



Project co-financed by the European  
Regional Development Fund

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

## Blue Energy Cluster Building Methodology

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

Document name: **Blue Energy Cluster Building Methodology**

Document identifier: **D.3.2.1**

Document Class: **Method**

Version: **Final**

#### Project Details:

Programme: **MED INTERREG 2014-2020**

Priority Axis: **1. Promoting Mediterranean innovation capacities to develop smart and sustainable growth**

Objective: **1.1. To increase transnational activity of innovative clusters and networks of key sectors of the MED area**

Project Title: **Promoting innovative nEtworks and cLusters for mArine renewable energy synerGies in mediterranean cOasts and iSlands**

Project Acronym: **PELAGOS**

Project Code No: **1373**

Lead Partner: **CRES**

Total Budget: **2,396,104€**

Time Frame: **1.11.2016-30.04.2019**

#### Deliverable Details

Component: **WP 3 Testing**

Task Title: **3.2 Blue energy Cluster Building and Coordination of pilot activities**

Deliverable Title: **D3.21 EU Blue Energy Cluster Building Methodology**

Responsible Partner: **CRES**

Involved Partners: - **PMM VT**

Date & Place of delivery: **31.05.2017**

Authors:

Contractual Date: **31.03.2017**

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## About this Guide

The present document entitled 'Blue Energy Cluster Building Methodology' is a guidance material intended for partners of PELAGOS project suggesting how to implement the activities foreseen within the framework of the project for setting-up a PELAGOS Cluster on Blue Energy in a proper, successful and coordinated way.

The document proposes that the set-up process of the PELAGOS Cluster on Blue Energy may be broken down into four broad phases, containing ten steps starting from the Establishment of the Cluster, to its Building and Service delivery and finally to its Evaluation and Sustainability.

The main scope of the current guide is to provide PELAGOS partners, in particular the PELAGOS Cluster Coordinator and the HUB Coordinators at country level, with a) background information setting the scene on blue energy Clusters, b) essential definitions and information on project specific actions to be implemented at Cluster (international) level and setting the base for local activities to be implemented in a coherent way and c) practical regional HUB level guidance on what needs to be done for establishing the PELAGOS HUBs, building the base and delivering of services on national/regional and international level.

**Section 1** sets the scene for a Blue Energy Cluster defining Clusters and their typical composition and presenting the potential of blue energy, the current technologies, the key players of the blue energy value chain and the key challenges and opportunities of blue energy sector highlighting the importance and critical factors for setting a Cluster on Blue energy to address those challenges.

**Section 2** outlines specific particularities and limitations for setting up the PELAGOS Cluster on Blue energy in terms of key characteristics of the PELAGOS project, the anticipated added value of the Cluster, the anticipated Role of the PELAGOS partners and the key actors to be involved. Considering the above, a common PELAGOS Cluster development process is proposed and presented under this section outlining the phases and specific steps to be done both on Cluster and HUB level in order to set up the PELAGOS Cluster on Blue Energy. According to this, this section provides guidance and suggestions on what needs to be done and considered while: Establishing the PELAGOS Cluster Governance scheme, defining Cluster's Legal Form, Defining its internal communication and information concept, Defining its strategic positioning and Defining its anticipated results, setting by this way the base for the implementation of the local activities by the HUBs.

**Section 3** provides guidance on what needs to be done and considered by each PELAGOS HUB Coordinator while: Establishing the HUB Team (HUB Coordinator and Focus Group), Monitoring the HUB through Focus Group meetings, Identifying key actors and potential members for the HUB, Launching the HUB, Providing Regional/National HUB services and Collaborating with the Cluster Management Team under International Cluster level services. Moreover, for the effective implementation of the activities on HUB and Cluster level this section also presents a proposed timeplan.

This document has been elaborated under the Activity 3.2 "Blue energy Cluster Building and Coordination of pilot activities" of PELAGOS project "Promoting innovative nEtworks and cLusters for mArine renewable energy synerGies in mediterranean cOasts and iSlands", co-financed by the European Regional Development Fund and National Funds under the MED Programme.

## ABBREVIATIONS

BE	Blue Energy
KPI	Key Performance Indicator
NGO	Non-governmental Organization
OWC	Oscillating Water Column
OTEC	Ocean Thermal Energy Conversion
TRL	Technology Readiness Level
CRES	Centre for Renewable Energy Sources and Saving
UAlg	University of Algarve
CTN	CTN Marine Technology Centre
UCV	Association of Chambers of Commerce of Veneto Region
HCMR	Hellenic Centre for Marine Research
UNIZAG FSB	University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture
Mar.In.E.M	Maritime Institute of Eastern Mediterranean
ENEA	Italian National Agency for New Technologies, Energy and Sustainable Economic Development
TVT-PMM	Toulon Var Technologies
PELAGOS	Promoting innovative nEtworks and cLusters for mArine renewable energy synerGies in mediterranean cOasts and iSlands
BIC	Business Innovation Center
MRE	Marine Renewable Energy
VAT	Value Added Tax
LLC	Limited Liability Company
FG	Focus Group
RTD	Research and Development
POC	Proof of Concept
BSO	Business Support Organization
OI	Open Innovation
PR	Public Relations
ASP	Associated Strategic Partner
EU	European Union
PP	Project Partner
LCOE	Levelized Cost of Energy



## GLOSSARY OF KEY TERMS

**Small enterprise:** is defined as an enterprise which employs fewer than 50 persons and whose annual turnover and/or annual balance sheet total does not exceed EUR 10 million.

**Medium-sized enterprise:** is defined as an enterprise which employs fewer than 250 persons and whose annual turnover does not exceed EUR 50 million or whose annual balance-sheet total does not exceed EUR 43 million.

**Large enterprise:** is defined as an enterprise which employs equal or more than 250 persons and whose annual turnover is greater than or equal to £22.8m/\$22.8m.

**TRL: Technology Readiness Level.** TRL 0: Idea. Unproven concept, no testing has been performed. TRL 1: Basic research. Principles postulated and observed but no experimental proof available. TRL 2: Technology formulation. Concept and application have been formulated. TRL 3: Applied research. First laboratory tests completed; proof of concept. TRL 4: Small scale prototype built in a laboratory environment ("ugly" prototype). TRL 5: Large scale prototype tested in intended environment. TRL 6: Prototype system tested in intended environment close to expected performance. TRL 7: Demonstration system operating in operational environment at pre-commercial scale. TRL 8: First of a kind commercial system. Manufacturing issues solved. TRL 9: Full commercial application, technology available for consumers.

**Quadruple Helix:** Innovation model that involves institutional bodies, research sphere, business sector and citizens in the process (industry - research bodies - public authorities - civil society). This new generation of open innovation leads to stronger economic impact and better user experience in Europe.

**PELAGOS Cluster:** A group of interconnected companies (SMEs, startups, spinoffs) and associated institutions of the Quadruple Helix, geographically proximate in the Mediterranean area, in the field of Blue Energy, linked by commonalities and complementarities. They are suppliers, technology providers, service providers, firms in Blue Energy and in related industries (maritime tourism, aquaculture, shipbuilding, maritime transport), and associated institutions (Universities, RTOs, Public Authorities/Agencies and Business Support Organizations, Trade Associations, Large firms, NGOs, Energy Agents, Maritime Clusters, Technology Transfer Offices & Innovation Poles), in particular fields, that compete and also cooperate in order to increase innovation.

**PELAGOS HUB:** A group of National companies (SMEs, startups, spinoffs) and associated institutions of the Quadruple Helix in the field of Blue Energy. A HUB is a National Node of the PELAGOS Cluster. Six PELAGOS HUBs will be established and implement the Cluster activities on National level: Greece, Spain, Cyprus, Italy, Croatia and Portugal.

**PELAGOS FOCUS GROUP:** Focus Group, is a group of National experts selected according to their background, expertise and experience that meet regularly in order to discuss, comment and share their knowledge and experiences on a specific subject under the supervision of a facilitator (in our case the HUB Coordinator representative).

**BLUE ENERGY VALUE CHAIN:** The stages of value creation by enterprises and other organisations as part of the process of designing and delivering goods and services for their users in blue energy sector including: studies and design, Manufacturing & supplying components, Installation and Construction, Operation and Maintenance.

**CLUSTER of SMEs:** Groups of specialised enterprises – often SMEs – and other related supporting actors that cooperate closely together in a particular location.

**NETWORK of SMEs:** An organisational form of economic activities that may allow SMEs to cope with market failures that they cannot face alone. The rise of an innovation-driven growth model seems to have enhanced the value of networking and the complexity of interdependent production processes of an increasingly uncertain business environment.

**EMERGING INDUSTRIES :** For the purpose of this document, Emerging Industries and Services are broadly understood as entirely new industrial sectors driven by applications of new technologies or other radical innovations OR existing economic activities that undergo renewal and transformation, evolving and upgrading and/or merging into new industries.

# 1. METHODOLOGICAL FRAMEWORK OF BLUE ENERGY CLUSTER

## 1.1. BLUE ENERGY CLUSTER: SETTING THE SCENE

Innovation activities tend to be concentrated in individual companies and certain regions that offer the right competences, skills and favourable conditions. At the same, innovation and excellence are rarely achieved in isolation, as competences are **spread across different sectors, value chains and geographical borders**. These characteristics call for collaboration between, and integration of, different innovation actors across different sectors and regions. This includes SMEs and large enterprises as well as supportive organisations such as universities, research and development institutions, other knowledge and skills providers, financial actors, etc. While large enterprises mostly have the resources to organise and manage open innovation processes, SMEs often need help to effectively link with, and integrate into, new industrial value chains.

### 1.1.1. Clusters & Networks

In a knowledge-based economy **competitiveness** is becoming more dependent upon the ability to apply new knowledge and technology in products and production processes and thus, innovate. However, with growing competition and globalisation and the rapid advancement of knowledge, new technologies and innovative concepts, most of businesses especially SMEs, have not yet developed a culture of innovation and those that do invest in innovation may still face obstacles in pursuing this effort. Inter-firm collaboration within networks is now by far the most important channel of knowledge sharing and exchange. Interactions are also intensifying between firms and a number of other institutions involved in the innovation process: universities and other institutions of higher education, private and public research labs, providers of consultancy and technical services, regulatory bodies, etc. In the last couple of decades, a lot of research has been done on the emergence of **clusters**. Clusters foster *linkages* among firms, knowledge-producing institutions (universities, research institutes, technology-providing firms), bridging institutions (e.g. technology extension services) and customers of a value-adding production chain, which co-operate in developing and using *sector-specific* goods based on common physical and knowledge *infrastructures*. The prevalence of clusters reveals important insights about the microeconomics of competition and competitive advantage and innovation. More specifically, *from a firm perspective*, evidence explains the **benefits of the cluster** including among others:

#### BENEFITS OF CLUSTERS

- Increased and sustainable competitiveness to those firms that are based in Clusters instead of similar not belonging in the Cluster by integrating core competencies and capacities
- Utilization of complementarities in the input of resources, which may create scale economies in production and chances to reach critical mass of demand necessary for the production of a particular goods or service
- Better access to skilled labor
- Sharing of knowledge and information, and learning through networking, interaction and collaboration
- Development of leader firms
- Reduction of transaction costs
- Deal with common problems and opportunities that cannot be addressed individually

Thus, the concept of Clusters and networks acquires central importance in the modern economic and business development.

As defined by Michael E. Porter, a **Cluster**<sup>1</sup> is a geographically proximate group of *interconnected* companies and associated institutions, in a particular field, linked by *commonalities* and *complementarities*. They are suppliers, service providers, firms in related industries, and associated institutions (for example, universities, standard agencies, and trade associations), in particular fields, that *compete* and also *cooperate*.

Based on the above definition, the Cluster Navigators<sup>2</sup> Model describes the operating environment of companies and organizations and the formation of competitiveness in a particular industry sector within the Cluster. According to this Model, the earnings of the Core Companies come mainly from outside the cluster. The operations of the support businesses, support the core member companies directly or indirectly. The knowledge-based organizations, such as educational and research institutions, support the core companies, and the material infrastructure, such as transport and telecommunication links, support also the core companies<sup>3</sup>.

#### TYPICAL STRUCTURE OF A CLUSTER

- **Core Companies:** The members that are the lead participants in the Cluster, often earning most of their income from customers who are beyond the cluster's boundary.
- **Support Businesses:** The businesses that are directly and indirectly supporting the companies at the core of the Cluster. These may include suppliers of specialized machinery, components, raw materials; and service firms including finance/venture capital, lawyers, design, marketing and PR. Often these firms are highly specialized, and are physically located close to the core companies.
- **Soft Support Infrastructure:** In a high performance Cluster, the businesses at the core and the support business do not work in isolation. Successful Clusters have community wide involvement. Local schools, universities, polytechnics, local trade and professional associations, economic development agencies and others support their activities and are key ingredients in a high performance Cluster. The quality of this soft infrastructure, and the extent of teamwork within it, are very important keys to the development of any Cluster.
- **Hard Support Infrastructure:** This is the supporting physical infrastructure: roads, ports, waste treatment, communication links etc. The quality of this infrastructure needs to at least match competitive destinations, be they local or further afield.

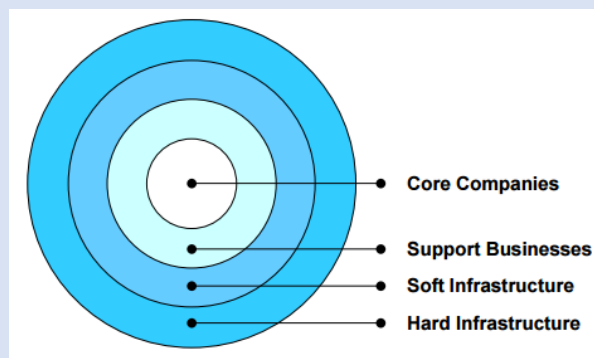


Figure 1: Typical structure of a Cluster (© Cluster Navigators Ltd, 2001)

<sup>1</sup> PORTER, M. 1998. Clusters and competition: new agenda for companies, governments and institutions. On Competition, Harvard Business Review Book, Boston, USA: Harvard Business School Press

<sup>2</sup> Cluster Navigators Ltd, "Cluster Building: A Toolkit A Manual for starting and developing local clusters in New Zealand", 2001

<sup>3</sup> Haverinen, K. (2011) Edellytyksiä Kajaanin datakeskus-klusterille, MS thesis, University of Oulu, Oulu, Finland (in Finnish).

### 1.1.2. Blue energy potential

**Marine renewable energy or Blue energy** includes both offshore wind energy and ocean energy. *Offshore wind energy* can be harvested by strong, consistent winds that are found over the oceans. *Ocean energy* can be harvested in many forms: Wave energy depending on wave height, speed, length, and the density of the water; Tidal stream energy generated from the flow of water in narrow channels whereas tidal range technologies (or 'tidal barrages') exploit the difference in surface height in a dammed estuary or bay; Thermal energy harnessed from temperature differences between surface and sub-surface (deep) water; Salinity gradient power relying on the difference in salt concentration between seawater and freshwater.

Our seas and oceans offer a vast renewable energy resource. According to COM(2014) 8 final on Blue Energy<sup>4</sup>: “At the end of 2012 the offshore wind energy sector consisted of nearly 5GW of installed capacity in 55 offshore farms in 10 European countries, producing enough electricity to cover 0.5% of the EU’s total electricity consumption. In the first six months of 2013, 277 new offshore wind turbines were connected totaling a further 1GW while on 2016 the offshore wind energy reached 12.6 GW<sup>5</sup>. By 2020 total installed capacity is projected to reach 43GW, producing approximately 3% of the EU’s total electricity consumption and 14% by 2030”. Ocean energy currently is an infant industry. There are currently 10MW<sup>6</sup> of installed wave and tidal stream capacity in the EU, which is almost a three-fold increase from 3.5MW four years ago. Located in the UK, Spain, France, Sweden and Denmark, these projects are mostly pre-commercial, demonstrating the reliability and survivability of tested devices. Huge growth is already predicted, however, with some 2GW of projects in the pipeline (predominantly in the UK, France and Ireland). If all of these projects are implemented, they could supply electricity to more than 1.5 million households. A further promising concept is offshore floating wind power. The deepening offshore coastal areas on the Mediterranean seabed make offshore turbines with fixed foundations too expensive. A floating platform that is anchored to the seabed could be a more cost-effective solution in those waters. There are currently three offshore wind floating demonstration projects in operation, in Portugal and Norway and Japan (Fukushima-Forward). France were launched, in 2016, 4 large floating wind farms demonstrators: 1 in Atlantic coast, 3 in Mediterranean (Gulf of Lion) of 24 MW each for start in operation in 2021. Ocean Thermal Energy Conversion (OTEC) technology has a strong potential in the Outermost Regions due to their location in the tropics, where the temperature difference between surface and deep waters is the greatest. Local deployment can provide for the islands' drinking water, cooling and electricity needs. Feasibility studies are currently underway in Martinique and La Reunion. Although ocean energy deployment figures are modest compared to the offshore wind sector, commercial interest in the sector is increasing, as evidenced by the growing involvement of large manufacturers and utilities.

Only very few demonstration projects are developed in the Mediterranean Sea. This contrast of the deployment of marine energies between the countries of Northern Europe and Southern Europe is mainly due to the natural characteristics of these two large areas:

- In the North, strong winds, strong tidal currents in certain zones, powerful waves on the Atlantic coast and finally water depths rather low in general;
- In the South, only few areas are windy - especially the Gulf of Lion, almost no tide, few areas of straits - therefore strong current, coastal areas with relatively deep water.

With the necessary caution in any prospective exercise, the main conclusions we can highlight are:

<sup>4</sup>COM(2014) 8 final “Blue Energy. Action needed to deliver on the potential of ocean energy in European seas and oceans by 2020 and beyond”

<sup>5</sup>The European offshore wind industry. Key trends and statistics 2016

<sup>6</sup>The current installed capacity rises to 250MW if the La Rance tidal range system, in operation since 1966, is included. Tidal range systems are a mature technology but the scope for increasing their deployment is limited due to a lack of suitable locations and high environmental impact.

- Wind energy will be probably developed in the windiest areas and will be mostly floating because it is adapted to the depths of the continental shelf;
- The technologies will be adapted from those used for offshore wind turbines laid on the sea floor. The installation of the pilot farms of several tens of MW in Mediterranean Sea is already planned. Remarkable innovations on this type of energy at sea, adapted in Mediterranean context are in progress including eco-design;
- Hydroelectric power in the straits is potentially interesting but it is probably necessary to wait the results for hydroelectric demonstrators which are operating in the zones of strong currents of Northern Europe;
- The energy of the waves could be developed in very specific zones, especially for insular territories;
- The SWACs are very interesting for coastal urban areas for heating or cooling the buildings, saving a lot of energy consumed;
- The industry of the Mediterranean countries is ready to design and deliver the equipments for the production of these energies which would be important growth relays, in synergy with key market sectors such as shipbuilding and ship repair, maritime transport activities, oil & gas off-shore industry, port, tourism , aquaculture;<sup>7</sup>
- The spatial morphology and seasonality of the Mediterranean countries are quite diverse so, some forms of MRE are favorable in some locations and unfarovable in others (i.e. in France Mediterranean Sea areas are offshore, in Greece there is the Aegean i.e., an Archipelago with quite different morphological characteristics) and some forms of MRE are more favorable in some seasons of the year than others (i.e. during summer, ample winds and intense sea states exist only in the Aegean Sea).

#### OPPORTUNITIES OF BLUE ENERGY SECTOR

- The 2020 package is a set of binding legislation to ensure the EU meets its climate and energy targets for the year 2020 (20% cut in greenhouse gas emissions (from 1990 levels)/ 20% of EU energy from renewables/ 20% improvement in energy efficiency)
- Supports renewable energy security and greenhouse gas reduction
- Enhances Innovation i.e. specialized ships
- Boosts competitiveness and Fuel economic growth
- Creates new, high-quality jobs in project development, component manufacturing and operations
- Develops Pan-European supply chains involving both innovative SMEs and larger manufacturing companies with relevant capabilities
- Enhances R&D allowing the generation of export opportunities for both technology and expertise

<sup>7</sup> PELAGOS D.3.1.4 - Deployment potential assessment of Blue Energy technologies for MED key maritime industries



### 1.1.3. Blue Energy generation: Key technologies



**Figure 2:** Offshore wind energy

**Offshore wind** with fixed foundations are now in a phase of sustained growth in northern Europe, with an installed capacity already reaching 2GW, and projects currently under construction exceed 4GW; The annual market could exceed the 10 billion euros next year.

**Floating offshore wind** is a breakthrough innovation market, as opposed to offshore wind with fixed foundations, whose development potential is limited mainly by the bathymetry of the oceans and seas- 40-50 meters deep being the threshold commonly accepted by the players of the market - as well as the social acceptability of the location of farms projects. The technology of the float allows to address much greater depths, particularly well adapted in Mediterranean Sea.

The development of floating offshore wind turbine market responds on the one hand to specific characteristics arising from the technologies currently being developed and on the other hand, to the market potential of the offshore wind laid on sea floor, which is technologically more mature and therefore in the short term economically more attractive.



**Figure 3:** Ocean Thermal Energy Conversion (Picture by Ocean Energy Europe [www.oceanenergy-europe.eu](http://www.oceanenergy-europe.eu) )

**Ocean thermal energy conversion (OTEC)** is most suited to equatorial and tropical waters of sufficient depth, where the temperature differential is at least 20 degrees Celsius all year round. OTEC has a low theoretical efficiency, (7-8%), which could drop even further, to 2-3% in practice. On the other hand, OTEC farms can operate continuously and could reach capacity factors of up to 90%.

**Figure 4:** Salinity Gradient (Picture by Ocean Energy Europe [www.oceanenergy-europe.eu](http://www.oceanenergy-europe.eu) )

In the **Osmotic (salinity gradient) power generation**, seawater and freshwater are channeled into different chambers, separated by a semi-permeable membrane. The saltwater molecules exert a pull on the freshwater molecules across the membrane and the resulting pressure is used to drive a turbine. This power generation technology can be used in countries with abundant freshwater resources flowing into the sea, such as the Netherlands and Norway. The total technical potential for salinity gradient power has been estimated at 657GW, which is equivalent to 5177 TWh of consumed electricity.



