



D2.3.1

Workshop with relevant technology
and innovation end-users
Stakeholders

Interreg
Atlantic Area



Co-funded by
the European Union

Document administration	
GRANT AGREEMENT NUMBER	EAPA_0038/2022
PROJECT TITLE	SMARTDEC – Smart Clusters for maritime decarbonisation
DELIVERABLE TITLE	Workshop with relevant technology and innovation end-users Stakeholders
DELIVERABLE NUMBER	D2.3.1
DELIVERABLE VERSION	Version I
CONTRACTUAL DATE OF DELIVERY	30/11/2025
ACTUAL DATE OF DELIVERY	28/11/2025
DOCUMENT STATUS	
DOCUMENT VERSION	Final revised version
ONLINE ACCESS	Yes
DIFFUSION	Public
NATURE OF DELIVERABLE	Report
WORK PACKAGE	2
PARTNER RESPONSIBLE	UAVEIRO
CONTRIBUTING PARTNERS	PMBA
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ABSTRACT	Description of preparation and analysis of the transnational workshop with stakeholders and SMARTDEC selected technology innovator’s representatives, highlighting program development and preparation and stakeholder inputs and interest. Includes the program, attendance lists, and a summary of key outcomes.

KEYWORDS	Maritime, Transport, Atlantic, Decarbonization, Network, Emissions, Innovations
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Executive Summary

This report presents the main outcomes of the first transnational SMARTDEC workshop “Decarbonisation Technologies for the Maritime Transport Sector,” that occurred on the 25th November 2025, during the Business2Sea 2025 event, in Terminal de Cruzeiros de Leixões, Porto, Portugal. It was a planned workshop under WP2, Task 2.3.1 — Regional matching analysis of decarbonisation needs with potential technology profiles. Building on the technological mapping carried out in Activity 2.1 and the stakeholder identification of WP, D1.1 and D1.2, the workshop aimed to collect targeted feedback from regional technology providers, SMARTDEC innovators, and potential interested stakeholders and end-users to support the development of a regional technology–needs matching framework in the Atlantic Area.

The workshop engaged a diverse set of stakeholders—including ports, shipbuilders, energy companies, technology developers, SMEs, research organisations, and regional authorities—to identify regional decarbonisation needs, motivations, challenges, and current strategies, but also the levels of technological readiness and innovation of the SMARTDEC innovators. The session was structured around presentations of SMARTDEC project results, innovation pitches from selected SMEs, and interactive feedback collection via the Vevox platform, ensuring comparable, structured input from all participants.

Key outcomes of the workshop are summarised as follows:

- Stakeholder engagement and profile: Participants were mainly Technology Providers/Developers (40%), Others (36%), and Aggregators/Clusters of Technology Users or Developers (20%). Sector representation included Ports/Related Activities (20%), but also Technology Providers (24%) and Other (40%) that refers to regional authorities, academia and engineering companies.
- Promising technologies: Among the innovations presented, the most promising and innovative for the Atlantic maritime sector were identified as Cormoran’s solar wing (21.54%), Suprasys’ superconducting cable (16.92%), and Inguru Predict’s real-time operations (15.38%). Other notable technologies included WindCredible turbines, HUPI’s AI-driven solutions, and fuel-related solutions, with particular emphasis on scalability and adaptability to port infrastructure.
- Technology adoption and investment likelihood: Participants indicated moderate-to-high interest in adopting SMARTDEC technologies, with an average likelihood score of 3.45/5 and a median of 4. Suprasys’ superconducting cable ranked highest for potential investment (26.67%), followed by WindCredible turbines and Cormoran’s solar wing (20% each).
- Drivers and barriers: Cost-efficiency emerged as the primary driver for technology adoption decision by end-users, with environmental benefits considered important only when

accompanied by a credible business case. Barriers include regional variability in infrastructure, fuel availability, and operational constraints, as well as the absence of standardised evaluation frameworks. Stakeholders highlighted the importance of risk-mitigated pilots, phased integration of decarbonising solutions, and real-world demonstrations to facilitate uptake and full market penetration of these new innovations.

- **Enabling environment:** Participants emphasised the need for clear regulatory frameworks, including clear goals for emissions' reduction, sanctions and benefits; targeted public funding, and accessible investment mechanisms. Ports and regional authorities were identified as strategic actors for supporting early adoption, providing infrastructure and space for pilot demonstration, and sharing knowledge with local and regional communities. Collaborative initiatives like SMARTDEC were recognised as critical for matchmaking, cross-regional learning, and reducing fragmentation across the sector.
- **Strategic insights:** The workshop reinforced that technological potential alone is insufficient. Innovations must demonstrate measurable performance, piloted scalability, and financial viability. Stakeholders encouraged exploration of hydrogen and alternative fuels, especially for large cargo sector, and highlighted the value of communication, pilot projects, and early engagement with end-users and ports.

Overall, the workshop confirmed a pragmatic yet ambitious approach by the Atlantic maritime sector towards decarbonisation. Stakeholders are committed to adopting innovative solutions but require supportive conditions to navigate economic, operational, and regulatory challenges. SMARTDEC is positioned as a key facilitator of this transition, promoting collaboration, visibility, and adoption of low-carbon maritime technologies across the Atlantic region.

Appendices provide detailed workshop materials, presentations, Vevox results, and participant registration lists (Confidential).

SMARTDEC Background

“Smart Clusters for Maritime Decarbonisation”, known as SMARTDEC, is an Interreg Atlantic Area project funded by the European Union. This project aims to create and develop a Network of Atlantic hubs of the maritime transport sector to provide tools, knowledge, and structure needed for an efficient implementation of decarbonisation solutions in maritime transportation.

