

Promoting innovative nEtworks and cLusters for mArine renewable energy synerGies in mediterranean cOasts and iSlands - PELAGOS

General information for the members of the Greek Hub for BE and relevant stakeholders

In the framework of the Interreg MED - PELAGOS project, **Promoting innovative nEtworks and cLusters for mArine renewable energy synerGies in mediterranean cOasts and iSlands (PELAGOS)**, the Hellenic Centre for Marine Research (HCMR) is the coordinator of the **Greek Hub for Blue Energy (GH4BE)**. Under this role, HCMR is responsible for the rational and transparent implementation of the GH4BE in line with the procedures of Interreg MED - PELAGOS project. Several steps are needed for the fulfilment of this aim, which are briefly described below.

1. General criteria for selection of SMEs

The SMEs that may be supported during the operation of the PELAGOS Cluster should already be active in the Marine Renewable Energy (MRE) Value Chain or clearly demonstrate the potential to become members of the MRE value chain in the future. More, specifically, SMEs should be operating in the following indicative fields:

- **Power suppliers:** Utilities and independent power producers;
- **Technology developers:** Marine energy innovators, designers and developers;
- **Manufacturers and component suppliers:** Manufacturers and component suppliers;
- **Electricity network operators:** Operators managing the electricity networks
- **Development services:** Resource assessment/ modelling, mapping, environmental impact assessment studies, sea floor environmental assessment and related marine safety and supply consults, permitting, approvals planning, marine corrosion consulting
- **Supporting technology providers:** Wave/ tidal current/ wind resource measurement, environmental monitoring devices, buoys, underwater remote vehicle operators/ owners, technical data collection
- **Engineering and construction:** Safety management, work platforms, underwater operators, cabling and electrical interconnect for marine operations, anchoring systems, floating devices, engineering firms, on-site supervision and management
- **Operations and maintenance:** Operational monitoring, transportation, port facilities and marine operators with related experience (including transport vessels and certified diving teams)

Additionally, beneficiaries SMEs should be located in Greece only (MED programme's eligible areas).

2. Identification of Cluster's HUBs key actors and establishment of the GH4BE

The first step aims to identify the most appropriate members for establishing the GH4BE. The selection method was based on the Quadruple Helix Innovation Model (**4Helix model**) that includes institutional bodies, research centres, business sector and citizens (industry - research bodies - public authorities - civil society).

This step initially resulted in a database of stakeholders at a national level. This database was the basic material in order to analyse the stakeholders that are fully or partly related to the Marine Renewable Energy (MRE) sector and the Blue Energy (BE) value chain. Then, by using specific criteria among the groups of the 4Helix model (with higher priority to Small Medium Enterprises - SMEs) and according to the methodology of the Cluster building, all entities that could become members of the **GH4BE** were evaluated. Consequently, according to the selection methodology, HCMR has already identified the key actors operating (directly or indirectly) in the MRE sector in Greece.

Furthermore, at the Demonstration Event (25/05/2017) that was organized in order to inform the potential stakeholders for the activities and the scope of the GH4BE, the interested stakeholders had also the opportunity to declare their participation as members of the GH4BE. However, the option to declare interest for becoming a member of the GH4BE is always open for the interested parties in order to participate in the upcoming project activities and accept the services of the GH4BE.

Methodology

The methodology that was followed in order to identify and select the key actors of the GH4BE is divided in 4 steps:

- a. **Quadruple Helix Model**
- b. **Desktop Research**
- c. **Prioritization and pre-selection of key actors**
- d. **Identification of key actors - potential members of the GH4BE**

More information regarding these steps is available upon request.

3. PELAGOS Hub support services approach

The direct support/pilot services offered by the PELAGOS GH4BE to its members are structured around a five-fold approach. For this aim, a variety of tools is used taking into consideration the needs of the targeted entities and the scope of these services. Within the framework of the general aims and scope of the PELAGOS project regarding MRE market and business development in Greece, it should be noted that these services are addressed to SMEs/ start-ups/ spin-offs. The relevant activities and services may be implemented in parallel or in succession. A tabulated form of these activities/services is provided in the Appendix.

Considering the time plan of the PELAGOS project, the major services focusing on SMEs consist in the following:

A) SMEs Innovation profiling: Support service profiling of the SMEs’ innovation potential & estimation of their technology readiness level (TRL). This is a direct service of the GH4BE offered to its SMEs members (20 audits are anticipated).