**Figure 5:** Wave Energy (Picture by Ocean Energy Europe [www.oceanenergy-europe.eu](http://www.oceanenergy-europe.eu) )

**Wave devices** and designs are currently being studied and/or developed. As many as 170 types of wave energy converter have been designed, but fewer than 20% are at the full-scale prototype stage. The main technologies used for wave energy extraction are: a terminator placed perpendicular to the main direction of the wave; an oscillating water column (OWC) which generates electricity by using the heave motion of waves to push air up a shaft and drive a turbine; a point-absorber which is a floating structure that absorbs energy from all directions through its movement at or near the water surface; an attenuator, oriented parallel

to the direction of the waves; overtopping devices, a floating reservoir, partially submerged, in which a head of water is created and further used to run hydro turbines; bulge wave technology, whereby water forms a bulge in a rubber tube moored to the seabed, which gathers energy as it travels through the tube; submerged pressure differential devices, where wave motion causes the sea level to rise and fall above the device, inducing a pressure differential in the device.

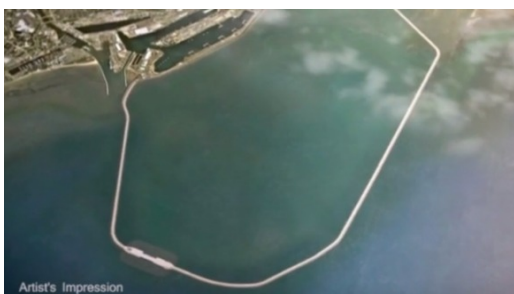
In general, wave devices can be classified either by location, or by the way they react to wave motion:

- **Shoreline devices**, either fixed to or embedded in the shoreline, do not require deep-water moorings or long underwater electricity cables and are easier to install and maintain. Their disadvantage is the less powerful wave resource available.
- **Near-shore devices** are deployed at moderate water depths (20-25m), at distances of up to 500m from the shore. With many of the advantages of shoreline devices, they exploit higher power wave resources. They include several point absorber systems.
- **Offshore devices** use the more powerful wave resources available in deep water (over 25m). More recent designs for offshore devices concentrate on small, modular devices, yielding high power output when deployed in arrays.



**Figure 6:** Tidal Energy (Picture by Ocean Energy Europe [www.oceanenergy-europe.eu](http://www.oceanenergy-europe.eu))

For **tidal technology** many **converters** are still in the R&D phase, but a small number of devices have undergone extensive sea testing using full-scale demonstration devices. The first array is expected to be deployed in 2016. There are several types of tidal system for wave energy: Horizontal axis turbines: These devices have two or three blades mounted horizontally to form a rotor; the kinetic motion of the water current creates lift on the blades causing the rotor to turn, driving an electrical generator.; Vertical axis turbines: These devices generally have two or three blades mounted along a vertical shaft to form a rotor; Oscillating hydrofoil: This device operates like an airplane wing but in fluid; control systems alter the angle relative to the water current, producing lift and drag forces that create device oscillation; the physical motion from this oscillation feeds into a power conversion system; Venturi or Ducted tidal stream devices: In these devices the tidal stream is directed through a venturi to create an eddy of low pressure behind the turbine. This encourages the flow to be drawn across the turbine entrance. This technology is especially suited to tidal stream devices that are exposed to a rocky seabed. The venturi hood smooths out the undulant currents caused by the terrain; Gorlov helical turbines are cross-flow turbines with aerofoil-shaped blades. They generate mechanical power independently of the direction of flow of the tidal stream. While individual devices are operating well and reliably, the next stage of the development process will involve the deployment of arrays of multiple devices.



**Figure 7:** Tidal Range (Picture by Ocean Energy Europe [www.oceanenergy-europe.eu](http://www.oceanenergy-europe.eu))

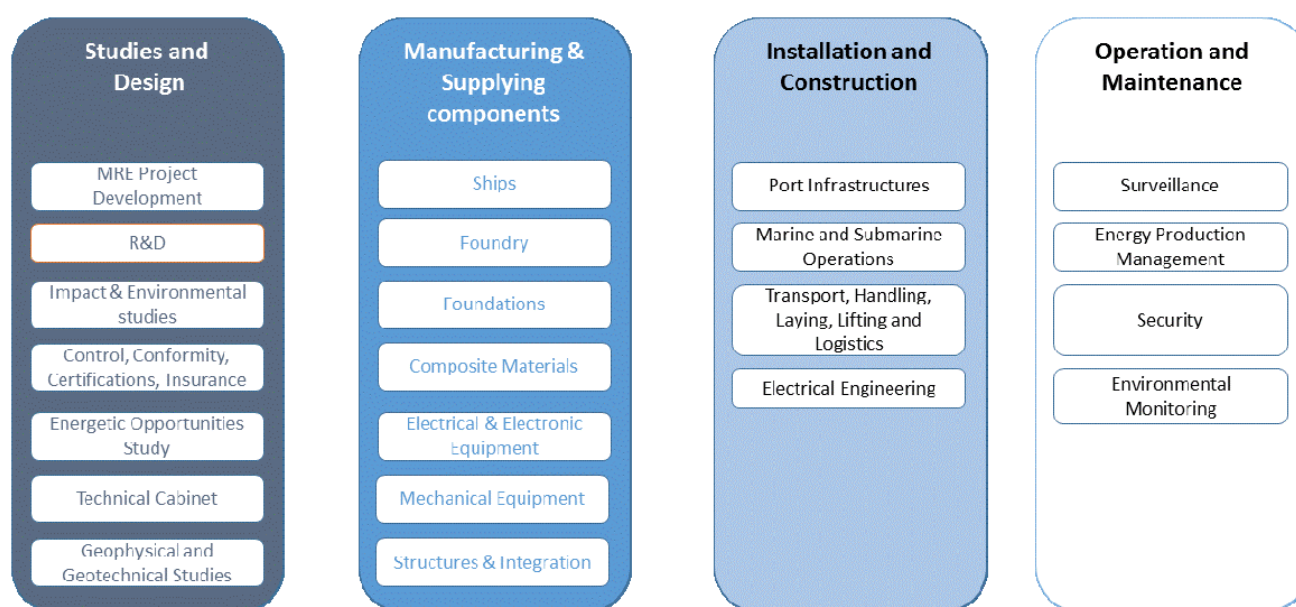
**Tidal range technology** uses the same principles as conventional hydropower and requires a natural or a man-made structure (e.g. a dam or barrier) to impound a large body of water.

#### 1.1.4. Blue Energy value chain: Key Players

An **industrial value chain** can be defined as the stages of value creation by enterprises and other organisations as part of the process of designing and delivering goods and services for their users.

Traditionally, the stages of the "value chain" were understood foremost as a linear process of a firm's internal primary activities ranging from inbound logistics, manufacturing operations, outbound logistics, marketing and sales, and after-sale service, complemented by horizontal support activities such as finance, planning, human resource development, technology development and procurement. Nowadays, enterprises increasingly outsource stages or parts of the value chain and acquire inputs for strategic positions within **global value chains**.

Industrial value chains are therefore **increasingly being reconfigured** as a result of cross-border and cross-sectoral collaboration, innovation and entrepreneurship. As innovation is likely to occur at the borderlines between different industries, facilitation and acceleration of new combinations along and across value chains represent a source for potential innovation and growth for the enterprises involved. This does not always require radical innovation as value chain innovation can be equally effective, when an innovation is brought from one sector into another. So, the specific innovation must not always be new to the world, but can come from the adaptation and testing of its application in a new context that still has a disruptive effect.



**Figure 8:** Blue energy value chain

These interactions and linkages between value chains and industries may lead to the **development of emerging industries**, such as **Blue Energy**. Emerging industries can be understood as "the establishment of an entirely new industrial value chain, or the radical reconfiguration of an existing one, driven by a disruptive idea (or convergence of ideas), leading to turning these ideas/opportunities into new products/services with higher added value".<sup>8</sup> Therefore, emerging industries can, but must not always, be completely "new" industrial sectors. They can also comprise existing industrial sectors that are evolving towards emerging industries.<sup>9</sup>

<sup>8</sup> European forum for Clusters in Emerging Industries (EFCEI)

<sup>9</sup> [https://ec.europa.eu/growth/smes/cluster/observatory/cluster-mapping-services/cluster-panorama\\_en](https://ec.europa.eu/growth/smes/cluster/observatory/cluster-mapping-services/cluster-panorama_en)



### 1.1.5. Blue energy Cluster in Mediterranean: Key Challenges & Opportunities

The availability of natural resources in the EU area that can be capitalized by the blue energy sector is really high and could be more than sufficient to constitute a real impulse for the use of marine energies. Even though the potential for the sector is promising, important challenges need to be tackled for the concrete development of the sector and help the sector to scale up and become competitive in comparison with other forms of energy generation.

#### MAIN CHALLENGES OF BLUE ENERGY SECTOR IN MEDITERRANEAN

- **Scale-up** from demonstration (pre-commercial projects) to viable commercial projects.
- **Technology costs** - Technology costs are currently high and access to finance is difficult. Most of the existing technologies and especially those of ocean energy still need to demonstrate their reliability and survivability in the marine environment. The cost of generated electricity is therefore currently high.
- **Demonstration of devices at sea** is costly and risky and SMEs are often short of the necessary resources to deploy their prototypes.
- **Large-scale Deployment** - There is a need for continued technology push support mechanisms and market-pull support schemes as well as large-scale deployment.
- **Critical mass of key actors** - The marine energy community needs to acquire a sufficient critical size including all the key actors such as business, academia and research. This requires also information exchange and coordination efforts among the actors.
- **Technological Risk** – For the moment, utility scale projects may be deemed ‘too risky’ in the current economic and political climate. The current deployment pathway seems to be taking a technological jump that is larger than investors are able or wish to support.
- **Complex licensing and consenting procedures** – At present there is a lack of design consensus, particularly for wave energy technology, yet the wave and tidal sector does not have the significant market demand to support the generation of tailor-made solutions for each application or site. Uncertainty about the correct application of environmental legislation may further prolong them.
- **Grid access** – In some cases, the lack of secured access to grid connection points is a significant barrier. Grid connections to onshore grids and thus centers of demand can also be problematic, as in some cases the grid cannot absorb the electricity from wave energy production. Moreover, other infrastructural issues including inadequate access to suitable port facilities and the lack of specialised vessels for installation and maintenance also need to be tackled.
- **Economic impact** – There is a need to bridge the gap between the expectations of investors and those of technology developers. Expectations need to be aligned with realistic deployment trajectories that are within the capabilities of technology developers and with appropriate funding, whether through public or private finance.
- **Environmental impact** – Some in the sector feel that legislators are over-cautious when formulating environmental legislation and call for greater flexibility. Also, when it comes to deployment, coastal management is key to regulating potential conflicts over the use of coastal space with other maritime activities (e.g. fishing, shipping lanes etc.).

Consequently, the state of the art describes an emergence for the development of a Cluster on Blue Energy that will advance the industrial business of the sector in the area to deal with those challenges and exploit the opportunities and potential of Blue energy.

## OPPORTUNITIES OF BLUE ENERGY SECTOR IN MEDITERRANEAN

- Support companies grow faster than they could do alone.
- Support companies face many common problems and opportunities that cannot be addressed individually.
- Support networking of SMEs at regional/national and international level.
- Strengthen relationships amongst business, public and academia, opening the dialogue.
- Enable the alignment of innovations and investments with the market needs.
- Encourage synergies between public and private actors for more stable funding opportunities.
- Encourage synergies with other maritime industries: Blue energies are a cross-cutting issue that involve other relevant sectors such as shipbuilding and ship repair, transport activities, oil & gas off-shore industry, port, tourism, aquaculture, from which synergies could be enhanced through the role of Clusters. The creation of synergies through Clusters between marine renewable energies stakeholders and stakeholders from other maritime industries would favour the penetration of blue energy on the market and encourage the increase of blue energy share in main maritime sectors.
- Help companies on their way to internationalization establishing an enabling mechanism for cooperation with various key actors in the field.
- Support companies to demonstrate their technologies to professionals, private individuals, knowledge institutions and policy advisors and support them promote themselves in the marketplace.
- Increase the visibility and raise awareness of marine renewable energies and prioritize Blue Energy in policies and initiatives contributing to the sustainable and economic development of the European basin.

## WEAKNESSES AND THREATS OF BLUE ENERGY SECTOR IN MEDITERRANEAN

- The delay of the MED companies involved in the realization of MRE in general compared to companies in northern Europe: The cause is principally due to the more favorable natural characteristics (wind, waves, etc.) in Northern Europe except for the wind offshore industry: the Floating Wind Offshore which only starts in MED Sea through demonstration projects.
- "Local" supplies (in the sense of supplies by workshops in the Mediterranean) in the value chain make sense only if they are competitive. It is therefore necessary for Mediterranean companies to compete on bricks where they can rely on real foundations and which are priorities in the markets for MREs.
- Competitiveness priorities identification in MRE technologies are essential in all initiatives. These priorities are deduced from the priority of the markets: reducing the LCOE of these energies.
- Financial crisis and poor funding is also an important issue that should not be neglected.

### 1.1.6. Developing the Vision

Clusters offer a favourable eco-system, which encourages both competition and cooperation among firms with different industrial backgrounds, technological and business expertise. Evidence shows that companies in Clusters are more innovative, conduct more market research and register more international trademarks and patents than businesses operating outside Clusters.<sup>10</sup> The Mission of a Blue Energy Cluster is to be an appropriate vehicle that will foster cooperation and linkages between its members from academia, business, government and other stakeholders from different sectors and activities whose functional area of final demand is the Mediterranean Sea.

#### THE VISION OF THIS CLUSTER IS TO:

- Encourage and facilitate collaborative projects/ joint activities between its members.
- Create a favourable environment for open innovation in SMEs facilitating cross-country and cross-sectoral connection, collaboration and acceleration of Blue Energy Innovation.
- Support SMEs and startups in the blue energy value chain through an integrated innovation support system and impact financing to build their innovation potential and scale up their growth potential by linking-up to knowledge, technologies, market and expertise; facilitating uptake of new technologies and use of new business models.
- Develop and capitalize emerging Blue Energy industry by fostering interactions and linkages between value chains and other industries; bridging enterprises, start-ups and SMEs with other industries' players, researchers and public authorities to generate, improve, co-create and put forward innovative Blue Energy ideas.
- Help the MED companies to select the innovative axes, based on their true expertise to cope with the main challenges of future MRE in MED. The main trend in the future (2020s) to take into account is to achieve reduce of LCOE.

<sup>10</sup> [https://infoeuropa.eu/ocid.pt/files/database/000074001-000075000/000074506\\_2.pdf](https://infoeuropa.eu/ocid.pt/files/database/000074001-000075000/000074506_2.pdf)

## 1.2. CRITICAL SUCCESS FACTORS

Each Cluster evolves in its own way. However, there are a number of key factors within strong Clusters that we need to take into account when designing the PELAGOS Cluster.

### CRITICAL FACTORS FOR SUCCESSFUL CLUSTERS

- **SMEs are an important factor** for renewal within the industry as they often end up in smaller niche markets where they can assess new ideas and product concepts. SMEs play an important role as suppliers to large companies and need to be at the core of the Cluster activities.
- **Positive environment for all players:** Clusters provide a positive environment for new firms, enabling access to customers, supply chains, to skilled labour and to information. Large firms benefit from specialist suppliers enabling them to focus on their core competencies and benefit from SMEs that are experimenting at the Cluster's periphery. Clusters enable SMEs to tackle issues that would be difficult to address in isolation. Large firms act as important partners and customers for SMEs.
- **Foster co-opetition:** The geographic and social proximity facilitates collaboration alongside competition a culture of co-opetition. Strong Clusters do not have clumps of isolated firms but networks of interlinked firms with well-developed communications. As isolated solo players become more integrated into a system, a co-opetition culture is developed with firms better understanding where collaboration can be a win-win.
- **Foster innovation:** Within a strong Cluster there is rivalry and intense competition. This is central to fostering innovation. Close interaction and exchanges amongst co-located firms underpins competition and stimulates innovation. Moreover, cooperation and linkages among competitive core firms and new firms, often exploring new markets, new processes, new technologies, support firms and service providers, government departments and other foster innovation.
- **Focus in internationalization:** In particular in small countries, internationalization should be at the centre of the Cluster development approach. Developing the Cluster's brand can be an element of export development and added value for small actors.
- **Fosters cross-sectoral cooperation:** Successful Clusters provide an important bottom-up input to the establishment of region's economic strategy involving also players from other sectors that may have positive impact on the target sector.
- **Focus on results and impact and adopts continuous evaluation processes:** A continuous evaluation processes should be established and adopted from the Cluster including: indicators on the activities performed, indicators on impacts, satisfaction questionnaires, assessment and benchmarking with other similar Clusters etc. The Cluster is engaging on activities that have noticeable impact on the Cluster's firms and other members and the local economic impact as well.
- **Provides added-value:** In order to effectively engage all the key players the Cluster should provide an added-value to them and a win-win process targeted to their needs.
- **Sector-specific methodology:** No one-size fits all. Design according to sector and region specific needs.
- **Emphasis on all the Different Phases:** Covering Establishment, Building the Base, Service delivery, Evaluation and Sustainability.
- **The Human factor:** Cluster is about personal relationships and trust building. Selection of appropriate people for Governance Scheme.

## 2. PELAGOS CLUSTER DEVELOPMENT

### 2.1. PELAGOS FRAMEWORK

The PELAGOS project aims at establishing a **Transnational Mediterranean Innovative Cluster in Blue Energy** properly designed to accelerate the development of Blue energy (or Marine Renewable Energy, MRE) sector in Mediterranean coastal, insular and marine regions by connecting Regions and key actors of the **blue energy value chain** with emphasis on SMEs. The project aims to facilitate the deployment of targeted solutions and products tailored to Mediterranean profile through fostering linkages among all the key actors that will develop a shared understanding of the challenges and collectively devise workable solutions for blue energy.

#### BLUE ENERGY CLUSTER WITHIN PELAGOS FRAMEWORK

The PELAGOS project foresees that the Blue Energy Cluster delivers a consolidated mix of innovative services by promoting novel technologies, bridging push and pull innovation activities and securing social acceptance that will increase SMEs' innovation capacities, support research and innovation in MRE sector, foster linkages and collaborations among all the stakeholders of the **Quadruple Helix Innovation Model** (business-academia-public-citizens) of Blue Growth. Those stakeholders will jointly identify opportunities of blue energy in Mediterranean marine areas and of the use and **exploitation of MRE technologies**, such as offshore wind turbines, wave energy converters, current energy and ocean thermal energy, in **key market sectors** such as tourism and leisure, aquaculture, shipbuilding and marine transport in order to generate the **critical mass** that is essential for the deployment of this emerging sector.

The partnership of the PELAGOS project covers seven countries of the Mediterranean area **Spain, Italy, France, Greece, Croatia, Portugal, Cyprus** and is composed of Maritime Clusters/Business Support Organizations, Maritime Institution, Technology & Research Centers, Universities, Energy Agency, Technology Transfer Office and Associations of Chambers. Moreover, the project involves associated partners including private companies, Regional Development Authorities and Foundations, Research Centers, Maritime Clusters, Energy Agencies and Energy Producers coming from **France, UK, Spain, Ireland, Greece and Cyprus**. Thus, the PELAGOS project brings all the necessary building blocks of designing and running a Cluster which will offer services to beneficiaries along the MED blue energy value chain in a robust way taking into account the Project-specific characteristics.

#### KEY CHARACTERISTICS OF PELAGOS

- Specific resources
- Pilot Project
- Interregional Cluster (Cluster of Clusters)
- Emerging Sector / Industry
- 4th Helix Methodology
- Focus on Mediterranean sectors such as shipbuilding and ship repair, transport activities, oil & gas off-shore industry, port, tourism, aquaculture.

## 2.2. PELAGOS CLUSTER ADDED VALUE

The PELAGOS Blue Energy Cluster will enhance cooperation, linkages and internationalization through the implementation of **pilot activities at both National and Transnational levels**. More specifically, the Cluster will support SMEs to identify opportunities for diversification of their products, identify new markets and trends, cooperate with companies that operate on supplementary products and work under joint R&D activities. Furthermore, the Cluster will assist them to enhance networking with large enterprises and RTOs, connect with potential investors and get closer to regional authorities and NGOs that operate in the local communities. Since more specific skills are required for the development of blue energy projects, capacity building will be provided while international partnering and brokerage will be provided. These are some indicative of the full spectrum of services which target mainly SMEs and other relevant actors at regional and transnational level.

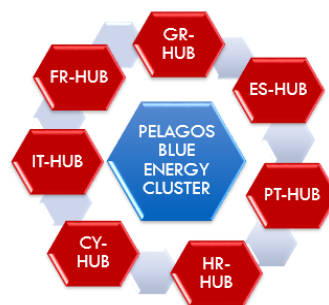
This range of **consolidated mix of innovative services** of the Cluster includes the provision of **Capacity Building services** such as seminars on Entrepreneurship and Technology Transfer, MRE applications, Soft-skills for innovation, market and technology intelligence, **coaching & mentoring services and other support services** for profiling of the innovation potential of SMEs and estimation of readiness level of their technologies (TRL), for the identification of new business opportunities and development of Blue energy Innovation Plans based on actual market needs, for developing joint-concepts with RTOs in BE that will result investor ready business plans. Additionally, the Cluster includes the provision of **matchmaking services** and networking during regional and international B2B meetings and Company Missions, **technology transfer and brokerage services** among SMEs and potential users in key maritime industries in Mediterranean and with international companies (Open Innovation). Finally, the Cluster includes the provision of **information and communication services** through the organization of Workshops and other events for increasing the information on and social acceptance of the MRE.