This objective will be reached with a quadruple helix approach in which research & academia, policymakers, society, and industry will collaborate to develop common strategies to achieve carbon neutrality in the sector. SMARTDEC will be implemented through several activities. Firstly, comprehensive research on the waterborne transport sector and its decarbonisation in the Atlantic area, focusing on older initiatives, will be conducted, alongside detailed data and narrative analyses specific to each country. Such efforts aim to understand the sector's status in terms of pollution levels and decarbonisation efforts, making the identification of key stakeholders crucial for the Atlantic network.

Subsequently, research on innovation and development of emerging technologies will be conducted, leveraging insights collected from the initial activity's findings, stakeholder input, and research facilities. This research will be a summarised consolidation of workshop outcomes and will provide information on technologies under development.

The SMARTDEC network will be implemented, and action plans for the stakeholders will be developed. This will pave the way towards setting up and accelerating promising innovations to decarbonise the maritime transport sector. All outputs and results will be available online via an interactive platform.

1. Introduction

The workshop reported in this deliverable was developed under WP2, Task 2.3.1 — Regional matching analysis of decarbonisation needs with potential technology profiles, in continuity with the technological mapping conducted in Activity 2.1 led by the University of Aveiro and Fórum Oceano. Building on the outputs from WP1 and the WP2, D2.1 and D2.2 previously identified technology profiles, this workshop aimed to gather targeted feedback from regional technology and innovation providers (SMARTDEC Innovators) and potential interested stakeholders and end-users to support the development of a regional matching framework for decarbonisation technologies in the Atlantic Area.

By engaging directly with stakeholders such as ports, shipbuilders, energy and fuel companies, technology and engineering developers and regional authorities, the workshop collected key information on regional decarbonisation needs, motivations, barriers and current strategies, but also the levels of technological readiness and innovation of the SMARTDEC innovators. This feedback will also be integrated with the environmental, social and economic analyses of the most promising technologies and with the geographical vision of decarbonisation capacities (e.g., fuel production, storage, distribution, and access to alternative energies). Combined, these inputs will allow SMARTDEC to identify and prioritise the technologies most consistent with each region's context and potential adoption pathways, supporting both local implementation and, where relevant, transnational uptake.

Overall, this workshop is a core element of Task 2.3.1, contributing to the foreground mapping required to identify regional gaps and needs, and informing the selection of technology providers and end-users relevant for activities in WP3 and WP4. The results will also help frame regional decarbonisation trajectories aligned with EU strategies such as the Green Deal and Fit for 55, as well as Atlantic and national specialisation strategies, thereby supporting future policy recommendations (WP5).

1.1. Objectives

The transnational workshop “Decarbonisation Technologies for the Maritime Transport Sector” aimed to:

1. Engage regional technology providers, developers and end-users to collect feedback on the technologies identified in Activity 2.1 and innovations selected in WP4 and assess their alignment with regional decarbonisation needs.

2. Characterise regional motivations, challenges, priorities and technological gaps to support the development of a regional technology–needs matching matrix under Task 2.3.1.
3. Facilitate dialogue between technology developers and end-users to understand potential future uptake, identify promising applications, and discuss the expected impacts of the most relevant technologies on carbon-emission reduction.

This engagement represents the first structured step toward stimulating the future adoption of SMARTDEC innovative decarbonisation solutions within the Atlantic maritime sector.

1.2. Methodology

1.2.1. Workshop Preparation and Invitations

In the weeks leading up to the event, the consortium carried out coordinated preparations to ensure the effective organisation and delivery of the transnational SMARTDEC workshop. This included developing the workshop agenda, defining the intervention sequence, preparing supporting materials, and aligning with partners.

All partners disseminated invitations (approximately 250 invitations) to their respective regional networks, targeting potential end-users and stakeholders identified in WP1, including ports, shipyards, shipowners, energy operators, technology developers, SMEs, research organisations, and relevant public authorities. Communication channels included direct email and social outreach, the Business2Sea 2025 event communication system, and promotional actions through partners' institutional networks. The objective was to ensure broad representation across the Atlantic regions and to encourage participation by actors relevant to the regional matching analysis under Task 2.3.1.

All registered participants received the agenda and logistical information ahead of the workshop.

1.1 Workshop Setting

The transnational SMARTDEC workshop, organised on the 25th November 2025, in person at Terminal de Cruzeiros do Porto de Leixões, Porto, Portugal and within the framework of the Business2Sea 2025 international event, followed a structured programme lasting approximately 1 hour and 45 minutes. The methodology adopted for the session was designed to: (i) disseminate the activities and preliminary results

produced under WP2, including those from the SMARTDEC Innovator Challenge; (ii) present a selection of innovative decarbonisation technologies developed by SMEs from the Atlantic area; and (iii) collect targeted and comparable feedback from key maritime stakeholders in support of the regional matching analysis foreseen under Task 2.3.1.

To ensure robustness, consistency and comparability of stakeholder inputs, the workshop employed the University of Aveiro's licensed Vevox platform (<https://www.vevox.com/>) as the digital tool for live polling and structured feedback collection. The use of Vevox also increased participant engagement, facilitated matchmaking, and generated complementary evidence to be integrated into the relevant project deliverables. In addition to closed polling questions, the platform offered open-ended questions, enabling participants to submit written contributions directly from their mobile devices. This feature proved particularly useful for capturing input from participants who preferred not to speak out loud or in situations where time constraints limited open discussion.

The workshop consisted of four main components, aligned with the official agenda (Appendix I):

- Part 1 — Welcome Remarks and Introduction

The session opened with a welcome address and a presentation of its objectives, outlining the workshop's role in promoting innovation matchmaking to support maritime decarbonisation in the Atlantic region. This introduction also framed how stakeholder contributions would feed into Task 2.3.1 and the broader SMARTDEC methodology.