Procedures & steps for the SMEs innovation profiling service	Selection criteria	PELAGOS project prioritize to select SMEs with the following characteristics:
<p>Step 1: Selection of companies for participating in the service; Step 2: Initial approach; Step 3: Desktop research – preparatory work; Step 4: Interview meeting; Step 5: Data analysis and reporting.</p>	<ul style="list-style-type: none"> • TEAM: Dynamic teams in terms of i) capacities and expertise, ii) existing partners and network, iii) willingness for skills improvement and learning; • CLARITY: Relevance of the idea/ technology/ product to the BE sector or other related sectors that are strong in the area; • TECHNOLOGY/SOLUTION/IDEA: TRL of the solution or product development phase; • INNOVATION: The innovation/ technology/ idea addresses a problem in a novel or promising way in relation to the State-of-the art; • EXPECTED IMPACT: Expected impact of innovations in terms of i) addressing a specific problem or real market need; ii) size of the market addressed. 	<ul style="list-style-type: none"> • real desire and motivation to innovate; • existence of at least a minimum capacity (in terms of size - employees and turnover); • a solid enough internal organization to enable the company to carry out an innovative project; • willingness to participate in the service and offer time and effort; • (preferably) not be part of a larger group; • operation in MRE related sector such as: a) Small manufacturers or systems integrators for MRE energy; b) Innovative solution providers with a mid-low TRL (<5); c) Companies implementing studies for MRE, Engineering firms, Component installations, Service providers

B) BE Market driven Innovation Plans: Coaching & mentoring services offered to the most promising innovative SMEs in order to identify new business opportunities emerging from technological innovation, new business models, market diversification (6 BE Market driven Innovation Plans are anticipated for the Greek Hub). This stage aims to provide concrete recommendations to the members of the GH4BE (with emphasis and priority to local SMEs). In the same context, services will be also provided aiming to help SMEs in the identification of new business opportunities in the BE sector by examining the technological and market feasibility of their MRE related offering (technology/innovation/product/service).

The GH4BE is responsible to implement this service at a national level, following the guidelines of the PELAGOS project documentation in order to achieve the desirable results according to the design of the project. The framework should be adjusted/customized according to the proposed timeline, and the GH4BE should take into account the profile and the specific needs of each SME.

In order to carry out the BE Market Driven Innovation Plans service, the corresponding procedure includes the following steps:

- Step 1: Selection of SMEs for participating in the service;
- Step 2: Initial approach;
- Step 3: Preparatory work;
- Step 4: First interview meeting/coaching session;
- Step 5: Desktop research/Data analysis;
- Step 6: Second interview meeting/coaching session;
- Step 7: Data analysis/reporting.

In addition, in the framework of the PELAGOS project, a **Business Model canvas** could be scheduled for each selected company recommended for the **BE Market driven Innovation Plans**.

The relevant requirements are briefly described below:

Value proposition: Description of the solution (product or service concept). Feasibility of the proposed solution and novelty.

Customer benefits: Clear and unique selling proposition addressing identified needs or solving major problems.

Team: The team is complete in terms of both technical and business competences.

Market: Well defined market and exploitation plan to up-scale the innovation.

Business potential: Clearly defined Target customers, Competition and anticipated Barriers.

Combination of two factors that derive from the Innovation profiling service and play a crucial role in the identification of the SMEs with the biggest market potential, namely the Technology Readiness Level (TRL) and the Market Readiness Level (MRL).

C) BE twinning services: joint concepts: Facilitation support services for joint co-work of selected SMEs with RTOs (National and/or foreign) in order to jointly design market-oriented MRE concepts (POCs=Proof of Concepts) or high-risk R&D concepts (1 report of 3 concepts is anticipated for the GH4BE).

The aim of the service is to support Greek SMEs work with RTOs in order to jointly develop POCs/high-risk projects on MRE. The procedure is going to be fully open, and under public framework processes, to each member of the **GH4BE**. Thus, each member of the GH4BE will have the opportunity to participate and be involved in the BE twinning services.

Selection Criteria	<ul style="list-style-type: none"> • FEASIBILITY: Innovations that could work and would be scalable in terms of: i) market and competitors analysis, ii) technical aspects, iii) evidence of success in the market, and iv) reasonable potential for scale/business growth. • FINANCIAL CAPACITY: The total grant value requested is reasonable relative to the scope of activities and timeframe. • Intellectual properties patented or estimated plan for licensing.
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D) Investor Ready Business Plans through mentoring & pitching services with investors: Mentoring & coaching services to enterprises & SMEs to develop an Investor-Ready Business Plan for high-risk projects will be also provided. Pitching with potential investors will also take place through targeted investment meetings. One Investment Plan is anticipated for the GH4BE.

