



STRATEGY FOR IDENTIFYING THE EFFECTIVENESS AND EFFICIENCY OF THE PROGRAMME

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1. INTRODUCTION

The project "MariTech Talent Programme" (MariTech Talent) is financed under the HORIZON Europe Programme, co-financed by the European Union. The consortium brings together 5 partners from 3 European countries, who will work together to achieve its main goal:

to develop a twin transition INTRAprenurship skills development programme, bringing maritime industry professionals and innovative enterprises with concrete digital solutions together in a two-way learning experience.

The MariTech Talent programme will apply a **challenge-based INTRAprenurship model** which will nurture learning by working on the most pressing needs identified by the ports and maritime companies themselves. Teams consisting of current workers and deep tech startups, scaleups and SMEs will work together to apply concrete solutions, undergoing the necessary training on the way.

On the one hand the programme will secure the **required skill set** for the maritime workforce related to the **green and digital transition**. They will acquire operational knowledge in key digital domains enablers of the twin transition in the maritime industry

On the other hand, it will provide valuable insights and feedback on the relevance and effectiveness of the applied digital solutions.

As a final result, maritime companies and ports will gain in-depth insights into the benefits digital solutions can bring to their operations, while at the same time their employees will become skilled and confident in their use.

In order to achieve these results, the MariTech Talent programme is developed on the basis of analysis and research among the stakeholders and is utilizing the partners network to deliver two ways dialogue among maritime companies and administration and innovative solution providers.

To ensure the Programme is meeting its goals, this evaluation strategy shall look for answers to the following questions:

- ❖ Does it cover the needs of the sector?
- ❖ Is it attractive to the potential trainees?
- ❖ Does it establish a two-way learning-experience between deep tech solutions providers developing key technologies and challenge owners to build INTRAprenurship skills?



2. SKILLS PERTINENT TO THE TWIN TRANSITION IN THE MARITIME INDUSTRY

The analysis, implemented within the MariTech project initial phase underscores the significant implications of the Twin Transition, which combines digital and green transformations, on the maritime sector. This is crucial for the attainment of broader sustainability objectives. The sector is a substantial contributor to global greenhouse gas emissions, and the implementation of green initiatives and digital technologies is not only advantageous but also essential. It is anticipated that these transformations will result in significant changes to the industry's operational landscape, such as the integration of renewable energy sources, the development of smart port infrastructures, and the implementation of automated systems for route optimisation and emissions monitoring. These modifications will be essential for the reduction of the environmental impact of maritime activities and the advancement towards the EU's ambitious climate and energy objectives.

Additionally, this analysis emphasises the necessity of addressing the skills deficit in the maritime industry, with a particular emphasis on digital and green competencies. The integration of these twin transitions into maritime operations requires a workforce that is well-equipped to navigate the industry's evolving demands. The analysis underscores the necessity of targeted educational and training programs by identifying specific occupations and skill sets that are essential for the sector's adaptation to these changes. The maritime sector can improve its resilience, operational efficiency, and sustainability by aligning the workforce's capabilities with the requirements of the Twin Transition, thereby contributing to the general objective of a sustainable blue economy.

According to the results of the MariTech analysis, green and Digital Skills Hierarchy for the maritime industry has the following structure:

GREEN AND DIGITAL SKILLS	SCORE
Complying with environmental protection laws and standards	48,5%
Environmental protection technology	45,5%
Monitoring environmental conditions	39,4%
Electronics and automation	33,3%
Database and network design and administration	33,3%
Designing electrical or electronic systems or equipment	33,3%

Computer use	27,3%
Analysing and evaluating information and data	27,3%
Electricity and energy	21,2%
Maintaining electrical, electronic and precision equipment	15,2%
Analysing scientific and medical data	9,1%
Handling and disposing of hazardous materials	9,1%

The findings from the initial skills analysis directly shaped the thematic focus of the training modules. For example, the high scores for “Complying with environmental protection laws and standards” and “Environmental protection technology” justified the emphasis on green practices and ESG reporting in topics **“Sustainability and Innovation (ESG reporting, circular economy, etc.)”** and **“Fuel and Technologies (Green Practices)”** in the training curriculum.

Likewise, competencies like “Electronics and automation” and “Database and network design” informed the inclusion of **topic “Cybersecurity and Threats”**. This alignment ensures that the training is tailored to bridge the exact skills gap identified in the sector, thereby enhancing the relevance and robustness of the intervention.

Each training component is thus a response to a clearly identified sectoral need, ensuring that the developed INTRAprenurship programme is not only thematically coherent but also grounded in robust empirical analysis.

