FAEN
Fundación Asturiana de la Energía

Regional actions to support the participation of Asturian companies in marine renewable energies markets

Action Plan

CLIPPER
Interreg Europe

European Union
European Regional Development Fund

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INTRODUCTION

New markets are emerging within the maritime sector, such as marine renewable energy (MRE) market, which represent interesting opportunities to revitalize traditional industrial sectors and bring added value and development to European maritime regions.

The important development of renewable energies in recent years has shown that wind energy is a competitive source of energy and that offshore wind energy is already part of the energy balance of many countries in northern Europe.

It must be taken into account that marine renewable energies, and offshore wind in particular, have two interesting qualities to be developed in the industrialized maritime regions of Europe, as is the case of Asturias.

It is easy to understand the correlation that exists in these two industries: maritime industries and marine renewable energy.

The maritime component of offshore renewable energy allows to take advantage of industrial capacities and infrastructures for the construction of ships in regions with traditional naval industry. The component of metal manufacturing that brings together both, offshore and offshore wind power industries, allows to take advantage of the entire regional supply chain by diversifying the destination of its products.

An Action Plan is proposed to include measures to respond to these requirements and facilitate the participation of companies of the Asturian industrial supply chain in the emerging market of marine renewable energy. The development of this Action Plan has been part of the activities of the Clipper Project, funded by the *Interreg Europe Program* under the specific objective of *improving the competitiveness of small and medium-sized enterprises.*

The main goal of the Clipper Project is the support to the Regional Public Authorities to improve their strategies towards maritime industries. In the case of Asturias, the Action Plan has been written in order to serve as a reference document for the implementation of the industrial strategies at regional level, with special interest in the *Smart Specialization Strategy 2014 - 2020 of Asturias* (S3).

The S3 of Asturias defines six fields of specialization. The activity of maritime industries is framed in the field of specialization "Steel Hub", where a priority axis is proposed to favor the technological development of the offshore and offshore wind industry. This Action Plan is presented to improve it and to facilitate this development.

The lessons learnt during the participation in the Clipper Project has been a fundamental input to set up the actions that are contained in this Action Plan. The experiences and initiatives that are being carried out by the partners of the Clipper Project has served as a source of inspiration to try to apply some of them in Asturias for the improvement of the regional policies in the industrial promotion of marine renewable energy. In the following sections are shown those actions of the Action Plan that have been inspired in other initiatives carried out in other regions of the Clipper project.

To adapt these experiences to the asturian context, a collaborative approach for the development of this Action Plan has been sought through the involvement of the main regional stakeholders related to the activity of marine renewable energies. For this purpose, the Operational Dialog Group created for the execution of the Clipper Project, has served as an advisor throughout the process of preparing this Action Plan.

This working group has been composed by the following institutions:

- Port Authority of Gijón
- Port Authority of Avilés
- ASTUREX
- Professional Association of Naval and Oceanic Engineers of Asturias
- FADE
- Idonial Technology Centre
- IDEPA
- METAINDUSTRY4
- University of Oviedo - Cluster of Climate Change, Energy and Environment.

The Action Plan has been shared with the partners of the CLIPPER project, to facilitate the exchange of knowledge and experience among the participating regions and as a consequence, facilitate interregional coordination and cooperation.

REGIONAL CONTEXT

Industrial activity has played a crucial role in Europe and maritime industries have made a significant contribution to European GDP for years. As reflected in the Green Paper *"Towards a future maritime policy of the Union: a European perspective of the oceans and seas*", between 3% and 5% of the European Gross Domestic Product (GDP) is generated by industries and maritime services.

Although the maritime regions produce more than 40% of GDP, the traditional maritime sectors have suffered some decline in recent decades and the European coastal regions have been affected by this fact.

It can be seen in the *EU's Renewed Industrial Policy Strategy* that European industrial policy is geared towards promoting the competitiveness of industry and businesses through initiatives that enable skilled labour to be trained in new skills, revitalization of the regions through collaboration, internationalization and belonging to intelligent specialization platforms as well as digital transformation.