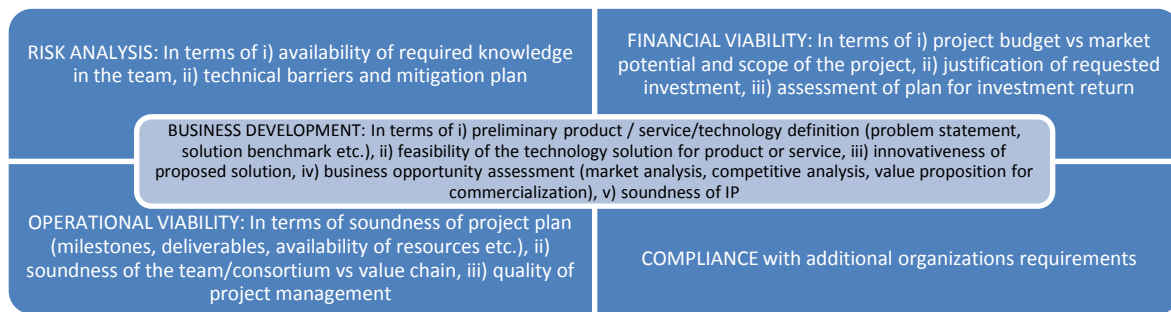
The aim of the service is to support Greek SMEs to elaborate their Investor Ready Business Plan on BE and be prepared for a potential pitching with a local investor and access to potential funding.

Parameters for the most suitable SMEs					
SECTOR	MARKET PENETRATION	DURATION	TRL LEVEL	INVESTOR GOALS	BUSINESS PLAN

The technology is in the priorities in one of the fields of BE	Less than 5 years from the beginning of the project	3 years maximum project duration	TRL>4, meaning that the majority of the system functionality and/or its components have already been proven at least at laboratory level (proof of concept)	Compliance with investor's goals	In terms of a clear definition of: i) problem need, ii) solution, iii) target market, iv) competition, and v) added value.
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E) Open Innovation Pathway service: GH4BE will act as a broker in order to promote technology-based opportunities and high-risk projects of enterprises to large firms outside MED area & Big European Business Support Organizations. The result will be 1 Open Innovation Service for the Greek HUB.

The main milestones for this service are:



The relevant requirements are briefly described below:

Maturity of business development: In terms of i) preliminary product/service/technology definition (problem statement, solution benchmark etc.), ii) feasibility of the technology solution for product or service, iii) innovativeness of proposed solution, iv) business opportunity assessment (market analysis, competitive analysis, value proposition for commercialization), v) soundness of IP.

Risk analysis: In terms of i) availability of required knowledge in the team, ii) technical barriers and mitigation plan

Financial viability: In terms of i) project budget vs market potential and scope of the project, ii) justification of requested investment, iii) assessment of plan for investment return

Operational viability: In terms of soundness of project plan (milestones, deliverables, availability of resources etc.), ii) soundness of the team/consortium vs value chain, iii) quality of project management

Compliance with additional organizations requirements

Investor Ready Business Plans

The relevant requirements are briefly described below:

- **Sector:** The technology is in the priorities in one of the fields of BE
- **Market penetration:** a time to market shorter than 5 years from the beginning of the project
- **Duration:** maximum project duration of 3 years
- **TRL level:** Technology Readiness Level > 4, meaning that the majority of the functionality of the system and/or its components has already been proven at least at laboratory level (proof of concept)

- **Investor goals:** Compliance with investor’s goals
- **Existing business plan:** In terms of a clear definition of the i) problem need, ii) solution, iii) target market, iv) competition, v) added value

PELAGOS Project's procedures diagram

All the stages of the PELAGOS project are schematically depicted in the following diagram in order to inform the members of the GH4BE about the official procedures that are followed during the implementation of the project.



