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Development of emerging sectors and new international value chains from the Basque Energy Cluster

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1. INTRODUCTION

At the end of the 1980s, the economy of the Basque Country was in a process of decline resulting from the loss of its traditional industry competitive advantages¹. The impact of the energy prices and the high-energy consumption of the Basque key industrial sectors, together with new challenges appearing, such as the common European market, were threatening this model.

It was therefore recognized that it was necessary to develop new, specialized and sustainable advantages to improve the competitiveness of the region; In the early 1990s and based on an intensive analysis and work², the Basque Country became one of the pioneers in Europe, alongside with Catalonia and Scotland, in establishing a targeted regional cluster policy.

The existing policy supports today eleven priority cluster associations, nine of which have been supported since the 1990s, and 11 ‘pre-cluster’ initiatives. The success of this policy, as part of a broader economy strategy, can be seen in the GDP growth experienced over the last thirty five years, which places the Basque Country in the top 5 of European regions today in GDP per capita³.

However, the period since the financial and economic crisis in 2008 has resulted in a decrease by 6% of manufacturing’s share in regional GDP and unemployment rates close to 15%, highlighting strongly the competitiveness issues facing SMEs in the Basque Country. Now, emerging from this stage, it is a moment in time to change and align the Basque Industry with a strategy of re-industrialization, with a special focus on the development of long-term internationally competitive goods and services that require combining different competences and innovative solutions.

¹ A participatory methodology for evaluating the cluster policy of the Basque Country- Basque Institute of Competitiveness.

² This study was based on the work carried out by Michael Porter on the competitive advantage of nations, in 1990.

³ The vanguard role of cluster policies in RIS3- A perspective from Basque Country, 2014.

Accordingly, the Basque Government has selected Advanced Manufacturing, Energy and Biosciences as its smart specialization priorities (RIS3). In these domains, technologies and sectors converge in order to share complementary capabilities.

The selection of energy as one of the three priorities of the regional RIS3 relies on its identifiable strengths: a competitive business sector and differential scientific and technological capabilities. Indeed, the energy sector in the Basque Country encompasses today 350 companies with a high degree of specialization, employing 69164 people worldwide (30% in the Basque Country) and accounting for over 25% of the total exports of the Basque Country.

It is clear then that the Basque Energy Cluster is one of the reference stakeholders in the Competitiveness Policy of the Basque Government and plays a key role in implementing the Basque policy, both from business and region perspective.

2. THE BASQUE ENERGY CLUSTER

The Basque Energy Cluster is a non-profit organization which was set up in 1996 with the mission of improving global competitiveness of the Basque energy sector companies by facilitating an industry-driven collaboration along the value chains and seeking public-private partnerships.

With 97 members, it integrates the main companies in the energy sector supply chain in the Basque Country, including energy operators, component and equipment manufacturers and service companies. Apart from that, players in the Basque scientific-technological field, and public administration bodies with responsibilities in the energy area can be found between our members. The Basque Energy Cluster represents in global 80% of the turnover of all energy business activities in the Basque Country and employs 59000 people worldwide (12800 in the Basque Country). It is therefore clear the international dimension of Basque energy activities, with a direct presence of 41 Basque Companies in 57 countries with a total of 337 delegations worldwide.

The Basque Energy Cluster operates in 7 strategic areas of priority character for the energy industry in the Basque Country⁴, with electricity as a common link to all of them: Electricity Transmission and Distribution, Wind Energy, Concentrated Solar Power, Marine energies, Energy storage, Electric Vehicle and Energy Efficiency (see Figure 1).

⁴ Estrategia tecnológica y de desarrollo empresarial energiBasque

The choice of these strategic value chains has relied fundamentally on market size, growth rate, present capacities, positioning of Basque companies and the potential for success. Electricity represents a key energy vector for companies in the coming years, being storage the enabling technology and smart grids the catalyst for solutions.

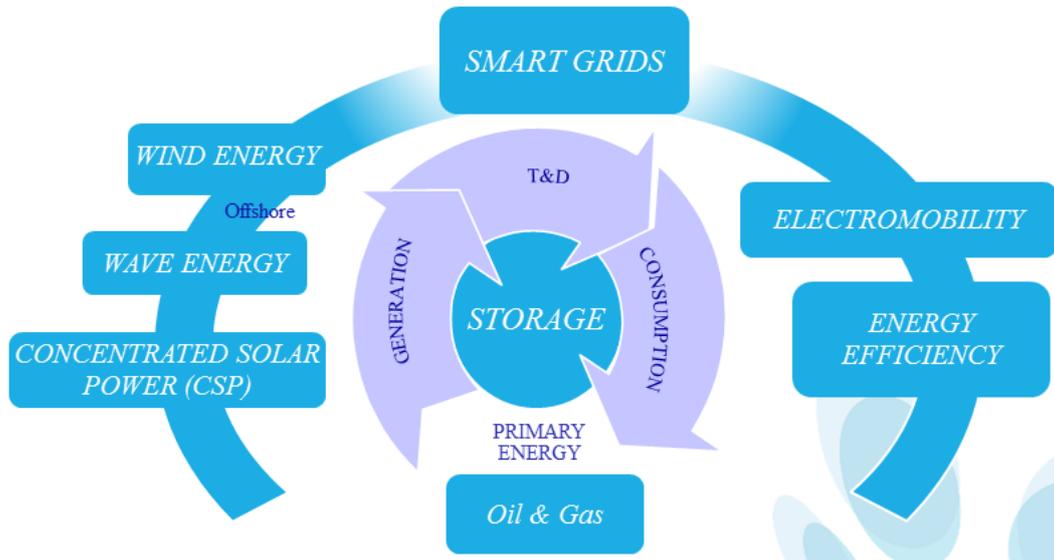


Figure 1: Selected Energy Technologies and strategic areas of activity of the Basque Energy Cluster.