PELAGOS CLUSTER ADDED VALUE	
<b>Training and Capacity Building</b>	The Cluster offers business and market intelligence in the form of CB Seminars and access to 'members-only' on-line training material, reports, technology marketplace and information.
<b>Co-operation and Innovation</b>	The Cluster provides free-of-charge services to its SME members including a) support services for profiling their Innovation potential and estimating their technology TRL, b) coaching & mentoring services for identifying new business opportunities in key maritime sectors and developing their Market driven BE Innovation Plan, c) initiation of co-operation among SMEs and RTOs for the development of joint-concepts in BE, d) coaching & mentoring services for developing their investor Ready Business Plan and pitch with investors.
<b>Networking and Internationalization</b>	The Cluster supports networking of its members with key players through Local B2B matchmaking events and promotes their clean technologies to actual needs of MED maritime industries through Company Missions. Moreover, facilitates the extroversion of its members through facilitating their participation in the International B2B event.
<b>Technology push and pull</b>	The Cluster provides a) knowledge transfer services bringing closer technologies to successful MRE installations (Study Visits) and b) brokerage OI services for promoting high risk projects to Large firms & Big EU support organizations.
<b>Information &amp; Communication</b>	The Cluster offers the opportunity to its members to attend and present their technology/project on Blue Energy to market players through the WSs, Conferences & Exhibitions & Forums on MRE as well as be informed and exchange ideas on MRE sector. Members get first preference on speaking positions and exhibition space in the events.

**Figure 9:** The added value of PELAGOS Cluster – Activities

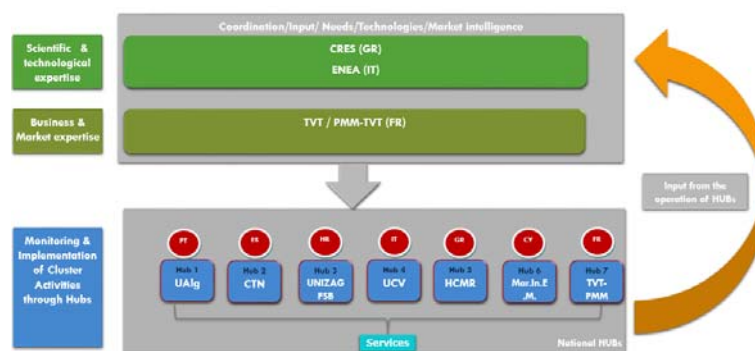
## 2.3. ROLES OF PELAGOS PARTNERS

The PELAGOS Blue Energy Cluster, will be composed of Mediterranean Institutions that will identify common opportunities, in the business, technological and socioeconomic fields and will be integrated under the framework of the **Transnational Cooperation Scheme ("Cluster of Clusters" concept)**. According to this, the Cluster will be composed of seven National Clusters (named as HUBs) where each HUB will be composed of **national key actors** dedicated to research, development and innovation including SMEs, technology providers, researchers, startups and spin-offs, entrepreneurs, policy makers, large firms, regulatory authorities and NGOs. The services of the PELAGOS Cluster on **National level** will be offered by the HUBs while the PELAGOS Cluster will orchestrate the National and transnational activities.



**Figure 10:** Cluster of Clusters' Concept – The six PELAGOS HUBs

PELAGOS Partners from the seven participant countries will exchange in a coordinated manner and define common objectives and plans of action. CRES, ENEA & TVT-PMM will act as **Technical and Scientific organizations** that provide methodological, scientific & technical background during pilot activities while UAIG, CTN, UCV, HCMR, UNIZAG FSB & Mar.In.E.M, TVT-PMM<sup>11</sup> will act as **Operational institutions** through pilot implementation and provision of support services to all key actors in the Cluster's HUBs. More specifically, Technical and Scientific organizations capitalize their know-how on research and innovation in blue energy technologies and applications, renewable energy and marine sciences, while operational partners will attract the SMEs and other actors from National clusters and networks, disseminate know-how, offer support services, identify the most suitable users in maritime industries (tourism and leisure, shipbuilding and ship repair, shipping and marine transport, energy, aquaculture) and liaise with enterprises, financing institutions, regional authorities and civil society.



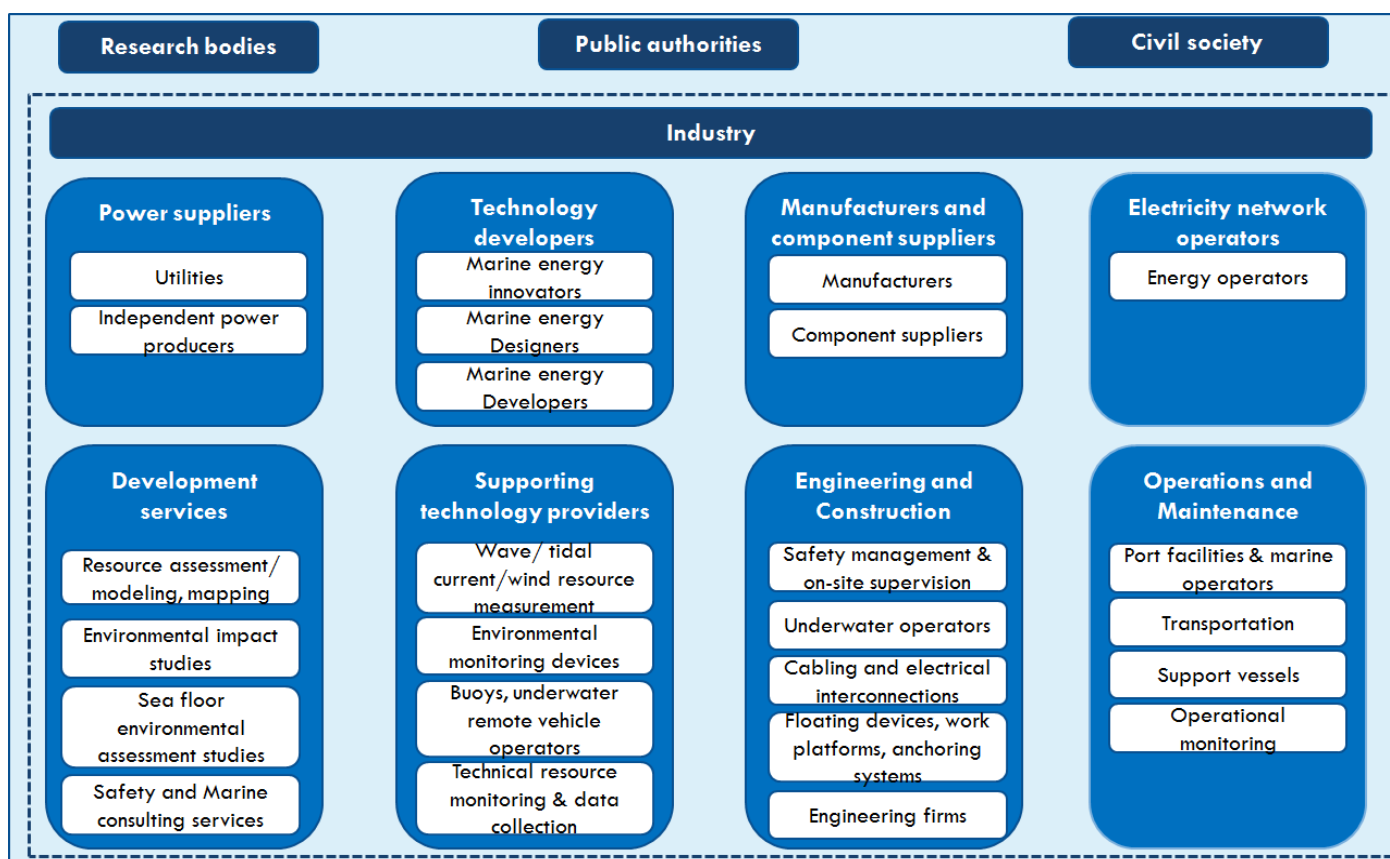
**Figure 11:** Roles of PELAGOS partners

<sup>11</sup> Except from the six HUBs foreseen under the framework of the project, it is proposed to add also a French Hub. This Hub already exists and will contribute to the development of the other HUBs and to the the overall MED PELAGOS Cluster.



## 2.4. KEY ACTORS INVOLVED

The actors that could be involved in the PELAGOS Cluster should include both actors that are already active in the Marine Renewable Energy Value Chain as well as actors that can potentially become members of the MRE value chain in the future. The Figure 11 shows the actors that could be involved in the PELAGOS Cluster on Blue Energy. This Figure, illustrates the core actors of the PELAGOS Cluster (industry) and the supporting organizations (Research bodies, Public authorities and Civil society).



**Figure 12:** Key actors to be involved in PELAGOS Blue Energy Cluster

More specifically, in terms of Private Entities, the project<sup>12</sup> foresees **SMEs, startups, spinoffs and Large Firms** offering technologies, products or services in the following components of the MRE value chain:

### INDUSTRY

- **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/ modeling, mapping, environmental impact assessment studies, sea floor environmental assessment and related marine safety and supply consults, permitting, approvals

<sup>12</sup> Source : PELAGOS Deliverable D 3.1.4



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)

Furthermore, the non-private actors are envisaged from the following categories:

#### RESEARCH BODIES

- **Research Institutions**
- **Research and Technology Centers**
- **Universities**
- **Individual researchers**

supporting the economic growth through the Research and development of novel technologies related to MRE (marine renewable energy, ocean energy, Renewable energy, etc.).

#### PUBLIC AUTHORITIES

- **Local and Regional Authorities** such as Municipalities, Prefectures etc.
- **National governments** such as Ministries
- **Regulatory agencies** such as General secretaries

possessing the power to administer and implement Laws and Government policies related to Blue Energy (grid connection and operation, grid safety and maintenance, spatial planning, financing, environmental etc.)

#### CIVIL SOCIETY

- **NGOS** like Sustainable nongovernmental organizations (NGOs) that make essential contributions to the environment, society and the sustainability agenda. They're responsible for research, aid, consumer awareness, conservation
- **Business Support Organisations** such as Chambers, Trade & Business Associations, Associations of Energy companies, BICs, Innovation Poles, Clusters, Incubators, Innovation Centers, Technology Parks, Venture capital, Business Angels, Banks and other.
- **Energy Agencies, Energy Centers, Energy organizations**
- **Consultants, lawyers etc.**

offering business services and support (legal, financial, insurance, business, communications, market research training) and influencing social acceptance of MRE.

## 2.5. PELAGOS CLUSTER PHASES

The set-up process of a cluster initiative varies substantially according to the purpose it is to fulfil and the circumstances under which the involved members are supposed to cooperate. Nevertheless, within the PELAGOS project, we consider that the PELAGOS Blue Energy Cluster development process may be broken down into **four broad phases, containing ten steps**:

### PHASE 1: CLUSTER ESTABLISHMENT

**Step 1: Establishment of PELAGOS Cluster Governance (Cluster Coordinator, Cluster Management Team, Cluster Advisory Board, Working group)** [see section 2.6 for guidelines]

**Step 2: Definition of clear objectives for the Cluster** [see section 2.10 for guidelines]

**Step 3: Establishment of HUB Teams (HUB Coordinators and HUBs Focus Groups)** [see section 3.1, 3.2 for guidelines]

### PHASE 2: BUILDING THE BASE

**Step 4: Monitoring of HUBs - Focus Groups Meetings** [see section 3.2 for guidelines]

**Step 5: Identification of key actors and potential members of HUBs** [see section 3.3 for guidelines]

### PHASE 3: SERVICES' DELIVERY

**Step 6: Launching of the HUBs – Organization of HUBs Demonstration events** [see section 3.4 for guidelines]

**Step 7: Provision of HUBs services** [see section 3.5 for guidelines]

**Step 8: Provision of Cluster services** [see section 3.6 for guidelines]

### PHASE 4: EVALUATION AND SUSTAINABILITY

**Step 9: Evaluation** [see Deliverable 3.7.1]

**Step 10: Sustainability** [see Deliverable 3.7.1]

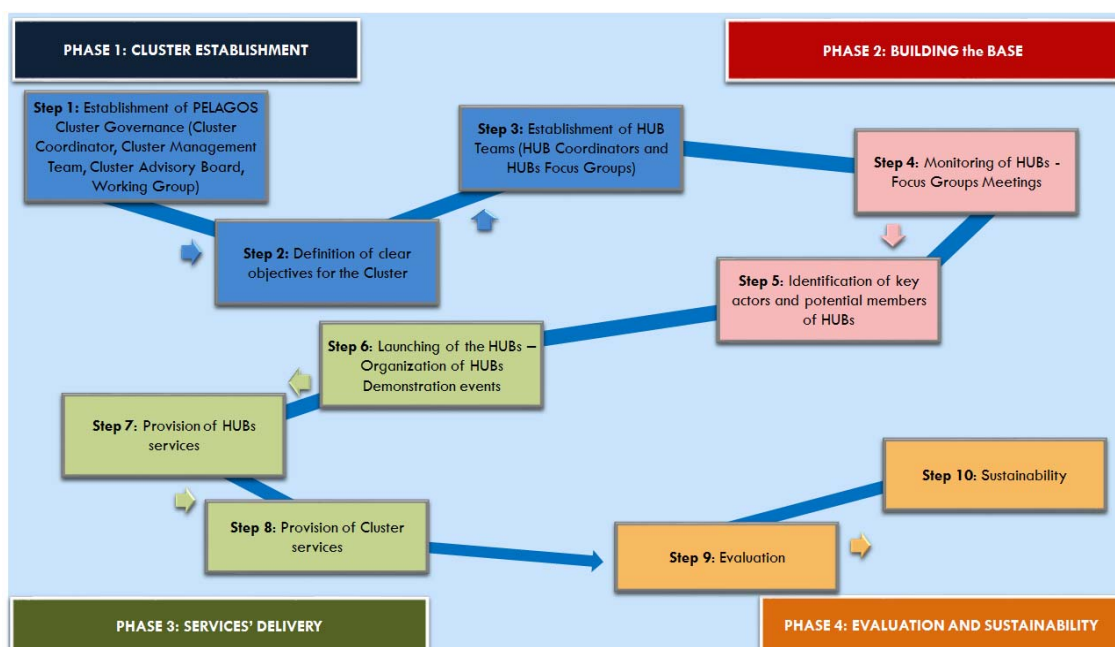


Figure 13: Lifecycle of PELAGOS CLUSTER DEVELOPMENT – Phases & Steps

## 2.6. PELAGOS CLUSTER GOVERNANCE SCHEME

In this respect the objective of this study is to propose a scheme into how and by whom knowledge processes and Cluster initiatives are organized and governed within the PELAGOS Cluster also in relation to how the Cluster aims at specialising itself within the European knowledge dynamics of the energy sector. The **Cluster governance structure** should be in position to answer to the following questions:

- What is the current position of the PELAGOS Cluster in the Energy sector and which key challenges are significant for its operation and future development?
- How are cluster activities governed and organized in response to current energy challenges?
- What is the local role and response of key players and leaders within the local and international cluster governance network in view of the project objectives?

The organisation set up to manage Cluster projects, although unique to the context in which they operate, generally share the same basic structures. We propose that the project shall select a **Cluster Coordinator** and establish local teams to manage the day-to-day co-ordination of the project – the **Cluster Management Team** or unit. For the good functioning of the project, this management team should be permanent, experienced and work full-time for the whole life of the Cluster. Cluster projects are normally overseen by an **Advisory Board (or steering committee)** that comprises of key stakeholders in the region. We also support the establishment of **Working Groups** to support the Cluster Management Team and to assist in the formation of strategies and proposal actions. These working groups are not mandatory but they often can be an adequate means to secure regional participation. In order to secure that all stakeholders share the Cluster objectives, governance schemes should allow for '*collaborative leadership*', meaning that hierarchies in decision-making should be flexible enough in order to let each actor to have a role and eventually take the lead in specific phases of project design, according to actors' characteristics, background, and capacities. When actors are many and different, it might be very difficult for them to find their own way to collaborate and manage potential conflicts. In order to tackle this potential problem, the governance scheme should include '*boundary spanners*', that is to say, people with interdisciplinary knowledge or proven experience in interaction with different actors, and who can hence help moderate the process.

### 2.6.1. Proposed Structure Scheme

The following graph presents the suggested structure of the governance of the PELAGOS Cluster. The Cluster is managed and coordinated by the Cluster Coordinator with the support of the Cluster Management team and the Cluster Advisory Board. As already mentioned, each HUB operates as a National Node of the Cluster so at HUB level the Coordinator of each HUB is called as HUB-Coordinator and is responsible for the proper implementation and management of the Cluster on National level with the support of National Focus Groups.

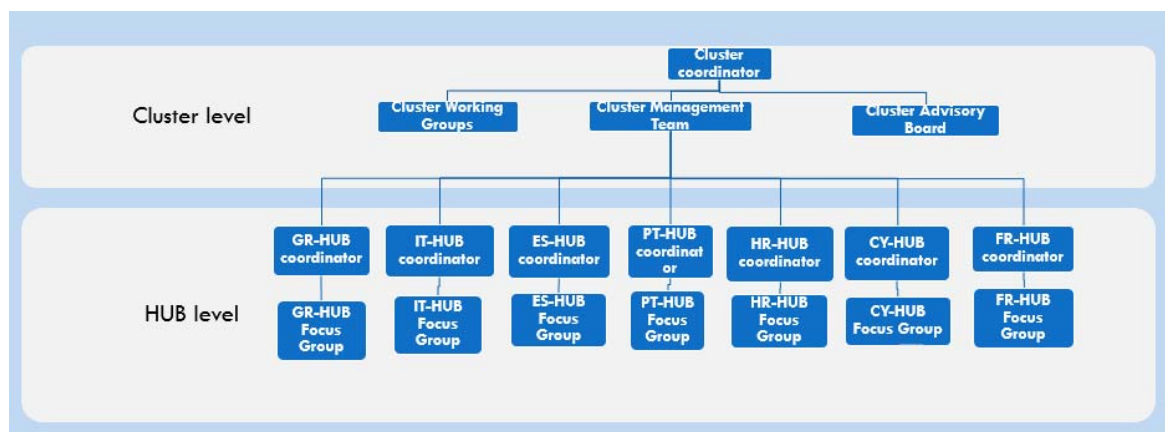


Figure 14: PELAGOS Cluster Governance Scheme (suggested)

### 2.6.2. Cluster Coordinator

The **Cluster Coordinator** will be responsible for the establishment, coordination and implementation of the PELAGOS Cluster on Blue Energy under the framework of the project. Among other tasks, its responsibilities include the overall management and monitoring of the Cluster, the coordination, support and evaluation of the performance of the HUBs and the building of a network of contacts with strategic counterparts. The Cluster Coordinator should be an individual with a deep understanding of the sector and the cluster development process. The Cluster Coordinator has the responsibility for ensuring, over the long term, that the Cluster continues to be effective and sustainable, ideally after the end of the PELAGOS project. The Cluster Coordinator is suggested to be a staff member of the Cluster Coordinator Organization (CRES Manager), such as the Head/Project Manager of the Cluster Coordinator Organisation or any other senior staff of the organization.

#### CLUSTER COORDINATOR TASKS

- Identify and set project priorities at any given project time
- Support the capacity of the members of the Management Team
- Enable the members of the Cluster Management Team to work together effectively and try to maximize the anticipated benefit for Cluster members
- Ensure coordination with and among HUB Coordinators in all countries involved
- Lead and work on behalf of the Cluster as a whole, facilitating all Cluster activities and maintaining a strategic vision
- Define tailored internationalisation strategies
- Ensure that needs, risks and capacities and opportunities are assessed and understood by all the members of the Management team and that information is well managed and shared (content and flow)
- Promote blue energy principles to the wider community
- Monitor strategy implementation and Cluster performance, evaluation and sustainability

#### SKILLS SUGGESTED BY THE CLUSTER COORDINATOR

- Strategic thinking
- Broad understanding of the blue energy sector; Good knowledge of Clusters and understanding of SME needs
- Familiarity with and knowledge of the Mediterranean area context
- Management, planning and organization skills
- Experience from both research and Industry environments
- Communication skills (written and spoken)
- Relational skills (networking, integration, motivation, moderation)

### 2.6.3. Cluster Management Team

The Cluster Management team is responsible for achieving the results expected of the project. The development and management of Cluster activities require establishing a **Cluster Management Team** or Cluster Leadership Group which is not only in charge of managing operations but moreover advises the Cluster and its HUBs on issues of strategic positioning, controlling and monitoring of activities and evaluating the already completed activities. It is suggested that the Cluster Management Team is composed of 9 people, more specifically staff of the PELAGOS project partners including the Cluster Coordinator: CRES, HCMR, UNIZG FSB, UAlg, CTN, UVC, MARINEM, TVT-PMM, ENEA. The members of the Management team should have sector-specific knowledge, be familiar with local/regional environment and have management skills, etc.

#### CLUSTER MANAGEMENT TEAM TASKS

- Support the overall goals of the PELAGOS Cluster approach at both regional and international level
- Infuse international practices and know-how to local environments
- Share experiences for Cluster activities including assessing needs, developing plans and guidelines, communicating information and agreed messages and organizing joint activities; and
- Respect and adhere to agreed principles, policies and standards, and implement activities in line with agreed priorities and objective
- Be proactive in exchanging information, highlighting needs and gaps and reporting process

### 2.6.4. Cluster Advisory board

This Group is composed of expert organizations from Europe whose role is to provide to the Cluster Coordinator and the Cluster Management Team their expertise and knowledge over the Cluster development and implementation. Those experts could be from industry, Regional Development Authorities, Research Centers, Maritime Clusters, Energy Agencies coming from the Mediterranean and/or other EU countries. Considering this, the creation of an Advisory Board involving public-academia-private experts in the field could also help to the steering of the Cluster. The Advisory Board is usually composed of 6-9 people. These people should be staff of the **Associate partners** of the PELAGOS project: French Maritime Cluster (FR), Marine South East Limited (UK), NYM Association (Murcia Maritime Cluster) (ES), University College of Cork – MaREI Centre (IR), AZTI Foundation (ES), Murcia Region Development Agency (ES), Region of North Aegean (GR) and Cyprus Energy Agency (CY).

