activity Description	<p>The goal of this initial activity is to draw a faithful picture of the status of the waterborne transportation sector across the 4 Atlantic area countries involved in the project. For this purpose, a macro-analysis of the existing fleet, ports, shipbuilding industry, marine transport infrastructures and related organisations in each country will be made. Acknowledging the vast diversity of the fleet ranging from small leisure boats to container ships through several types of working vessels like those for fishermen, this activity is designed to identify some of the key attributes shaping the Atlantic area waterborne transportation sector. The availability of essential infrastructures in the ports in particular for the production and storage of fuel will also be examined.</p> <p>A definition of the current CO2 emissions for the maritime transport sector per country will be the basis for the next stage of the project regarding the technologies addressing the decarbonisation challenge and the real impact of those in a long term strategy for the Atlantic Area.</p> <p>Thanks to the review of the literature and associated data collection, a portrait representing the distinctive characteristics of the maritime sector in the Atlantic area will be drawn, using amongst others, the Short Sea Shipping report. Through this exercise, it will be easier for the SMARTDEC project to grasp a clear view of the current status of the sector. This will help focusing on the right levers for decarbonisation while anticipating the risk of implementing solutions that may not fit well the strength and weaknesses of the existing value chain and associated infrastructure. Ultimately, the scoping review serves as a guide to produce a roadmap toward an efficient decarbonisation of the waterborne transportation sector.</p>		
3.7.2 Deliverables <i>(Max: 8,000 characters with spaces included)</i>			
3.7.2 Deliverable Title	Scoping report		
Deliverable Description	The summary report will consist of synthesis of the findings and an illustrated set of slides providing a description of the maritime transport sector in the Atlantic area (key actors, current initiatives on decarbonisation, ongoing projects, etc.)		

Activity 1.2	Stakeholders' mapping and assessment of sector priorities		
3.7.2 Start Date	M3	3.7.4 End Date	M30
3.7.2 Activity Description	<p>Desktop analysis and Mapping of strategic stakeholders of the Atlantic Area involved directly or indirectly in the decarbonisation of the maritime transport sector.</p> <p>This activity will undertake the following actions:</p> <ul style="list-style-type: none"> - Mapping, analysis, and compilation of existing documentation (database, port statistics, previous studies and research, funded projects, etc.) in the maritime transport sector, in order to define the main challenges and opportunities in the sector. - A specific mapping of the existing research and testing facilities relevant to increase the TRL of a greenship or greenport solution (above TRL6 which show a direct benefit in quadruple helix). The idea is to identify relevant research infrastructures capable of providing experimental conditions to scale-up; these structures could be involved as 		

	<p>potential facilitators for the development of the promising innovations (input to WP4). - The stakeholder list will be an input for WP3 and will support the development of our network for maritime decarbonisation in the Atlantic Area (SMARTDEC).</p> <p>Integration with the clusters and university centres in each country is required, with a description of the issues outlined above, in order to then be able to articulate the reports of each country analysed into the sector and identify key challenges. Regional smart specialisation strategies linked to greening maritime transports and other related regional strategies will be integrated in the analysis thanks to the contribution of CPMR Transport Working group and Bilbao PortLab with challenges we gathered and also interviews with the port responsible to contrast the report.</p> <p>Having the key challenges in mind, each territory covered by the SMARTDEC project will engage with their local stakeholders to collect expressions of interest to facilitate the experimentation of a solution that could address these key challenges. Ports, vessel owners, shipyards and other testing facilities willing to provide access to an infrastructure useful to experiment the solutions will be listed. The terms and conditions to access these facilities will also be described.</p>
<i>3.7.2 Deliverables</i>	
<i>3.7.2 Deliverable Title</i>	Scoping analysis report on the Atlantic maritime transport sector: mapping of stakeholders and regional priorities in terms of the decarbonisation
<i>Deliverable Description</i>	A technical Report will be build resulting from the opportunities, needs, barriers and possibilities gathered, with the aim of providing the actors involved with strategies for action in the following areas: Existing Ports/ State of their Infrastructures/ Technological State/ State of the Shipping Companies/ Needs of the sector/ Intermodality Capacities/ Service Providers/

Activity 1.3	Stakeholder's interaction and mapping validation		
<i>3.7.1 Start Date</i>	M6	<i>3.7.4 End Date</i>	M30
<i>3.7.1 Activity Description (Max: 8,000 characters with spaces included)</i>	<p>To complement the expression of interest to identify the sector priorities, 4 local workshops will be organised to involve relevant stakeholders and present the project's objectives, actions, and expected results.</p> <p>The main objective of this task is to connect to regional stakeholders, establish cohesion between existing and strategic partners, explain the benefits of the project, and improve and grow in the activity of the project. Furthermore, this task is related to the validation of the mapping of regional strategies and roadmaps to the decarbonisation of the maritime transport sector.</p> <p>Through a 4 face-to-face local workshop it is intended to involve all contacts: project partners and associates, actors of the port communities, universities, and research centres, technological companies, and agents with an impact on port and maritime transport activities, as a result of this workshop, the aim is to raise awareness about the project objectives and activities and to encourage collaboration and participation in it. This activity will be developed with the outcomes of Task 1.2 Stakeholders' mapping and assessment of sector priorities.</p> <p>- Set-up of a centralised database complaining information on the role of actors, needs and gaps in the sector per region involved. All partners will contribute with the Database sharing information about the maritime transport community in their region.</p>		

	<p>Communication actions will be needed in the form of press releases, emails - newsletters, publications on social networks, etc.</p> <p>These workshops will also support the dissemination actions of the project, since the objectives, activities, and expected results will be presented to the stakeholders.</p>
3.7.1 Deliverables	
3.7.1 Deliverable Title	Methodological report and content structure
3.7.1 Deliverable Description	<u>Report</u> defining the methodology, structure, and linear design to be followed in all workshops, the content to be addressed, the objectives, and the target audience.
3.7.2 Deliverable Title	<u>Workshop presentation</u> and <u>contact list</u>
3.7.2 Deliverable Description	<p><u>Workshop presentation</u> (PowerPoint) and Database: <u>contact list</u>, with main partners and actors participating in the workshop - for the countries involved in this WP: Ireland, Portugal, France, Spain- with interest in cooperating in the future network per each region involved in the project</p> <p>Databases: providing the actors involved with strategies for action in the following areas: Existing Ports/ State of their Infrastructures/ Technological State/ State of the Shipping Companies/ Needs of the sector/ Intermodality Capacities/ Service Providers/</p> <p><u>Communication tools</u>: Compilation of all press releases and social media outreach and dissemination achieved by the event.</p>

Result Indicator #1.2 - 1.3	RCO 104 - Solutions taken up or up-scaled by organizations		
Description	The aim is to build up a database per country involved through the regional workshops.		
Baseline	<p>Project participants:</p> <ul style="list-style-type: none"> • Clusters: 3 (Spain, Ireland, France) Portugal • Business support: 2 Atlanpole (Fr) • Technological/academic • Capitalisation, policy makers interface Ports in the different countries • Associated partners 	Target	4

3.7.4 Output Indicators

Name (Output Indicator #1.1)	Target	Measure Unit
RCO 79 - Joint strategies and action plans taken up by the organisation.	1	Nr. Strategic & Plans 1 Scoping report
Name (Output Indicator #1.2 and #1.3)	Target	Measure Unit
RCO 116 - Jointly developed solutions	4	Workshops and events organized in this WP
	4	Nr. Stakeholders network 1 Technical report 4 Database (1 per country)

Work Package 2

WP Number	WP Title		
2	Profiling decarbonisation maritime technologies: Environmental, Social and Economic aspects		
Start Date	M1	End Date	M36

2.1 Implementation Summary (Max: 8,000 characters with spaces included)

This work package will focus on the technological and scientific components of current technologies and innovations for decarbonisation in the maritime transport sector according to the priorities identified by regional stakeholders (input from WP1).

In concrete, we will not only research and identify the most innovative decarbonising technologies available to date, but also profile some of these technologies in terms of their environmental, social and economic status and impact in order to perform a cost-benefit analysis taking into account their specificities. The results of the regional mapping and strategic analysis of WP1 coupled with the regional context regarding decarbonisation levels, availability of alternative technologies or renewable energies and fuels development will be taken into account during this process.

This foreground technological mapping will determine and prioritise the available decarbonising technologies that are better suited for the European current decarbonisation goals while also allowing a pre-definition of the ones more suitable for the regions needs (input WP1) and it will support the development of the Call in WP4, leading to a short list of the best and most adequate green and cleaner techs for SMARTDEC goals, in particular, and maritime decarbonisation, in general.

To achieve this, a previous technology identification and specifications description will be performed to generate a State-of-the-Art Technology Catalogue for Maritime Transport Decarbonisation, including an in-depth analysis of future technological trends to guarantee this exercise is valid beyond the life and landscape of the project's duration.

This list of technologies will be an input for WP3 and will support the development of our network for maritime decarbonisation in the Atlantic Area (SMARTDEC).

Furthermore, once this catalogue is prepared, subsequent profiling of these technologies for their environmental, social and economic aspects will be performed to determine their impacts and potential values for future implementation. Regional contexts will be taken into account to determine these profiles.

The data obtained will be used to perform private and social cost-benefits analysis on each of these technologies to assess the ones that are more suitable for application in the regions but also to provide a broad overview of their impacts and guide future support and policy design, giving an output for WP5.

This WP will be divided into the following 3 activities:

2.1 - Decarbonisation Technology Identification and mapping, where the mapping and gathering of information on the current state-of-the-art of innovative suitable maritime technologies, including those related to energy, and their degree of technological efficiency (All).