In addition, in an European context of fighting against climate change and committed to the energy transition, it is needed that new industries allow to move towards new sustainable and low carbon economies, within the energy sector has a fundamental role.

Currently, Europe has 88% of the global installed capacity in offshore wind energy with a significant increase in recent years given that its installed capacity has gone from 3 GW in 2010 to 12.6 GW in 2016.

In 2017, according to the latest data from the European Wind Energy Association, the average capacity of offshore wind turbines was 5.9MW, which represented a 23% increase compared to 2016. In addition, in the past ten years, the average size of the offshore wind farm has increased considerably, from 79.6 MW in 2007 to 493 MW for the offshore wind farms under construction in 2017.

These reasons make the maritime industry of marine renewable energies a market of high interest for a region with the characteristics of Asturias. On the other hand, the characteristics of this market require an important work and support from public administrations to facilitate as much as possible the access of SME's to these type of projects.

With this context, FAEN has carried out The *Regional Diagnosis of maritime industries in Asturias* within the Clipper Project. This study allowed to characterize the current state of the regional maritime industry and identify the value chain of marine renewable energies in Asturias.

For this analysis, the definition used of maritime industry[1] was: "A*ll the industrial activity related to the design, construction, maintenance and repair of all types of ships and any other relevant maritime structure (oil platforms, offshore wind farms, ...), including all the companies of the supply chain of systems, equipment and services as well as educational and research institutions".*

[1] LeaderShip 2020 report "The Sea, New Opportunities for the Future"

As a result of this analysis, it was identified a total of approximately 20 companies and 10 entities that have participated or that are taking part in the marine renewable energy markets. These agents are considered to be the main representatives of the value chain in Asturias.

Considering the structure of the value chain of maritime industries and considering in depth the development of offshore renewable energies in Asturias, it is followed that the experience is mainly limited to offshore wind energy.

Table 1 shows the Asturian companies and entities that are, currently, part of the supply chains of international offshore renewable energy projects.

Nº	AGENTS
Segment 1. Ship Manufacturers and floating structures	
1º	ASTURFEITO S.A.
2º	ASTILLEROS GONDÁN S.A
3º	INGENIERÍA Y DISEÑO EUROPEO S.A. (IDESA) (GRUPO DANIEL ALONSO)
4º	WINDAR RENOVABLES S.L. (GRUPO DANIEL ALONSO)
Segment 2. Equipment manufacturers, components and service providers	
5º	ARCELORMITTAL ESPAÑA S.A.
6º	AST INGENIERÍA S.L. (ADVANCED SIMULATION TECHNOLOGIES S.L.)
7º	CEMENTOS TUDELA VEGUIN
8º	DACERO (GRUPO DANIEL ALONSO)
9º	FLUINOR
10º	HIERROS MARCELINO FRANCO
11º	GRUPO SEM
12º	IMPULSO
13º	INERSA
14º	GRUPO ISASTUR
15º	KNOW HOW INNOVATION SOLUTIONS
16º	MECANIZADOS CAS
17º	METALICAS SOMONTE
18º	TALLERES JESÚS ALVAREZ
19º	TAXUS GESTIÓN AMBIENTAL, ECOLOGÍA Y CALIDAD
20º	TUINSA
Segment 3. End users	
21º	EDP RENOVABLES ESPAÑA S.L.
Segment 4. R+D+I antivity and training	
22º	CENTRO DE SEGURIDAD MARITIMA INTEGRAL JOVELLANOS
23º	FUNDACIÓN PRODINTEC
24º	ITMA MATERIALS TECHNOLOGY
25º	MANZANA DEL ACERO
26º	UNIVERSIDAD DE OVIEDO
Segment 5. Support institutions	
27º	ASTUREX
28º	CLUSTER POLO DEL ACERO
29º	CONSORCIO TECNOLÓGICO DE LA ENERGÍA DE ASTURIAS
30º	FUNDACIÓN ASTURIANA DE LA ENERGÍA (FAEN)
31º	INSTITUTO DE DESARROLLO ECONÓMICO DE ASTURIAS
32º	PUERTO DE AVILÉS, (AUTORIDAD PORTUARIA DE AVILÉS)

Table 1: Main agents of the value chain of offshore renewable energy projects in Asturias

Main players involved in the value chain of Asturias

The agents identified in table 1 can be divided in five segments, according to the main activity they are developing:

- **Segment 1. - Manufacturers of ships and marine structures.**
  It is composed by manufacturing companies of ships and structures to be installed into the sea.