#### CLUSTER ADVISORY BOARD TASKS

- Steering the Cluster and monitor activities (including deliverables' approval)
- Evaluate intermediate results and (if necessary) redirect and adjust targets
- Engage actors from Industry, Research, Public and Society
- Monitor key technology and market trends
- Properly promote the Cluster concept and build-up international cooperation
- Identify possible additional funding from other sources
- Secure political support at regional and EU level, when necessary

### 2.6.5. Cluster Working Groups

Working groups are a useful mechanism to help build consensus, they may be **sector orientated or thematic**, depending upon the approach adopted. They should be given specific terms of reference or timetable for delivery of results. It is useful to include a member of the Advisory board in each working group together with a member of the management team. The conclusions of the different working groups, coordinated by the Cluster Coordinator should be the basis of strategic discussions in the steering group.

Working groups can be a valuable channel to raise awareness amongst the target audience. Given that a requirement for the PELAGOS project was to **ensure a bottom up approach**, inviting companies to become members of working groups is a direct way of achieving this. The groups can reveal the crucial factors that should be considered when developing the project operations. The more successful projects use them not only as an instrument for anchoring the project in the community but also to deliver pilot actions and implement strategies. **Involving industry in the implementation phase will enable stakeholders to perceive the direct industrial relevance and benefits more clearly.** This in turn will lead to stronger engagement and commitment from business sectors.

For example, PELAGOS has shown that in the case of MRE technologies, the main obstacles to their large-scale diffusion in the Mediterranean Sea are among others the i) rather low wind and wave availability (at least compared to North Sea resources), ii) their difficult adaptation to wind and water depth conditions and other natural conditions in MED, iii) the high risk of investing in the Sea, combined with lack of funding and iv) the different policies and regulatory frameworks in these countries. This could be a topic for a targeted Working Group that will identify ways to tackle the specific challenge. Typically, there are four roles assigned to the working groups:

#### CLUSTER WORKING GROUPS TASKS

- Information and diffusion of results
- Validation and discussion, deepening of these results
- Gathering of ideas for Cluster activities and results
- Gathering of ideas for project and measures development

## 2.7. FORMALIZATION

### 2.7.1. Legal Form

Clusters may obtain a legal status in a country. This may prove advantageous if the Cluster wishes to attract funds from corporate sponsors or wishes to bid for National, EU or international contracts. Since sometimes such a process may take a long time and be costly due to domestic legal frameworks, the formula that is currently being used in other clusters is to involve the offices of members who have expertise in bidding for EU funding. The offices sign the contract and then distributes the grant among the Cluster members. As far as the legal framework for the Clusters development is concerned, the European law governing the Clusters area, which would ultimately require the harmonization of national legislation of any member state or a country in the EU accession process, does not exist. In the context of aforementioned, every EU member state adopts the legislation that governs the Clusters issue in a slightly different manner. In general, there is no consensus in the EU on the most appropriate and beneficial legal identity for a Cluster. Decision regarding the most suitable legal form of cluster is being usually based on the following:

### MOST SUITABLE LEGAL FORM BASED UPON FACTORS

- Defined strategy for Cluster (the role and functions of the Cluster and the type of services to be provided for Cluster members)
- Access to financial resources in order to achieve objectives of the overall strategy and to provide defined services to members
- National corporate law and EU funding possibilities

Choosing an appropriate legal form for PELAGOS Cluster is of vital importance as its consists of a number of business members and partners whose input, communication, rules of engagement and rules for cooperation should be formally organized and structured to ensure transparency, fair play to all members and members' accountability. After the vision, mission, goals and strategy of a Cluster are identified and agreed, legal advice should be sought on the issue of legal formation. Some possible legal forms for PELAGOS Cluster are<sup>13</sup>:

### ALTERNATIVE CLUSTER LEGAL FORMS

<b>Association (non-profit or for-profit)</b>	This form is used when the focus of Cluster organization is to provide "soft" services to its members, such as support to networking and specialization, training or up-grading Cluster members' skills and capabilities, presentation of a Cluster at international conferences, organization of international conferences to make Cluster known to the international community, lobbying, market intelligence or other not for profit activities. As a non-profit organization, Cluster and Cluster members are eligible to receive national and/or EU grants.
<b>Private limited company</b>	Cluster organization takes this legal form if Cluster members are or would like to be engaged in commercial activities. It is subject to value added tax and taxation. It can access national grants (differs according to the countries' rules) but not EU grants.
<b>Economic interest group</b>	Cluster organization takes this legal form when its activities concentrate on providing "soft" services to Cluster members. Cluster companies remain independent business entities. Economic interest group is registered at a court, activities and operations of Cluster organization and Cluster members are regulated by the founding contract/statute. It is a legal form which provides easy entry of new members into a Cluster and excellent environment for open innovation. Cluster activities can be funded by national and/or EU grants. This form is quite similar with association form.
<b>Cooperative</b>	The focus of this legal form is on the promotion of individual and joint economic interest of all members. Membership is voluntary and open to everyone. It can undertake commercial activities for itself but also for the members. It cannot receive the EU grants when cooperative makes profit. It is VAT liable and subject to corporate taxation.
<b>Partnership</b>	Formally it is not a legal entity but a set of entities.
<b>Hybrid forms</b>	Mix of association and public or private limited company.

An association (a non-profit organization) is the most common used legal form of Clusters within the EU member states. It has been followed by limited liability company (organized with the purpose of undertaking commercial i.e. profit oriented activities) as another quite common legal form. Hybrid form is form in which some or exceptionally all Cluster (association) members have been involved and own (owners as members not as association as legal entity) a limited

<sup>13</sup> Source: UNDP manual



liability company. In majority of the cases hybrid form refers to both: (i) Clusters registered as association for conducting non-profit activities and (ii) business organizations primarily LLC for conduction profit oriented activities.<sup>14</sup> Moreover, the experience has shown that a **hybrid form of registering the Cluster is also the most cost – effective** one, because it allows for a combination of commercial and non - commercial activities.

#### ADVANTAGES OF HYBRID TYPE

- A Cluster with the identity of an Association has no difficulties in registering new members and it is open to everyone willing to work for the benefit of that sector in the region. This is not the case with a limited company, as it is too complicated and too expensive to introduce new company members after the limited company has been established;
- The Association is eligible to attract and bid for EU grants, while a limited company is not;
- The Association can integrate in its management team seconded staff from its members;
- The operational costs for both legal identities are divided between the Association and limited company;
- The new sources of finance available through the commercial activities of the limited company opens the possibility to employ one or more professionals to assist the Cluster manager so as to provide additional services and to coordinate the activities of the Cluster, and also provide the opportunity to undertake more sophisticated activities;
- Through a limited company and its commercial activities the Cluster as an Association becomes more attractive for new members to join;
- New (Association) members can cooperate (without difficulty) with the limited company on commercial projects if there is joint or common interest. Cooperation can be administered through a cooperation contract.
- The Hybrid legal form enables the combination of commercial and non-commercial activities.

#### THE EXPERT'S PROPOSAL

- The most appropriate forms within existing framework are: (i) association; (ii) limited liability company and (iii) potentially cooperatives;
- The association is the most appropriate form during the initial phases of Cluster development and in compliance with the potential start up strategies;
- The limited liability company is the most appropriate form for the growth phases of Cluster development when growth and profit making represents the key objectives of the Clusters;
- The decision should be made at local level according to the conditions and strategy;

<sup>14</sup> Legal framework for clusters development in Montenegro



## 2.8. INTERNAL INFORMATION & COMMUNICATION

### Information and communication management system

The PELAGOS Cluster information and communication management system includes the:

- ✓ Definition of the person, this may be the HUB Coordinator Representative or other staff of the HUB Coordinator responsible for the communication activities of the HUB and providing information and expertise from the HUB operation to the Cluster Coordinator.
- ✓ Establishment of specific norms, standards and principles that should be followed for effective information management.
- ✓ Establishment of systems and processes to effectively identify and communicate with members of the Cluster Management Team including: contact list, meeting schedules, who does what where information etc.
- ✓ Establishment of information sharing mechanisms to ensure availability of, and access to, up-to-date Cluster specific information (e.g. meeting minutes, standard forms, policy or technical guidelines, datasets etc.).
- ✓ Definition of the person, this may be the Cluster Manager or other staff of the Cluster Coordinator that will ensure coherence and coordination between the members of the Cluster Management Team and the HUB Coordinators.

### Efficient internal information and communication

Efficient internal information and communication is essential to the success of a Cluster. Indeed, ideally an internal communication and dissemination method and strategy should be defined at the outset and prior to the main Cluster launch, to decide which tools would be used, and how. The Cluster Coordinator should also take on the responsibility of coordinating internal dissemination. Following we present some of those tools:

- **Regular Cluster Management Team meetings**, through rare face-to-face meetings and regular web based or skype conferences are recommended to reaffirm each HUB commitment, common strategy, share the results of common activities and discuss future activities. The Cluster Coordinator role during these meetings takes on a particular importance in reminding every member of the importance of attending, leading the meeting and providing everyone with a short report after the meeting.
- **Regular internal reports** related to activities and results are also recommended, especially from each HUB Coordinator to all members of the Cluster Management team after an activity has been reached.
- **Internal dissemination tools** are also important for gathering information, reports and deliverables of the HUBs.
- **Managing and communicating** the decision timeline process is an important skill required to ensure the Cluster progresses as planned. Given the duration and the nature of the main tasks (events, services etc.) HUB Coordinators need to be aware of the impacts of delays on other outputs/activities and communicate them.

## INFORMATION THAT MAY NEED TO BE COLLECTED AND STORED/FILED FOR EFFECTIVE INFORMATION AND COMMUNICATION FLOW WITHIN THE CLUSTER

- List of members of the HUB Focus Groups and other major organizations with contact details
- List of members of the HUBs and other stakeholders identified with contact details
- Evaluation reports
- Minutes - Proceedings of Focus Group meetings
- Action Plans on National level
- Periodic reports, reviews and evaluations of HUB activities
- Press releases and other formal HUB communications
- Photos of significant events

### Managing external communication

The external communication system should be implemented under a common framework including (indicative):

- Regular production of a Cluster newsletter and dissemination of the newsletter by the HUBs
- Post and regularly up-date information on an appropriate website (possibly the PELAGOS Blue energy platform).
- Contacts with local and international journalists and news-media representatives.
- Thematic sector-based events.
- Conferences on Blue Energy and Forums.
- Photo-library: systematically collect and catalogue photos of the situation and significant events.
- Sufficient, good translation of materials produced, where necessary, so that the information promptly reaches all relevant actors.

## 2.9. VARIATIONS BETWEEN LOCATIONS

**The most promising, in terms of economic potential, and most feasible, in terms of the natural environment, Marine renewable energies in each Region/Country.**

Based on the deliverables produced in Activity 3.1 of the PELAGOS project, it is collectively highlighted that the level of maturity is completely different from an energy to another as well as, for some energies (i.e: OTEC/ Tidal), the Mediterranean is not adapted due to its natural environment. In these conditions, we think that the HUBs and then the MED Cluster should take into account these facts for their development and focus only on the most promising energies (and feasible in the Mediterranean context) which have an economic potential.

**Offshore wind** with fixed foundations (the only commercial offshore wind farms) are now in a phase of sustained growth in northern Europe while in the Mediterranean, practically no important installations of wind turbines with fixed foundations are possible. Floating offshore wind appears to be particularly adapted to the Mediterranean (continental shelf, high depth) if the potential sites are windy. It is particularly the cases of Gulf of Lion, in Aegean Sea, etc.

**Tidal energy** includes both tidal range and tidal current. Although tidal range is proven technology with long-term viability, the environmental implications of any new scheme are prohibitive in the vast majority of scenarios. Tidal range structures are also characterized by high investment costs. Tidal current technology has been proven technically feasible, although costs must be lowered in order to compete with other renewable energy sources. To allow a realistic implementation of systems in the Mediterranean, tidal turbines need a stream speed of at least 1.5-2 m/s- in order to be effectively operating. Some areas like Dardanelles, Gibraltar and the strait of Messina could have a potential for the exploitation of tidal energy (current). However, some more research and measurement are needed and expected. Tidal range are however not conceivable and adapted to the Mediterranean.

Technology in **wave energy** is still being proven. The optimum technological model is yet to be defined. Sea waves and swell are present in the Mediterranean, but the current generated is not favourable enough for the production of energies in large quantities (short wave = not important Fetch) and not very sustainable over the time. However, production systems can be deployed locally, particularly for insular territories in order to provide them with additional energy, as the import of fossil fuels is expensive, but also in addition to other renewable energies such as solar or wind.

**Ocean Thermal Energy Conversion (OTEC)** is a marine renewable energy technology that harnesses the solar energy absorbed by the oceans to generate electric power. Sea-water air conditioning (SWAC) is already developed in the Mediterranean context especially in the French Mediterranean coast. The island's territories, for instance are ideal places for the deployment of this technology.

**Salinity gradient energy (SGE)** is a renewable energy source that can be harnessed from the controlled mixing of two different salt concentration water masses. Three potential river mouths located in the Mediterranean Basin of which two on the European soil have a high extractable energy. The two river mouths on the European soil are that of the Rhone River in France and Po River in Italy. However, since salinity gradient energy is still a concept under development, further research is needed for this technology to uptake.

Considering the above, maybe we could envisage PELAGOS HUBs, focusing on local strengths and potential of MRE, to give special attention and specialization to one or more but not all marine energies i.e. GR-HUB on offshore wind, wave or tidal current energy, IT-HUB on tidal, wave or SGE energy, ES-HUB on offshore wind, tidal or wave, HR-HUB on OTEC, PT-HUB on offshore wind, wave or tidal, CY-HUB on wave or tidal etc.

### **Possible business priorities or strategic positioning of a HUB in each area/country according to the local economy, business ecosystem and natural environment.**

Another issue is related to the analysis of the differences between Northern Europe/Mediterranean. Northern Europe has developed more MRE because of its natural conditions more adapted for tidal/ wave for instance. In MED, the natural conditions are less favorable for MREs in general. These findings explain why the industries in MED are lagging behind the northern ones. One of the key role of the PELAGOS Cluster should support its members to identify the niches where companies from the South can take place: on the basis of innovation adapted to the Med. This means big R & D efforts for the south. For example: it is very difficult for companies in the south to compete with manufacturers of wind turbine blades currently manufactured in factories in the north (Germany, Denmark, UK, France) by Siemens, Vestas, Senvion, GE (formerly Alstom).

### **Possible maritime sectors in each Region/Country where the MRE technologies could have the most possible applications.**

Within the current document it is highlighted that Blue energy as a cross-cutting industry of the Mediterranean is ready to design and deliver the equipments for the production of these energies which would be important growth relays, in synergy with key market sectors such as that shipbuilding and ship repair, maritime transport activities, oil & gas off-shore industry, port, tourism, aquaculture. The creation of synergies between marine renewable energies and other maritime industries would favour the penetration of blue energy on the market as well as positively affect other maritime sectors. Considering the importance and economic potential and impact of each maritime sector in each country it is proposed each HUB focus on a specific maritime sector and try to involve as many stakeholders as possible from those sectors in order to achieve the critical mass for blue energy and further assess the deployment potential of blue energy technologies in those sectors.

## 2.10. ANTICIPATED RESULTS

### PELAGOS CLUSTER: ANTICIPATED RESULTS

- **Focus on SMEs:** SMEs normally employ a large proportion of the total work force in the region and provide an important risk diversion to the labour market. A vivid and innovative SME-culture strengthens the entrepreneurial spirit of the population which is important when the regional economy is weak and the unemployment is increasing, as well as when it is good and spin-offs and economic growth in small businesses should be stimulated.
- **Renewal within the industry:** SMEs are an important factor for renewal within the industry as they often end up in smaller niche markets where they can assess new ideas and product concepts and play an important role as suppliers to large companies.
- **Improve the business environment of the supported SMEs** by establishing open collaboration spaces that can involve innovation actors from different sectors and countries. This will lead to the creation of new ideas for innovation and new collaboration partnerships, which will be subject of further development and with the potential for further impact on business turnover.
- **Facilitate the Engagement of active members.**
- **Strengthen industrial leadership** in Mediterranean Member States by reinforcing value chains that integrate innovative solutions in SMEs.
- **Stimulate the creation** of new emerging industrial value chains across the Mediterranean to accelerate the development of Blue Energy, which will boost industrial competitiveness and underpin future economic growth, jobs and progress towards a resource-efficient economy.
- **Further leverage and complement support for innovation** in SMEs and other funding, which may be provided by national or regional authorities (including under the European Structural and Investment Funds) and/or by private investors (upfront or as follow-up investments).
- **Contribute to regional smart specialisation strategies** by capitalising upon concentrated and complementary competences for the development of new activities and emerging industries with a clear EU added-value.
- **Disseminate the anticipated results** and “sell” the right message to research, industry and society.

The above results should be clearly demonstrated in activities at both and regional level. Monitoring of results' achievement should be based on a set of both Quantitative and Qualitative indicators. These indicators could include, for example, the number of SMEs that receive innovation support as well as key innovation performance indicators of the supported SMEs, especially third party SMEs, – such as number of new or significantly improved products (goods and/or services) and criteria used to assess the changes made by the Cluster activities to the situation (baseline conditions) at the start of the Cluster. These indicators should provide transferable evidence in terms of qualitative information about the effectiveness of the Cluster, such as on the contribution to regional smart specialisation strategies and the leverage effect through public and private investors.

## 3. GUIDELINES FOR HUB-LEVEL OPERATIONS

### 3.1. THE HUB COORDINATOR

#### The role of the HUB Coordinator

According to the design of the PELAGOS cluster, it will include 7 regional HUBS and for each HUB there is a main organization responsible for its operation, namely:

- **Greek HUB** - The Hellenic Centre for Marine Research
- **Spanish HUB** - CTN Marine Technology Centre
- **Italian HUB** - The Association of Chambers of Commerce of Veneto Region
- **Cypriot HUB** - The Maritime Institute of Eastern Mediterranean
- **Croatian HUB** - The University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture
- **Portuguese HUB** - University of Algarve
- **French HUB** - Toulon Var Technologies<sup>15</sup>

The **HUB Coordinator** will be responsible for the implementation of the activities of the HUB and for implementing the foreseen processes for the HUB's lifecycle, from its initial launch until the phasing out of its operation. Apart from an administrative role the HUB coordinator will make strategic decisions under his/her jurisdiction, and in alignment with PELAGOS Cluster policies & guidelines, whilst also providing feedback on the effectiveness of the HUB at a National level.

For the more efficient operation of the HUBS, each **HUB Coordinator** will appoint a **HUB Coordinator Representative** who will act as the main point of contact of the HUB.

#### What is expected by the HUB Coordinator?

##### HUB COORDINATOR TASKS

- ☐ Effectively coordinate all the activities and processes of the HUB
- ☐ Identify the stakeholders that will be involved in the HUB
- ☐ Decide the legal form of the regional HUB
- ☐ Identify and approach the members of the HUB Focus Group
- ☐ Identify and approach the members of the HUB
- ☐ Facilitate the interactions among the members of the HUB Focus Group during the Focus Group Meetings.
- ☐ Encourage information sharing and networking among the members of the Focus Group
- ☐ Encourage co-operation and networking among the members of the HUB
- ☐ Report on a regular basis to the Cluster Coordinator about the progress of the HUB development and implementation
- ☐ Monitor the HUB's performance in alignment with the Cluster objectives and guidelines on National and International level
- ☐ Serve as the contact point of the HUB, respond to inquiries from government officials, representatives of the FG and other stakeholders and provide one voice to communicate the multiple concerns and challenges of the members

<sup>15</sup> The French HUB already exists and will contribute to the development of the other HUBs and to the overall PELAGOS Cluster. The French HUB will be part of the whole Cluster. In France, Pole Mer Méditerranée has deployed a working group dedicated to Marine Renewable Energies. It gathers in 2017 102 SMEs, 44 Large enterprises/ Groups and 22 research organizations. 22 R&D projects in the field have been already supported. This working group will be included in the forthcoming Mediterranean Blue Energy Cluster.

### 3.2. THE HUB FOCUS GROUP

#### The Concept

Defining a Focus Group, is a group of National experts selected according to their background, expertise and experience that meet regularly in order to discuss, comment and share their knowledge and experiences on a specific subject under the supervision of a facilitator (in our case the HUB Coordinator representative)

The HUB Focus Groups will ensure the involvement of important National stakeholders from all fields of reference, from the beginning of the HUB’s operation. The focus group will give valuable input in the identification of the HUB stakeholders and in the selection of the HUB members.

The main purpose of this Group, in fact, is to strengthen the cooperation between public and private institutions in view to apply the framework of HUB’s operation for supporting innovation in blue energy.

The back bone of a HUB Focus Group can be made by **ASPs of the PELAGOS** project which are located in the each HUB country (*NYM Association (Murcia Maritime Cluster) (ES), AZTI Foundation (ES), Murcia Region Development Agency (ES), Region of North Aegean (GR) and Cyprus Energy Agency (CY)*), together with additional **regional/national organizations** that will be identified and contacted according to the steps described below.

We propose that each HUB Focus Group should have **minimum 4 to maximum 8 members** (1 member representing each Helix of the Project Framework, i.e. Industry, Research, Public and Civil society)

The HUB Focus Group should meet under the framework of a half-day **Meeting**, preferably every 5 months, mainly during the implementation of HUB’s activities and the follow-up of the HUB methodology, according to the workplan of the PELAGOS project.

The HUB Focus Group Meetings will be organized and coordinated by the HUB Coordinator following the guidelines of ENEA, the responsible task leader under the framework of the project.