2.2 - Environmental, Social and Economic Profiling of Decarbonisation Innovations, where an analysis of each technology in terms of environmental, social and economic costs and efficiency profile will be done (UAveiro, Atlanpole, IMDO) to produce a cost-benefit rating that will allow to prioritise them.

These two activities are crucial to obtain the basis of information needed to activity 2.3 - prioritise and perform a matching framework between the regions and the most adequate types of decarbonisation innovations (activity 2.3), aligned with regions' local contexts, decarbonisation strategies and level of neutrality to date (Link to WP1)

This foreground mapping will be crucial for the identification of gaps and needs, but also to help identify technology providers/users relevant for WP3 and WP4. Finally, this analysis will also provide the backbone to frame the adequate type of technologies needed for the regions' decarbonisation goals (link to WP1, WP3 & WP4). This profiling analysis of each decarbonising technology and determination of its impacts at all 3 levels will be fundamental to guide the SMARTDEC project and provide data for consolidated future reports and policy recommendations to support not only alignment with the Green Deal and Fit for 55 goals but also within the Atlantic strategy and regional specialisation strategies, helping each Member State in the preparation of their national policy framework for the development of alternative fuels in the maritime transport sector (link to WP5).

2.2 Project Specific Objective (Max: 250 characters with spaces included)

The WP2 main goal is to identify and prioritise innovative technologies for decarbonisation of the maritime sector, accounting for their technological, environmental, social and economic impacts (objective 2 of SMARTDEC)

2.3 Communication objective(s) and target audience (Max: 500 characters with spaces included)

To engage with technology and innovation providers and end-users.

Tools: 4 Workshops (1 per country), 1 foreground exercise and interactive co-creation event. (see activity 2.3)

Technical and Scientific Reports (4); Publications in Peer reviewed journals (4)

Target audience: Technology Providers and designers, Technological centres, Research groups, Innovative technological companies, Port communities and regions, Shipping companies, Public and regional administration

2.4 Overall description of this Work Package and responsibilities (Max: 500 characters with spaces included)

WP2 deals with mapping technology innovations and environmental and socio-economic aspects. It will be divided into 3 main activities:

2.1 Decarbonisation technologies mapping, led by the UAveiro (all will contribute)

2.2 Environmental, Social & Economic Profiling of Decarbonisation Innovation Led by UAveiro with the collaboration of MI and Atlanpole

2.3 Innovation Matchmaking: Technological decarbonisation approaches to address regional needs, led by the UAveiro (all will contribute)

2.6 Result Indicators

Select an option

RCR79 - Joint strategies and action plans taken up by organisations

RCR104 - Solutions taken up or up-scaled by organisations

Result Indicator #1.1	Joint strategies and action plans taken up by organisations		
<i>Description</i>	Nº of organisations engaged into joint workshops and co-creation exercises developed by SMARTDEC WP2 for co-creation of the scientific and technological reports on decarbonisation technologies to be delivered but also into the foresight trends exercise to be done. Also reflects the nº organisations that will demonstrate interest into the final reports outputs.		
<i>Baseline</i>	0	<i>Target</i>	40

2.7 Activity List

Activity 2.1	Decarbonisation Technology identification and mapping		
<i>3.7.2 Start Date</i>	M1	<i>3.7.4 End Date</i>	M18
<i>3.7.2 Activity Description (Max: 8,000 characters with spaces included)</i>	<p>Task 2.1.1 - Decarbonisation Technology innovation research and identification (M1-12)</p> <p>For this task UAveiro, MI, Bilbao PortLab and Atlantpole will perform a systematic literature review of the last 3 years to determine the current state-of-the-art in maritime technology developments and innovations that are suitable or targeted to decarbonisation, neutrality and circularity of these sectors. The technologies identified will be collected into a database and their main technological, efficiency, energy consumption and emissions outputs will be retrieved for posterior profiling.</p> <p>This information will be complemented by inputs from all partners that will perform a pre-analysis of their countries R&D innovations in what concerns maritime technologies for decarbonisation by teaching out to interface units and R&D centres. Current scientific and innovation reports, along with patent's portfolios and each country's maritime decarbonisation strategies and roadmaps (from WP1) will also be used to complement this analysis.</p> <p>To further refine and focus this mapping, an expression of interest will be deployed and some surveys and interviews with key regional stakeholders will be planned and jointly organised to collect direct feedback from the developers on what are their current main innovation trends and focus of development towards neutrality in the near future.</p> <p>This task encompasses all the engagement and communication actions needed to achieve the proposed goal of mapping current technologies and innovations for maritime sector decarbonisation. These will be targeted mostly to technology providers and developers, interface centres and innovation partners. In concrete, it involves:</p> <ul style="list-style-type: none"> - Preparation and implementation of adequate format and content interviews and surveys to collect technology development information from main stakeholders in every region identified in WP1 (UAveiro and IMDO/MI) - Organization of at least 4 workshops with technology developers and innovators into the maritime decarbonisation space to collect technology development real time information (UAveiro, Bilbao PortLab, CMMA, Atlantpole, PMBA, FO and IMDO) <p>Task 2.1.2 - Assessment of Scientific and technological innovations (M9-M15)</p> <p>UAveiro and IMDO will do a first analysis and prioritisation will be achieved using the data collected in task 2.1 to perform a technological development status analysis and potential impact into the decarbonisation goals of the maritime transport sector. A matrix</p>		

	<p>will be designed to compute several variants into this assessment, such as TRL level, energy efficiency, level of engineering needed, potential impact on future innovations, potential adoption levels, etc and a short list of the most promising technologies will be taken further to activities.</p> <p>Task 2.1.1.3 - Forecasting future technology innovation trends in the sector (UAveiro) (M12-M18)</p> <p>Led by UAveiro, and jointly organised with all partners, this task comprises a series of interactive online workshops on the SMARTDEC platform (WP3) and interaction with relevant regional stakeholders and tech developers. These may also include non EU stakeholders that may be relevant for trend analysis and comparison, like those in the USA or Asia. Co-creation exercises will be developed to analyse, understand and promote the knowledge on future technological trends to enrich each region's knowledge on the potential to further exploit these trends in their strategies towards implementation of neutrality in maritime transport.</p> <p>This task also encompasses the engagement and communication actions needed to be able to define a set of future technology trends. The target audience in this co-creation event will be not only technology and innovation providers, but also end users and regional administration and policy stakeholders to frame the potential legal constraints of future developments.</p> <p>- Organization of an on-line co-creation event on the SMARTDEC platform, also using tools like Miro and Business Model Canvas, with relevant technology developers and end-users from the different Atlantic regions to perform a technology trends forecasting exercise and map (UAveiro)</p> <p>The outputs of WP2 and the different tasks will be key for WP3 innovation catalogue, for the WP4 development and for the WP5 impact and policy recommendations framing.</p>
3.7.2 Deliverables	
3.7.2.1 <i>Deliverable Title</i>	Workshops with relevant technology and innovation developers regional stakeholders (M12)
<i>Deliverable Description</i>	Programmes and presence signed sheets for the 2 workshops events to be developed for technology mapping
3.7.2.2 <i>Deliverable Title</i>	Catalogue on innovation technologies for decarbonisation within the maritime sector (M18)
<i>Deliverable Description</i>	Detailed technological and scientific description of the state of the art maritime decarbonisation technologies and future technology trends
3.7.2.3 <i>Deliverable Title</i>	Forecast Future Decarbonisation Innovation Trends Report (M24)
<i>Deliverable Description</i>	Detailed Report on the Forecast exercise for future technology trends

Activity 2.2		Environmental, Social and Economic Assessment of Decarbonisation Innovations	
3.7.2 Start Date	M9	3.7.4 End Date	M34
3.7.2 Activity Description	<p>Task 2.2.1 - Environmental, social and economic profiling of each innovative technology (M9-M34)</p> <p>This task aims to investigate and compile several data points and information of each innovative technology in terms of environmental, social and economic aspects:</p> <ul style="list-style-type: none"> - Environmental profiling of each technology: this task comprises the use of Environmental Profiles Methodology, a standardised method of identifying and assessing the environmental effects associated with materials or products over their life cycle. This will use common methodologies in environmental economics sciences in which all data is either published on these technologies or from data the tech developers provide or that could be calculated by SMARTDEC partners. In this particular case, this methodology will be applied to the most relevant and potential technologies and according to data such as technological state of development, energetic profile, emissions characterization (for air and water) and potential impacts on the marine ecosystem an environmental profile for each one will be built. Additionally a technological development analysis from an energy transition point of view and with a life cycle approach to assess impacts of future scenarios into the decarbonization goals of the maritime sector will be included. Also, preliminary assessment of technologies via modelling tools (support of the future french institute for maritime decarbonation MEET2050) will be performed. The data needed to support this analysis will be obtained either from published sources like scientific literature and patents or provided voluntarily by the technology developers in order to be included in the innovation catalogue of WP3. (UAveiro and IMDO together with Atlantpole). - Social profiling methodologies will be used to perform a preliminary analysis of the drivers for and constraints to the adoption and diffusion of innovative technologies by potential end users as well as the local and regional populations and key actors and their expected impacts towards the uptake of these innovations.(UAveiro) - Economic profiling of each technology, based on technology characteristics (from Activity 2.1) and environmental profiles (Task 2.2.1) in combination with value transfer techniques (UAveiro and IMDO), to obtain insight into the multiple costs and benefits of innovative technologies. (UAveiro and IMDO) <p>In this whole tasks will be emphasised the three fundamental components to sustainable development: environmental protection, economic growth, and social equity</p> <p>Task 2.2.2 – Private and social cost-benefit analysis profiles of each innovative technologies (M12-M32) (UAveiro and IMDO)</p> <p>This task aims to assess the private and social costs and benefits of innovative technologies, as to obtain insight in the distribution of costs and benefits across relevant stakeholders – forming the basis for the development of financing models. To this end, private costs and social benefits of innovative technologies (based on Task 2.2.1) will be mapped for the more interesting and promising innovations – using spatially explicit information on, amongst others, energy, emissions, environmental impacts, stakeholders and population in combination with value transfer techniques.</p>		
3.7.2 Deliverables			
3.7.2.4 Deliverable Title	Report of Decarbonisation Technologies Profiles (Environmental, social and economic) (M34)		