- **Segment 2. - Manufacturers of equipment, components and materials.**
  The companies that supply materials, equipment, components, machinery and services to the sector of the manufacture of ships and marine structures (Segment 1).

- **Segment 3. - Final sectors of the maritime sector (transport and energy).**
  All the sectors that use the ships and marine structures manufactured by the companies in Segment 1.

- **Segment 4. - R + D + I activities and training**
  It is composed of the entities that, in a horizontal manner, can support the research and innovation processes in the companies in segments 1, 2 and 3.

- **Segment 5. - Support activities and infrastructures**
  It is composed by the organizations that develop activities that support segments 1, 2 and 3 through a portfolio of general services and not focused specifically on R & D & I.

Almost 80% of the companies identified in Table 1 are SME's.

The diagram shown in Figure 1, details the existing relationships between each of the components of the value chain:

- Segment 1 is composed by a list of Asturian companies with participation in marine renewable energy projects. It can be seen that the regional supply chain in this segment is made up of medium-sized shipyards and companies that manufacture metal structures and components.
  Some of these companies are reference in the market, having participated in projects for the manufacture of ships and elements and components of wind turbines such as towers, monopiles, jackets and substructures. In addition, they provide constructive solutions to innovative projects, providing knowledge and experience.

- Segment 2, it is mainly composed of companies belonging to the metal, capital goods manufacturing and service sector sectors. Within the companies of the metal sector we find companies supplying the raw material, secondary steel, mechanization companies and transformation companies. Among the companies belonging to the services sector, those dedicated to surface treatments of steels and metals, engineering companies and consulting companies, mainly environmental, are the most common.

- Segment 3 has a single company that promotes facilities for the use of marine energies, in this case offshore wind farms in international waters.

- Segments 4 and 5 consist of a large number of support organizations, among which are technological centres, training centres, entities belonging to the public sector, universities, clusters and ports.