- Part 2 — Presentation of the SMARTDEC Project and Innovator Challenge Results

A brief project overview was delivered to contextualise the work conducted under WP2, including the technological mapping (Activity 2.1) and the selection of SMEs for the Innovator Challenge. This segment ensured participants had a shared understanding of SMARTDEC's purpose, approach and expected outcomes before engaging in the interactive components.

- Part 3 — Innovation Pitches by Selected SMEs

Award-winning companies presented their decarbonisation-related technologies and business models. These concise pitches exposed stakeholders to a diverse set of solutions—from digital platforms to vessel design innovations—allowing them to understand technological applicability and readiness levels. This component also prepared participants for the subsequent stakeholder discussion.

- Part 4 — Stakeholder Discussion and Matchmaking Session (using Vevox)

Following the innovation pitches, ports, shipyards, energy operators and other relevant actors were invited to comment on the presented solutions, discuss operational challenges, and identify potential opportunities for collaboration.

To structure and capture stakeholder feedback consistently, the session incorporated live Vevox polls with both closed and open questions (Appendix II). This component directly supports Task 2.3.1 by generating input on regional needs, motivations, challenges and perceived technological fit.

- Part 5 — Wrap-up and Next Steps

The workshop concluded with a summary of key discussion points and an outline of planned follow-up actions, including how the inputs gathered through Vevox and the open discussion will feed into SMARTDEC's regional matching matrix and future cooperation activities.

The Appendix provides detailed information on the workshop, including agenda, PowerPoint, Vevox raw images and data, and attendance list.

2. Workshop Delivery

In Porto, during Business2Sea on the dedicated Transnational SMARTDEC workshop side event, in the blue room, 9 of the 11 SMARTDEC innovators delivered their pitches to showcase their technologies and attract the interest of participating stakeholders and regional representatives (Figure 1, **Erreur ! Source du renvoi introuvable.**, Figure 3). All pitch presentations are provided in **Erreur ! Source du renvoi introuvable.** Following every sequence of three pitches, a short burning-questions round was held to allow immediate clarification and targeted exchanges between SMEs and the audience. After the final presentation block, a more extensive Q&A and open discussion session took place.

2.1. Workshop Photos



Figure 1. Workshop photos (Part I). Opening session, SMARTDEC presentation and first innovator's Pitch.



Figure 2. Workshop photos (Part II). Innovators Pitch and Open discussion session.



Figure 3. Workshop photos (Part III). Closure and group and team photos.

2.2. Results

To further support structured stakeholder input, the facilitation UAveiro team invited all participants to complete several questions on the Vevox questionnaire (Appendix III - Stakeholder Discussion and Matchmaking Session List (using Vevox)), which was used to initiate discussion, ensure comparability of responses across present audience, and maximise the information gathered for this Deliverable. Not all audience engaged in the digital tool and therefore the presented numbers do not correlate with the total available sample. Participants first completed the identification questions (Figure 4, Appendix IV – Vevox Results). Subsequently, they engaged in a moderated debate on the relative relevance, interest and potential of the presented technologies for maritime decarbonisation.

The audience was mostly composed of Technology Providers/Developers (40.00%) including engineering companies and similar tech suppliers, followed by Others (36.00%) category as well as Aggregator/Cluster of

Technology Users or Developers (20.00%). Sectorially speaking, most identified as Other (40.00%) sectors; however, Technology Providers (24.00%) and Ports and Related Activities (20.00%) were very much present.