<i>Deliverable Description</i>	Technical report on Environmental and Socio-Economic profiles and Cost-Benefits analysis assessments of the catalogue of innovative technologies identified
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Activity 2.3	Innovation Matchmaking: Technological decarbonisation approaches to address regional needs		
3.7.2 Start Date	M12		M36
3.7.2 Activity Description	<p>Task 2.3.1 Regional matching analysis of decarbonisation needs with potential technology profiles identified (M12-M20) (All partners)</p> <p>To identify the best technological solutions for each regional context, a matrix computing the regional context, specific needs and level of decarbonisation and goals with the profiles of the technologies identified in activity 2.1 will be performed.</p> <p>This matrix and analysis will take into account the feedback collected from the WP1, and in concrete will integrate with the technological profiles and the environmental, social and economic analysis performed for the best technologies, the geographical vision of decarbonisation capacities for storage, distribution and even production of alternative and renewable energy and fuels (concentrate e-fuel and electricity) as well the geographical access to alternative energies for decarbonisation. On the basis of this identification, we will be able to propose the selection of technologies most consistent and applicable according to the regional context and the desired applications within the maritime transport sector, making it relevant for the local use and when relevant transnational adoption.</p> <p>This task encompasses all the needed engagement and communication actions involving the regional technology and end users stakeholders. In concrete, it involves:</p> <ul style="list-style-type: none"> - Organization of 1 transnational event with potential end-users identified in WP1 (ports, shipbuilders, energy companies and regional stakeholders), at least 2 representatives per region to highlight the best technologies (at least to representatives per region) and assess the interest in those technologies and their impacts in terms of reducing carbon emissions (Forum Oceano, CMMA, Bilbao PortLab, IMDO/MI and Atlanpole) 		
3.7.2.5 Deliverable Title	Workshop with relevant technology and innovation end-users Stakeholders (M23)		
Deliverable Description	Programmes and presence signed sheets for the transnational event to be developed for for first contact and stimulating engagement of potential technology end-users for their evaluation with the aim of future uptake		
3.7.2.6 Deliverable Title	Report of Regional Promising innovations Technology Impact Assessment (M36)		
Deliverable Description	Technical report on each regional innovation complete Environmental and Socio-Economic analysis assessments to guide future decision making and technology development roadmaps		

2.7.4 Output Indicators		
Name (Output Indicator #1.1)	Target	Measure Unit

RCO 83 - Strategies and action plans jointly developed	2	Reports published on the technologies and future trends and Report Environmental and Socio-economic profiles matching each region needs
Name (Output Indicator #1.2)	Target	Measure Unit
RCO 81 - Participations in joint actions across borders	9	Workshops and events organized in this WP
RCO 87 - Organisations cooperating across borders	80	All the partners that collaborate in the tasks plus the stakeholders they will engage with (10 per partner)

Work Package 3

WP Number	WP Title		
3	Implementation of the Atlantic network SMARTDEC – Smart clusters for maritime decarbonisation		
<i>Start Date</i>	M1	<i>End Date</i>	M36

3.1 Implementation Summary (Max: 8,000 characters with spaces included)

The WP3 will manage the implementation of the SMARTDEC, an Atlantic network of smart clusters with a quadruple helix approach for maritime decarbonisation. The SMARTDEC partners have well-established networks and have strong experience in collaborative projects, as well as expertise in marine/maritime sectors, notably maritime transport and logistics and port's activities. In order to implement and consolidate a relevant network to tackle the maritime decarbonisation challenge in the Atlantic area and ensure the engagement of the involved stakeholders, the consortium will define and set some guides to guarantee the appropriate development of the network during the lifetime of the project and beyond.

1. SMARTDEC governance will consist in the constitution of 3 committees that will follow all the project activities and implementation, this will contribute with a specific perspective to the decision making and monitoring of the network actions: Industry and Business: (CMMA, PMBA, FO, Atlanpole); Research (University of Aveiro, IMDO); Government (CPMR, Brittany region, Pays de la Loire region and BPL); Society (CMMA, PMBA, FO, Atlanpole, IMDO, BPL). The committees will define and develop the main strategies guiding all the network activities, and a strategic plan for the network will be delivered.

2. SMARTDEC will create national hubs to serve as relays in technology and knowledge transfer activities in the Atlantic Area. These hubs will be built according to the same governance principles and organisation to ensure the best implementation, development and transferability of SMARTDEC activities. The consortium partners will be responsible for these national hubs (IMDO - Ireland, PMBA & Atlanpole – France, CMMA & BilbaoPortLab – Spain and Forum Oceano & University of Aveiro – Portugal), the partners will promote the development of the hubs including relevant actors and initiatives from academia & research, businesses, society and government.

3. The SMARTDEC frame will consist in precisising internal procedures for the organisation of the hubs to provide innovation services to their local target groups as well as the interaction between hubs to deliver unique knowledge to their local SMEs, the processes to be put in place to support collaboration and networking between SMEs and other type of organisations in the different regions. SMARTDEC will implement different operational tools and internal guidelines for FAIR data management, GDPR, open innovation, ethical aspects (gender issues, non-discrimination, research and environmental responsibility), as well as identification of main risks to the

project success and the respective mitigation measures; all of these considering the transnational and end-user driven approaches.

4. Finally, this WP will allow us to build the SMARTDEC communications tools needed to make the network a living organism for sharing, meeting and creating value. PMBA as leader of the workpackage in collaboration with all partners will develop a Communication and Dissemination Plan (CDP) to support the whole consortium in the implementation of the communication and dissemination activities with internal and external targets. Communication tools and guidelines will be made available to ensure the definition of communication targets, all partners will provide relevant content feeding the general communication of the project, this will also include making available an internal communication guide to facilitate the interaction between all project partners and associate partners.

4a. In the framework of the communication the SMARTDEC platform will be defined, built and developed. This platform will be used to showcase the project objectives, activities and results. The SMARTDEC platform will be an interactive online tool to boost matchmaking between technology providers (WP2) and end-user (WP1, WP5), this will be a wide matchmaking to complement the concrete actions that will be carried out in WP4. Furthermore, the SMARTDEC platform aims at all kinds of partnerships between the stakeholders involved in maritime decarbonisation identified in WP1 and WP5. On the platform, the consortium will design and setup the transnational innovation services directory/catalogue, design the processes for turning high-demand knowledge and expertise into deliverable innovation services, continuous engagement and feedback loop between all the SMARTDEC activities and regional stakeholders to maintain momentum and facilitate further adoption of the technologies and common practices.

As coordinator of the SMARTDEC project, PMBA will assume the lead of WP3, considering its wide experience in maritime innovation and leading a network of more than 420 members as well as its participation in several relevant previous and ongoing projects, its capability in capitalising projects results and outputs. PMBA will be supported by all partners.

3.2 Project Specific Objective (Max: 250 characters with spaces included)

The WP3 will contribute to the specific objective n°1 aiming at creating and developing an Atlantic platform to support technology adoption and transnational cooperation to address the needs of the Atlantic Area in terms of maritime decarbonisation.

3.3 Communication objective(s) and target audience (Max: 500 characters with spaces included)

To raise awareness on the SMARTDEC objectives, activities and future results and to promote the Atlantic network for building a solid community focus in addressing the maritime decarbonisation challenges in the Atlantic Area and beyond.

Target audiences: Maritime decarbonisation start-ups, SMEs; Regional communities, European and international actors; Regional business support organisations; Research and academia; General public, society and policy makers

3.4 Overall description of this Work Package and responsibilities (Max: 500 characters with spaces included)

This WP will be divided in 4 main activities: 1) Definition and set up of the SMARTDEC network; 2) Implementation of management practices to improve connectivity and create expected synergies at a strategic and operational level; 3) Development of communication procedures and tools 4) Set-up of the SMARTDEC platform to boost innovation and interaction of stakeholders. As project coordinator, PMBA will lead the organisation set-up and operation and will be supported by all partners.