APPENDIX

<i>Promoting innovative nEtworks and cLusters for mArine renewable energy synerGies in mediterranean cOasts and iSlands - PELAGOS</i>			
Project Deliverables	Description of Activities	Delivery Date	Invited Members
3.2.3: BE Cluster & Cluster's HUBs demonstration event	Organize 1 BE Cluster & Cluster's HUBs demonstration event Responsible: HCMR	25/05/2017	All the potential national key actors for the GH4BE & members of the Focus Group were invited.
3.3.3.: Capacity Building on Entrepreneurship & Technology Transfer	Organize the 1st Capacity Building on Entrepreneurship & Technology Transfer in Athens. Responsible: HCMR	18/07/2017	All the members of the GH4BE after the Demonstration Event & members of the Focus Group were invited.
3.3.2.: SMEs Innovation profiling	SMEs Innovation profiling (20 audits)	15/11/2017	All the SMEs members of the GH4BE.
3.3.4: 1 Capacity Building on Markets & MRE Technology applications	Organize the 2nd Capacity Building on Markets & MRE Technology applications in Athens Responsible: HCMR	11/12/2017	All the members of the GH4BE & members of the Focus Group will be invited.
3.4.1: BE Market driven Innovation Plans	BE Market driven Innovation Plans (6 Plans)	15/12/2017	Selected among the 20 SMEs members of the GH4BE of Deliverable 3.3.2
3.4.2: 1 BE match-making "Team-Up" services	Organize 1 Regional B2B event in Athens. Responsible: CRES & HCMR	Early 2018	All the members of the GH4BE & members of the Focus Group will be invited. (Regional)
3.4.3: BE twinning services: joint concepts	1 BE twinning service: joint concepts - 1 report of 3 Proof of concepts (POCs) Greece Responsible: HCMR	31/03/2018	All the members of the GH4BE & members of the Focus Group will be invited.
3.5.1.: Company Mission to end users in Maritime Industries	1 Company Mission to end users in Maritime Industries in Greece Responsible: CRES & HCMR .	31/05/2018	All the members of the GH4BE & the Focus Group will be invited.
3.6.1.: Workshop on Spatial planning, Coastal Zone management & social acceptance of MRE	Organize 1st Workshop on Spatial planning, Coastal Zone management and social acceptance of MRE in Athens. Responsible: HCMR	31/05/2018	All the members of the GH4BE & members of the Focus Group will be invited.
3.3.5: Capacity Building on innovation soft-skills development	Organize the 3rd Capacity Building on innovation soft-skills development in Athens. Responsible: HCMR	31/07/2018	All the members of the GH4BE & members of the Focus Group will be invited.

3.4.2: BE match-making "Team-Up" services	Organize 1 International B2B Regional event in Rome Responsible: ENEA	31/07/2018	All the members of the GH4BE & members of the Focus Group will be invited.
3.5.2.: 1 Investor Ready Business Plan through mentoring & pitching services with investors	1 Investor Ready Business Plan through mentoring & pitching services with investors (1 Investment Plan), Greece. Responsible: HCMR	31/08/2018	All the members of the GH4BE & members of the Focus Group will be invited.
3.5.3: Open Innovation Pathway service	1 Open Innovation Pathway service Greece Responsible: HCMR	30/11/2018	All the members of the GH4BE & members of the Focus Group will be invited.
2.2.3.: Media Press Conference	Organize a Press Conference in Athens. Responsible: HCMR	30/11/2018	All the members of the GH4BE, members of the Focus Group & the initial potential key actors of the GH4BE will be invited.
2.5.2.: Thematic event on the application of MRE technologies in key market sectors	Organize a Thematic event in Athens Responsible: CRES & PMM-TVT	30/11/2018	All the members of the GH4BE, members of the Focus Group & the initial potential key actors of the GH4BE will be invited. MED Policy makers & other stakeholders of PELAGOS Partners will be also invited.
3.5.4: Study Visit to installations	3rd Study Visit to installations in France. Responsible: PMM-TVT	30/11/2018	The Coordinators of the National Hubs & selected SMEs members from the national Hubs will be invited.
3.6.2.: Workshop on the Environmental impact of MRE in MED coastal, insular and marine areas	Organize 1 (2nd) Workshop on the Environmental impact of MRE in MED coastal, insular and marine areas in Athens. Responsible: HCMR	30/11/2018	All the members of the GH4BE & members of the Focus Group consisting the National actors will be invited.
2.5.1.: Final International Conference & Joint exhibition on BE	Organize Final International Conference & Joint exhibition on BE in Athens. Responsible: CRES	30/04/2019	All the members of the GH4BE, the identified Greek Cluster's HUB key actors, EU policy makers, financial institutions & other stakeholders will be invited. Moreover, all partners of the PELAGOS project will be invited & contribute.
2.5.3: Transnational Forum on MRE and BE	Organize 1 Transnational Forum in Athens. Responsible: CRES	30/04/2019	All the members of the GH4BE, the identified Greek Cluster's HUB key actors, EU policy makers, financial institutions & other stakeholders will be invited.