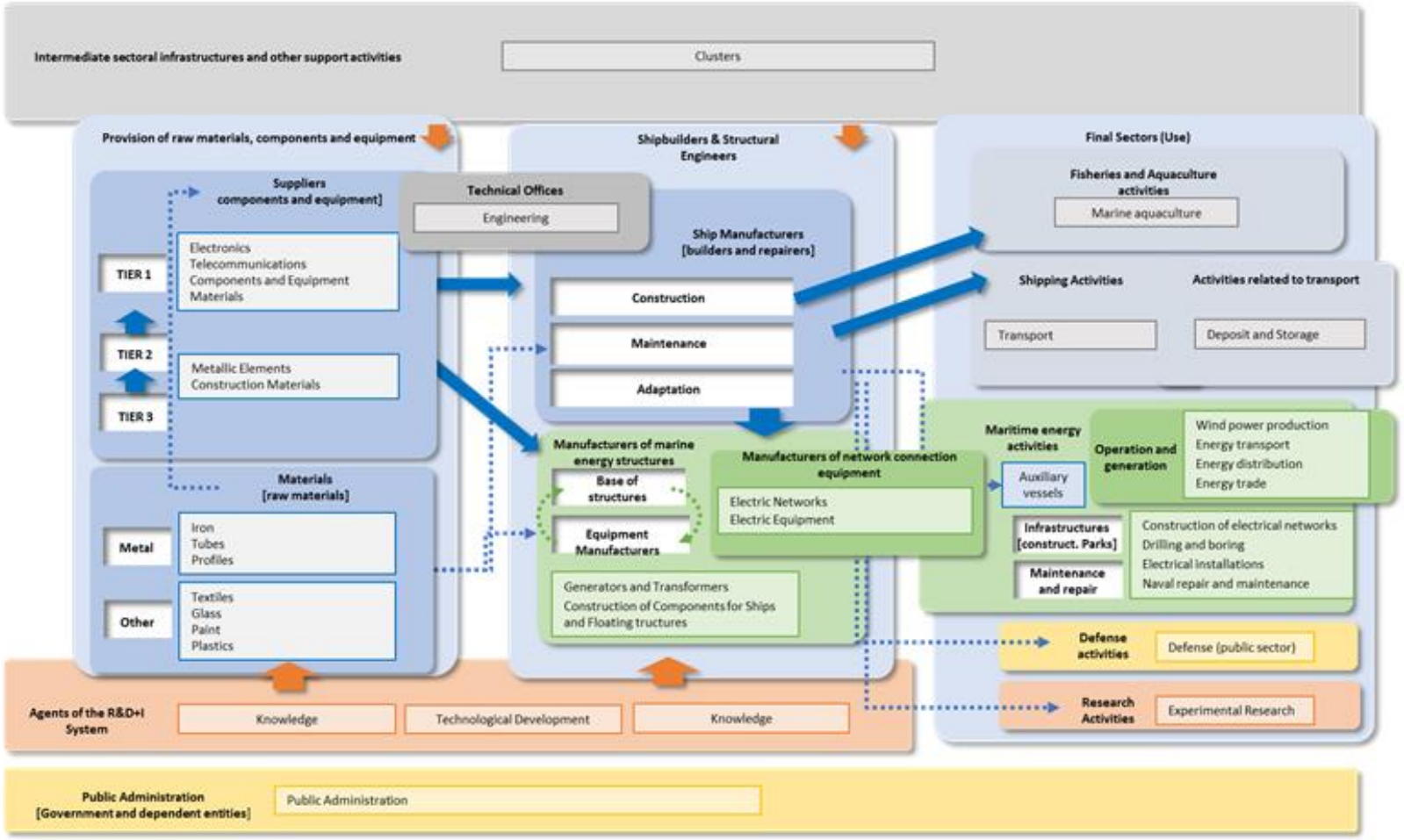

Figure 1: Structure of the value chain if offshore renewable energies in Asturias

RATIONALE OF THE ACTION PLAN

The high level of quality, investment, risk and guarantees required in the projects to develop marine renewable energy plants present significant constraints for small and medium enterprises.

The Regional Diagnosis of the Maritime Industries of Asturias and the works with the stakeholders carried out during the execution of the first phase of the Clipper Project, allowed the identification of the companies that are working for marine renewable energy projects and to analyse those ones that have the capabilities to work in this market in the mid-term.

The conclusions of these works reveals that the regional maritime industry is composed by several big companies and a numerous number of small and medium companies with long experience in maritime work and with a strong potential to participate in new maritime markets, provided that certain conditions were met.

The production and metal manufacturing sector is in similar situation, given that it counts with strong expertise in developing products and services for industrial facilities and is formed by numerous companies that are able to develop products and services that could be demanded by the marine renewable energy market.

After the first approach to the maritime regional sector, it can be said that a group of regional companies is interested in participating more actively in the offshore market and, in particular, in the marine renewable energy market.

Although the needs of each company are different, there are certain requirements that are shared by most of them and there are other requirements that are also shared by some of them.

Given that the industrial capacity identified during the development of analysis is aligned with the priority of promoting the industry related to marine renewable energy identified in RIS3 *(Thematic priority: Maritime Industry (naval and offshore))*, an Action Plan is proposed to improve this political instrument.

For this reason, an Action Plan is proposed to include measures to facilitate the participation of companies of the Asturian industrial network in the emerging market of marine renewable energy[2].

The inspiration arising from the process of sharing experiences, tools and procedures with the partner regions of the Clipper Project has allowed us to identify in Asturias, some actions that could be effective for supporting the growth of this new industrial sector.

[2] In this document, it is considered under Marine Renewable Energy the energy from offshore wind, waves, currents…The offshore wind energy is the most developed marine renewable energy and in this document, the main initiatives are aimed at offshore wind energy projects.