3.6 Result Indicators

Result Indicator #1	RCR 79 - Joint strategies and action plans taken up by organisations		
<i>Description</i>	Joint programs firstly developed for guiding the SMARTDEC activities prioritised later adopted by the project partners & other stakeholders (accessible from the SMARTDEC platform).		
<i>Baseline</i>	0	<i>Target</i>	1

3.7 Activity List

Activity 3.1	SMARTDEC network establishment and governance		
3.7.3 Start Date	M1	3.7.4 End Date	M36
3.7.5 Activity Description (Max: 8,000 characters with spaces included)	<p>This activity will consist in the set-up of the SMARTDEC network, the creation of national hubs for the following project actions as well as the definition of the governance of SMARTDEC.</p> <p>First, a transnational network will be established, all partners will agree and document all the aspects for the governance, management and operation of the network. It must be "fit-for-purpose" and sufficiently robust to deliver, not just the project outcomes, but of absorbing new regions and sustaining the project after its end, accommodating a diverse range of organisations from varying organisation cultures, language and operating issue as they arise, e.g. IPR, tech transfer or technology delivery, end-user uptake and challenge driven.</p> <p>The SMARTDEC project will be organised in two main strategic perspectives:</p> <ul style="list-style-type: none"> - Set-up National Hubs that will be responsible for the project activities in their own regions, they will provide a local follow-up that will share pertinent information to the transnational level. The national hubs managers will promote the development of the hubs in a quadruple helix approach including relevant actors and initiatives in academia & research, businesses, society and government. Partners will use online tools to collaborate and notably the SMARTDEC platform will allow the knowledge transfer activities in the Atlantic Area. The managers of the national hubs should ensure the best implementation, development and transferability of SMARTDEC activities and they will be organised as follow: <p>France : Pôle Mer Bretagne Atlantique & Atlanpole; Ireland: Irish Maritime Development Office as operational entity for the Marine Institute; Portugal: Forum Oceano & University of Aveiro; Spain: Cluster Marino Marítimo de Andalucía & Bilbao Port Lab.</p>		

	<p>- Constitution the General Assembly with 3 SMARTDEC committees integrating all partners (beneficiaries & associated), these committees that will support the decision making and monitoring of the network actions to ensure a pertinent implementation of the project activities, each committee will provide its expertise and perspective to develop a common strategy considering the different axes and points of view: Industry and Business: (CMMA, PMBA, FO, Atlanpole, BPL); Research (University of Aveiro, IMDO); Government (Brittany region, Pays de la Loire region, Donegal council and CPMR); Society (SURFRIDER). The committees will define and develop the main strategies guiding all the network activities, and a strategic plan for the network will be delivered.</p> <p>This activity will carry out a number of “knowledge transfer” activities to provide detailed experience from the home region on how best to approach the innovation paths.</p>
3.7.6 Deliverables	
3.7.6.1 Deliverable Title	SMARTDEC project manual
3.7.6.2 Deliverable Description	Document including the SMARTDEC governance, partners roles and responsibilities and well as the description of national hubs and the general assembly. Description of the tools and planning of meetings, progress reports and a general project manual that will be continuously updated during the project lifetime.

Activity 3.2	SMARTDEC operational management		
3.7.3 Start Date	M1	3.7.4 End Date	M36
3.7.5 Activity Description	<p>This activity will consist in definition of the SMARTDEC frame precising internal procedures for the organisation of the hubs to provide innovation services to their target groups as well as the interaction between hubs to deliver unique transnational knowledge, the processes to be put in place to support collaboration and networking between SMEs and other type of organisations in the different regions. SMARTDEC will implement different operational tools and internal guidelines for FAIR data management, GDPR, open innovation, ethical aspects (gender issues, non-discrimination, research and environmental responsibility), as well as identification of main risks to the project success and the respective mitigation measures; all of these considering the transnational and end-user driven approaches.</p> <p><u>Data management and GDPR</u>: Definition and continuous update of an appropriate data management structure and plan (DMP). Specific FAIR procedures will be elaborated and included in the DMP, with a special focus on: i) data related to the SMARTDEC consortium and the list of stakeholders, resulting for the mapping actions, we will set rules to access and gather the data; ii) other personal data (e.g. from the SMARTDEC activities in the different WPs, workshops, surveys, interviews, etc; iii) technical and financial data, IP protection and measures for open innovation (e.g. within the participative workshops); and iv) Numerical and experimental data, and measures for related to the project activities mostly in WP2 and WP4.</p> <p><u>Risk management</u>: Listing of the most likely and/or impactful risks to achieving the project objectives, and definition and implementation of the respective mitigation measures.</p>		

	<p>Considering the key role of stakeholders in the project activities, one of the main risks are related to the involvement of external stakeholders, particularly the key actors of the regional institutions, policy makers, technology innovators, innovation facilitators and end-users. SMARTDEC will allocate significant effort to engage with the pertinent stakeholders, will implement the work plan in a coordinated way between work packages in order to joint efforts and avoid stakeholders' fatigue. The consortium of the project will address and minimise these risks.</p> <p><u>Ethical rules and horizontal principles</u>, regarding: responsible research and innovation (collective responsibility for the trustworthiness and reliability of collaborative research and innovation processes), integrity, transparency, equal opportunities, gender equality, and environmental sustainability (also including the systematic application of "do not significant harm" (DNSH) principle, and identifying eventual contributions to the EU Taxonomy), for which a joint manual will be prepared to be considered by all those involved in the SMARTDEC activities.</p> <p>PMBA will coordinate this activity, supported by all partners. In order to reinforce the overall project quality management, the consortium will look for external support in the project progress monitoring against the targeted time, quality and budget plans. The results will be analysed in the project progress meetings, and action plans eventually to be defined to address any recommendations or deviations will be jointly elaborated by the project partners. The external assessment reports and the eventual consecutive action plans will be included in the yearly progress reports to be provided to the Interreg Joint Secretariat.</p>
3.7.6 Deliverables	
3.7.6.1 Deliverable Title	<i>SMARTDEC progress reports and organisational and strategic documents.</i>
3.7.6.2 Deliverable Description	Technical and financial reports regarding the progress of all project activities (yearly reports). The first report (M12) will include SMARTDEC's Strategic Plan to guide the project activities and to be further adopted by the project partners & other stakeholders, Data Management Plan (to be updated at M24), cooperation agreements with external organisations established along the project will be included in the final report (M36).

Activity 3.3	SMARTDEC communication and outreach		
3.7.3 Start Date	M1	3.7.4 End Date	M36
3.7.5 Activity Description	<p>This WP will build the SMARTDEC communications tools needed to make the network a dynamic ecosystem for sharing, meeting and creating value.</p> <p>First, a Communication and Dissemination Plan (CDP) will be build-up and continuously updated to support the whole consortium in the implementation of the communication and disseminations activities with internal and external targets. It will focus on the SMARTDEC objectives, activities and expected outcomes a) definition of main target audiences and communication channels; b) newsletter; c) headline project information and key messages by audience segment; d) branding guidelines: visual and written identity; e) set-up of social media; and f) CD metrics monitoring tools.</p>		

	<p>Creation of a variety of communication tools and compelling content to foster the credible, continuous and large-scale procurement of the SMARTDEC resources and outputs. Includes: project image / logo; templates, placeholders, badges, rollups and/or leaflets; specific material for media relations (press kit, editorial content profiling the skills, experiences, credibility and performance of the project; project sheets, LinkedIn 'company page', and a lively twitter feed); short concise and creative videos serving as an introduction to the SMARTDEC and its activities; and content of the project key areas and concepts, success stories and results. Sharing these materials with stakeholder networks and the SMARTDEC online platform. In order to support the efficient internal operation of the SMARTDEC consortium, a protected space will feature appropriate working documents, reporting and non-public deliverables. All partners will provide relevant content feeding the general communication of the project, this will also include making available an internal communication guide to facilitate the interaction between all project partners and associate partners.</p> <p>PMBA will lead the organisation set-up and operation and will be supported by all partners. PMBA will also support all the partners in the organisation of the workshops (WP1, WP2, WP4 & WP5).</p>
3.7.6 Deliverables	
3.7.6.1 Deliverable Title	SMARTDEC's Communication reports and tools.
3.7.6.2 Deliverable Description	Yearly reports on the main project communication activities and statistics. The first report will include a summary on the main instruments (e.g. logo, website, communication toolkit and guidelines for their appropriate use), specifically developed to communicate the SMARTDEC activities.

3.7.7 Output Indicators		
Name (Output Indicator #2.1)	Target	Measure Unit
RCO 81 - Participations in joint actions across borders	XX	Nr. Participants of the workshops
Name (Output Indicator #2.2)	Target	Measure Unit
RCO 83 - Strategies and action plans jointly developed	1	1 communication and dissemination Plan

Activity 3.4	SMARTDEC interactive Platform		
3.7.3 Start Date	M12	3.7.4 End Date	M36
3.7.5 Activity Description	The SMARTDEC platform will be defined, built and developed. This platform will be used to showcase the project objectives, activities and results. The SMARTDEC platform will be an interactive online tool to boost matchmaking between technology providers (WP2) and end-user (WP1, WP5), this will be a wide matchmaking to complement the concrete actions that will be carried out in WP4.		

	<p>Furthermore, the SMARTDEC platform aims at all kinds of partnerships between the stakeholders involved in maritime decarbonisation identified in all of the project WPs.</p> <p>The SMARTDEC Platform will concretely take up the inputs from WP1 & WP2 to develop a highly interactive and user-friendly platform powered by a database to collect and promote state-of-the-art as well as emerging technologies suitable for maritime transport decarbonation. In this way, the platform will narrow the gap between research and market as well as stimulate an increased interaction between the end- users and tech providers in the different regions. Already within the project's lifetime technology suppliers will be encouraged to populate the database with technologies (TRL 7-9); while technology searchers are encouraged to fill in a search request. The profiles on the platform will have predefined categories and/or units to allow optimal search, benchmarking and value chain connections; as well as having pre-defined entry fields for free text/visual content. The SMARTDEC Platform will be developed in close cooperation with relevant stakeholders. We will involve and engage stakeholders within the regions to better understand the needs, interests and priorities (WP1, WP5) of the potential users of such a match-making tool, all of this will be supported by the surveys, interviews and workshops in WP1 & WP2.</p> <p>The platform will therefore not only serve as a repository for technologies, but also explicitly function as an opportunity/networking tool for finding and releasing new collaborative business projects and developing partnerships.</p>
3.7.6 Deliverables	
3.7.6.1 Deliverable Title	<i>SMARTDEC Platform</i>
3.7.6.2 Deliverable Description	Interactive platform to engage all stakeholders involved in the project objectives, activities and expected results, notably, around the maritime transport decarbonisation sector.