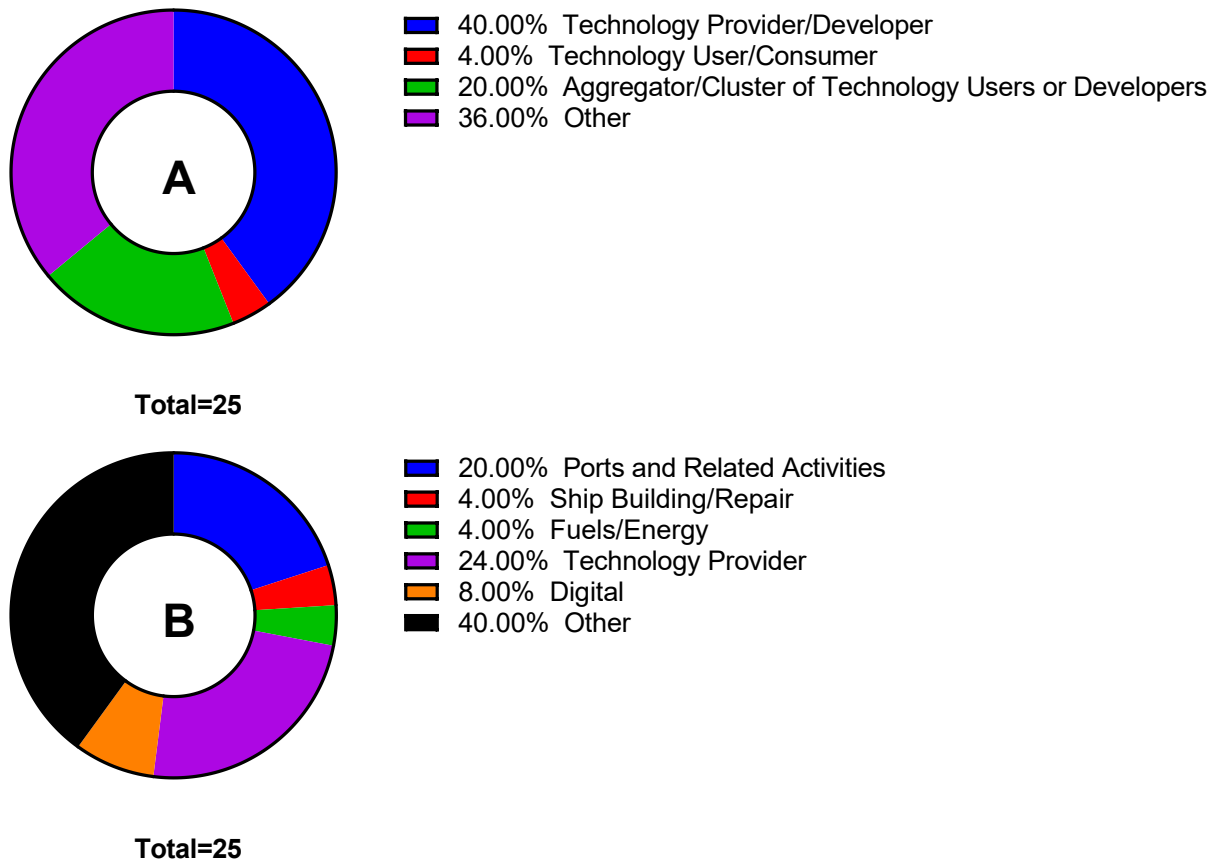


Figure 4. Audience characterisation: Identification (A) and Sector (B).

During the discussion, several stakeholders highlighted which of the presented innovator technologies were, in their opinion, of interest for maritime decarbonisation (Figure 5, Appendix IV – Vevox Results). **Comoran’s solar wing was seen as the most promising and innovative for the Atlantic maritime sector**, accounting for 21.54% of the choices, followed by **Suprasys’ superconducting cable (16.92%)** and **Inguru Predict’s real-time operations (15.38%)**. A representative from Industry (Portugal) emphasised the **potential of Windcredible for diverse settings**, the usefulness of HUPI’s AI-driven solutions to boost digital transition and support decision making in operations at ports, and the scalability of Suprasys for major infrastructure, noting that its standard cable dimensions facilitate deployment, provided adequate port infrastructure is in place. A

specialist from Tecnalía (Basque Country, Spain) noted that Suprasys’ commercial relevance would increase significantly if the same footprint could deliver greater power. The same stakeholder praised Camoran’s propulsion system, and expressed reservations about the feasibility of Green Navy solutions for long-distance voyages. To this the innovator replied that their key targeted segment at the moment is mid-size ships and vessels. Another Basque researcher indicated particular interest in Camoran and Green Navy, while stressing that large cargo vessels remain the core challenge for decarbonisation and most certainly will need alternative fuels to clearly reach the carbon zero goals.

Stakeholders also engaged in a broader exchange with innovators concerning **marketability, patent status, and retrofitting constraints**. Reference was made to Camoran’s patented deck-extension concept, a solution that further expands the potential of this technology for scaling up to larger vessels. Also, reference was made to persistent difficulty of renewing the existing fleet, given typical vessel lifetimes of around 30 years. To accelerate this, financial incentives must be made available for either conversion or substitution of existing fleets. Several participants underlined that the majority of maritime CO₂ emissions—approximately 92%—originate from a relatively small number of large vessels, despite the significantly greater number of small and medium ships in operation. A representative from a French port infrastructure organisation highlighted Suprasys, HUPI, and fuel-related solutions as the most immediately relevant.

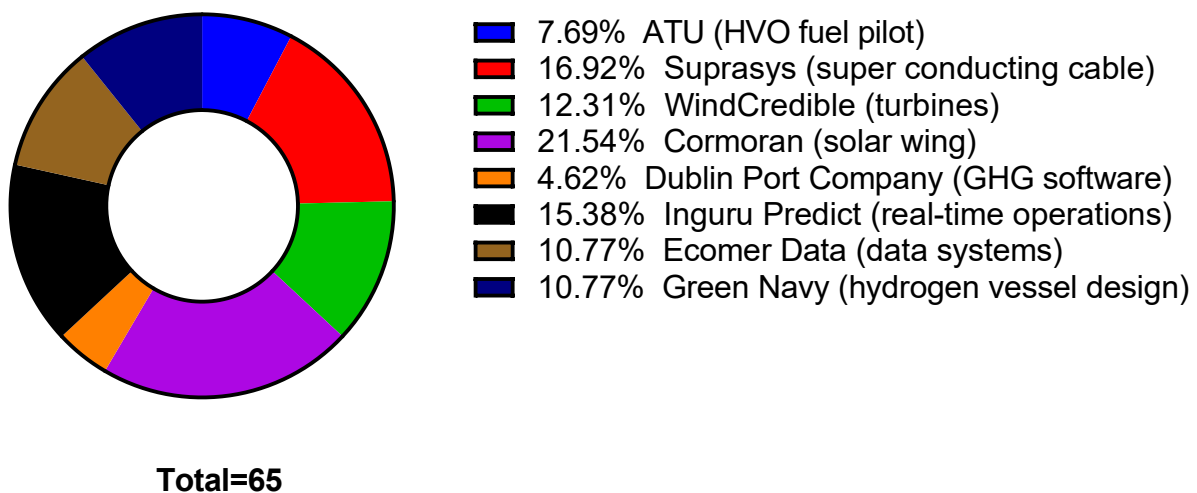


Figure 5. Results to the question "Considering the SMARTDEC technologies and innovations presented today, which decarbonisation solutions do you see as the most promising and innovative for the Atlantic maritime sector? "

When the audience was confronted with the question “How likely is your organisation to adopt or invest in one or more of the SMARTDEC selected technology?”, the likelihood (on a scale of 0 to 5) averaged 3.45, and the median answer was 4.00. This was followed by the question “Which one [*more likely to invest*]?” where Suprasys’ superconducting cable came first with 26.67% of choices, with WindCredible’s turbines and Cormoran’s solar wing coming as close seconds, both with 20.00% (Figure 6, Appendix IV – Vevox Results).