LIST OF ACTIONS INCLUDED IN THE ACTION PLAN

ACTION 1: MARITIME COMPETITION PROGRAM

Policy context

Name of the policy instrument addressed - **The REGIONAL STRATEGY FOR SMART SPECIALIZATION (S3) FOR ASTURIAS**

With this action, this Action Plan aims to impact in **diversification and market orientation**

Details of the action envisaged

Need addressed - Promote diversification and market orientation

This action is oriented to promoting and supporting the participation of Asturian companies in new markets such as marine renewable energy market.

SME's have difficulties to participate in the MRE market because the market players are large international companies. The action 1 is aimed at trying to facilitate contact between regional SME's and large companies operating in the ERM market.

The purpose of this action is to replicate the same model of the Resolutions Program (lesson learnt from Pays de Loire) in Asturias, launching a joint call for Asturias and Pays de la Loire in the field of MREs. The joint call will facilitate cooperative projects among SME's and big companies from both regions.

Overview of the policy improvement that this action refers to

The development of the Action 1 for developing the ***Objective 2*** of the **S3** in the ***Objective 2. - Market orientation and diversification*** within the ***Program 2.1. - Program to boost cooperation and growth around technological niches to meet new internationalized markets. Thematic priority: Maritime industries (naval and offshore).***

The source of inspiration in this Action is the Resolutions Program that is a program carried out by Conseil Regionale Pays de la Loire at regional level. The implementation of Resolutions program in the region introduces two improvements compared to other running programs in Asturias:

1. Allow the bilateral cooperation among regional SME's and big companies. The running programs facilitate the cooperation between several companies and with the participation of research centres (Consortiums must be formed by, at least, three partners)
2. Facilitate the access of Asturian SME's to large companies from other regions (in this case, from the Pays de la Loire).

The background

The Regional Diagnosis of the Maritime Industries of Asturias and the works with the stakeholders carried out during the execution of the first phase of the Clipper Project, allowed the identification of the companies that are working for marine renewable energy projects and to analyse those ones that have the capabilities to work in this market in the mid-term.
The conclusions of the Regional Diagnosis reveals that the regional maritime industry is composed by a numerous number of small and medium companies with long experience in maritime work and with a strong potential to participate in new maritime markets.

Furthermore, there are in the regions participating in the CLIPPER project and in Asturias several leading companies which can make a tractor effect in this new market and work with the regional industrial networks to participate in this new markets.

After the first approach to the maritime regional sector, it can be said that a group of regional companies is interested in participating more actively in the marine renewable energy at international level.

During 2019, several meetings have been celebrated among FAEN and IDEPA to define the best collaborative tool to be used by SME's and big companies in the field of marine renewable energies. Taking into consideration the existing tool in Pays de la Loire through the Resolutions Program, conversations has started with Pays de la Loire to better know the tool. The idea is to launch an international call focused in MREs in both regions replicating the Resolutions model emerged from these conversations among the three entities (IDEPA, FAEN and Conseil Regional Pays de la Loire), where companies of both regions could take part.

An international call of these characteristics will facilitate to the regional SME's the cooperation not only with the big companies located in Asturias but also with the big companies of the supply of the maritime industry of Pays de la Loire.

Specific activities and timeframe

The MARITIME COMPETITION PROGRAM will be composed by the next stages:

- Stage 1 – Definition of the Program – The joint call will be defined through a collaborative work among the two funding agencies from each region, IDEPA and Conseil Regional Pays de la Loire taking as reference the Resolutions Program model.

- Stage 2 - Call for issues/challenges - the project developers or lead companies will be invited to express their issues or challenges in marine renewable energies. As the result of the call for issues, 3 challenges will be selected by a jury specifically constituted for this purpose.

- Step 3 - Call for solutions - companies of the supply chain will be invited to propose their innovative solutions to the challenges selected. It will be organised a pitch event where the solution suppliers of the industrial network will present their proposals to the project developers and these companies will choose the solution that best meets their expectations.

- Step 4- Implementation of cooperation – the aid is allocated to the project developer that acquires the obligation to sign a contract with the SME and to execute the project for which it has been funded.