#### What is expected by the Focus Group?

The role of the members of the HUB Focus Group will be:

HUB FOCUS GROUPS TASKS
<ul style="list-style-type: none"><li>❑ Consult the HUB Coordinator on matters of strategic positioning, controlling and monitoring of activities.</li><li>❑ Support the HUB Coordinator in the orientation of the HUB to current and future markets and technology requirements</li><li>❑ Evaluate the HUB development and implementation methodology, and propose implementation changes in a National context</li><li>❑ Evaluate the HUB’s performance during the implementation of its activities in terms of acceptance, benefits for the member companies and suggest new activities</li><li>❑ Develop comprehensive policy recommendations together with the members of the HUB that will support the business and the innovation environment in the blue energy sector on a regional level.</li></ul>

#### How to attract Focus Group members:

We need to convince them that they will be in position to:

- ✓ Influence the design and the operation of the PELAGOS HUB
- ✓ Exchange best practices, methodologies, solutions and challenges with peers in Marine Renewable Energy
- ✓ Enhance their know-how on the trends of MRE that impact their organizations
- ✓ Develop a strong connection with leading actors in the MRE sector

## Setting-up a HUB's Focus Group

### **Step 1: Identifying potential HUB Focus Group Members**

- ❑ The **search** for the potential members of the HUB Focus group will be done through desktop research and personal contacts.

Because of the importance of the HUB Focus Group and the influence that it will have on the HUB the members must have a clear focus on the MRE sector and they must be easily accessible.

**Important sources** for potential HUB Focus Group Members include:

- The existing list of PELAGOS ASPs
- Participants of important EU projects in the thematic of MRE
- List of previous successful collaboration with the project partners in MRE related projects.

According to section 2.4 priority should be given to Regional/National Ministries in the field of Environment/Energy/Climate, National Managing Authorities in the field of Entrepreneurship/Research/Technology, National NGOs in the field of Environment/Energy, Research Institutions and University Faculties in the fields of Energy/RES, National Business Associations of Energy companies, Public or Private Energy providers, Large Firms.

The common characteristics among them are the:

- High Interest/Impact on MRE
- High impact on the HUB
- Ability to attract cluster members

**The criteria can vary per country.**

- ❑ Prepare a **pool of 15 National organizations** matching the above criteria (including: name of the organization, type of organization, website, name of contact person, contact email, contact telephone).

### **Step 2: Approaching potential HUB Focus Group members**

- ❑ **Contact them:** The HUB Coordinator will contact the National organizations identified. It is proposed the initial contact to be made through email including an **introductory text and maybe a flyer** presenting the purpose of PELAGOS HUB and the usefulness of HUB's operation to their organization activities as well as **expression of interest document** (to be filled by those interested to join the Focus Group of the HUB). Where necessary, the HUB Coordinator should provide them additional information about the HUB. More specifically the email should include:
  - a short introduction to PELAGOS project,
  - a short presentation of the HUB Coordinator,
  - a description of the main activities of the PELAGOS project,
  - the anticipated synthesis and role of HUB Focus Group,
  - the anticipated benefits of for the members of the Focus Group,



- contact details of the HUB Coordinator,
- Deadline for replying to the invitation.

**Communication Process:** In order to ensure that the timeframe of the project is kept the potential members will be given a strict deadline in order to respond to the proposition for entering the HUB. The goal is to complete the process in 30 days and the following process should be followed:

- 1) **Initial email** – giving information and requesting a response within 10 days
- 2) **Follow up call** – call the potential target in order to ensure that the mail was read 5 days after initial mail.
- 3) **Status after 10 days** - Gather the expression of interest documents and define the potential members from the shortlist that should be contacted next following the procedure (1) & (2). If needed this procedure should be repeated once more.

- ❑ **Final list of the HUB Focus Group members:** The HUB Coordinator will prepare a list of the actors that replied positively in the request to join the HUB Focus Group. (including: name of the member, position in the organization, contact email, type of organization, contact telephone, name of the organization).

### **Step 3: Selecting the HUB Focus Group members**

- ❑ **Selection of HUB Focus Group Members:** The HUB Coordinator will be responsible to select **4-8 organizations** from the compiled list from the previous step, taking into account the above criteria and ensuring that the composition of the HUB Focus Group will have representatives from the different groups of the 4Helix, in order to maximize the positive impact that the Focus Group will have on the HUB. A suggestive allocation can be found in the table below:

FOCUS GROUP SELECTION MATRIX		
TYPE	Light Scenario	Full Scenario
Public national Authority	1	1
Municipality / Regional Government	1	1
NGOs		1
Research & Technology actors	1	1
Business support organizations		1
Energy Agency		1
Large Firms		1
SMEs Associations	1	1
TOTAL NUMBER OF FOCUS GROUP MEMBERS	4	8

The balance among the categories can vary per country.

- ❑ **Prepare the final list of HUB Focus Group representatives:** The HUB Coordinator will prepare a list of the people who will represent the selected members of the HUB Focus Groups. (including: name of the member, position in the organization, contact email, contact telephone, name of the organization)

### **Step 4: Engaging Focus Group members**

- ❑ Invite the members of the HUB Focus Group, to attend the **1<sup>st</sup> Focus Group Meeting** (see below ‘holding successful Focus Group meetings’).
- ❑ Build relationships and maintain regular **contact** with all the members of the Focus Group
- ❑ Inform the members of the HUB Focus Group about the results and the progress of the project
- ❑ Understand members’ expectations and constraints; seek ways to cover their expectations and consider their constraints during the next period.
- ❑ Seek regular feedback from the members of the Focus Group on the effectiveness of the HUB and how it could be enhanced.
- ❑ Make sure that all the necessary information and documentation concerning the HUB is circulated to the members of the Focus Group
- ❑ Keep them up-to-date concerning the upcoming HUB’s activities and the progress of the HUB
- ❑ Invite them in the upcoming HUB events

### Holding successful Focus Group meetings

Focus Group meetings are essential for the effective and efficient management and coordination of the HUB but careful planning and implementation is necessary to ensure their success.

The members of the National Focus Group will meet 4 times under the framework of half-day Meetings<sup>16</sup>. The Focus Group Meetings should be organized on a National level by the HUB Coordinator. The HUB Coordinator Representative will act as facilitator and inform the attendees through presentations. However, Q&A and feedback should be considered and is strongly welcome to optimize the current or future HUB’s activities. ENEA, will support the HUB Coordinators by providing the agenda, setting the scope for each Focus Group and the expected benefits per FG for the attendees.

#### **Step 1: Organizing the Focus Group Meeting**

- ❑ **Define the scope of the Focus Group Meeting**
- ❑ **Invite the HUB Focus Group members:** Invite all the members of the HUB Focus Group by sending **an invitation email** accompanied with an **introductory text** concerning the scope of the Meeting, the **Agenda** and where necessary documentation to be read by the FG before the Meeting. Each FG Meeting should have between 4-8 participants. Fewer than 4 participants may limit the conversation while more than 8 can be unwieldy.
- ❑ **Prepare the HUB Focus group meeting agenda:** see an example below; focus on the key issues and topics to be discussed and to be agreed per Meeting in advance with ENEA. Try to keep the Agenda short (not more than half-day)
- ❑ **Select a HUB Focus group meeting facilitator:** The HUB Coordinator will identify and assign the role of the HUB Focus group meeting facilitator to a person actively involved in the HUB progress, with previous experience in managing and coordinating similar meeting. This role could be fulfilled by the HUB Coordinator representative or other staff from the organization or by people outside of the HUB Coordinator organization that match the above criteria. The facilitator will be responsible for conducting the Focus groups and he/she will ensure that the agenda is kept.
- ❑ **Select a venue:** The HUB coordinator will select a venue that is suitable in terms of accessibility, facilities (laptop, projector, microphones etc.), space, catering etc.

<sup>16</sup> According to PELAGOS Technical Proposal: 1st by 31/3/2017, 2nd by 31/7/2017, 3rd by 31/12/2017 and 4th by 31/7/2018

- ❑ **Prepare presentations and handouts:** The HUB Coordinator will prepare a presentation for the Focus Group in accordance to the scope of the meeting. The presentations should be developed in English. The working language of the focus group is suggested to be English.
- ❑ **Prepare a Registration list:** This list will be used to document the participation of the members of the Focus group in the meeting.
- ❑ **Notes of meeting and documentation:** During the meeting the HUB Coordinator will be responsible to keep notes that will be used in the order to prepare the minutes of meeting and he/she will ensure to take photos that will assist in the dissemination of the meeting.
- ❑ **Briefing of the Task coordinator:** The HUB Coordinator will inform ENEA (the coordinator of the task under the framework of the project) about the results of the meeting.

#### Tips for holding successful Focus Group Meetings by the facilitator

- ✓ Try to make participants feel invited and comfortable
- ✓ Keep the discussion ongoing and guarantee that all agenda points are covered
- ✓ Control the time allotted to each topic and to the entire discussion
- ✓ Guarantee that unclarities are cleared
- ✓ Seek feedback from all the individuals participating in the Meeting and ensure that the discussion stays focused
- ✓ Encourage discussion among the participants
- ✓ Gain the confidence and trust of the participants

The first Focus Group Meeting will be prepared by strong supporting actions aiming not only to disseminate information concerning the PELAGOS project, the PELAGOS Cluster and the HUB, but also to identify potential members for the HUB at a National level, that will be the main target group of the HUB's activities.

#### PROPOSED AGENDA FOR THE 1ST FOCUS GROUP MEETING

- Welcome
  - Short presentation of PELAGOS project
  - State of the Art of the development and potential of MREs in the Mediterranean
  - Structure, aims, benefits and activities of the Focus Group
  - Presentation of the participating members of the Focus Group
  - Brief presentation of the meeting scope
- Introduction to the PELAGOS Cluster Methodological approach
- Methodology for the identification of HUB's members
  - Steps, Method, Procedure, Criteria and Anticipated targets
  - Discussion and evaluation of the methodology
  - Recommendations improving the methodology
  - Recommendation of potential stakeholders to be approached
- Summary and feedback / Q&A
- Main conclusions – Next activities

### Step 2: Implementing follow-up activities

- ❑ Collect all relevant documents (**Agenda, presentations, photos, signed list of participants-Registration sheet, notes etc.**).
- ❑ Prepare the **Minutes** Report (proceedings) of the Meeting (including: number of participants, scope, date, time, place, list of participants, main topics discussed, main outcomes-findings, photos, agenda, next meeting).
- ❑ Send **"follow-up" emails** to all the members of the Focus Group accompanied with the Minutes of the Meeting.

### 3.3. IDENTIFICATION OF MEMBERS

#### The Concept

Before implementing the HUB activities, key actors operating in blue energy related sectors located in the HUB area, should be initially identified, approached and further engaged to participate in the HUB's activities and become members of the HUB.

**How many members per HUB? Evidence<sup>17</sup> shows that effective clusters consist of around 20 to 30 entities**

Depending on the region/ country, a large set of stakeholders located in the HUB's area should be initially identified. For example, this 1<sup>st</sup> set could consist of around 100 potential members. As the second step, 30-50 of them will be initially approached to learn more about the offering of the HUB and finally become **the main target group** of the activities of the HUB (members).

The identification of the HUB members on National level will be done and coordinated by the HUB Coordinator representative following the guidelines of CRES, the responsible task leader under the framework of the project. Each HUB Coordinator representative will be responsible to select such bodies at a National level in order to create a critical mass of participants in the HUB while Cluster Coordinator will then make any efforts needed to respect and ensure the balance by creating a final matrix with the partners' target selections.

**BE CAREFUL: SMEs are the core component of the Cluster and should be facilitated in their innovation endeavors. They need to constitute the largest proportion of the HUB.**

#### Identifying members for the HUB

##### Step 1: Identifying National stakeholders

- ❑ The first step in order to identify the members of the HUB is to identify the National Stakeholders, the organizations that are influenced and can influence the PELAGOS Cluster. The search will be done through **desktop research**.  
**Suggested sources** that should be utilized in this search are:
  - **Previous MRE related projects.** Some indicative sources of information for these projects include:
    - CORDIS, primary portal for results of EU-funded research projects [www.cordis.europa.eu](http://www.cordis.europa.eu)
    - KEEP, Data base of Interregional cooperation funded projects [www.keep.eu](http://www.keep.eu)
    - InnoEnergy Innovation Projects [www.innoenergy.com/innovationproject](http://www.innoenergy.com/innovationproject)
    - List of Regional Funded MRE related projects
  - **List of stakeholders** from Energy related organizations and lists of members of other energy related clusters
  - **List of participants** of energy related events (conferences, B2B meetings)
  - **List of Supported ventures** from energy VC funds, Incubator or accelerators.
  - **Previous successful collaboration** with the project partners in MRE related projects.
  - **Input of the HUB focus group**
  - **Other** such as IT companies, Aquaculture, Naval, Ports, Environmental studies, National/ local public bodies in charge of the regulations etc.

The identification criteria of stakeholders for the regional HUBs of the PELAGOS cluster must answer the questions below:

- Which are the organizations that would be interested in the PELAGOS Cluster?

<sup>17</sup> Source: European Cluster Observatory

- Who might benefit from the activities/services of the HUB and of the Cluster?
- Who might be impacted by the Cluster's activities?
- Who will have impact on the Cluster?

#### CRITERIA FOR IDENTIFYING POTENTIAL STAKEHOLDERS

- **RELATION TO THE MRE SECTOR:** The stakeholders should have a clear connection with the Marine Renewable Energy. These are Organizations already operating in the Blue Energy sector and organization that operate in other sectors that can bring added value to the MRE sector (as actors defined in section 2.4). For each stakeholder identified the HUB coordinator should be able to clearly define:
  - The specific type of MRE that the stakeholder is already involved or could be involved in
  - The role or the potential role of the stakeholder in the MRE value chain
- **CONNECTION OF THE STAKEHOLDER WITH THE HUB:** In order to identify a stakeholder the HUB coordinator and his/her team should be able to clearly define the potential role by defining:
  - The potential value of the HUB for the stakeholder (this must be based on an identified need of the stakeholder)
  - The potential value of the stakeholder for the HUB (This must be based on the goals and the needs of the HUB and the PELAGOS project)
- **COUNTRY:** The stakeholders should be located in the HUB's country (MED programme's eligible areas only).

**The stakeholders should belong to any of the 4 groups of the Quadruple Helix Model (Industry, Research bodies, Public authorities and Civil society) BUT PRIORITY SHALL BE GIVEN TO SMES!!!**

The selection criteria can vary per country according to the local business and economic environment.

- ❑ Prepare a **pool of at least 100 National stakeholders** according to the above criteria by filling out the form in Annex in an excel format, in order to justify the identification but also to include necessary information for each stakeholder (i.e. name of the organization, type of organization, website, name of contact person, contact email, contact telephone) that will facilitate the communications with them.

## Step 2: Prioritization of stakeholders

- ❑ **Prioritize the Stakeholders:** By doing an in-depth **study** and analysis of the identified stakeholders we will be able to recognize the key players that should be involved in the HUB activities. The two criteria that will determine the key actors and the factors that will determine each one can be found below:

#### The Interest of the stakeholder to be involved in the HUB activities

- Involvement in MRE
- Position in the MRE value chain
- Value of the HUB for the stakeholder

#### The Influence that the stakeholder will have on the HUB

- Type of organization according to the 4Helix
- Involvement in MRE
- Position in the MRE value chain

In order to facilitate the prioritization, the HUB Coordinator will map out the identified stakeholders on the diagram below based on the power/influence methodology<sup>18</sup>. The necessary input that influences each factor will be acquired during the identification of the stakeholders. Each stakeholder will be positioned on the diagram according to their influence and their impact on the project. In the prioritization process the HUB Coordinator should seek input from the HUB Focus Group.

<sup>18</sup> Bryson, John M. "What To Do When Stakeholders Matter". *Public Management Review* 6.1 (2004): 21-53. Web.

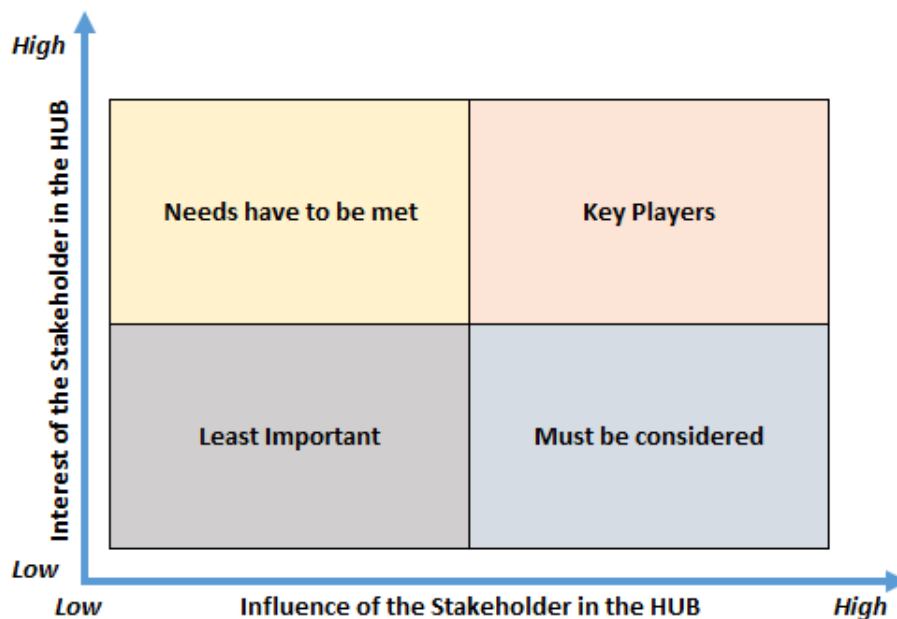


Diagram: Prioritization map of Stakeholders

Apart from this diagram, it is important to take into account the “versatility” criteria. The HUB Coordinator representative should ensure that will select key actors respecting a balance in order to have concrete results. The grid below presents the proposed balance:

KEY ACTORS SELECTION MATRIX	
Type of key actor	Proposed Target Mix
SMEs	15
Public actors	2
Other organizations	2
Research & Technology actors	5
Business support organizations	1
Suppliers – large Firms	3
Industry - Utilities	2
<b>TOTAL NUMBER OF KEY ACTORS</b>	<b>30</b>

The balance among the categories may vary per country.

- ❑ Prepare a shortlist of stakeholders: The HUB Coordinator will prepare a list that will determine the priority in which the identified stakeholder will be contacted, taking into account:
  - the above criteria
  - the desired “versatility” for keeping also the balance among the key actors (selection Matrix)
- ❑ Prepare a **Report** including max 1 page short Profiles of actors identified, Internal Evaluation (Taking into consideration the targets), overall Analysis of actors needs etc.
- ❑ Inform the **Cluster Coordinator**, about the number (30-50) and type of actors identified. In the total number of members identified also the HUB Coordinator and the members of the Focus Group will be also calculated.

### **Step 3: Approaching key actors and potential members**

- ❑ **Contact them.** The first 30-50 targets of the shortlist that is prepared in Step 2 will be approached. It is proposed the initial contact to be made through email including an **introductory text and a flyer** presenting the purpose of PELAGOS HUB and the usefulness of HUB's operation to their organization activities as well as **expression of interest document** (to be filled by those interested to join the membership of the HUB and be actually benefited by the HUB offer). Where necessary, the HUB Coordinator should provide them additional information about the HUB.

**Communication Process:** In order to ensure that the timeframe of the project is kept the potential members will be given a strict deadline in order to respond to the proposition for entering the HUB. The goal is to complete the process in 30 days and the following process should be followed:

- 1) **Initial email** – giving information and requesting a response within 10 days
- 2) **Follow up call** – call the potential target in order to ensure that the mail was read 5 days after initial mail.
- 3) **Status after 10 days** - Gather the expression of interest documents and define the potential members from the shortlist that should be contacted next following the procedure (1) & (2). If needed this procedure should be repeated once more.

- ❑ **Final list of the HUB members:** Prepare the final list of the actors that replied positively in the request to join the HUB as members (including: name of the member, position in the organization, contact email, type of organization, contact telephone, name of the organization).

**Considering the fact that the HUB and PELAGOS Cluster are dynamic, further stakeholders not yet identified or approached may have the opportunity to join the membership of the HUB during its operation (i.e. through the demonstration event, the platform and other activities of the HUB).**

**Examples: Indicative Members of the Ocean Energy Europe**

L'Agence regionale – Pays de la Loire (Public Authority): <http://www.emr-paysdelaloire.fr/>

Carnegie (Large firm): <http://carnegiewave.com/>

MRIA (Association): <http://www.mria.ie/>

IFREMER (Research Institute): [http://www.ifremer.fr/institut\\_eng](http://www.ifremer.fr/institut_eng)

### **Step 4: Engaging HUB members**

- ❑ Invite the members to attend the **Demonstration event** (see below 'Organizing a demonstration event').
- ❑ Build relationships and maintain regular **contact** with all the HUB members
- ❑ Understand members' expectations and constraints;
- ❑ Seek feedback from the members on the effectiveness of the HUB and how it could be enhanced.
- ❑ Make sure that all the necessary information concerning the activities of the HUB is circulated to the members
- ❑ Keep them up-to-date concerning the upcoming HUB's activities



## 3.4. LAUNCHING

### The Concept

The Launching of the HUB (**Demonstration Event**) is the event that will mark the official initiation of the HUB activities. This 1-day event with the aim to present to the attendees the HUB approach, the Structure of the HUB, the services and the activities of the HUB as well as to engage the key actors identified to participate in the HUB activities. Attendees are going to be informed via presentations from the HUB Coordinator and other speakers invited (those could be also members of the HUB's Focus Group or other additional keynote speakers).

It is proposed that this event should take place one month after the 1st Focus Group. The Event will be organized and coordinated, on a national level, by the HUB Coordinator representative following the guidelines of TVT-PMM, the responsible task leader under the framework of the project.

This event will be the first time that all the members of the HUB, the members of the HUB Focus Group and further key actors (not yet members of the HUB) or other national stakeholders not yet contacted, will gather.

### Holding a successful Demonstration event

This Event is essential for the effective launching and dissemination of the HUB. It is proposed to take place one month after the 1<sup>st</sup> Focus group Meeting and it should last a full day.