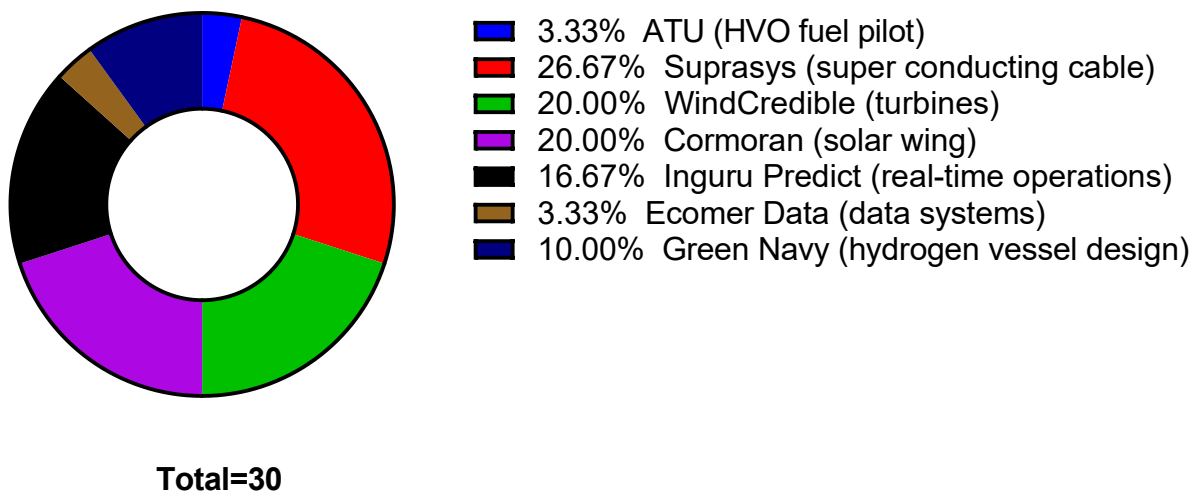


Figure 6. Results to question: “How likely is your organisation to adopt or invest in one or more of the SMARTDEC selected technologies? Which one?”

In response to the follow-up Vevox Question 6 — “Why? How do you balance cost-efficiency and decarbonisation impact in your decision-making?” — participants provided a wide range of insights reflecting the complexity of technology-selection decision processes in the maritime sector (Appendix IV – Vevox Results). While several stakeholders expressed strong support for innovation and efficiency gains, the **majority emphasised that cost considerations remain the predominant decision driver, with some estimating that up to 75% of decisions are guided by financial viability and return on investment of a given investment choice.** Many participants stressed that **environmental benefits are only adopted when accompanied by a credible business case**, describing the need for solutions that delivers “more benefits than costs.” Regional context was also highlighted as a determining factor, with decisions depending on available or fitted local infrastructure, fuel availability, and budgetary constraints.

Stakeholders further noted the **absence of standardised evaluation/comparison frameworks**, explaining that organisations must often define bespoke KPIs and data approaches for each project. Differences across

stakeholder groups also emerged: technology developers tend to prioritise performance and efficiency improvements, while shipowners and operators adopt a more cost-sensitive approach. Nevertheless, participants broadly agreed that while cost-efficiency currently outweighs decarbonisation impacts, the transition is inevitable and will accelerate as technologies mature, become scalable, and decrease in cost.

Additional comments addressed the **broader enabling environment**. A stakeholder with experience in the United States and Asia compared regulatory contexts, noting that the **EU remains one of the most demanding regions globally**. The cost first decision making process seems to be an European centred approach, as USA/Asian based stakeholders mentioned that this is not the case in other geographies. Industry representatives also noted that European companies face lower profit margins due to competition across the 27 Member States with different levels of market maturity and regulation/demands. These factors reinforce the need for clear regulation, financial support mechanisms, and a predictable investment landscape.

Building on this, Vevox Question 7 — *“How do you see these innovations integrating into existing operations?”* — generated further insights into the **conditions required for effective deployment** (Appendix IV – Vevox Results). Stakeholders consistently highlighted the need for a phased, risk-mitigated integration process, supported by pilots, demonstrators, and real-world trials to validate performance and minimise operational disruption. Many noted that decision-makers, especially in ports and shipping companies, are risk-averse and prefer technologies that have been tested within comparable operational settings. Integration was also seen as dependent on interoperability standards, modular deployment, and the scalability of proposed solutions. This input further supports the leverage potential of SMARTDEC like projects preparing the innovators for future pilot stages.

Participants underscored the **essential role of public support**, including **targeted funding for high-cost solutions, tax incentives, and clear regulatory signals** that can help de-risk early adoption. Some stressed the importance of engaging long-term strategic investors—not only venture capital—to foster scalability and industrialisation.

Finally, respondents emphasised that **knowledge exchange and the dissemination of successful pilots** are central to broader uptake. Collaborative initiatives such as **SMARTDEC platform** were viewed as critical enablers, supporting matchmaking, cross-regional replication, and communication between innovators, ports, and operators—particularly given that funding opportunities and scaling pathways are often better known within port authorities and regional agencies.

Overall, the responses portray a sector that recognises the potential of innovative decarbonisation technologies but seeks pragmatic, well-supported pathways to integrate them into existing maritime operations.

In the concluding segment, Wim Stubbe (CPMR), responsible for summarising key outcomes and outlining next steps under the SMARTDEC initiative, encouraged innovators not to shy away from hydrogen-based solutions. He underscored that each technology must ultimately establish a credible business case and that the scientific community should shift towards proactively communicating the full range of viable fuel alternatives rather than focusing exclusively on current limitations. He further emphasised SMARTDEC's role as a platform that supports real-world testing, enhances visibility, and improves communication across the value chain, noting persistent gaps between innovators, end-users, and port authorities.