Calendar

The program is expected to be launched during the period 2019-2020.
The next is a proposal of calendar for this Action:

Action 1												
Year	January	February	March	April	May	June	July	August	September	October	November	December
2019	Collaborative Work: FAEN, IDEPA and Pays de la Loire to set up collaboration											Definition on the Joint Call
2020	Call for Issues/challenges	Final selection of challenges				Call for Solutions - Pith Event	Final Selection of solutions	Development of the cooperation among the companies				

Players involved

- ✓ *The Economic Development Institute of Asturias* – IDEPA - as the funding entity.
- ✓ *The Asturian Energy Foundation* – FAEN - as the technical advisory entity.
- ✓ *Lead companies* – the main companies at regional level with experience and interest in participate in marine renewable energy projects.
- ✓ *SME's* – the SME's at regional level with capability to solve the issues of the lead companies.

Costs and funding sources

The global budget that is proposed to fund by Asturias in this program is 60,000€.
This funds will be managed by IDEPA and came from the European Regional Development Fund.

Monitoring

The best indicator for monitoring the success of this action is the number of companies that participate in the call. Two main monitoring indicators will be evaluated:

- Number of companies that participate in the call for issues/challenges.
- Number of companies that partipate in the call for solutions.

This data will show the interest of the regional companies in the topic, and will give a valuable information about the regional value chain in terms of capabilities, coordination and cooperation.

Risk and contingency plans

The main risk of carrying out this action is the insufficient participation of regional companies.

On the one hand, the limited participation of leading companies capable of posing the challenges - the minimum number of challenges may not be achieved.

On the other hand, the low participation of SME's capable of providing solutions - may not be sufficient solutions for the number of challenges.

In addition, it could happen that in the eyes of leading companies, the solutions provided by SME's do not have the technical quality required for the challenges posed.

As contingency plan, it is envisaged the creation of a **Working Group**, based in the current Operational Dialog Group created for the development of the Clipper Project. This Working Group will facilitate, through a regional and interregional approach and public-private cooperation, the exchange of information and opportunities, and encourage the participation of Asturian companies in projects of marine renewable energy.
The Asturian Energy Foundation will continue to act as secretary of the working group and, in this role, will monitor the success of the Action Plan and each action and will act to facilitate the achievement of the expected results.

To avoid in the event a low participation of the companies, FAEN will increase the communication channels and improve the promotion of the program.

ACTION 2: MARITIME INNOVATION PROGRAMME

Policy context

Name of the policy instrument addressed - **The REGIONAL STRATEGY FOR SMART SPECIALIZATION (S3) FOR ASTURIAS**

With this Action, the Action Plan aims at the promotion of the innovation in projects in the field of marine renewable energies.

Details of the action envisaged

Need addressed - Promote Innovation activity in marine renewable energy projects

This action is oriented to boost and support innovation in the field of marine renewable energy projects.

The technological development achieved in recent years in projects of offshore wind farms has contributed to an important growth of this market with the corresponding reduction in the cost of generating energy. To be able to participate in the market, companies must make an important effort in innovation and a continuous improvement and technological adaptation. Given that the SME's may have problems to develop innovation activities as is being required by the market, this tool is envisaged to facilitate the participation in innovative projects in the field of marine renewable energies.

The purpose of this Action is to launch a call focused in MRE innovation projects to ease the cooperation among the research groups of the University of Oviedo and the companies. This program allows to take advantage of the testing infrastructures and knowledge of the University in a way that can be used by companies.

Overview of the policy improvement that this action refers to

This action is addressing the ***REGIONAL STRATEGY FOR SMART SPECIALIZATION (S3) FOR ASTURIAS***. This can be framed within ***Objective 3. - New territorial model based on network cooperation. Program 3.2. - Program to support collaboration with leading companies. Thematic priority: Maritime industries (naval and offshore).***

The source of inspiration of this Action is the ORE CATAPULT'S LEVENMOUTH DEMONSTRATION TURBINE that is taking place in Fife, Scotland and that was shown under the works carried out within the Clipper Project by *Invest in Fife*.