This event should be organized on a National level by the HUB Coordinator. The HUB Coordinator Representative will act as the facilitator and he/she will inform the attendees through presentations about the Project and the HUB.

Q&A and feedback should be part of the event in order to optimize the current or future HUB's activities. TVT-PMM will support the HUB Coordinators providing the agenda, setting the scope for the Event and the expected benefits for attendees to be adapted at local level.

### Step 1: Organizing a demonstration event

- ☐ Determine the desired number of **participants** in the event, considering the anticipated impact and the available budget
- ☐ **Invite participants:** Invite all the members of the HUB, the members of the HUB Focus Group as well as the key actors identified and additional stakeholders identified by sending **an invitation email** accompanied with the **Agenda** of the event.
- ☐ **Prepare the meeting agenda:** Define the scope of the Event and Prepare the event **agenda** – see an example below; focus on the key issues and topics to be discussed in advance with TVT-PMM.
- ☐ **Define speakers:** The speakers selected should have good communication skills, great knowledge about the HUB and/or and they should be experts in the topic they will present. Suggestions include the HUB Coordinator representative who will present the overview of the HUB, members of the Focus Group presenting the Blue Energy sector, challenges and opportunities from their perspective and their role in this business environment, as well as other keynote experts in the field of Blue Energy.
- ☐ **Selection of a venue:** The HUB coordinator will select a venue that is suitable in terms of accessibility, facilities (laptop, projector, microphones etc.), space, catering etc.
- ☐ **Prepare presentations:** The presentations should be prepared by the HUB Coordinator representative and by the invited speakers according to the agenda. The presentations should be developed in English. The working language of the event is suggested to be English.

- ❑ **Prepare a Registration list:** This list will be used to document the participation of the members of the Focus group in the meeting.
- ❑ **Notes of meeting and documentation:** During the event the HUB Coordinator will be responsible to keep notes that will be used in the order to prepare the minutes of meeting and he/she will ensure to take photos that will assist in the dissemination of the event.
- ❑ **Event dissemination:** The HUB Coordinator will Disseminate the event through the HUB Coordinator's website, blogs, social media, direct emails and other media (i.e. press releases)
- ❑ **Dissemination of communication material:** The HUB Coordinator will be responsible for printing the project's **communication material** (poster, flyer etc.) and that HUB flyer that will be utilized for the optimum promotion of the HUB during the event
- ❑ **Briefing of the Task coordinator:** Inform **TVT-PMM** about the proceedings of the Event (the coordinator of the task under the framework of the project).

The aim of the Event is to inform the participants about the HUB and its activities as well as engage all the key actors to become members of the HUB and participate in the upcoming activities of the HUB.

#### PROPOSED AGENDA FOR THE EVENT

- Registration
- Welcome
  - Welcome speech: Short presentation of PELAGOS project
  - Welcome speech: Short presentation of the Organization of the HUB Coordinator and its role towards enhancing entrepreneurship, research and innovation in the field of blue energy
- Presentation of the National PELAGOS Cluster - HUB on Blue Energy - Innovative services supporting SMEs and other actors in blue energy for innovation and competitiveness
- Suggested topic: Marine Renewable Energy
- Suggested topic: Supportive services for Green Entrepreneurship
- Suggested topic: Business in Blue Energy sector
- Suggested topic: Clusters and networks supporting business environment and SMEs
- Q&A

#### Tips for inviting experts to attend the event as speakers

- ✓ Provide them a draft agenda of the event
- ✓ Provide a short briefing of the types of people attending the event (including other speakers)
- ✓ Provide them a summary of what they are expected to do
- ✓ Inform them about the speak time and language
- ✓ Provide them a presentation template (if necessary)

### Step 2: Implementing follow-up activities

- ❑ Collect all relevant documents (**Agenda, presentations, photos, signed list of participants-Registration sheet, notes etc.**)
- ❑ Prepare a post-event **article** and disseminate it through your website
- ❑ Prepare the **Minutes** Report (proceedings) of the Event (including: overview of the actions implemented for organizing the event, date, time, place, participants, main topics discussed, photos, speakers, signed list of participants, presentations, agenda, dissemination activities and activities implemented)
- ❑ Send **"thank you" emails** to all the participants of the Event

## 3.5. PROVISION OF REGIONAL HUB SERVICES

### 3.5.1. Services per Target Beneficiaries

The services of the PELAGOS Cluster (International level) and its HUBs (on Regional/National level) target mainly SMEs but also other relevant actors at both regional and transnational level are considered to be involved.

SERVICE CATEGORY	PELAGOS HUB SERVICES	TARGET BENEFICIARIES			
		INDUSTRY	PUBLIC	RESEARCH	SOCIETY
AWARENESS	3.2.3: Blue Energy Cluster & Cluster's HUBs demonstration events	*	*	*	*
STRATEGY	3.2.4: Cluster's HUBs' Focus Group Meetings	*	*	*	*
KNOWLEDGE PROMOTION DISSEMINATION	3.3.1.: On-line Platform on Blue energy Market & Technology Intelligence	*	*	*	*
	3.3.2.: SMEs Innovation profiling	*		*	
CAPACITY BUILDING	3.3.3.: Capacity Building on Entrepreneurship & Technology Transfer	*		*	
	3.3.4: Capacity Building on Markets & MRE Technology applications	*	*	*	*
	3.3.5: Capacity Building on innovation soft-skills development	*		*	
BUSINESS DEVELOPMENT & INTERNATIONALISATION	3.4.1: Blue energy Market driven Innovation Plans	*		*	
	3.4.3: Blue Energy twinning services: joint concepts	*		*	
	3.5.2.: Investor Ready Business Plans through mentoring & pitching services with investors	*			
	3.5.3: Open Innovation Pathway service	*		*	
NETWORKING	3.4.2a: Blue Energy match-making "Team-Up" services (a)	*	*	*	*
	3.4.2b: Blue Energy match-making "Team-Up" services (b)	*	*	*	*
	3.5.1.: Company Missions to end users in Maritime Industries	*		*	
	3.5.4: Study Visits to installations	*	*	*	*
COMMUNICATION & SOCIAL ACCEPTANCE	3.6.1 Workshop on Spatial planning , Coastal Zone management and social acceptance of MRE	*	*	*	*
	3.6.2 Workshop on the Environmental impact of MRE in MED coastal, insular and marine areas	*	*	*	*
	2.5.1 Final Conference & Joint exhibition on Blue Energy	*	*	*	*
	2.5.2 Thematic events over the application of MRE technologies in key market sectors	*	*	*	*
	2.5.3 Transnational Forum on MRE and Blue Energy	*	*	*	*

**External Expertise required:** HUBs might take advantage of external expertise to implement the following Tasks.

## EXPERTISE REQUIRED

### HUB MANAGEMENT

- Experience with establishing or developing contacts, including issues like integrating of and fostering exchange between Cluster members
- Experience with lobbying activities with stakeholders or organizing events as well as initiating and bringing forward various kinds of co-operation projects, within and outreaching the Cluster and the HUB
- Knowledge on national innovation policies and R&D frameworks
- Communicative skills and leadership capacity
- Experience and knowledge of the Cluster's specific industry (experience in energy, maritime industries or relevant sectors is an asset)

### INNOVATION / OPEN INNOVATION

- Experience in innovation management, intellectual property fundamentals and commercialization of technologies
- Solid business development, communication and team-working skills, as well as previous experience of scaling up technology and/or taking relevant technology innovation to market within a commercial environment or technology transfer within an academic context.
- Experience in both academia and the commercial sector would be a distinct advantage.

### CAPACITY BUILDING

- Consulting and coaching experience, experience of delivering training through all phases of the innovation Cycle of a project's life time, from project idea to successful exploitation of generated results, such as:
  - Business Development and entrepreneurship
  - Market analysis, Technology Exploitation, Benchmarking of Innovation Performance
  - Business Model Innovation
  - Strategic Collaborations and Open Innovation management
  - Financing paths and Acquisition of financing (e.g. Venture capital, banks, public funds) on behalf of entrepreneurs

### NETWORKING & PROMOTION

- Communication and presentation skills (presentation of the Cluster, the HUB and its members at trade fairs and/or conferences)
- Organization experience for events/workshops to present the Cluster , the HUB and its members
- Organization experience for Matchmaking/partnering events
- Experience in developing information material, website, press releases, publications

### 3.5.2. Provision of Services: Communicating the Message

All key actors (SMEs members, Large firms, Public Authorities, Research bodies, civil society) in order to be active and engaged in HUB activities should be convinced that will have something to gain from participating in HUB activities.

#### BENEFITS FOR SMES MEMBERS (PER HUB)

- ❑ Have access to **advanced information** on Blue Energy through the on-line platform, including market foresights and trends, articles and reports, Technology Offers and Technology Requests, which, on an individual basis, would be expensive, scattered or inaccessible.
- ❑ Find **complementary skills and expertise** among the participating actors of the HUB and the Cluster to excel their organization, and thus be able to access opportunities to speed-up their innovation's time to market; paths to new sources of funding and access to new markets, exploiting the synergies and the network effect.
- ❑ **Increase skills & competences** and develop capabilities to face entrepreneurial challenges, innovate in products, services or strategies, access international markets, train their staff and develop partnerships through participating in Regional Capacity Building Seminars.
- ❑ Being able to **innovate through strategic cooperations** exploiting the opportunity to establish contacts with key players of the Blue Energy sector in an open and flexible context within the HUB and the Cluster and take part in individual and collaborative Open Innovation projects.
- ❑ **Promote their technologies and offerings** to potential recipients, co-developers and investors in the Mediterranean Blue Energy area through the HUB and Cluster participating actors' networks.
- ❑ Take advantage of dedicated & **targeted active technology transfer activities**, aiming to promote selected technologies identified to meet actual technology needs of the Maritime Industry, through direct visits and presentations and actively seek for creation of partnerships, development of business matches, licensing in/out, and creation of spin-offs.
- ❑ Opportunities to **actively participate in Match-Making Events** in regional and international level aiming to bring together companies, technology centers, research and development institutes, research laboratories, universities and private researchers offering innovative technologies and know-how, looking for technological solutions or searching for partners for the European R&D projects.
- ❑ Have **access to advanced expertise** for the enhancement of the innovation and exploitation potential of their Blue Energy related technology, through dedicated support for the formulation and/or promotion of their technology profile, able to address the needs of the areas involved, which can have substantial impact on productivity and profits.
- ❑ Benefit from a **strong marketing and quality image** of the exclusive Cluster on Blue Energy and, through this image, increase the visibility and exposure of their business.
- ❑ Get the **recognition of being one of the pioneer** organizations working towards unlocking Blue Energy potential.

## BENEFITS FOR LARGE FIRMS (PER HUB)

Involvement of large companies in Cluster projects. Large companies should be involved in the project for several reasons:

- They are important players in the infrastructure and important local actors;
- They are important in promoting innovation among SMEs;
- They can sometimes function as technology suppliers;
- They generally have a good overview of the business community in the region.

PELAGOS offering:

- ❑ Put roots in a Regional Blue Energy HUB where there is already a **significant knowledge base** opening **new opportunities for open innovation and strategic cooperations**, to get supplemented by the power of small, innovative growth companies and thus creating growth and getting access to emerging markets.
- ❑ Get advantage of the opportunities for increased **talent attraction** and development in regional, national and cross border level as well as between businesses located nearby.
- ❑ Benefit from a **quality image** of being among the stakeholders of the Blue Energy Cluster and, through this image, increase the visibility and exposure of their business as blue energy business innovation and economic growth boosters

## BENEFITS FOR PUBLIC AUTHORITIES (PER HUB)

- ❑ Get the **state of the art on the technology** and deployment status, solutions, experiences from other countries and challenges anticipated.
- ❑ Understand the **Blue Energy research, innovation and business landscape** with its strengths and weaknesses, thus better understand the local, regional and national potential and better design their policies on economic development.
- ❑ Understand the potential for international competitiveness of the Mediterranean Blue Energy Cluster and the local HUB and identify, prioritize and justify related **policy efforts** to accelerate economic growth and the region's attractiveness.
- ❑ Validate and communicate **EU's Blue Growth strategy** and related **smart specialization strategies**.
- ❑ Increase their capacity to operate efficiently in a **Cluster environment** - both in a national level, as well as across borders - taking advantage of growth opportunities as a result of joint activities.
- ❑ Raising local, regional and national skills and **encouraging links and collaboration** between business, academia and society as well as facilitating the development of Clusters.

#### BENEFITS FOR RESEARCH BODIES (PER HUB)

- ❑ Be enabled to cooperate in **exchange of scientific knowledge and information** and constantly share expertise about the advancements in the fields of Blue energy and related sectors' technologies and applications.
- ❑ Benefit from **joint academic and business opportunities** for open innovation and maximize the efficient exploitation and commercialization of relevant technologies and research results.
- ❑ Better position and facilitate **new spinoffs** formulation or growth of existing ones through the discovery of new submarkets of Blue Energy innovation.

#### BENEFITS FOR CIVIL SOCIETY (PER HUB)

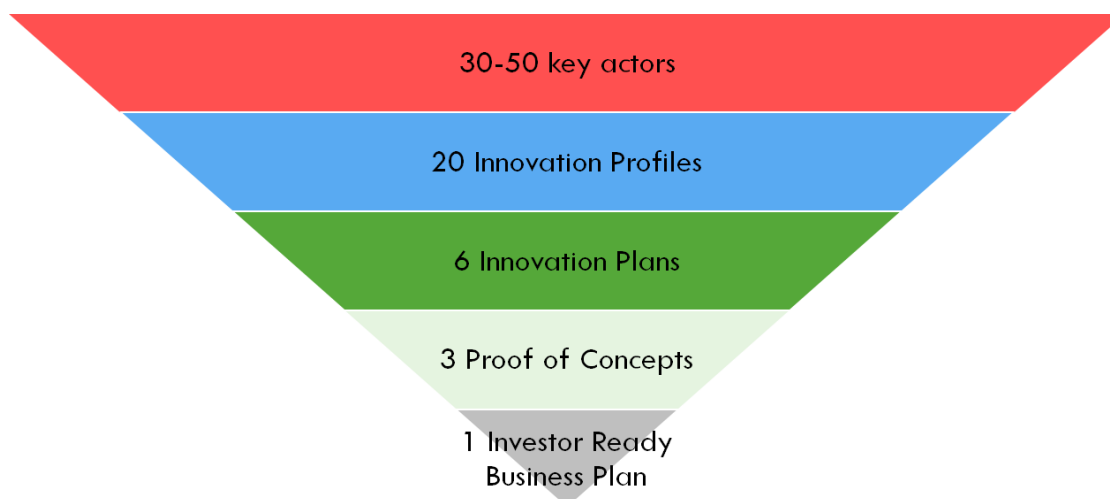
- ❑ Society as users and appliers of knowledge will be able to **contribute** with a region-specific context and experiences to the development and deployment of Blue Energy innovations.
- ❑ Society will be enabled to propose new types of innovations to **address their needs**, connecting users with their stakeholders across industry, academia or policy makers.
- ❑ Society will be able to **provide key feedback** to business, innovation and technology development and exploitation as well as strategy formulation and decision making, resulting in socially accountable as well as socially acceptable practices and policies.



### The funnel scheme: Rationale

Considering the restrictions of the PELAGOS project including budget resources and time allocation as well as the fact that the PELAGOS Cluster on Blue Energy and the operation of its HUBs is under pilot phase, in order to achieve the successful operation and performance of the HUBs, a restricted number of actors may participate in the HUB activities. By this way, as described in the funnel scheme presented in the following Figure, each HUB is considered to reach a specific maximum number of actors (30-50 actors), while from those a specific number of actors will be further selected to participate in some specific support services of the HUB. By this, way the operation and performance of each HUB will be more effective and efficient.

More specifically, from the 30-50 key actors initially selected and approached to participate in the HUB, 20 from those will be further selected to receive support in order to develop their Innovation profile, in continuation 6 of them will be further selected to receive support to develop their Innovation Plan, in continuation 3 of them will further selected to be linked with RTOs and supported to joint develop their proof of concept on BE and finally, 1 of them will be further selected to be supported to develop its Investor Ready Business Plan. The suggested criteria for the further selection of those to participate in the specific services are described under the following sections.



**Figure 15:** HUB services funnel scheme

### 3.5.3. Blue Energy Cluster & Cluster's HUBs demonstration events

SERVICE DESCRIPTION: Blue Energy Cluster & Cluster's HUBs demonstration events CODE: 3.2.3				
BENEFICIARIES	PRIVATE	PUBLIC	RTD	USERS
GOAL	The aim of the service is to officially launch the HUB and its services as well as ensure the desired visibility to local stakeholders.			
OCCURENCE	1 EVENT per HUB			
WORKING DEFINITION	DEMONSTRATION EVENT: An event during which the attendants will be informed about the HUB and its services.			
SERVICE DESCRIPTION	1 event will be organized by each Cluster's HUB in the local area (region or country) to demonstrate the HUB and how to use the services offered. Key actors and local stakeholders will be informed by the HUB Coordinator and other experts. These events will officially launch the pilot activities.			
RESOURCES	<b>60 attendants</b> to the Event, <b>1 expert</b> as speaker, 1 ASP/SME/OTHER to attend the event			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Agenda</li> <li>○ Event dissemination (press release, website, invitation emails, communication material etc.)</li> <li>○ Presentations and handouts</li> <li>○ Event management (venue, catering, speakers, facilities, logistics etc.)</li> <li>○ Registration list</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Q&amp;A</li> <li>○ Notes</li> <li>○ Post-event activities (Minutes, 'thank you' emails, dissemination etc.)</li> </ul>			
INDICATIVE TOPICS	<ul style="list-style-type: none"> <li>➤ PELAGOS project</li> <li>➤ Presentation of the HUB (services, Structure, MRE, maritime sector)</li> <li>➤ Other related topics: MRE, Green Entrepreneurship, Business in Blue Energy sector, Clusters and networks supporting business environment and SMEs, key local maritime sectors</li> <li>➤ How to become member of the HUB (criteria, process)</li> </ul>			
TIPS	<ul style="list-style-type: none"> <li>✓ Start the preparatory activities one month before the event</li> <li>✓ Arrive early to the venue (90 min before) and Set everything up</li> <li>✓ One day before go to the venue and check if everything is ready</li> <li>✓ Make everybody feel invited and comfortable during the event</li> </ul>			

### 3.5.4. Cluster's HUBs' Focus Group Meetings

SERVICE DESCRIPTION: Cluster's HUBs' Focus Group Meetings CODE: 3.2.4				
BENEFICIARIES	PRIVATE	PUBLIC	RTD	USERS
GOAL	The aim of the service is the monitoring of the HUB activities as well as providing valuable input on the operation of the HUB.			
OCCURENCE	4 FG MEETINGS			
WORKING DEFINITION	FOCUS GROUP: Focus Group, is a group of National experts selected according to their background, expertise and experience that meet regularly in order to discuss, comment and share their knowledge and experiences on a specific subject under the supervision of a facilitator (in our case the HUB Coordinator representative).			
SERVICE DESCRIPTION	Focus Group will meet every 5 months (4 FG meetings on Regional level). The proceedings will assure HUB's performance.			
RESOURCES	1 ASPS/SMES/OTHER to attend the FG			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Agenda</li> <li>○ Invitation of FG members</li> <li>○ Presentations and handouts</li> <li>○ Event management (venue, catering, facilitator, facilities, logistics etc.)</li> <li>○ Registration list</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Notes</li> <li>○ Post-Meeting activities (proceedings, follow-up emails, dissemination etc.)</li> </ul>			
INDICATIVE TOPICS	<ul style="list-style-type: none"> <li>➤ PELAGOS Cluster on Blue energy Methodology</li> <li>➤ The HUB (services, Structure, composition, sector, FG)</li> <li>➤ HUB members</li> <li>➤ Progress of the HUB activities</li> <li>➤ Recommendations of new actors to be approached</li> <li>➤ Recommendations improving HUB operation</li> </ul>			
TIPS	<ul style="list-style-type: none"> <li>✓ Circulate to the members all the documentation concerning the HUB one week before the meeting</li> <li>✓ Arrive early to the venue (90 min before) and Set everything up</li> <li>✓ Inform them about the next meeting</li> <li>✓ Make everybody feel invited and comfortable</li> <li>✓ Keep discussion ongoing encouraging the exchange of experiences</li> </ul>			

### 3.5.5. SMEs Innovation profiling

SERVICE DESCRIPTION: SMEs Innovation profiling			CODE: 3.3.2	
BENEFICIARIES	PRIVATE		RTD	
GOAL	The aim of the service is to increase the skills of National member SMEs or and researchers on BE, support them estimate the TRL of their technology and assess their potential on BE.			
OCCURRENCE	20 AUDITS per HUB			
WORKING DEFINITION	INNOVATION PROFILE: Is an up-to 5 pages document presenting the name of the project promoter, contact data, MRE sub-sector of its project, brief description of the activities and services of the SME, brief description of its idea or project or technology offered on MRE, brief description of SME experience in the sector, short description of the innovation of the idea/project/product/technology, the main objectives of the idea/project/product/technology, what kind of cooperation or partners the SME is looking for, and what is the estimated total amount requested.			
SERVICE DESCRIPTION	<b>Support services</b> profiling of the Innovation potential of SMEs & estimation of readiness level of their technologies (TRL). This is a direct service of the Cluster's HUBs offered to their SMEs members (20 audits per HUB).			
RESOURCES	-			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Select 20 SME-members to offer the service</li> <li>○ Start the selection process one month before the delivery of service</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Schedule a meeting/audit with them</li> <li>○ Notes</li> <li>○ Photos</li> <li>○ Co-develop with the SMEs their Innovation Profile</li> <li>○ Post-service activities (Minutes, follow-up, 20 Innovation Profiles etc.)</li> <li>○ Offer your services as consultants</li> </ul>			
SELECTION CRITERIA	<ul style="list-style-type: none"> <li>➤ TEAM: Dynamic teams in terms of i) capacities and expertise, ii) existing partners and network, iii) willingness for skills improvement and learning.</li> <li>➤ CLARITY: Relevance of the idea/technology/product to the blue energy sector or other related sectors that are strong in the area.</li> <li>➤ TECHNOLOGY/SOLUTION/IDEA: TRL of the solution or product development phase.</li> <li>➤ INNOVATION: The innovation/technology/idea addresses a problem in a novel or promising way in relation to the State-of-the art.</li> <li>➤ EXPECTED IMPACT: Expected impact of innovations in terms of i) addressing a specific problem or real market need; ii) size of the market addressed.</li> </ul>			