2.3. Results Summary

The workshop and Vevox responses (all available in the annexes of this deliverable) revealed strong interest in several SMARTDEC technologies—particularly Suprasys' superconducting cable, Camoran's solar wing, WindCredible's turbines, and selected AI-driven and fuel-related solutions—while also highlighting the decisive role of cost-efficiency in technology selection. Stakeholders emphasised the need for credible business cases, risk-mitigated pilots, and compatibility with existing operational and infrastructure constraints. Although views differed across stakeholder groups, participants broadly agreed that the adoption of innovative decarbonisation solutions depends on financial viability, regulatory clarity, and access to port-specific knowledge, with initiatives such as SMARTDEC recognised as key enablers of cross-regional learning and early-stage deployment.

3. Conclusion

The stakeholder discussions and Vevox results presented in this workshop provide a clear picture of a maritime sector that is simultaneously ambitious in its decarbonisation objectives and pragmatic in its approach to innovation uptake. Across regions and stakeholder groups, the need to reduce emissions is widely acknowledged, yet the pathway to adoption remains conditioned by economic realities and operational constraints. **The findings confirm that technological potential alone is insufficient: innovations must**

demonstrate measurable performance gains, scalability, and an attractive return on investment to gain traction in a competitive and risk-averse industry.

A recurring theme was the **centrality of cost-efficiency**. Despite strong interest in emerging solutions—from **superconducting cables and wind-assisted propulsion to AI-supported optimisation**—participants indicated that financial considerations still outweigh environmental motivations in most investment decisions. This constraint is further shaped by regional variability in infrastructure readiness, fuel availability, and access to funding mechanisms. Ports and operators in particular emphasised the difficulties of integrating new technologies into complex, continuous operations without disrupting service reliability or exceeding budgetary limits. These insights underline the importance of creating supportive conditions for early adopters, including targeted public funding, tailored regulatory signals, and clearer pathways for demonstrating technologies in real-world settings.

At the same time, the workshop highlighted a **growing appetite for cooperation and knowledge exchange**. Stakeholders repeatedly stressed the value of pilot projects, interoperability standards, and transparent communication across the value chain. The **role of port authorities emerged as especially significant**, given their strategic position in providing infrastructure, enabling access to funding opportunities, and reducing risk for first movers. These findings reinforce **the need to integrate ports and regional innovation agencies more systematically into decarbonisation initiatives**.

The workshop also underscored the continued relevance of **SMARTDEC as a broker, facilitator, and accelerator of maritime decarbonisation**. By connecting innovators with users, supporting comparative assessments across regions, and providing a platform for testing and visibility, SMARTDEC is well positioned to help reduce fragmentation and accelerate technology adoption. The encouragement from Wim Stubbe and other contributors to maintain open dialogue, explore hydrogen and alternative fuels, and prioritise the development of viable business cases reflects a shared understanding that innovation requires not only technical excellence but also strategic communication and cross-sector engagement.

Overall, the **results indicate that the sector is progressing toward decarbonisation through a combination of targeted innovation, structured collaboration, and pragmatic investment strategies**. The next steps for SMARTDEC and its partners will involve deepening these collaborative mechanisms, strengthening the enabling environment for early adoption, and ensuring that regional differences are recognised and leveraged as a source of learning rather than a source of fragmentation. By continuing to bridge gaps between

innovators, end-users, ports, and policymakers, the initiative can play a crucial role in supporting a more coordinated and effective transition toward low-carbon maritime operations.

APPENDIXES

Appendix I- Workshop agenda

- **11:30-11:35: Welcome remarks and an introduction.**

Setting the session objectives and highlighting its role in promoting innovation matchmaking for maritime decarbonisation.

Lorella Ciuti, EU Project Manager - Forum Oceano

- **11:35 -11:45: Overview of the SMARTDEC project**

Project's mission, key results, and the outcomes of the *SMARTDEC Innovator Challenge*.

Christophe Debois, Head of European affairs – PoleMer Bretagne Atlantique

Boris Teillant, Project Developer – ATLANPOLE

- **11:45-12:30: Innovation Pitches**

Awarded companies will present their innovative solutions, showcasing technologies and business models that contribute to decarbonising maritime operations across the Atlantic.

- Filipe Fernandes – Thunder Tricks (Portugal)
- Charles Cardi – Green Navy (France)
- Marine Rialan – Cormoran (France)
- Olivier Capelle – Ecomer Data (France)
- Romain Roquefere – Hupi (Spain)
- Endika Perez Vidal – Suprasys (Spain)
- David Fernandez - Eonseal (Spain)
- Paul Brewster – Killibegs Marine Cluster and Dublin Port (Ireland)

- **12:30-12:55: Stakeholder Discussion and Matchmaking Segment**

This interactive debate will allow ports, shipbuilders, and energy companies to react to the presented solutions, share insights on current challenges, and identify potential areas for collaboration.

Helena Vieira, Coordinator Senior Researcher – University of Aveiro

- **12:55-13:00: Wrap-up and Next Steps**

Summary of key outcomes, outlining follow-up actions, and discussing the project's legacy and future cooperation perspectives under the SmartDec initiative.