3.7.7 Output Indicators		
Name (Output Indicator #2.1)	Target	Measure Unit
RCO 81 - Participations in joint actions across borders	XX	Nr. Participants ?
Name (Output Indicator #2.2)	Target	Measure Unit
RCO 83 - Strategies and action plans jointly developed	x	Nr. Plan
Name (Output Indicator #2.3)	Target	Measure Unit
RCO 87 - Organisations cooperating across borders	x	Nr. Organisations

Work Package 4

WP Number	WP Title
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4	Set up & Acceleration of promising innovations for the decarbonisation of maritime transport sector		
<i>Start Date</i>	M12	<i>End Date</i>	M36

3.1 Implementation Summary (Max: 8,000 characters with spaces included)

WP4 deals with the concrete undertaking of advancing maritime transport decarbonisation through the set-up and acceleration of promising innovations that will come out at the end of the 3 years project with all the requirements to start their path in a concrete and full pilot. WP4 delivers fitting conditions to bring forward some of the latest technological innovations able to make a significant contribution to achieve the International Maritime Organisation (IMO) targets. In the context of maritime transport decarbonisation, in order to build a reliable and well implemented full pilot a high financial capacity and lengthened timeline are required; therefore in the SMARTDEC's framework, WP4 will not include the implementation of pilots themselves but will focus on the set up, preparation and acceleration of the best suited innovations/technologies (WP2) to meet the Atlantic regions needs in terms of maritime transport decarbonisation (WP1). At the final stages of SMARTDEC, these promising innovations will be ready for their full implementation afterwards (tech provider validated, end-user validated, financial support identified,).

Using the cross-sectorial analysis carried out in WP1 & WP2 as well as the set up of the SMARTDEC network in WP3 three main tasks will represent the backbone of this WP4:

- First, a campaign to recruit high potential and innovative solutions matching a set of hosting facilities for experimentation (end-user) will be prepared leading to a selection of flagship actions (link Task 2.3.1).
- Second, selected innovations and their providers (usually SMEs or Startups) will undergo continuous guidance to guarantee they can achieve their full potential for decarbonization while maximising their market fit. A range of mentoring and acceleration services will be provided to advance the innovations to a readiness level allowing them to engage better fitted into future implementation. Each technology provider will make use of those acceleration services to develop a solid and comprehensive development plan including not only technical R&D roadmapping but also a sound business and financial plan alongside a collaboration model plan.
- Lastly, WP4 will take a step back to confront the expected performance of these innovations with the trajectory (waterborne transport frame) as it is imposed by the IMO and EC regulatory framework. The purpose of this final introspective exercise is not only to ease the legacy of the work done in the SMARTDEC project (link WP5) but also to contemplate the credible path to a full scale regional strategy for the maritime transport sector being in line with Paris Agreement within the United Nations Framework Convention on Climate Change.

WP4 activities will complement the identification of gaps and barriers in the development of technologies for the decarbonisation of waterborne transportation that have been initiated in WP1 and WP2. In fact, the support provided in WP4 to the promising innovations will allow the analysis of the market and regulatory conditions for concrete cases. This work, and the support to the entrepreneurs and scientists/engineers developing innovative technologies and their business strategies, will highlight some of the critical needs and bottlenecks the maritime transport sector is facing to meet the ambitious targets of emissions reduction set by the IMO or other policy-maker.

The methodology to provide the acceleration services to the selected innovations will rely on the support from the local SMARTDEC partners directly connected to the team leading the regional actions within the project. This decentralised approach will allow the deployment of a tailored acceleration service package taking into account the strong knowledge each local partner has regarding their surrounding ecosystem. While a local partner will be coordinating the innovations in a regional scale, transnational cooperation will be encouraged throughout WP4 in order not only to share the common challenges and best practices but also to discuss the transferability of each solution across different Atlantic regions and across various shipping and port subsectors.

The main output of WP4 is thus the preparation of at least 8 (2 per country) highly promising innovations that will be ready for future implementation as demonstration pilots to boost the decarbonisation of the maritime transport sector in the Atlantic Area.

3.2 Project Specific Objective (Max: 250 characters with spaces included)

WP4 will contribute to the specific objective n°3 aim at sharing best practices, and tackle problems jointly with the preparation of future pilots which will address the needs of the Atlantic Area in terms of maritime transport decarbonisation.

3.3 Communication objective(s) and target audience (Max: 500 characters with spaces included)

To promote the selection of the most promising innovations across the Atlantic area to address maritime transport decarbonisation and disseminate the outcomes of these through local feedback workshops and a final event.

WP4 primarily focuses on three targeted audiences: Innovative solution developers (Entrepreneurs / Startups / SMEs); End User of pilot technologies (Ship owner / Shipyards / integrators / Port Authority); Research and testing infrastructures (Certification labs / R&D platforms)

3.4 Overall description of this Work Package and responsibilities (Max: 500 characters with spaces included)

WP4 will accelerate high potential innovative solutions for the decarbonisation of the maritime transport sector. For this purpose at least 8 promising innovations will be selected and will benefit from a range of tailored acceleration services. WP4 does not intend to fund the implementation of the pilots but rather to de-risk the path towards their successful operational use by the end-users.

3.6 Result Indicators

Result Indicator #3.1	RCR 104 - Solutions taken up or up-scaled by organisations		
<i>Description</i>	Solutions taken up or up-scaled by organisations		
<i>Baseline</i>	0	<i>Target</i>	8

3.7 Activity List

Activity 4.1	Selection of the promising innovative solutions for the maritime transport decarbonisation		
3.7.3 Start Date	02/2025 (M14)	3.7.4 End Date	10/2025 (M22)
3.7.5 Activity Description (Max: 8,000 characters with spaces included)	<p>This activity aims at recruiting and matching innovative profiled solutions (WP2) with relevant existing experimental regional conditions. The work to launch this effort is articulated around four steps as follows:</p> <p>4.1.1 - Based on the outputs of WP1 and WP2, some of the challenges towards waterborne transportation decarbonisation will be identified. Combining the needs across the maritime transport sector, the existing infrastructures and the potential of innovative solutions, a set of priorities will be defined to select a limited number of key challenges derived from the outcome of the workshops run in WP1 & WP2 (up to 8). Those key regional challenges shall address the main components necessary to run an energy efficient maritime transportation sector. Interactions between ports and</p>		

	<p>vessels will be considered as well as the issues related to storage, logistics and safety, aligned with environmental and socio-economic potential impacts. This task will help define the scope of the most promising innovations using a matrix built from the database of the original technology profiling with their environmental, social and economic value developed in WP1 & WP2. This information can assist in refining the support actions and also indicate more types of technological innovations to be tested for similar goals in similar regional contexts.</p> <p>4.1.2 - Analyse the landscape of existing research and testing facilities relevant to increase the TRL of a greenship or greenport solution done in WP1 mapping. The idea is to consider the fact that this technological roadmap relies on the availability of experts as well as some research and testing facilities. This task will determine which research infrastructures within the Atlantic area could host some of the promising innovative solutions with a particular focus on those allowing the path from TRL4 to TRL8. Some examples of such research infrastructures include wind/wave basins, engine testing room, marine worthiness testing facilities, connectors testing for loading/charging, hardware in the loop systems etc.</p> <p>4.1.3 - Considering all these elements and the inputs from WP3, an open call for solution providers will thus be launched to select the most promising technologies that could address the key challenges and that will integrate the SMARTDEC business support actions. A selection committee comprising the SMARTDEC consortium and 3 external experts will review and evaluate the applications. At least two solution providers, and up to 3 maximum, will be selected per country. Among the evaluation criteria, the innovativeness, the potential to decarbonise and the compatibility with local and regional end-users conditions and needs will be scored, as well as the commercial potential and the financial and partnering structure proposed. Transnational cooperation as well as gender balance will also be promoted. The activity will conclude with the announcement of the selected innovations.</p>
3.7.6 Deliverables	
3.7.6.1 Deliverable Title	<i>List of selected promising innovations for maritime transport decarbonisation in the Atlantic Area</i>
3.7.6.2 Deliverable Description	<i>Short document summarising the selected solution providers and their corresponding experimental conditions</i>

Activity 4.2	<i>Business support actions for promising innovations addressing maritime transport decarbonisation</i>		
3.7.3 Start Date	10/2025 (M22)	3.7.4 End Date	10/2026 (M36)
3.7.5 Activity Description (Max: 8,000 characters with spaces included)	<p>The second activity of WP4 concerns the deployment of business support actions in order to leverage the preparation of the promising innovations to full scale pilots. SMARTDEC will provide a compass of actions to support the up-grade and preparation of the selected promising innovations. This activity will allow the selected innovations to achieve the necessary conditions to be implemented as full demonstration pilots after the end of the lifetime of the project. All the business support actions will be conducted under the supervision of the local partners.</p>		