Based on that the MariTech training programme framework is focused on:

- ❖ Delivering online introductory training to maritime professionals, start-ups/SMEs to inspire new ways and attitudes
- ❖ Training startups on methodologies and tools to effectively educate and upskill maritime professionals (to ensure the INTRAprenurship model is applied)
- ❖ Train-the-Professionals in three thematic scopes:
 - Cybersecurity and Threats
 - Fuel and Technologies (Green Practices)
 - Sustainability and Innovation (ESG reporting, circular economy, etc.)



3. OBJECTIVES AND GOALS OF THE INTRAPRENEURSHIP PROGRAM

The MariTech Talent program aims to provide a standardized service for green and digital skilling and upskilling, tailored to address the industry's specific needs while making an exponential contribution to wider impacts under the "human-centered and ethical development of digital and industrial technologies" destination.

It focuses on applying a systemic approach to the use of technologies within society and industry, with a particular emphasis on the needs of maritime companies and their workforce. It is an innovative training approach that provides standardized development of twin skills and competencies through technological adoption, thereby promoting the modernization of the maritime industry.

To achieve the defined aspiration to more digitalised and greener maritime sector, the MariTech Programme will strive to deliver the following objectives:

- ❖ To educate maritime participants how to identify problems/challenges/barriers
- ❖ Support SMEs with knowledge on how financing /project procurement occurs within the Maritime Sector
- ❖ Equip maritime workforce with competencies in sustainable maritime technologies and digital transformation.
- ❖ Enhance workforce adaptability to **emerging green regulations and standards**.
- ❖ Train participants in **systems-based problem-solving** to improve efficiency, sustainability, and innovation.
- ❖ Bridge the gap between **technological innovation** and **workforce readiness**.

4. APPROACHES FOR MEASURING EFFECTIVENESS AND EFFICIENCY

As a first step to evaluating effectiveness and efficiency, it is important to clearly define the terms to identify the right approaches to delivered the expected results.

Effectiveness refers to the extent to which the programme achieves its intended goals and objectives. A program is considered effective if it successfully delivers the intended outcomes



or objectives, therefore this evaluation will focus on the impact and quality of results rather than the process of achieving them.

Effectiveness will be measured by outcome indicators, such as improvements in learning, health, productivity, or participants satisfaction.

On the other hand, **efficiency** measures how well, the programme utilizes resources (time, money, personnel) to achieve its outcomes. A program is considered efficient if it minimizes the use of time, money, and personnel while still achieving the desired results.



In order to ensure proper and meaningful evaluation results, few aspects are carefully planned:

4.1. KEY EVALUATION CRITERIA

To evaluate the programme, key evaluation criteria are defined, related to the evaluated aspects – namely effectiveness and efficiency and formulated to strictly match the MariTech Talent Programme objectives.

Effectiveness Criteria

- ❖ Achievement of Goals: this criterion will compare actual outcomes with planned objectives.
- ❖ Stakeholder Satisfaction: this criterion will collect feedback from participants, speakers, and stakeholders (e.g. task force members)
- ❖ Sustainability: this criterion will assess whether the programme's outcomes are long-lasting.

Efficiency Criteria

- ❖ Resource Utilization – Analyse the time and effort spent on training versus obtained benefits.
- ❖ Process Optimization – Identify programme areas for improvement in implementation.
- ❖ Scalability – Evaluate whether the programme can be expanded without excessive cost increases.

4.2. DATA COLLECTION METHODS

In order to allow for evaluation of the defined evaluation criteria, a set of data should be gathered, underpinning conclusions and answering the main evaluation questions.

The data collection methods are identified in relation to the evaluation criteria, to ensure direct contribution to the evaluation question, thus ensuring the Programme objectives have been achieved.

Evaluation criteria	Data collection method	Definition and applicability
Achievement of Goals	Questionnaire (anonymous)	In order to assess whether the elaborated and delivered Programme is bringing the planned outcomes a questionnaire will be elaborated, collecting direct feedback from participants on their learning experience, satisfaction, and perceived applicability of skills, and more importantly on the established two-way learning-experience.
Stakeholder Satisfaction		
Resource Utilization		

		Due to the relatively small testing group, the questionnaire could successfully utilise higher percentage of open questions, to ensure the more detailed and free feedback.
Sustainability	Experts' observation Focus group with Task Force members and Stakeholders	The partners will observe the training exercise and provide in-depth insights to identify gaps in training design and delivery with focus on sustainability.
Process Optimization	Experts' observation Focus group with Task Force members and Stakeholders	Based on the results of Task 3.3. Setting the stage, feedback will be gathered from the participating challenge owners and solution providers and the task force members, including on the experience and the longevity of the obtained results, based on the analysis of the data gathered through questionnaire.
Scalability	Experts' observation Focus group with Task Force members and Stakeholders	

The **same core questionnaire (Annex 1)** focused on satisfaction, applicability, and skills acquired will be used across all training cohorts to ensure consistency in data collection and allow for comparative analysis. The questionnaire addressing the three criteria is presented in Annex 1.