### 3.5.6. Capacity Building on Entrepreneurship & Technology Transfer

SERVICE DESCRIPTION: Capacity Building on Entrepreneurship & Technology Transfer CODE: 3.3.3				
BENEFICIARIES	PRIVATE		RTD	
GOAL	The aim of the service is to increase the skills and capacities of staff of mainly SMEs, startups, spinoffs and other National stakeholders on Entrepreneurship and Technology Transfer.			
OCCURRENCE	1 SEMINAR per HUB			
WORKING DEFINITION	TRAINING CAPACITY BUILDING SEMINAR: Seminar targeted to develop skills and competencies of the attendants on a specific topic using group work exercises, case studies, consulting and training techniques.			
SERVICE DESCRIPTION	<b>Training Seminars</b> on Entrepreneurship, Innovation & Technology Transfer organized in Cluster's HUBs (6 in total) aiming to build SMEs' technical, commercial, financial & legal skills related to innovation & technology transfer.			
RESOURCES	<b>30 attendants</b> of the seminar, <b>2 experts</b> as speakers			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Agenda</li> <li>○ Seminar dissemination (press release, website, invitation emails etc.)</li> <li>○ Presentations/Training material and handouts</li> <li>○ Event management (venue, catering, speakers, facilities, logistics etc.)</li> <li>○ Registration list</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Notes</li> <li>○ Group work exercises, case studies, consulting, training</li> <li>○ Post-event activities (Minutes, dissemination etc.)</li> <li>○ Self-assessment questionnaire</li> <li>○ Certificate of attendance</li> </ul>			
INDICATIVE TOPICS	<ul style="list-style-type: none"> <li>➤ Business Model Canvas</li> <li>➤ Business Plan</li> <li>➤ Establishing a business/startup</li> <li>➤ Project Management</li> <li>➤ Intellectual property</li> <li>➤ Patents and Licensing</li> <li>➤ Negotiations</li> <li>➤ Commercialization</li> <li>➤ Technology transfer and Technology transfer agent</li> <li>➤ Open Innovation</li> <li>➤ Pitching skills</li> </ul>			

### 3.5.7. Capacity Building on Markets & MRE Technology applications

SERVICE DESCRIPTION: Capacity Building on Markets & MRE Technology applications CODE: 3.3.4				
BENEFICIARIES	PRIVATE	PUBLIC	RTD	USERS
GOAL	The aim of the service is to increase the technical knowledge of staff of mainly SMEs, startups, spinoffs and other National stakeholders on MRE.			
OCCURRENCE	1 SEMINAR per HUB			
WORKING DEFINITION	SCIENTIFIC CAPACITY BUILDING SEMINAR: Seminar targeted to increase the knowledge and technical expertise of the attendants on a specific scientific / sector-based topic using education and training techniques.			
SERVICE DESCRIPTION	<b>Scientific Seminars</b> organized in Cluster's HUBs (6 in total) aiming to increase the capacity of SMEs in technological advances, challenges, future needs, new trends and prospects in the area of MREs & market applications of clean technologies.			
RESOURCES	<b>30 attendants</b> of the seminar, <b>2 experts</b> as speakers			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Agenda</li> <li>○ Seminar dissemination (press release, website, invitation emails etc.)</li> <li>○ Presentations/Training material and handouts</li> <li>○ Event management (venue, catering, speakers, facilities, logistics etc.)</li> <li>○ Registration list</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Notes</li> <li>○ Post-event activities (Minutes, dissemination etc.)</li> <li>○ Self-assessment questionnaire</li> <li>○ Certificate of attendance</li> </ul>			
INDICATIVE TOPICS	<ul style="list-style-type: none"> <li>➤ State of the Art of MRE</li> <li>➤ Existing Industrial and Technological Capabilities</li> <li>➤ MRE value chain</li> <li>➤ European and National vision to the Sector and future prospects</li> <li>➤ Associated challenges to harnessing marine energy and solutions and existing opportunities</li> <li>➤ Technical specifications and characteristics of MRE technologies</li> <li>➤ Potential applications of MRE technologies to maritime markets according to the National economic environment</li> </ul>			

### 3.5.8. Capacity Building on innovation soft-skills development

SERVICE DESCRIPTION: Capacity Building on innovation soft-skills development CODE: 3.3.5				
BENEFICIARIES	PRIVATE		RTD	
GOAL	The aim of the service is to increase the skills and capacities of staff of mainly SMEs, startups, spinoffs and other National stakeholders on soft-skills of Entrepreneurship.			
OCCURRENCE	1 SEMINAR per HUB			
WORKING DEFINITION	TRAINING CAPACITY BUILDING SEMINAR: Seminar targeted to develop skills and competencies of the attendants on soft-skills using group work exercises and training techniques.			
SERVICE DESCRIPTION	<b>Training Seminars</b> organized in Cluster's HUBs (6 in total) aiming to build innovation soft-skills to SMEs (business planning, HR, finance, marketing, innovation management, networking & partnering, decision making & problem solving etc.).			
RESOURCES	<b>30 attendants</b> of the seminar, <b>2 experts</b> as speakers			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Agenda</li> <li>○ Seminar dissemination (press release, website, invitation emails etc.)</li> <li>○ Presentations/Training material and handouts</li> <li>○ Event management (venue, catering, speakers, facilities, logistics etc.)</li> <li>○ Registration list</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Notes</li> <li>○ Group work exercises, training</li> <li>○ Post-event activities (Minutes, dissemination etc.)</li> <li>○ Self-assessment questionnaire</li> <li>○ Certificate of attendance</li> </ul>			
INDICATIVE TOPICS	<ul style="list-style-type: none"> <li>➤ Strategic Planning</li> <li>➤ Human Resources Management</li> <li>➤ Finance</li> <li>➤ Marketing and Sales</li> <li>➤ Innovation management</li> <li>➤ Networking &amp; partnering</li> <li>➤ Decision making</li> <li>➤ Problem solving, Time management</li> <li>➤ Creative Thinking</li> <li>➤ Leadership, Team Building and Motivation</li> <li>➤ Presentation and communication skills</li> </ul>			



### 3.5.9. Blue energy Market driven Innovation Plans

SERVICE DESCRIPTION: Blue energy Market driven Innovation Plans CODE: 3.4.1				
BENEFICIARIES	PRIVATE		RTD	
GOAL	The aim of the service is to support National SMEs and researchers to identify new business opportunities and ideas on MRE and elaborate their Innovation Plan targeting specific Blue energy market needs.			
OCCURENCE	6 PLANS per HUB			
WORKING DEFINITION	<p>INNOVATION PLAN: A Blue energy Market driven Innovation Plan is a statement of a SME for the design of its Business Idea, driven by Blue energy Market, presenting goals, company/team and action plans for reaching these goals etc. We could say that this Plan is a shorter version of a Business Plan. This Idea may refer to new business opportunities emerging from technological innovation, new business model, product/market diversification etc.</p>			
SERVICE DESCRIPTION	<p><b>Coaching &amp; mentoring services</b> offered to most promising Innovative SMEs, to identify new business opportunities emerging from technological innovation, new business models, market diversification (6 Blue energy Market driven Innovation Plans per HUB).</p>			
RESOURCES	-			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Select 6 SME-members to offer the service</li> <li>○ Start the selection process one month before the delivery of service</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Schedule a meeting with them</li> <li>○ Notes</li> <li>○ Photos</li> <li>○ Co-develop with the SMEs their Innovation Plan</li> <li>○ Post-service activities (Minutes, follow-up, 6 Innovation Plans etc.)</li> <li>○ Offer your services as mentors &amp; coaches</li> </ul>			
SELECTION CRITERIA	<ul style="list-style-type: none"> <li>➤ VALUE PROPOSITION: Description of the solution (product or service concept). Feasibility of the solution, novelty.</li> <li>➤ CUSTOMER BENEFITS: Clear and unique selling proposition addressing identified needs or solving big problems</li> <li>➤ TEAM: The team is complete</li> <li>➤ MARKET &amp; SCALABILITY: Well defined market and exploitation plan</li> <li>➤ BUSINESS POTENTIAL: Target customers. Competition. Barriers.</li> </ul>			

### 3.5.10. Blue Energy twinning services: joint concepts

SERVICE DESCRIPTION: Blue Energy twinning services: joint concepts CODE: 3.4.3				
BENEFICIARIES	PRIVATE		RTD	
GOAL	The aim of the service is to support National SMEs work with RTOs and jointly develop POCs / high risks project on MRE.			
OCCURENCE	3 POCs per HUB			
WORKING DEFINITION	PROOF OF CONCEPT: Proof of concept (POC) or High risk R&D concepts is a statement for the realization/demonstration of a certain market oriented marine renewable (blue) energy Idea/R&D project/ concept in order to validate its feasibility and verify that this concept has practical potential. The POCs/High risk R&D concepts are co-designed and co-developed by SMEs together with RTOs (Research and Technology Organizations).			
SERVICE DESCRIPTION	<b>Facilitation support services</b> for joint co-work of selected SMEs with RTOs (National or/& foreign) in order to jointly design market oriented marine renewable energy concepts (Proof of Concepts) or high risk R&D concepts (3 concepts/HUB).			
RESOURCES	-			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Select 3 SME-member to offer the service</li> <li>○ Select RTOs that would be interested in the Case</li> <li>○ Start the selection process one month before the delivery of service</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Schedule a meeting among the Cases and the RTOs</li> <li>○ Co-develop with the SMEs and the RTOs their POCs</li> <li>○ Post-service activities (Minutes, follow-up, 3 POCs etc.)</li> <li>○ Offer your services as intermediaries</li> </ul>			
SELECTION CRITERIA	<ul style="list-style-type: none"> <li>➤ 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, iv) reasonable potential for scale/business growth</li> <li>➤ FINANCIAL CAPACITY: The total grant value requested is reasonable relative to the scope of activities and timeframe</li> <li>➤ IP: Intellectual properties patented or estimated plan for licensing</li> </ul>			

### 3.5.11. Investor Ready Business Plans through mentoring & pitching services with investors

SERVICE DESCRIPTION: Investor Ready Business Plans through mentoring & pitching services with investors					CODE: 3.5.2
BENEFICIARIES	PRIVATE				
GOAL	The aim of the service is to support National 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.				
OCCURENCE	1 PLAN per HUB				
WORKING DEFINITION	INVESTOR READY BUSINESS PLAN: An Investor Ready Business Plan is a document suitably prepared in order to clearly answer the unique concerns of an investor (Venture capitalists and angel investors) demonstrating that the Business is ready to implement the Idea and the business goals and objectives for the specific project that look for funding are clear. We define as “Pitching” meetings among the SME presenting its investment plan to potential investors.				
SERVICE DESCRIPTION	<b>Mentoring &amp; coaching</b> services to enterprises & SMEs to develop an Investor-Ready Business Plan for high risk projects. Pitching with potential investors will also take place through targeted investment meetings. (1 Investment Plan per HUB).				
RESOURCES	-				
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Select 1 SME-member to offer the service</li> <li>○ Select an investor that would be interested in the Case</li> <li>○ Co-develop with the SME an Investor Ready Business Plan</li> <li>○ Start the selection process one month before the delivery of service</li> </ul>				
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Offer them consulting and mentoring services on how to pitch</li> <li>○ Schedule a meeting among the Case and the investor</li> <li>○ Post-service activities (Minutes, follow-up, 1 Investment Plan etc.)</li> <li>○ Offer your services as mentors &amp; coaches</li> </ul>				
SELECTION CRITERIA	<ul style="list-style-type: none"> <li>✓ SECTOR: The technology is in the priorities in one of the fields of Blue energy</li> <li>✓ MARKET PENETRATION: a time to market shorter than 5 years from the beginning of the project</li> <li>✓ DURATION: maximum project duration of 3 years</li> <li>✓ TRL level: Technology Readiness Level (TRL)&gt; 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)</li> <li>✓ INVESTOR GOALS: Compliance with investor’s goals</li> <li>✓ BUSINESS PLAN: In terms of a clear definition of the i) problem need,</li> </ul>				

	ii) solution, iii) target market, iv) competition, v) added value
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### 3.5.12. Open Innovation Pathway service

SERVICE DESCRIPTION: Open Innovation Pathway service CODE: 3.5.3				
BENEFICIARIES	PRIVATE		RTD	
GOAL	The aim of the service is to promote local technology based opportunities and high risk projects on BE to Large firms outside of MED area & Big European Business Support Organizations.			
OCCURENCE	1 Open Innovation Service per HUB			
WORKING DEFINITION	OPEN INNOVATION: Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology” Henry Chesbrough.			
SERVICE DESCRIPTION	Cluster’s HUBs will act as <b>brokers</b> in order to promote technology based opportunities and high risk projects of enterprises to Large firms outside of MED area & Big European Business Support Organizations (such as KIC Innoenergy).			
RESOURCES	-			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Select 1 SME-member to offer the service</li> <li>○ Select a Large firm/Big EU BSO that would be interested in the Case</li> <li>○ Start the selection process one month before the delivery of service</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Co-develop with the SME an Open Innovation Plan</li> <li>○ Promote and present the Plan to the Large firm/BSO</li> <li>○ Post-service activities (Minutes, follow-up, 1 OI Innovation Plan etc.)</li> <li>○ Offer your services as brokers</li> </ul>			
SELECTION CRITERIA	<ul style="list-style-type: none"> <li>➤ 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.</li> <li>➤ RISK ANALYSIS: In terms of i) availability of required knowledge in the team, ii) technical barriers and mitigation plan</li> <li>➤ 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</li> </ul>			

	<ul style="list-style-type: none"> <li>➤ 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</li> <li>➤ COMPLIANCE WITH ADDITIONAL ORGANIZATIONS REQUIREMENTS</li> </ul>
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### 3.5.13. Blue Energy match-making “Team-Up” services (a)

SERVICE DESCRIPTION: Blue Energy match-making “Team-Up” services (a) CODE: 3.4.2a				
BENEFICIARIES	PRIVATE	PUBLIC	RTD	USERS
GOAL	The aim of the service is to grow National SMEs network in BE through bringing them closer with Regional, National Clients and users.			
OCCURENCE	1 B2B EVENT per HUB			
WORKING DEFINITION	B2B EVENT: A B2B event or Business-to-Business event, refers to scheduled one-to-one meetings, in a place, among SMEs, entrepreneurs, Large firms, Researchers. B2B event mainly targets SMEs who need to either present their technology/product/service to potential clients or look for potential partners for their innovation projects.			
SERVICE DESCRIPTION	<b>Matchmaking services</b> during Regional (6) B2B meetings bringing SMEs closer to Regional & National Clients & users, aiming to grow SMEs network in BE.			
RESOURCES	<b>40 attendants</b> of the seminar, <b>2 experts</b> as speakers, <b>2 ASPS/SMES/Other</b> to attend the event			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Event dissemination (press release, website, invitation emails etc.)</li> <li>○ Event management (venue, catering, B2B meetings schedule, facilities, speakers/experts, logistics etc.)</li> <li>○ Registration list</li> <li>○ Pre-schedule meetings</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Notes</li> <li>○ Post-event activities (Minutes, ‘thank you’ emails, dissemination etc.)</li> </ul>			

<b>INDICATIVE PARTICIPANTS</b>	<ul style="list-style-type: none"> <li>➤ Meetings among national Ports and national Renewable Energy companies</li> <li>➤ Meetings among national companies and national private investors</li> <li>➤ Meetings among national companies</li> <li>➤ Meetings among national companies and national BSOs</li> </ul>
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### 3.5.14. Company Missions to end users in Maritime Industries

SERVICE DESCRIPTION: Company Missions to end users in Maritime Industries CODE: 3.5.1				
BENEFICIARIES	PRIVATE		RTD	
GOAL	The aim of the service is to bring closer National MRE technology donors and receivers into contact satisfying actual local needs for blue energy.			
OCCURENCE	3 COMPANY MISSIONS per HUB			
WORKING DEFINITION	COMPANY MISSIONS: Company missions refer to scheduled meetings among HUBs representatives and MED maritime industries such as Ports, shipyards in order to present, promote and match existing clean technologies & services, offered by HUBs enterprises & SMEs with Industries potential needs.			
SERVICE DESCRIPTION	<b>Company missions</b> matching existing clean technologies & services, offered by enterprises & SMEs, to actual needs of MED maritime industries (i.e. Ports, shipyards) bringing technology donors & receivers into contact.			
RESOURCES	2 experts			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Select the place for the Missions</li> <li>○ Start the preparatory activities one month before the event</li> <li>○ Select expert speakers of the organization</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Q&amp;A</li> <li>○ Notes</li> <li>○ Post- event activities (Minutes, thank you email, follow-up, new opportunities etc.)</li> </ul>			
CASE STUDY	<p>The company Mission could refer to a visit to:</p> <ul style="list-style-type: none"> <li>➤ a Port installation,</li> <li>➤ a shipyard,</li> <li>➤ a shipbuilding/ship repair company</li> <li>➤ a facility for demonstration and testing of projects</li> <li>➤ an Aquaculture installation</li> <li>➤ an energy producer</li> <li>➤ a large manufacturing industry etc.</li> </ul>			



### 3.5.15. Workshop on Spatial planning, Coastal Zone management and social acceptance of MRE

SERVICE DESCRIPTION: Workshop on Spatial planning , Coastal Zone management and social acceptance of MRE CODE: 3.6.1				
BENEFICIARIES	PRIVATE	PUBLIC	RTD	USERS
GOAL	The aim of the service is to bring together all the National actors and stakeholders of Blue Energy in order to exchange information on issues related to MRE capitalizing key findings provided by HUB's operation.			
OCCURENCE	1 WS per HUB			
WORKING DEFINITION	WORKSHOP: An event during which the attendants will be informed and exchange ideas on a particular field of expertise, raise discussions and conclude to specific recommendations.			
SERVICE DESCRIPTION	<b>WSs</b> that will take place on Regional level in order to exchange information on issues related to the deployment of MRE technologies such as: Spatial planning, Coastal Zone management & to increase the social acceptance of BE from end-users & utilities.			
RESOURCES	<b>60 attendants</b> to the event, <b>1 expert</b> as speaker			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Agenda</li> <li>○ Event dissemination (press release, website, invitation emails, communication material etc.)</li> <li>○ Presentations and handouts</li> <li>○ Event management (venue, catering, speakers, experts in the field, facilities, logistics etc.)</li> <li>○ Registration list</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Q&amp;A</li> <li>○ Notes</li> <li>○ Post-event activities (Minutes, dissemination etc.)</li> </ul>			

<b>INDICATIVE TOPICS</b>	<ul style="list-style-type: none"> <li>➤ Introduction to marine spatial planning</li> <li>➤ Ecosystem, sea use management and spatial planning</li> <li>➤ Review of status and trends of MSP activities around MED</li> <li>➤ State of the art on institutional capacity development in relation to the design, implementation and follow-up of MSP processes</li> <li>➤ Legislation and policy framework for spatial planning in MED</li> <li>➤ Societal and environmental issues of the coastal territories process management</li> <li>➤ Recommendations for Coastal Zone management</li> <li>➤ Social and Economic benefits of MRE</li> </ul>
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### 3.5.16. Workshop on the Environmental impact of MRE in MED coastal, insular and marine areas

SERVICE DESCRIPTION: 3.6.15. Workshop on the Environmental impact of MRE in MED coastal, insular and marine areas					CODE: 3.6.2
BENEFICIARIES	PRIVATE	PUBLIC	RTD	USERS	
<b>GOAL</b>	The aim of the service is to bring together all the National actors and stakeholders of Blue Energy in order to exchange information on issues related to the local Environmental impact & benefits of the deployment of MRE capitalizing the key findings provided by the operation of the HUB.				
<b>OCCURENCE</b>	1 WS per HUB				
<b>WORKING DEFINITION</b>	WORKSHOP: An event during which the attendants will be informed and exchange ideas on a particular field of expertise, raise discussions and conclude to specific recommendations.				
<b>SERVICE DESCRIPTION</b>	<b>WSs</b> that will take place on Regional level in order to exchange information on related to the Environmental impact & benefits of the deployment of MRE technologies in MED coastal, insular and marine areas.				
<b>RESOURCES</b>	<b>60 attendants</b> to the event, <b>1 expert</b> as speaker				
<b>PREPARATORY ACTIVITIES</b>	<ul style="list-style-type: none"> <li>○ Agenda</li> <li>○ Event dissemination (press release, website, invitation emails, communication material etc.)</li> <li>○ Presentations and handouts</li> <li>○ Event management (venue, catering, speakers, experts, facilities, logistics etc.)</li> <li>○ Registration list</li> </ul>				
<b>SERVICE DELIVERY</b>	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Q&amp;A</li> </ul>				

	<ul style="list-style-type: none"> <li>○ Notes</li> <li>○ Post-event activities (Minutes, dissemination etc.)</li> </ul>
<b>INDICATIVE TOPICS</b>	<ul style="list-style-type: none"> <li>➤ National and European Legislation and policy framework</li> <li>➤ Natural conditions of MED countries and opportunities for MED and local area</li> <li>➤ Environmental effects of Blue energy development</li> </ul>

## 3.6. INTERNATIONAL CLUSTER LEVEL SERVICES

### 3.6.1. Coordination and co-operation under joint activities: setting the message

A set of activities on International level will be implemented and coordinated by other members of the Cluster Management team instead of the HUB Coordinators, especially CRES, ENEA and TVT-PMM.