	<p>The selected innovations will be classified in the regards of their TRL and their BRL, hence the support actions will be tailored according to the requirements of each case.</p> <p><u>Partnership & network:</u> Assistance will be provided to facilitate the discussions between the solution providers and the hosting facilities in order to define a R&D planning roadmap. SMARTDEC will promote the relation on the alignment of interests of both sides.</p> <ul style="list-style-type: none"> - A list and contact of the testing infrastructures in each country - A complete report of the value chain, considering synergies between different technology providers from the Atlantic Area - A list of financial support programs - A list of potential end-user for the technology providers' solutions - A list of financial support programmes (regional, national and European) <p><u>Business support and scenario analysis:</u> Selected innovations will benefit from individual coaching provided by local partners. This coaching will allow other entrepreneurial considerations to be thoroughly scrutinised. Expert business support coaches will ensure not only the technical objectives are met but that the overall strategy of the company developing the solution is in line with:</p> <ul style="list-style-type: none"> - the market needs - The market conditions (e.g price) - the regulatory framework - The overall deployment strategy and partnership suitable models <p><u>-Environmental Impact planning:</u> Selected innovations will be challenged to determine their strategy to monitor environmental performance. The methodology shall not only allow the appraisal of the overall contribution to decarbonisation of the sector but also consider other environmental hazards.</p> <p><u>Financial planning:</u> Selected innovations will have to roll out a credible financial plan towards full deployment of the technology. Blended finance mechanisms combining the appropriate balance between private equity, debt and public grants will be determined.</p> <p><u>Feedback final workshops:</u> Once the business support actions planning is concluded, a final meeting consisting of a local feedback workshop bringing together the parties involved. There will be one workshop per country.</p>
3.7.6 Deliverables	
3.7.6.1 Deliverable Title	Report on the SMARTDEC business support actions
3.7.6.2 Deliverable Description	A document describing the main outcome for the promising innovations that have benefited from the SMARTDEC business support actions

Activity 3.3	Recommendations for future actions towards maritime transport decarbonisation		
3.7.3 Start Date	04/2026 (M28)	3.7.4 End Date	12/2026 (M36)
3.7.5 Activity Description (Max: 8,000 characters with spaces included)	<p>The last activity of this WP aims at reflecting on the results obtained through the business support actions for the selected innovations. In essence, the exercise will consist of analysing all the conclusions and determining the trends of key enablers and the best implementation route for supporting innovations addressing the maritime transport decarbonisation challenge in the Atlantic Area. This analysis will also be based on the outcomes of WP4 activities combined with the learnings from the other WPs of SMARTDEC.</p> <p>Since maritime innovations often ultimately require testing in a real vessel or port facility which may be difficult to leverage due to their commercial duty, this last task intends to define the basic requirements and ecosystem facilitators to achieve the acceleration of the deployment of validated innovations into the maritime transport sector that will contribute to the minimisation of the pollutant emission and could increase the energetic performance of the sectors.</p> <p>This final activity of WP4 will compile a guide targeting the stakeholders involved in the development of innovative solutions for the decarbonisation of the maritime transport sector. From solution providers to end users, and all the stakeholders in between, the route towards operational adoption of new technologies, the requirements to support relevant actors (from prototyping to full demonstrator). This guide will cover the needs and good practices for the development of innovative solutions towards the decarbonisation of the maritime transport sector.</p>		
3.7.6 Deliverables			
3.7.6.1 Deliverable Title	Report on the recommendations for future actions		
3.7.6.2 Deliverable Description	A guide compiling not only the best practises in terms of maritime transport decarbonisation through the lessons learnt by the preparatory actions for future demonstration pilots but also some key recommendations to ensure the waterborne transportation keeps on track on its trajectory towards reduction of emissions		

3.7.7 Output Indicators		
Name (Output Indicator #1)	Target	Measure Unit
RCO 84 - Pilot actions developed jointly and implemented in projects	8	Nr. pilot actions
Name (Output Indicator #2)	Target	Measure Unit
RCO 87 - Organisations cooperating across borders	5	Nr. organisations
Name (Output Indicator #3)	Target	Measure Unit
RCO 116 - Jointly developed solutions	4	Nr. Solutions (Pilot actions' key outputs)

Work Package 5

WP Number	WP Title		
5	SMARTDEC Impact & legacy from regional to EU Level		
Start Date		End Date	

3.5.1 Implementation Summary (Max: 8,000 characters with spaces included)

In order to maximise SMARTDEC's impact and ensure an outreach beyond the partnership, technology providers and key regional actors beneficiaries involved throughout the project, actions to foster significant engagement with Atlantic stakeholders, regional and EU policy makers will be developed. SMARTDEC will provide an opportunity to frame reflections on waterborne transport decarbonisation with key players of the Atlantic and beyond through exchanges of best practice and reflection on the needs to respond to current and future challenges. This network, coordinated by the CPMR Atlantic Arc Commission, will enable the development of policy recommendations addressed to EU Institutions and other relevant policy makers based on the project's experience and outcomes. This WP will therefore be key to ensure a legacy to the project, and thus explore the potential of the SMARTDEC model to be replicated in other areas, via:

- Dissemination to Atlantic regional authorities and beyond
- Enabling exchange of best practice between regional stakeholders
- Share the results of the project with EU and international organisations such as IMO, SeaEurope, ESPO, European boating Industry, ECSA, Waterborne TP
- Address of policy recommendations based on the project's outcomes
- Translate the outputs of the projects into useful information for policy makers at EU level : European Commission, European Parliament and Council
- Exploring SMARTDEC's model transferability

Outputs: Sustainability Plan, Policy Workshops and Event, Policy Recommendations

Regarding the communicating capitalisation activities, for each deliverable of the WP5, a dedicated press release will be proposed to all partners to share on its own social media.

6 written press releases will be delivered (English - digital format), these documents to be shared with WP3 newsletter and for partners' social media.

3.5.2 Project Specific Objective (Max: 250 characters with spaces included)

To capitalise SMARTDEC actions and results at regional, national/transnational and EU levels, and design of a sustainability strategy to enable the project to go beyond the timeframe of the EU co-financing (specific objective n°1 & n°3).

3.5.3 Communication objective(s) and target audience (Max: 500 characters with spaces included)

To engage with regional authorities, Port authorities, Shipbuilding companies, EU Institutions, EU and International organisations related to waterborne transport and promote the legacy of the SMARTDEC network beyond the end of the project's lifetime

3.5.4 Overall description of this Work Package and responsibilities (Max: 500 characters with spaces included)

This WP will set up the activities of the network related to the regional policy makers and stakeholders. It will enable the organisation of 3 workshops and 1 high-level event with EU Institutions. Policy recommendations will be drafted and promoted based on the project's outcomes and conclusions from the workshops. A Capitalisation & Sustainability Plan will provide guidance and a strategy to maximise the project's impact.

3.5.6 Result Indicators

Result Indicator #4.1	RCR 79 - Joint strategies and action plans taken up by organisations		
<i>Description</i>	1 Sustainability Plan, 1 Policy Recommendations document, 3 workshops engaging with regions, 1 high level event		
<i>Baseline</i>	0	<i>Target</i>	2
Result Indicator #4.4	RCR 104 - Solutions taken up or up-scaled by organisations		
<i>Description</i>	Exploitation plans developed for the key outputs of promising innovations and the actions developed within WP4, effectively adopted by relevant end-users.		
<i>Baseline</i>	0	<i>Target</i>	4

3.7 Activity List

Activity 5.1		Connecting with Atlantic regional authorities	
3.7.3 Start Date	M1	3.7.4 End Date	M36
3.7.5 Activity Description (Max: 8,000 characters with spaces included)	<p>Coordinated by the CPMR Atlantic Arc Commission and framed in the AAC Transport Working Group activities, these workshops will gather Atlantic regional officers and policy makers and stakeholders and other relevant stakeholders (national, EU level included) and non-Atlantic actors when relevant. Project partners will be invited to share SMARTDEC developments and vision. These workshops will provide an opportunity to 1) exchange best practice SMARTDEC-related issues 2) share progressively SMARTDEC results (mapping of stakeholder WP1, mapping of technologies WP2, development of SMARTDEC network WP3, innovations support programmes WP4), 2) identify current challenges and needs to overcome them 3) nurture the content of other WPs 4) Elaborate the policy recommendations to be drafted towards the end of the project.</p> <p>They are aimed to occur once per year to enable a regular dissemination of SMARTDEC's developments and foster a long-term connection and visibility with regional authorities.</p> <p>A final event/workshop the last year of the project will be developed at CPMR level to engage with the 150 member regions of the association, located in all the EU sea-basins.</p> <p>SMARTDEC Lead partner and/or WP leaders will contribute to these events bringing an overview of the results achieved in the respective WPs.</p>		
3.7.6 Deliverables			
3.7.6.1 Deliverable Title	Regional Workshops		
3.7.6.2 Deliverable Description	3 Workshops engaging with regions		

3.7.7 Output Indicators		
Name (Output Indicator #4.1)	Target	Measure Unit
Workshops engaging with regions	3	Nbr of workshops

Activity 5.2		Production of policy recommendations	
3.7.3 Start Date	M16	3.7.4 End Date	M27
3.7.5 Activity Description	<p>Based on the project's results and highlights of the regional workshops, policy recommendations will be produced with the support of all partners, aiming to provide key messages to further encourage the decarbonisation of the maritime sector.</p> <p>CPRM will share ideas in the SMARTDEC coordination meeting to assess which structure the document should take. All SMARTDEC partners will receive the draft and be able to comment.</p> <p>These policy recommendations will be addressed to EU Institutions and any other relevant policy maker identified in the course of its development (e.g national</p>		

	governments). They will be politically endorsed by the CPMR Atlantic Arc Commission regional authorities to give them political clout. This activity will be fundamental to ensure a legacy of the project by providing key insights and proposals for solutions to keep boosting the decarbonisation of the maritime sector at Atlantic and EU level beyond the project's lifetime.
3.7.6 Deliverables	
3.7.6.1 Deliverable Title	Policy recommendations
3.7.6.2 Deliverable Description	1 written document politically approved by CPMR AAC regional authorities, translated into the four Atlantic languages (ES,PT,FR,EN), in digital format. Public document.