The questions are selected to provide feedback from the participants on their opinions on the achieved results, their feelings regarding the delivered information and the overall learning experience and the time and effort spent for receiving the training.

In addition to that a focus groups with task force members and stakeholders will be organised (online) to hear their feedback on the process of delivery, sustainability of the results and the scalability of the training content. A scenario for focus group is presented in Annex 2 to this document.

The **expert observation** will be implemented by the partners experts, during the actual programme delivery and will be discussed as a basis for fine tuning the questionnaire and FG scenario and as first feedback for the training delivery.

Expert observations will be structured and guided by an observation checklist (**Annex 3**). Observers will document aspects such as participant engagement, trainer delivery quality, session flow, technical issues, and evidence of interaction between challenge owners and solution providers. These reports will be synthesized into qualitative summaries feeding into the Process optimization and scalability evaluation dimensions.

In order to ensure compliance with personal data protection in the EU, the questionnaires will be anonymous and all data, collected during the focus groups will not be bound to participant.

We anticipate collecting responses from approximately 50 participants across all training activities. This includes participants from at least three thematic training modules, as well as focus group attendees.

The responses will be analyzed through:

- **Quantitative methods:** Descriptive statistics (frequencies, means) and basic cross-tabulations to identify differences by module or role (e.g., solution provider vs. port staff).
- **Qualitative methods:** Thematic coding of open-ended responses and focus group transcripts using a grounded approach to surface emergent themes and actionable insights.

4.3. ANALYSIS & REPORTING

Two stages of analysis are foreseen within the programme evaluation process:

At first stage, a quantitative analysis of the filled in questionnaires will be implemented to provide overall assessment of the participant's feedback. The analysis will be reinforced by the MariTech team expert observations of the programme implementation.

After the results are ready, the analysis will be used as a basis for further qualitative evaluation through discussions with stakeholders and taskforce members. Within an online focus-group exercise the results will be discussed, together with ideas and suggestions for programme improvements to finalized the programme design and ensure delivery of best outcomes.

Based on the results, a report will be elaborated to be presented to the partners, including suggestions for improvement of the Training programme, if needed.

Based on the results and the suggestions, the partner, responsible for the Programme elaboration will **update the Training programme** and will implement the necessary changes as per the received feedback.

The evaluation results will feed directly into the final adjustment of the MariTech training programme. Specifically, findings related to learning satisfaction, practical applicability, and intrapreneurial engagement will inform both content and delivery modifications. The evaluation report will not only summarize findings but also contain concrete improvement recommendations—such as redesigning modules that underperform, enhancing digital materials, or modifying group formats. These changes will be documented in a revised training framework in collaboration with WP2 and WP4 leads to ensure cross-WP alignment.

ANNEX 1 – QUESTIONNAIRE TO PARTICIPANTS

Dear participants,

filling in this questionnaire, you will help us in improving the MariTech training programme and ensure outcomes are best reached.

Please do not hesitate to be honest and give us your true feedback in order to ensure your needs are best met.

It is anonymous and we will only use aggregated data in our analysis.

QUESTIONNAIRE

1. Did the training meet your expectations?
 - a. It exceeded my expectations
 - b. Yes, it was exactly what I have expected
 - c. It was close to my expectations
 - d. It was not up to my expectations

We would be happy to hear more. Feel free to add any comments here:

2. Did the time required to complete the training align with your expectations
 - a. I could use some more time in training activities
 - b. The training was long enough for consuming the training content
 - c. I would prefer more concise and short training exercise

We would be happy to hear more. Feel free to add any comments here:

3. Did you think the training content met your needs

- a. No, the information was too wide and above what I needed to learn
- b. Yes, the subjects, covered during the training were meeting my needs

c. No, I needed different content:

We would be happy to hear more. Feel free to add any comments here:

4. Was the material presented in a manner that was easy to grasp?

- a. Yes, I had no difficulties in grasping the material
- b. I needed more interactions and explanations
- c. It was too practical. I needed more theoretical basis

We would be happy to hear more. Feel free to add any comments here:

5. Were the provided handouts or digital materials useful?

a. Yes, they were very useful

b. They were somewhat useful, but could be improved:

c. No, they were not so useful:

We would be happy to hear more. Feel free to add any comments here:

6. Were you given opportunities to interact with other participants?

- a. Yes
- b. Partially
- c. No

We would be happy to hear more. Feel free to add any comments here:

7. Do you believe the knowledge and skills you got would be beneficial to you in your future work

- a. Yes
- b. Partially
- c. No

We would be happy to hear more. Feel free to add any comments here:

8. Which training approaches were more relevant for you

- a. Online training sessions
- b. Physical training sessions
- c. Networking and two-way learning-experience
- d. All of them

We would be happy to hear more. Feel free to add any comments here:

9. Do you have any comments and recommendations for programme improvement

Please share all your thoughts with us:

ANNEX 2 – FOCUS GROUP

Objective:

To assess the effectiveness, sustainability, and scalability of the training exercise by gathering qualitative insights from key stakeholders (challenge owners, solution providers, task force members).

Timing & Duration

- **When:** Within 1 week after training completion (while feedback is fresh)
- **Duration:** 40-60 minutes

Format

- **Format:** Online (e.g., Zoom or MS Teams)
- **Moderator:** Neutral facilitator, familiar with the project but not involved in training delivery
- **Tools:** Slides, interactive tools (Slido), recording (with consent), note-taker

Agenda Outline

Time	Activity
0–5 min	Welcome & Introduction: Goals of the focus group, confidentiality, recording
5–10 min	Icebreaker: One-word reaction to the training or short reflection (Slido)
10–40 min	Guided Discussion (key questions below)
40-50 min	Open Floor: Additional insights, unexpected reflections
50-60 min	Wrap-up & Next Steps: Thank you, outline how the input will be used

Guiding Questions

To guide the discussion and ensure coverage of sustainability, scalability, and delivery aspects:

A. Training Delivery

- How did you experience the structure and delivery of the training?
- What elements worked well, and what could be improved in the future?
- Was the content appropriate and engaging for your level of expertise?
- Did you think the common work between solution providers and challenge owners is driving inspiration for looking out to new opportunities and Intrapreneurship.

B. Sustainability of Results

- Do you believe the skills or knowledge gained during the training will be useful in your work long-term?
- What would help ensure the continued application or impact of the training outcomes?

C. Scalability

- Could this training model be scaled to other locations or sectors?
- What adjustments would be necessary to make it scalable (e.g., language, context, duration)?
- What delivery methods (in-person, online, blended) would work best for broader implementation?

D. Added Value

- What was the most valuable takeaway for you?
- Would you recommend this training to others in your field? Why or why not?

Data Collection & Reporting

- Focus group will be recorded (with consent) and transcribed
- Notes and key quotes will be analysed thematically
- Findings will be triangulated with questionnaire results and observer feedback
- A section in the main evaluation report will summarise key outcomes and recommendations



ANNEX 3 – OBSERVATION CHECKLIST

General Information

Item	Notes
Date of Training	
Location / Format	<i>(Online / In-person / Blended)</i>
Observer Name/ Partner	
Module / Topic	<i>(e.g. Cybersecurity, ESG, Green Fuels)</i>
Trainer(s)	
Participant Profile	<i>(e.g. SMEs, port staff, solution providers)</i>

Training Delivery & Engagement

Observation Point	Yes / No / Partial	Notes
Trainer was well-prepared and followed the agenda		
Content was delivered clearly and at an appropriate level		
Use of training materials (presentations, handouts, tools) was effective		
Participants were actively engaged (questions, discussions, polls)		
Time was managed well across different sections		
Technological setup worked without major interruptions		
Two-way interaction between challenge owners and solution providers was visible		

Relevance and Appropriateness of Content

Observation Point	Yes / No / Partial	Notes
Examples and case studies were practical and relevant		
Sustainability and/or digital transition topics were clearly addressed		
Clear connection was made to skill needs identified in the preliminary analysis		





Efficiency and Logistics

Observation Point	Yes / No / Partial	Notes
Session began and ended on time		
Group size was appropriate for the format		

Sustainability and Long-term Impact

Observation Point	Yes / No / Partial	Notes
Participants discussed how to apply knowledge after training		
Materials/tools were shared for future use (e.g., templates, checklists)		
Trainer referred to long-term changes (e.g., ESG implementation, digital strategies)		

Scalability Potential

Observation Point	Yes / No / Partial	Notes
The training format could be replicated in another location		
Content was adaptable to other sectors or training groups		
Barriers to broader rollout were identified (e.g., technical, language)		

Additional Notes / Recommendations:

(Open space for observer to add qualitative impressions, examples, or suggestions for improvement.)