Wim Stubbe, Project Manager - CPMR

Appendix III - Stakeholder Discussion and Matchmaking Session List (using Vevox)

Audience Characterisation (VEVOX)

1. Do you identify yourself as a *(Multiple Choice)*:
 - Technology developer
 - Technology user/Consumer
 - Aggregator/Cluster of technology users or developers
 - Other

2. Which sector do you come from? *(Multiple choice)*
 - Maritime Transport/Cargo
 - Ports and related activities
 - Ship Building/Repair
 - Cruises and leisure
 - Fishing vessels operators
 - Fuels/energy
 - Technology provider
 - Digital
 - Other

Innovation Questions (VEVOX)

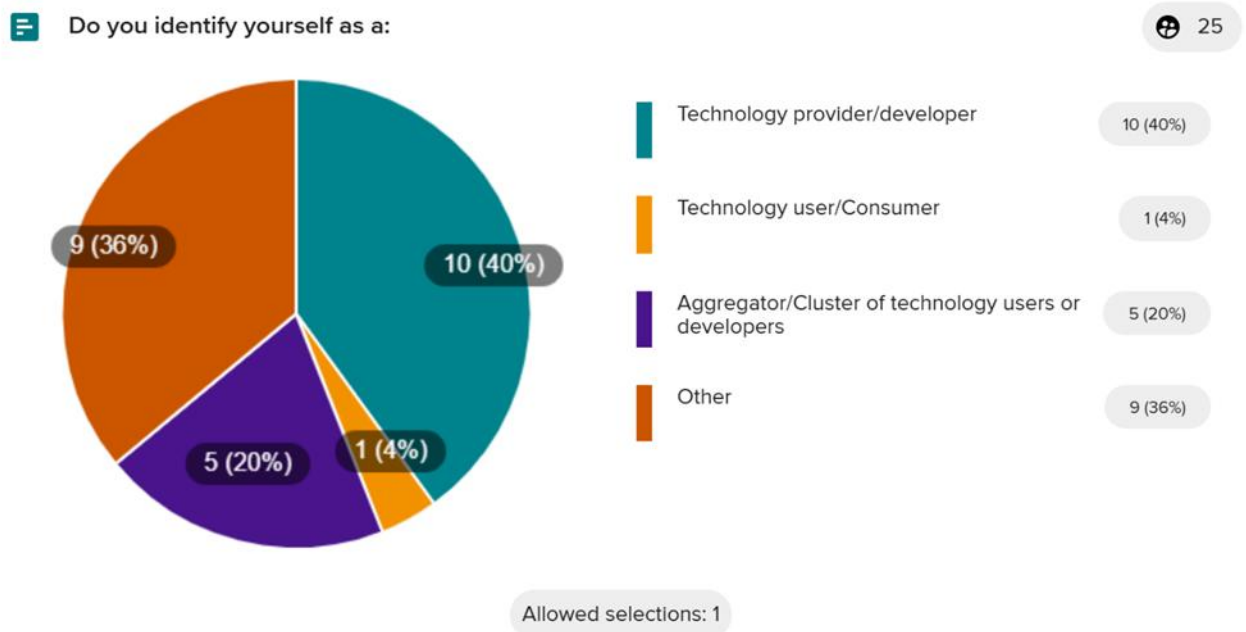
3. Considering the SMARTDEC technologies and innovations presented today, which decarbonisation solutions do you see as the most promising and innovative for the Atlantic maritime sector?
(multiple choice – choose one)
 - ATU (HVO fuel pilot)
 - Suprasys (super conducting cable)
 - WindCredible (turbines)
 - Cormoran (solar wing)
 - Dublin Port Company (GHG software)
 - Inguru Predict (real-time operations)
 - Ecomer Data (data systems)
 - Green Navy (hydrogen vessel design)

4. How likely is your organization to adopt or invest in one or more of the SMARTDEC selected technology? **(Range: Very Unlikely [0] – Very Likely [5])**
 - a) **Follow-up question (Vevox):** Which one?
 - ATU (HVO fuel pilot)
 - Suprasys (super conducting cable)
 - WindCredible (turbines)
 - Cormoran (solar wing)
 - Dublin Port Company (GHG software)

- Inguru Predict (real-time operations)
- Ecomer Data (data systems)
- Green Navy (hydrogen vessel design)

- b) **Follow-up question:** Why? How do you balance cost-efficiency and decarbonisation impact in your decision-making?
- c) **Follow-up question:** How do you see these innovations integrating into existing operations?

Appendix IV – Vevox Results



☰ Which sector do you come from?

⊕ 25

Maritime Transport/Cargo

0 (0%)

Ports and related activities

5 (20%)

Shipping

0 (0%)

Ship Building/Repair

1 (4%)

Cruises and leisure

0 (0%)

Fishing vessels operators

0 (0%)

Fuels/energy

1 (4%)

Technology provider

6 (24%)

Digital

2 (8%)