3.7.7 Output Indicators		
Name (Output Indicator #4.1)	Target	Measure Unit
Policy recommendations	1	1 document

Activity 5.3	Engaging with EU policy makers and relevant EU organisms - High Level Final Event		
3.7.3 Start Date	M28	3.7.4 End Date	M36
3.7.5 Activity Description	<p>EU Policy makers (e.g SEARICA MEPs, TRAN Committee MEPs, Representatives of DG MARE, DG MOVE, Representatives of the Atlantic Strategy), Regional authorities, key stakeholders from the sector (ESPO, ECSA, IMO, SEAEurope, Waterborne TP, etc.) will be conveyed key information on SMARTDEC and will be invited to gather on the occasion of a high-level event. This political event will build a momentum for SMARTDEC by providing 1) visibility of the project at EU level, 2) Campaign on the SMARTDEC network 3) Share results of the Pilots 4) promotion of the messages from the policy recommendations and discussions on future opportunities and initiatives needed to implement them, 3) discussion of the challenges of the sector at EU level.</p> <p>Sister EU projects supported by the INTERREG Atlantic Area programme will be able to be associated.</p> <p>The CPMR Atlantic Arc Commission and Pole Mer Bretagne Atlantique will be coordinating the organisation of the event. It will be framed as a Final Event of the Project. All SMARTDEC partners will be involved.</p>		
3.7.6 Deliverables			
3.7.6.1 Deliverable Title	High-level event		
3.7.6.2 Deliverable Description	1 presential meeting, with interpretation in the four Atlantic languages (ES,PT,FR,EN)		

3.7.7 Output Indicators

Name (Output Indicator #4.1)	Target	Measure Unit
High level event	1	Nb of event

Activity 5.4		Setting up a strategy for SMARTDEC's legacy	
3.7.3 Start Date	M27	3.7.4 End Date	M36
3.7.5 Activity Description	<p>A Draft Sustainability plan will be produced by CPMR and addressed to all partners within the last year of the project in order to explore possibilities for SMARTDEC's vision to be continued or adapted to future funding opportunities.</p> <p>CPMR will use coordination meetings with SMARTDEC partners to harness their views and build up the final document. The strategy will be shared with CPMR Atlantic Arc Commission members to ensure that the strategy is co-built and adapted to Atlantic regional authorities priorities and strategies.</p> <p>This document will provide guidance to ensure the legacy of SMARTDEC. It will be presented at the High level event of SMARTDEC (Final Conference).</p>		
3.7.6 Deliverables			
3.7.6.1 Deliverable Title	Sustainability Plan		
3.7.6.2 Deliverable Description	1 written document in English, in digital format. Document restricted to members of the consortium.		

3.7.7 Output Indicators		
Name (Output Indicator #4.1)	Target	Measure Unit
Sustainability Plan	1	Nb of document

4. PARTNERSHIP

5. PROJECT MANAGEMENT AND COMMUNICATION

5.1 How will you coordinate and manage your project?

5.1.1 Project Coordination and Management

Please describe how the project management on the strategic and operational level will be carried out, including the set-up of management structures, responsibilities and procedures, as well as risk management. Please also explain how the internal communication within the partnership will be organised.

(Max: 2,000 characters with spaces included)

The consortium is led by Pôle Mer Bretagne Atlantique (PMBA) and is joined by 7 partner beneficiaries and 5 associated partners. The management structures will be included in the Partnership Agreement along with a clear division of responsibilities among partners. The Partnership Agreement will set out the responsibilities for all partners regarding technical, financial, administrative and communication aspects. The Lead partner (LP) will ensure the appropriate monitoring of the partner's activities and their progress. The General Assembly (GA) will be formed by representatives of each project partner and act as the decision-making body of the project, following the achievements of the activity and project objectives closely. The LP and the GA will monitor the achievements of the milestones and deliverables of the project, as well as monitoring the mitigation of identified risks. As the consortium is made up of highly experienced partners, it is ensured that the project management will be efficient, transparent and of sound quality throughout the project implementation period. The LP will manage the overall legal, contractual as well as administrative and financial aspects of the project with the support of all partners. This includes the preparation and submission of project reports, communication with the partners and the Joint Secretariat, defining the Data Management of the project, as well as assuming the responsibility for developing and implementing the Partnership Agreement. The GA will organise six partner meetings, two per year, including the kick-off meeting that will be organised by the LP and the final meeting co-organised by LP and CPMR.

the GA, including the SMARTDEC Associated partners, will be gathered every 6 months (online or onsite) to discuss the project actions and activities, as well as long-term strategy and improvements to be made to ensure the success of the project and its objectives.

5.2 Which measures will you take to ensure quality in your project?

5.2.1 Measures to Ensure Quality

Describe the planned approach and processes for quality management, i.e., how the quality of deliverables and outputs will be monitored and ensured, and indicate the responsible partner(s). If you plan to conduct any type of project evaluation, please describe its purpose and scope. (Max: 2,000 characters with spaces included)

The Lead partner (LP) will ensure that all consortium partners are familiar with reporting templates provided by the European Regional Development Fund (ERDF) and collate all partners' administrative and financial reports; and communicate regularly with the ERDF and act as a contact point on behalf of the consortium. In addition, the LP will oversee the financial management of the project; ensuring that all partners implement activities within the agreed financial resource allocations. LP will establish an official control quality plan to guarantee that the project is correctly managed and regular consultations will be launched to get partners feedback on the management procedures.

The General Assembly (GA) will oversee the strategic project management by monitoring the achievements of the milestones and deliverables of the project, critical risks for implementation as well as monitoring the mitigation of identified risks and through the organisation of regular meetings (onsite and online). The GA will be formed by representatives of each project partner and will provide guidance to the optimization of all project activities, monitor their contribution to the achievement of the project objectives and generally serve to direct the progress of the project. The GA will do a checkpoint with the WPs leader that will monitor the implementation of the activities and each WPs.

The project will operate within well-determined administrative/technical procedures, which will be defined both on the consortium agreement and project manual and will cover management reporting, documents, review, general quality assurance, among other procedures. The quality control will check that all contributions and conclusions are consistent and meet the requirements for the deliverables, reports and other documents. A common format will be agreed upon for the preparation of all documents, activity reports, project publications and other deliverables will be submitted for review to the GA.

5.3 What will be the general approach you will follow to communicate about your project?

5.3.1 Project Communication General Approach

Please describe how your project's communication objectives, as outlined in the work plan, will help with achieving your project's main result(s). Why is communication important? Which common tactics, channels and tools will help the partnership to reach out to and involve its target audiences? How will the project communication coordinator ensure that all project partners are involved and contribute to communication?

(Max: 2,000 characters with spaces included)

There will be a common space for the partners to access the internal documents of the project. This space will support the track of project progress, to make available continuously updated information about the progress of each WP, to exchange documents, to collect contacts info and relevant data, to collaboratively prepare reports, to assist in official and intermediate reporting, to report on meetings, achievements and time schedules, and to discuss new approaches and activities planned.

The communication focus is on the maritime transport sector and its decarbonisation, the LP will provide a Communication and Dissemination plan to ensure a close interaction with the target groups, and adapting the message to each of them, aiming to generate their interest and engage with them, spreading the word and inviting others to participate in the network activities, expanding collaboration and business opportunities to the benefit of the Atlantic Maritime transport sectors.

External communication activities will ensure that the development and implementation of the project, its activities and their impacts, are appropriately communicated (raising awareness) and disseminated (engaging with) among relevant stakeholders. The Communication Strategy will outline the specific activities, their expected impacts as well as concrete measures and indicators to track their success. Communication activities will reach out to all stakeholder groups including the general public through the SMARTDEC platform, with the aim of increasing the understanding of the priority of the decarbonisation challenge and support for accelerating the innovation in maritime transport decarbonisation across the Atlantic Area. Furthermore, the consortium will ensure that the

SMARTDEC network is adequately promoted through external communication channels, such as websites, e-newsletters and social media accounts from partners, as well as external stakeholders and institutions.

5.4 How do you foresee the reporting procedures for activities and budget (within the partnership)?

5.4.1 Reporting Procedures

Please describe the reporting processes at the level of partners towards the lead partner.

(Max: 2,000 characters with spaces included)

PMBA, as Lead Partner (LP) will ensure a smooth coordination regarding project reporting. The LP will make available the appropriate reporting templates to be used, both for the technical and the financial reporting, and will propose due dates for delivery of the progress reports. The SMARTDEC project will do 2 progress reports per year (1 every 6 months), therefore 6 reports will be achieved at the end of the project lifetime. LP will ensure that each partner is acquainted with the SIGI platform, each partner reports on its own activities and knows the rules and criteria of eligibility regarding expenses certification and declaration.

Each partner will ensure the collection of updated information regarding the work-plan, the deliverables, output indicators and result indicators and related expenses, and that these are timely submitted to the WP leaders. The LP will rely on the work package leaders to report on activities dealing with each work package and will ensure that relevant reports, deliverables and outputs are enclosed in concerned reports. The LP will be in charge of compiling all feedback and delivering the whole project report.

One month before the closing of each reporting period, the LP will remind the partners to prepare their technical and financial reports in order to meet the deadline provided by the JS. Several reminders will be sent to partners to make sure that the reporting process is going as planned, that the First Level Control and National Authority approval have been granted and to provide support if needed.