The public facility located in Levenmouth is a good example of the cooperation among private-public research actors to develop technological solutions for offshore wind turbines.

The Action 2 is a trial of adaptation, to the asturian regional conditions, a model of public-private cooperation that is being a success in the United Kingdom. The cooperation among companies and public research centres using the research facilities for innovative projects in this field could be very interesting for every participant and for the regional industry.

Taking into account the type of funding programs running in Asturias, this initiative introduces two main improvements:

1. It facilitates the engagement of the research groups of the University of Oviedo with the companies in the field of MRE to try to apply the research potential and the work in innovation

that is carried out by the University to projects that are of interest of the asturian industrial network.

2. It allows the use of the research facilities of the University to test, design, re-design.... by the regional industrial network. These facilities are test benches, wind tunnels, specialized software and simulation tools, etc that in many cases are not within the reach of companies, specially, of SMEs.

The background

Using as basis *The Regional Diagnosis of the Maritime Industries of Asturias* it can be said that along with the number of companies that exist in Asturias with capacity to work in the field of marine renewable energies, there are also a number of entities dedicated to the research and development activity which can play an interesting role.

There are several research groups of the University of Oviedo that work on technology aspects that may be of interest for the regional companies in terms of develop, design, testing or validation of mechanical, electrical or materials challenges.

In some cases, to show the interest, feasability and applicability of this kind of research in specific applications, it is needed to expose the works and results of these research activities and facilitate the process of cooperation for the sake of the industrial competitiveness.
FAEN and IDEPA have held conversations to assess the possible ways of collaboration between companies and regional research centres that have been working in activities related to marine renewable energies or in projects from which these companies can obtain innovative solutions, meet the market requirements in R+D+i and give added value to their projects.
After the staff exchange that took place among *IDEPA* and *Invest in Fife* in the framework of the CLIPPER Project, it has been proposed the launching in Asturias of a program inspired in ORE Catapult model of Fife for using test facilities in a public-private cooperation in the field of marine renewable energy.

Specific activities and timeframe

To facilitate the cooperation among the companies and research groups, it is proposed the creation of a call, named "*Proof of concept*", to connect companies with R&D needs in the field of marine renewable energy with research groups of the University of Oviedo.

It is proposed an open innovation model with the aim that basic research projects carried out by investigators of public research centres in the priority scientific areas of Asturias S3 could be applied in the industrial environment.

The beneficiaries of these premiums must refer to research results obtained in priority scientific-technological areas of Asturias S3, for which a Proof of Concept will be proposed to verify the interest and applicability of the innovative potential of ideas and lines of research to the regional industry projects.

The MARITIME INNOVATION PROGRAM will be composed by the next stages:

- Stage 1- Definition of the Program – The funding entity (IDEPA) will define the basis of the program to adapt it to the specific characteristics of MRE projects and potential participants.

- Stage 2 – Signing of Agreement of cooperation among the University of Oviedo and IDEPA – IDEPA and the University of Oviedo have signed a collaboration agreement for the implementation of the Proof of Concept Program.

- Stage 3 – Signing of Agreement among the Company and IDEPA – IDEPA and the companies that are interested in participating in this call, have to sign a collaboration agreement showing the commitment to participate in the proof of concept.

- Stage 4 – Submission of proposals - The proposals must be submitted by research staff of the University of Oviedo. The results of the research project will come from projects or lines of research in which the applicant have participated as a researcher and will have been obtained before the date of submission of the application. The ownership of them must belong to the University of Oviedo.

- Stage 5 – Defence of the proposal
All accepted applications must be defended by the researcher responsible for the application (or person delegated) in a public act with a jury. The jury will consist of 6 members, designated 2 by the IDEPA, 2 by the interested company, and 2 by the University of Oviedo.

The selection of applications will be made according to the merits set forth in reference to:

- Quality of the scientific achievements in the research project / line and supporting evidence.
- Expected impact or innovative potential of the idea, in terms of improving the competitiveness of companies in response to market needs.
- Concept or technology to be validated in the chosen environment, indicating the proposed measures, including tests or experiments, for the development of proof of concept of the research results in the new operating conditions.