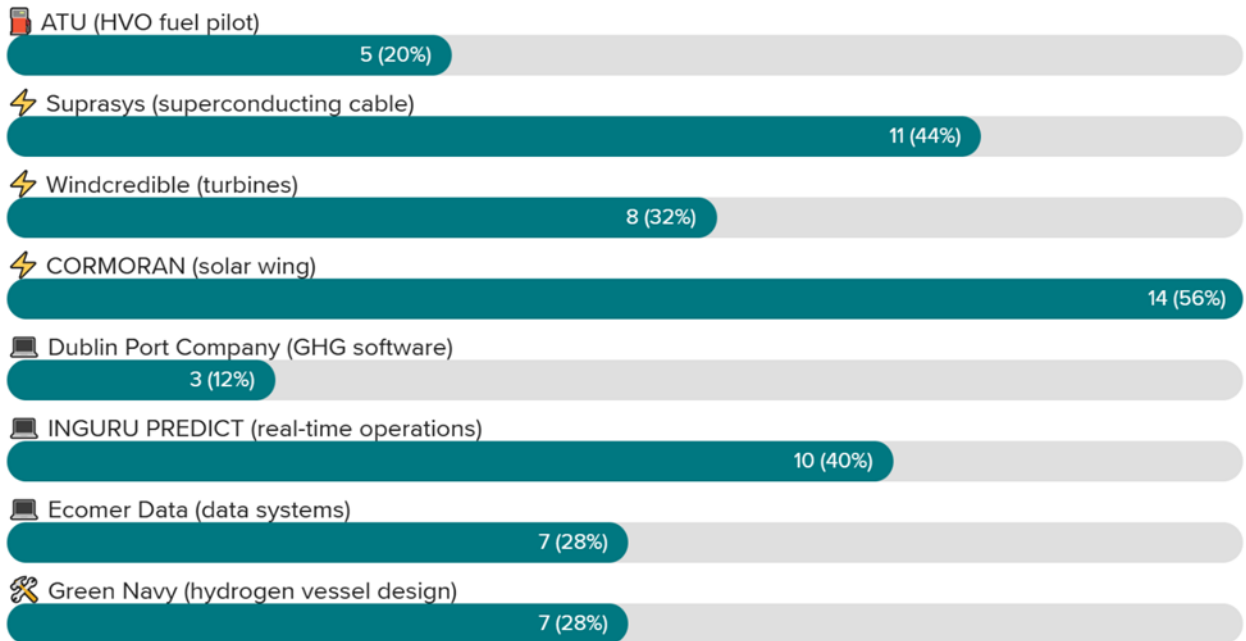
Other

10 (40%)

Allowed selections: 1

☰ Considering the SMARTDEC technologies and innovations presented today, which decarbonisation solutions do you see as the most promising and innovative for the Atlantic maritime sector ?

⊕ 25



Allowed selections: 3



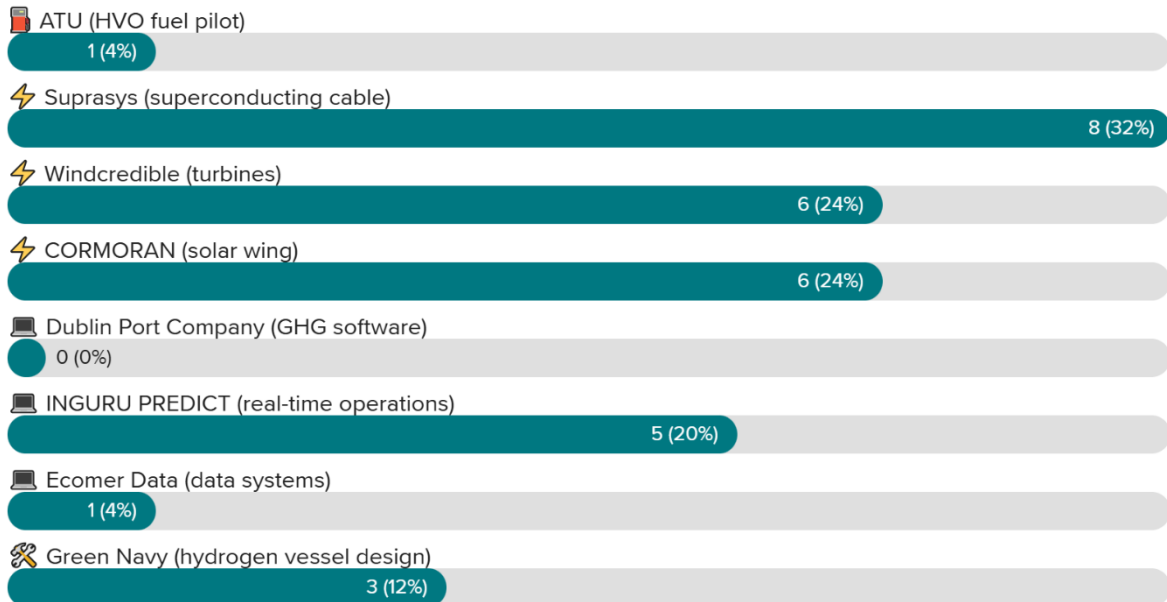
⋯ How likely is your organization to adopt or invest in one or more of the SMARTDEC selected technology?

⊕ 22



☰ Which one?

⊕ 25



Allowed selections: 8

A Why? How do you balance cost-efficiency and decarbonisation impact in your decision-making?

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Applicability and generalization.	We bet on accessible and scalable solutions	As a company, my decision will be based on the needs of my region(e.g, infrastructure or fuel) so considering that and taking into account the budget and the
Cost efficiency while decarbonisation technology matures and becomes a more rentable solution	Very challenging. There is not a standard, each time we have to look for a new way of defining KPIs, defining data and how to use it.	For technology providers: efficiency and technological improvement. For ShipOwner: Mostly cost
You need to determine the priorities no the short term and determine what can be done in the long term. Decarbonistaion will happen.	75% cost driven	More benefits than costs
Cost-efficiency	Needs to work both hands	Mostly cost efficiency decisión
Value for money	Costs and a viable business case are crucial.	Retourner on investment
Scalability	Cost efficiency	Mostly cost driven decision
Efficiency and innovation		

A How do you see these innovations integrating into existing operations?

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Tax incentives	Demonstrators to demonstrate benefits and trust	Through modular deployment, interoperability standards, and phased pilots that validate performance with minimal operational disruption.
Again it's a cost efficiency thing, then the Focus could lay on regulatory advances	Regional government and public authorities will make the investments, supporting the higher costs to get things started	For high cost investment solutions, public funding to support the development and strict regulations to "help" Ship Operators to take the decision
Bring new strategic investors and not only VCs	Bigger and better Lobby close to the major private operators.	Through pilots, demonstrators, followed up by expansion. This process needs support from all stakeholders, industrial partners and government
More piloting and knowledge exchange. Decision makers avoid risks, they prefer the ones that have already tested in a port environment, and/or already	Disseminate good results and practices.	It's just about making clever decisions, smart investment
It would depend on short terms or long terms aspects	Through efficiency gains	Tax incentives Better independence from outside EU competitors
Through scalability and suport from projects suco as Smartdec	They need funding, as well as support for governments and policymakers	