The LP will follow up on activities progress and completion, to see if risk mitigation has to be put into place and will ensure that the budget consumption is going as planned (avoiding under and/or over spending).

5.5 Cooperation Criteria

5.5.1 Joint Development

(Max: 8,000 characters with spaces included)

The SMARTDEC project aims at accelerating the decarbonisation of the maritime transport sector thanks to the identification of existing and innovative solutions adapted to the needs of regional stakeholders, and the creation of tools and services for ensuring and supporting innovation transfer. These objectives integrate the ideas, expectations, priorities and contributions from all participating partners:

- Those of the clusters and companies support partners, for which the objectives are to improve the competitiveness of their members around the blue economy through technological innovation and services network
- Those of the academic and research partners for which the project will allow to improve knowledge and develop a strategic socio-economics analysis of technological solutions and stakeholders in the area of maritime transport decarbonisation

- And finally, all partners who have gathered around the SMARTDEC project and who are seeking to solve challenges of marine activities and ensure the capitalisation of the project results.
- Moreover all partners are contributing to achieve the expected results, as demonstrated in the 5.5.2 Joint Implementation.

5.5.2 Joint Implementation

(Max: 8,000 characters with spaces included)

All partners are fully integrated in the projects activities: there is no WP whose activities will be carried by a single partner:

- In WP1, if the leader of the WP is Cluster Maritimo Marino de Andalucia, the work will be also carried out by Atlanpole, Marine Institute, Pole Mer Bretagne Atlantique and the University of Aveiro, each of these partners bringing their expertise in the environmental sciences, research and development, entrepreneurship and blue economy. They will be also supported by CPMR network.
- In WP2, if the leader of the WP is University de Aveiro, Atlanpole, Cluster Maritimo Marino de Andalucia and Pole Mer Bretagne Atlantique will work on these WP activities in relation to their areas of intervention.
- The WP3 is led by Pole Mer Bretagne Atlantique but it will request coordination of all partners to produce results, first, because it will be based on the results of WP1 and WP2, and second because this WP aims at building a network that will not work without the cooperation of all partners
- The WP4 is dedicated to the preparation of promising innovations. This WP will be led by Atlanpole logically with the cooperation of all cluster partners of the consortium but also with the contribution of academic/research partners for the instruction and rating of proposals and our umbrella organisations to ensure the publicity and dissemination of WP4 actions.
- Finally the WP5 will allow the stakeholder's engagement from regional to EU level. This WP will be carried by CPMAR but all partners will contribute to these WP activities: indeed they will help to reinforce the project dissemination and capitalisation results in their own ecosystems.

There is therefore a balanced distribution of tasks and responsibilities and links between all the WP and most of the activities of each partner. Moreover, the project will be based on regular contacts between partners through regular consortium meetings (at least 2 meetings per year) and workshops in which all partners will participate for example in WP1, WP2 and WP4).

Due to their institutional profile and the level of experience in the coordination of the specific WP activities, resulting as follows, WP leaders are distributed as follow:

WP1: Regional mapping of stakeholders and identification of maritime transport decarbonisation priorities - CMMA (SP)/IMDO (IR)

WP2: Profiling decarbonisation maritime technologies: Environmental, Social and Economic aspects - University of Aveiro (PT)

WP3: Implementation of the Atlantic network SMARTDEC – Smart clusters for maritime decarbonisation - PMBA (FR)

WP4: Set up & Acceleration of promising innovations for the decarbonisation of maritime transport sector - Atlanpole (FR)

WP5: SMARTDEC Impact & legacy from regional to EU Level - CPMR (FR)

Similarly the effort with the organisation of onsite meetings (on a 6-months regular basis) was also distributed among all the project partners, ensuring a balanced distribution among the different regions and countries, as follows:

- Kick-off meeting – Brittany (FR) - organised by PMBA
- Progress meeting after 6 months – Andalusia (SP), organised by CMMA
- Progress meeting after 12 months – Aveiro (PT), organised by UAveiro
- Progress meeting after 18 months – Cork (IR), organised by IMDO
- Progress meeting after 24 months – Lisbon (PT), organised by FO
- Progress meeting after 30 months – Bilbao (SP), organised by BPL
- Final event/ meeting (before 36 months) – Brussels (BE), co-organised by CPMR

5.5.3 Joint Staffing

(Max: 8,000 characters with spaces included)

All partners will contribute to ensure the efficient development of the project and a consistent implementation of the activities. The division of the tasks has been done, avoiding the duplication of functions. As leader of the SMARTDEC Project, Pôle Mer Bretagne Atlantique will be responsible for the whole project management and will also be the financial manager for the whole consortium as responsible for the administration and reporting towards the Joint Secretariat of the Interreg AA programme. Each partner will designate a project manager but the partners have shared responsibilities for activities within the WPs in order to pool resources and avoid staff mobilisation for the same tasks.

WP1 – Regional mapping of stakeholders and identification of maritime transport decarbonisation priorities: Directors and senior researchers, staff from Business Development, Innovation Management, International Affairs, and/or Public Relations Offices, and experts from the different SMARTDEC committees, in position to mobilise their peers and key players from their regional networks to the stakeholders' engagement

WP2 – Profiling decarbonisation maritime technologies: Environmental, Social and Economic aspects: Senior and junior researchers, professors, and lab and workshop technicians, who will assume the mapping and profiling of promising innovations, establish socio-economic and environmental assessments. Define the appropriate conditions for the match between innovations and potential end-users.

WP3 – Implementation of the Atlantic network SMARTDEC – Smart clusters for maritime decarbonisation: Technical coordinators, financial and administrative managers and technicians, Innovation managers, Directors and senior researchers, who will ensure both the structuring of the new network governance, the project management and transversal communication.

WP4 – Set up & Acceleration of promising innovations for the decarbonisation of maritime transport sector: Researchers, and staff from Business Development & Technology Transfer Offices, business support organisations who will support the scale-up of promising technologies to be developed in concrete cases for the maritime transport decarbonisation and the definition and dissemination of the joint Atlantic roadmap.

WP5 – SMARTDEC Impact & legacy from regional to EU Level: Policy makers, NGOs, clusters, to ensure a legacy of the project by providing key insights and proposals for solutions to keep boosting the decarbonisation of the maritime sector at Atlantic and EU level beyond the project's lifetime.

Transversally to all the WPs, all partners also involve their institutional project managers for the management of the project and communication offices for all the transversal communication & dissemination actions in the project as a whole.

5.5.4 Joint Financing

(Max: 8,000 characters with spaces included)

The SMARTDEC project presents a joint financing: the different partner budgets form together the joint budget for the whole project. The SMARTDEC project partners are sharing the total financial effort among themselves, and each partner is allocating its effort to all work-packages.

The 8 SMARTDEC project partners will assume the co-funding of all activities to be developed, through the appropriate allocation and distribution of both own resources and the funds supported by the Interreg Atlantic Area Programme.

Partners leading work packages have a pertinent budget allocated for the well-development of their actions and coordination of each WP. All partners have a budget for similar activities, such as, local workshops and the organisation of partners meetings.

The budget allocated to each partner considers its participation in the partners meetings, the final event and the transnational event for matchmaking between technology providers and potential end-users. The budget presented by research and business organisations considers mostly the effort related to the socio-economic and environmental assessment to profile the promising innovations.

Common investments, such as contracting of external services in the scope of the preparation of promising innovations to tackle the decarbonisation challenge of the maritime transport sector, will be distributed in a balanced way among the partners per country and according to their individual staff efforts and corresponding budgets.

5.6 Horizontal Principles

5.6.1 Sustainability Development Effects

(Max: 8,000 characters with spaces included)

Positive Effects	<p>Sustainable development impact in the maritime transport sector</p> <ol style="list-style-type: none"> 1) Smartship / Green ports 2) Project management, the project will take some sustainability measures: minimise the use of paper when organising events; events are grouped to avoid extra travelling that impacts into CO2; digital tools avoiding extra travelling or paperload (i.e. online meetings)
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5.6.2 Equal Opportunities Effects

(Max: 8,000 characters with spaces included)

Positive Effects	<p>No individual, regardless of personal circumstance/characteristic, will be disadvantaged or discriminated against by this project. All the SMEs, stakeholders and partners will be supported on a path of inclusive development. The activities planned will involve and consult the targeted groups and stakeholders in order to consider their inputs when delivering the services and make them accessible to all. If an expansion of the SMARTDEC network is envisaged in the future, this will be open to all the interested regions without any preference.</p>
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5.6.1 Gender Equality Effects	
<i>(Max: 8,000 characters with spaces included)</i>	
Positive Effects	Equal treatment and representation by all gender groups is vitally important during all stages of this project. Equal representation will be preserved at all project operational levels, on the General Assembly, in Project Teams, Target Groups and Stakeholder Teams. Active female participation will be encouraged and sought out during the project. The regional hubs responsible will be requested to assure equality between men and women when accessing the opportunities created in the project.

5.7 Project Monitoring Environment Indicators

Indicator	Number	Start Date	End Date
<i>(Add/remove as many rows as PME indicators)</i>			
Common strategies to reduce GHG emissions in the industrial sectors and housing and transports in the Atlantic Area developed or implemented	1	XX/XXXX	XX/XXXX
Joint local, regional and/or sectoral action plans to reduce GHG emissions developed or implemented	1	XX/XXXX	XX/XXXX
Collaborative projects (including digital upskilling, tools and processes) to adapt to climate change developed	1	XX/XXXX	XX/XXXX
Joint sectoral or territorial plans to adapt or mitigate the effects of climate change developed or implemented	1	XX/XXXX	XX/XXXX