Premiums will be awarded to the best rated applications in accordance with the above criteria. After jury's decision the winners will be able to start the activities for the development of the proof of concept. In this regard, the University of Oviedo and the company may sign a confidentiality agreement regulating the exchange of confidential information provided by each of the parties.

- Stage 6 – Proof of concept - The proof of concept will consist in carrying out the feasibility studies of the research results for the expected needs, which will involve the identification of the new operating conditions and tests/experiments that facilitate the analysis using the facilities of the University of Oviedo and which may include the design and manufacture of prototypes and/or pilot laboratory plants. The maturity level of the starting technology will be between levels 2, 3 or 4 following the TRL (Technology Readiness Level). The proof of concept that may be carried out may increase the maturity of the technology developed to a maximum of TRL 5.

- Stage 8 – Presentation of results and development of the proposals
The results of the proof of concept will be submitted to the evaluation of the participating company. The company will have a deadline to reach an agreement with the University of Oviedo to advance technology to a demonstration phase.
If after the deadline, the collaborating company do not show interest, the University of Oviedo will be authorised to disseminate or exploit the results of the proof of concept.

Calendar

The program is expected to be launched during the period: 2020-2022. An initial calendar is shown below:

Action 2													
Year	Month 0	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 7	Month 8	Month 9	Month 10	Month 11	Month 12
2020	Signing of Agreement IDEPA - Uniovi	Signing protocol of the leading company	Opening of the application deadline	Public event of defense of the application									
2021	Month 13	Month 14	Month 15	Month 16	Month 17	Month 18	Month 19	Month 20	Month 21	Month 22	Month 23	Month 24	
			Completion of proof of concept		Presentation of findings								
2022	Month 25	Month 26	Month 27	Month 28	Month 29								
					Collaborative development proposals								

Players involved

- ✓ *The Economic Development Institute of Asturias* – IDEPA - as the funding entity.
- ✓ *The Asturian Energy Foundation* – FAEN - as the technical advisory entity.
- ✓ *Companies* – the companies at regional level with experience and interest in participate in marine renewable energy projects.
- ✓ *University of Oviedo* – the research groups that can pose innovative solutions for projects to be executed in cooperation with the University.

Costs and funding sources

Each winning proposal, up to a total of 3, will receive a 30,000€ to develop the proof of concept proposal for the research results. This amount of money will be equally shared in the same quantity by IDEPA and by the collaborating company (50% from IDEPA-50% from the company).

The Initiative as a whole is endowed with a maximum total amount of € 90,000, from the same contributions of IDEPA and the company interested in collaborating.
In the public part of this call, it will be funded by the regional Economic Development Agency of Asturias (IDEPA). The funds will be managed by IDEPA and came from European Regional Development Fund.

Monitoring

The best indicator for monitoring the success of this action is the number of projects that compete in the call. Two main monitoring indicators will be evaluated:

- Number of projects that compete in the call.
- Number of projects that are executed after the finish of the call.

This data will show the interest of the regional companies in the topic, and will give a valuable information about the regional R+D+I and the coordination and cooperation among the research centres and companies.

Risk and contingency plans

The biggest risk of carrying out this action is the insufficient participation of regional agents.

On the one hand, the limited participation of research centres capable of proposing research projects that can attract the involvement of leading companies.

On the other hand, the low participation of companies with interest in using this model to carry out their projects in cooperation.

As financing agency, IDEPA will be in charge of all process related with the Call Proof of Concepts.

FAEN will participate with the promotion of the call and working to attract the interest of the companies in participating.

As contingency plan, the creation of the **Working Group** commented in the Action 1, will serve to monitor and to correct or mitigate the possible problems of participation that may arise in this call. Given that the Working Group will facilitate, through a regional and interregional approach and public-private cooperation, the exchange of information and opportunities, and encourage the participation of Asturian companies in projects of marine renewable energy.
The Asturian Energy Foundation will continue to act as secretary of the working group and, in this role, will monitor the success of the Action Plan and each action and will act to facilitate the achievement of the expected results.

OFFICIAL SIGNATURE