Close inter-hub coordination among the HUB Coordinators and those partners should be assured by:

- the Cluster Management team
- the responsible partners for organizing the International activities through inter-hub coordination and collaboration
- arranging joint activities and attendance at each others' events/study visits, as outlined below.

#### ROLE OF THE HUB COORDINATORS UNDER JOINT ACTIVITIES

HUB Coordinators will work with other members of the Cluster Management Team by contributing with the following tasks:

- Assign SMEs, spinoffs, startups and other actors members of the HUB to attend International events (International B2B event, Final Conference and Exhibition, MRE Forum, Thematic events, Study Visits)
- Be responsible for the assigned actors from their selection to their stay and active involvement in those events
- Identify as early as possible the targeted maritime sector of the Thematic events and invite where necessary experts to attend those events
- Assign representatives of the HUB Coordinator to attend the International events (International B2B event, Final Conference and Exhibition, MRE Forum, Thematic events, Study Visits)
- Provide material, input and contribution for the regular content update of the PELAGOS on-line platform on blue energy
- Select and elaborate technology offers and requests or other profiles from their HUB to be promoted through the on-line platform

### 3.6.2. On-line Platform on Blue energy Market & Technology Intelligence

SERVICE DESCRIPTION: On-line Platform on Blue energy Market & Technology Intelligence				
		CODE: 3.3.1		
BENEFICIARIES	PRIVATE	PUBLIC	RTD	USERS
GOAL	The aim of the service is to provide up-to-date information on MRE, raise awareness on the activities of the HUB and the Cluster, promote technologies and project ideas on MRE, bring closer all the key actors of BE in MED and support open innovation and technology transfer and increase capacity building on the sector.			
OCCURENCE	1 PLATFORM			
WORKING DEFINITION	ON-LINE PLATFORM: A web-based platform including specifically designed tools and modules to support the operation of a Cluster.			
SERVICE DESCRIPTION	<b>Web-based platform</b> hosting web-based services including catalogue of key actors in BE (by country, type), market & technology intelligence Module, e-learning toolkit, Technology offers & requests tool, RSS tool, Legal/Policy Alerts tool, funding opportunities.			
RESOURCES	-			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Sitemap and URL</li> <li>○ Tools &amp; Modules (RSS, News, Marketplace, Search, Social media etc.)</li> <li>○ Terms of use</li> <li>○ Members area</li> <li>○ Dissemination</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Technology Offers &amp; Technology Requests (Marketplace)</li> <li>○ Members profile</li> <li>○ eLearning Training Modules</li> <li>○ Content</li> <li>○ “private” information of the members, Terms of use</li> </ul>			
EXAMPLES	<ul style="list-style-type: none"> <li>➤ NineSights (Technology problem solving platform) <a href="https://ninesights.ninesigma.com/">https://ninesights.ninesigma.com/</a></li> <li>➤ Innocentive (CrowdSolving OI problem solving Platform) <a href="https://www.innocentive.com/">https://www.innocentive.com/</a></li> <li>➤ Yet2.com Market Place (IP Marketplace) <a href="http://marketplace.yet2.com/app/about/home">http://marketplace.yet2.com/app/about/home</a></li> <li>➤ Skipso (Open Innovation platform) <a href="http://skipsolabs.com/">http://skipsolabs.com/</a></li> <li>➤ Camtech Innovation Platform (Accelerator for global health techs) <a href="http://camtechmgh.org/">http://camtechmgh.org/</a></li> <li>➤ Innoget (Research intermediary platform) <a href="https://www.innoget.com/">https://www.innoget.com/</a></li> </ul>			

### 3.6.3. Blue Energy match-making “Team-Up” services (b)

SERVICE DESCRIPTION: Blue Energy match-making “Team-Up” services (b) CODE: 3.4.2b				
BENEFICIARIES	PRIVATE	PUBLIC	RTD	USERS
GOAL	The aim of the service is to increase the Extroversion of National SMEs and researchers on BE through bringing them closer with Regional, National, International Clients and users.			
OCCURENCE	1 B2B EVENT			
WORKING DEFINITION	B2B: A B2B event or Business-to-Business event, refers to scheduled one-to-one meetings, in a place, among SMEs, entrepreneurs, Large firms, Researchers. B2B event mainly targets SMEs who need to either present their technology/product/service to potential clients or look for potential partners for their innovation projects.			
SERVICE DESCRIPTION	<b>Matchmaking services</b> during an International (1) B2B meeting bringing SMEs closer to International Clients & users, aiming to grow SMEs network in BE & increase their extroversion.			
RESOURCES	<b>40 attendants</b> of the seminar, <b>2 ASPs/SMEs/Other</b> to attend the event			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Event dissemination (press release, website, invitation emails etc.)</li> <li>○ Selection of companies to attend the event</li> <li>○ B2B meetings schedule</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Notes</li> <li>○ Post-event activities (Minutes, ‘thank you’ emails, follow-up, dissemination etc.)</li> <li>○ Pre-schedule meetings</li> </ul>			
INDICATIVE PARTICIPANTS	<ul style="list-style-type: none"> <li>➤ Meetings among international and MED Ports and MED Renewable Energy companies</li> <li>➤ Meetings among MED companies and international private investors</li> <li>➤ Meetings among MED companies</li> <li>➤ Meetings among MED companies and international BSOs</li> </ul>			

### 3.6.4. Study Visits to installations

SERVICE DESCRIPTION: Study Visits to installations			CODE: 3.5.4	
BENEFICIARIES	PRIVATE	PUBLIC	RTD	USERS
GOAL	The aim of the service is to increase the capacities and internationalisation of the Cluster and Cluster Management Team including HUB Coordinator through bringing them closer to real installations of MRE in MED area.			
OCCURENCE	3 STUDY VISITS			
WORKING DEFINITION	STUDY VISIT: Is a visit by an individual or group to one or more countries for knowledge exchange. Study Visits provide an opportunity for the Cluster Management team and other stakeholders to obtain practical information and experiences from key end users or large firms players in the field. Study Visits allow for a high level of interaction among participants and exposure to the topic of study.			
SERVICE DESCRIPTION	<b>On-site visits</b> to successful marine energy projects/installations in MED (Spain, Portugal, France) having the form of active knowledge transfer, among key experts & Cluster HUBs' Team contributing to the internationalization of Cluster.			
RESOURCES	<b>3-7 ASPs/SMES/OTHER</b> to attend the study visits			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Selection of HUB's Team representatives</li> <li>○ Selection of companies/other to attend the Study Visits</li> <li>○ Start the selection of the companies/other to attend the Study Visits one month before</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Notes</li> <li>○ Post-visit activities (Minutes, new opportunities etc.)</li> <li>○ Make your companies/other invited feel invited and comfortable</li> <li>○ Make sure the selected ones will offer an added value to the visited installation and gain from this visit (win-win)</li> </ul>			
EXAMPLES	<p>The Study Visit could refer to:</p> <ul style="list-style-type: none"> <li>➤ Floating offshore pilot farms</li> <li>➤ Ocean current energy conversion systems located in lagoons</li> <li>➤ Wave energy converters in islands and coasts</li> <li>➤ Full-scale prototypes installed in Ports</li> <li>➤ Offshore ocean thermal energy projects off the coast</li> <li>➤ Osmotic power plants</li> <li>➤ Offshore installation vessels etc.</li> </ul>			

### 3.6.5. Final Conference & Joint exhibition on Blue Energy

SERVICE DESCRIPTION: Final Conference & Joint exhibition on Blue Energy CODE: 2.5.1				
BENEFICIARIES	PRIVATE	PUBLIC	RTD	USERS
GOAL	The aim of the service is give the opportunity to National SMEs, spinoffs and startups to promote their technologies, products and services on Blue Energy to potential stakeholders, clients and partners from MED area as well as to other actors, increase their network and exchange their expertise on MRE on International level.			
OCCURENCE	1 CONFERENCE			
WORKING DEFINITION	CONFERENCE & EXHIBITION: A formal meeting of stakeholders and experts in a particular topic usually accompanied with an exhibition where participants may exhibit/show/demonstrate their products/services to potential clients.			
SERVICE DESCRIPTION	<b>Project's Final Conference</b> where PPs will present & share project results to EU policy makers, financial institutions & other stakeholders. A joint exhibition will follow with enterprises presenting their MRE products, services & technologies to attendants.			
RESOURCES	<b>2 ASPs/SMES/OTHER</b> to attend the event, <b>2 experts</b> as speakers			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Event dissemination (press release, website, invitation emails etc.)</li> <li>○ Selection of companies/other to attend the event as Exhibitors</li> <li>○ Presentations</li> <li>○ Speakers</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Notes</li> <li>○ Post-event activities (Minutes, 'thank you' emails, dissemination etc.)</li> </ul>			
INDICATIVE TOPICS	<ul style="list-style-type: none"> <li>➤ Market perspectives of MRE in the MED</li> <li>➤ Link between blue energies and other maritime sectors (aquaculture, ship building and ship repair etc.)</li> <li>➤ Needs in terms of investments, and current use of available opportunities</li> <li>➤ Coordination between public and private investment sources</li> <li>➤ Examples of demonstration projects in MED</li> <li>➤ The MRE potential in MED and the local natural conditions</li> <li>➤ Funding opportunities for the marine industry</li> </ul>			



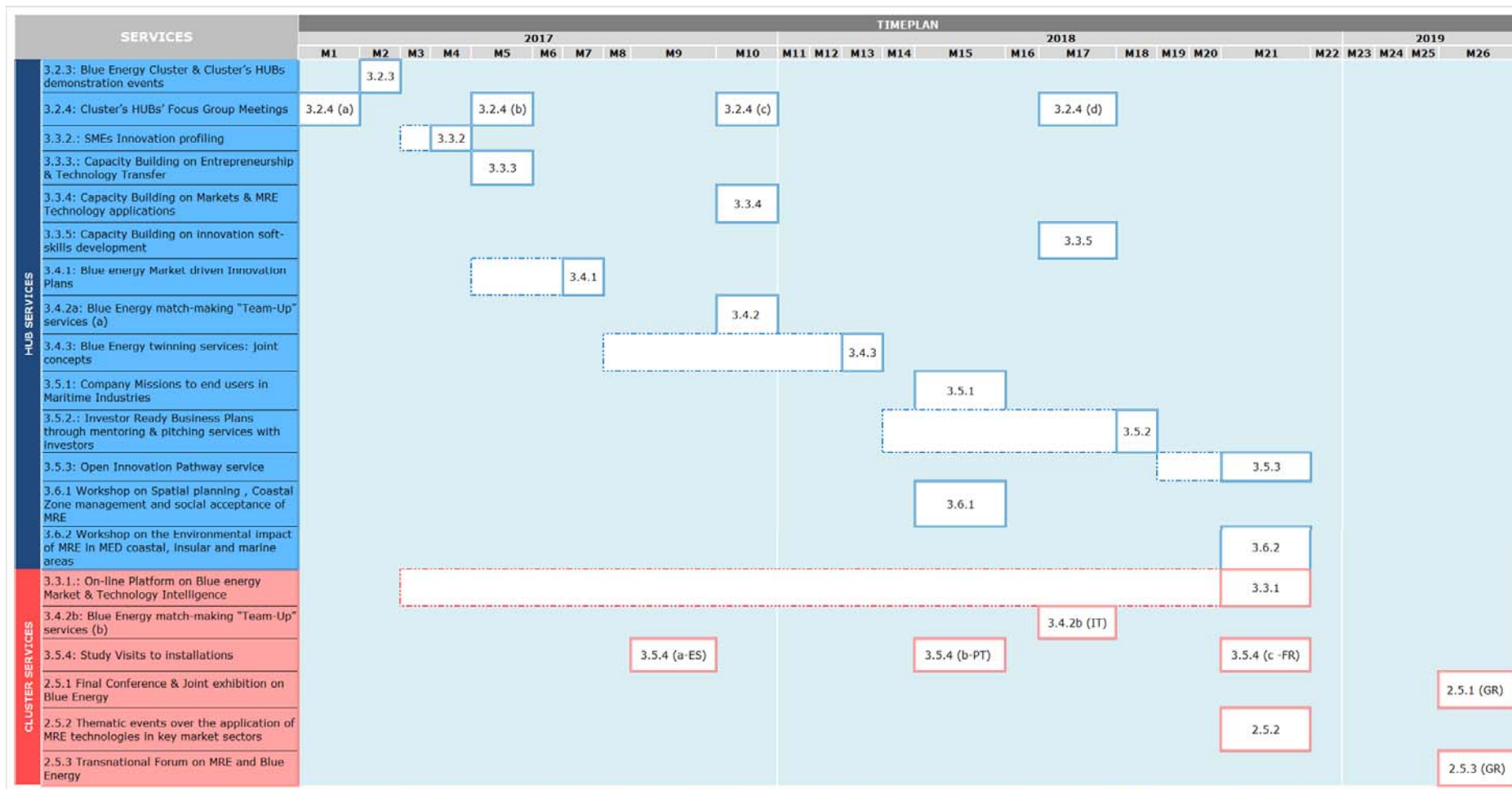
### 3.6.6. Thematic events over the application of MRE technologies in key market sectors

SERVICE DESCRIPTION: Thematic events over the application of MRE technologies in key market sectors				
			CODE: 2.5.2	
BENEFICIARIES	PRIVATE	PUBLIC	RTD	USERS
GOAL	The aim of the service is to exchange information among all actors on issues related to the potential, impact & benefits of the deployment of MRE technologies to key National maritime market sectors (tourism, aquaculture, energy, shipping, shipbuilding) considering the local MRE potential, morphology, economy etc.			
OCCURENCE	6 EVENTS			
WORKING DEFINITION	THEMATIC EVENT: Event targeted to a particular maritime sector of MRE considering the local particularities.			
SERVICE DESCRIPTION	<b>Thematic Regional days</b> where potential application of Blue Energy technologies to key MED maritime market sectors will be presented & shared with MED Policy makers & other stakeholders by PPs.			
RESOURCES	<b>2 ASPs/SMES/OTHER</b> to attend the event, <b>2 experts</b> as speakers			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Agenda</li> <li>○ Targeted maritime market sector</li> <li>○ Event dissemination (press release, website, invitation emails, communication material etc.)</li> <li>○ Presentations</li> <li>○ Event management (venue, catering, speakers, facilities, logistics etc.)</li> <li>○ Registration list</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Q&amp;A</li> <li>○ Notes</li> <li>○ Post-event activities (Minutes, dissemination etc.)</li> </ul>			
INDICATIVE TOPICS	<ul style="list-style-type: none"> <li>➤ Market perspectives applying MRE technologies to maritime sectors</li> <li>➤ Benefits of the deployment of MRE technologies to local maritime market sectors</li> </ul>			

### 3.6.7. Transnational Forum on MRE and Blue Energy

SERVICE DESCRIPTION: Transnational Forum on MRE and Blue Energy CODE: 2.5.3				
BENEFICIARIES	PRIVATE	PUBLIC	RTD	USERS
GOAL	The aim of the service is to raise discussions and exchange of experiences and views on MRE sector among key experts and actors in the field coming from the whole participating MED area.			
OCCURENCE	1 FORUM			
WORKING DEFINITION	FORUM: A formal discussion meeting of key experts and actors in a particular topic.			
SERVICE DESCRIPTION	<b>Transnational Forum</b> on Blue Energy where project representatives will discuss & share experiences with EU policy makers, financial institutions & other stakeholders over the development & deployment of MRE & Blue energy sector in MED.			
RESOURCES	<b>2 ASPS/SMES/OTHER</b> to attend the event, <b>1 expert</b> as speaker			
PREPARATORY ACTIVITIES	<ul style="list-style-type: none"> <li>○ Event dissemination (press release, website, invitation emails etc.)</li> <li>○ Presentations</li> <li>○ Experts</li> </ul>			
SERVICE DELIVERY	<ul style="list-style-type: none"> <li>○ Photos</li> <li>○ Notes</li> <li>○ Post-event activities (Minutes, ‘thank you’ emails, dissemination etc.)</li> </ul>			
INDICATIVE TOPICS	<ul style="list-style-type: none"> <li>➤ Policy recommendations over the MRE sector</li> <li>➤ Priorities and action plans for supporting businesses of blue energy sector</li> <li>➤ Future initiatives for enhancing blue energy</li> </ul>			

### 3.7. TIMEPLAN



## 4. CONCLUSIONS

Considering the high renewable energy resource potential of European seas, the continuous advancement of new technological achievements for the exploitation of this potential, the challenges of blue energy value chain as well as the important role of Clusters for addressing those challenges and creating new business opportunities for innovations, competitiveness, blue growth and development, PELAGOS project identified the emergence for developing a **Transnational Mediterranean Innovative Cluster in Blue Energy**. More specifically, this Cluster foresees to advance the industrial business of the blue energy sector in the Mediterranean area to deal with the challenges and exploit the opportunities and potential of Blue energy, by connecting Regions and fostering linkages among all the key actors of the blue energy value chain, with emphasis on SMEs, that will develop a shared understanding of the challenges and collectively devise workable solutions for blue energy.

To do this, the current document starts with presenting the specific particularities and limitations to be considered before setting up a PELAGOS Transnational Mediterranean Innovative Cluster in Blue Energy with emphasis on the composition of a PELAGOS Blue Energy Cluster. More specifically, considering that the Cluster focuses on businesses, it is proposed that the key actors of the PELAGOS Cluster on Blue Energy could be both companies that are already active in the Marine Renewable Energy Value Chain (Power suppliers, Technology developers, Manufacturers and component suppliers, Electricity network operators, Development services, Supporting technology providers, Engineering and construction companies, Operations and maintenance companies) as well as companies that can potentially become members of the MRE value chain in the future. Furthermore, other actors of the **4Helix Model** operating in blue energy related sectors are envisaged as key actors of the Cluster including: Research bodies (Research Institutions, Research and Technology Centers, Universities, Individual researchers), Public Authorities (Local and Regional Authorities, National governments, Regulatory agencies), Civil society (NGOs, Business support organizations, Energy Agencies, Energy Centers, Energy organizations).

In continuation, the document proposes a common PELAGOS Cluster development process explaining that the set-up of the PELAGOS Cluster on Blue Energy may be broken down into four broad phases, containing ten steps starting from the Establishment of the Cluster, to its Building and Service delivery.

### PHASE 1: CLUSTER ESTABLISHMENT

**Step 1: Establishment of PELAGOS Cluster Governance (Cluster Coordinator, Cluster Management Team, Cluster Advisory Board, Working group)**

**Step 2: Definition of clear objectives for the Cluster**

**Step 3: Establishment of HUB Teams (HUB Coordinators and HUBs Focus Groups)**

### PHASE 2: BUILDING THE BASE

**Step 4: Monitoring of HUBs - Focus Groups Meetings**

**Step 5: Identification of key actors and potential members of HUBs**

### PHASE 3: SERVICES' DELIVERY

**Step 6: Launching of the HUBs – Organization of HUBs Demonstration events**

**Step 7: Provision of HUBs services**

**Step 8: Provision of Cluster services**

Following the definition of PELAGOS Cluster development process, the current document initially provides guidance and suggestions, targeting mainly the Cluster Coordinator, on what needs to be done and considered while: Establishing the PELAGOS Cluster Governance scheme, defining Cluster's Legal Form, Defining its internal communication and information concept, Defining its strategic positioning and Defining its anticipated results.

Moreover, the current document proposes that the operation of the PELAGOS Cluster on Blue Energy is based on a **"Cluster of Clusters"** concept meaning that the PELAGOS Cluster will be composed of Six National Clusters, named as HUBs (Greece, Italy, Croatia, Portugal, Spain and Cyprus). According to this, the implementation of the PELAGOS Cluster on National level will be implemented by those National Cluster Nodes. For this reason, the current document provides guidance on what needs to be done and considered, mainly by the HUB Coordinators, running the HUBs, while: Establishing a PELAGOS HUB Team (HUB Coordinator and Focus Group), Monitoring the HUB through Focus Group meetings, Identifying key actors and potential members for the HUB, Launching the HUB, Providing Regional HUB services. Adding to the above, the PELAGOS Cluster will offer International activities where HUBs are asked to cooperate where additional guidelines are provided on what needs to be done and considered for the effective, coordinated and efficient cooperation and offering of those international activities.

We consider that although the current Guide is mainly addressed to the PELAGOS Cluster Coordinator and the PELAGOS HUB Coordinators, this document may be also useful for the rest partners of the PELAGOS project and may be potentially also useful to other stakeholders of blue energy considering the fact that includes easily adaptable guidelines and tools for setting a Cluster.

## 5. REFERENCES

- Blue Energy - Action needed to deliver on the potential of ocean energy in European seas and oceans by 2020 and beyond <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014DC0008&from=EN>
- Blue Growth opportunities for marine and maritime sustainable growth [https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/docs/body/com\\_2012\\_494\\_en.pdf](https://ec.europa.eu/maritimeaffairs/sites/maritimeaffairs/files/docs/body/com_2012_494_en.pdf)
- Ocean wave energy: Technology Information Sheet <https://setis.ec.europa.eu/related-jrc-activities/jrc-setis-reports/ocean-energy-technology-information-sheet>
- Ocean energy e-learning tool <http://www.aquaret.com/>
- OCEAN ENERGY EUROPE <http://www.oceanenergy-europe.eu/en/association/technologies>
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- European forum for Clusters in Emerging Industries (EFCEI). Actions for new linkages needed <file:///C:/Users/user9/Downloads/Svensson%20Presentation.pdf>
- Legal framework for clusters development in Montenegro <file:///C:/Users/user9/Downloads/Legal%20framework%20for%20Cluster%20development%20in%20Montenegro.pdf>
- The European offshore wind industry. Key trends and statistics 2016 <https://windeurope.org/wp-content/uploads/files/about-wind/statistics/WindEurope-Annual-Offshore-Statistics-2016.pdf>

## 6. ANNEX

## ANNEX I: TOOL FOR THE IDENTIFICATION OF STAKEHOLDERS

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