2.1 The Basque Energy Cluster Strategy Plan

With the clear vision of positioning the Basque Country as one of the European references in the energy industry sector in the selected specialization areas, the Basque Energy Cluster has recently developed a strategy plan for the period 2014-2018. It is essentially based on fostering SME growth and competitiveness, with special emphasis on the development of higher added value products and services.

The Basque Energy Cluster business model focuses on Triple Helix Agents⁵ (industry, academia, Basque Government and other stakeholders) and provides each target segment a differentiated value proposition. As seen in Figure 2, this value proposition, which has been designed in a participatory manner, is in general based on four fields: R&D projects, International promotion, Innovation and Training.

⁵ Global Clusters of innovation: Entrepreneurial engines of economic growth around the world, 2014.

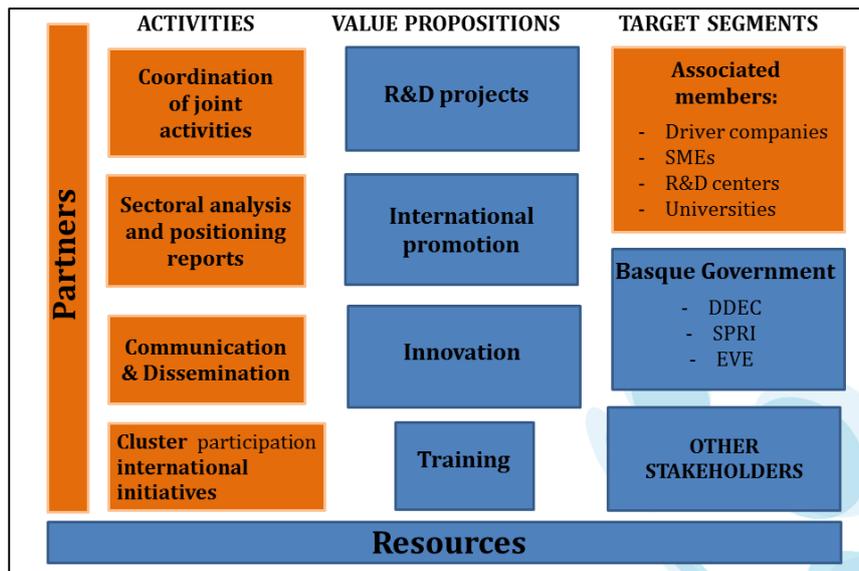


Figure 2: The business model of the Basque Energy Cluster

Accordingly, a series of key activities are undertaken around 7 “Workings Groups” related to the strategic value chains (see Figure 1):

Firstly, the Basque Energy Cluster has a sound activity in the organization and coordination of all kind of meetings and joint activities between its members and external stakeholders. Periodical meetings and debate platforms are organized in order to identify requirements, opportunities and points of common interest, as well as to coordinate and follow-up the collaboration projects and activities launched by the Working Groups and other groups and committees. These thematic meetings are coordinated by dynamic organizations, which guide the activities of the group thanks to their knowledge and greater general perspective of each area. Moreover, the presence of R&D agents in these meetings enhances knowledge transfer and development of new innovative concepts and proposals.

Secondly, the Basque Energy Cluster aims to identify high-added value training necessities, including knowledge and innovation management skills, and facilitates the interconnection with specialised training centres.

As part of its internationalisation strategy, the Basque Energy Cluster helps its members to identify emerging technologies and business opportunities by analysing and reporting the market opportunities of the energy sector.

This was the case of the REINA⁶ project, which was funded under the COSME programme and joined the efforts of three European Clusters under the energy scope:

⁶ Project REINA - World EU Cluster Initiative in Renewables and sustainable Energy InterNational

The Basque Energy Cluster in Spain (host), the EnergyVaasa Cluster in Finland and the Oekoenergie Cluster in Austria. The focus was to support European SME's internationalisation through the design and implementation of joint cluster specific internationalisation strategies in renewable energy growing markets. The targeted markets were Brasil (focusing in wind energy), Mexico (T&D, smart grids), Chile (Solar Power, Biomass) and North Africa, and internationalisation strategies were carefully developed in each of them. These strategies contributed to stimulate commercialization in emerging international markets and to prepare the European energy industry, especially the SMEs, to compete in international energy markets characterized by high growth. The experience and knowledge generated in REINA project and other European projects in terms of development of European technology, internationalisation processes and intercluster collaboration agreements, are used for future international activities.

As a result, the Basque Energy Cluster is at present particularly active in the participation in regional and international initiatives, including H2020 and COSME calls and matchmaking events with other European Clusters. The participation of the associated members in European Research and Innovation programmes is also strongly encouraged by organising Info Days of interest and identifying calls and topics related to the energy sector.

Finally, the Basque Energy Cluster explores marketing activities in both consolidated and emerging areas of the energy sector. At this stage, the association and its members are actively involved in international trade fairs and commercial missions. The branding of the Basque energy sector, which is one of the complementary support elements in this internationalization strategy, is at present used to reinforce the visibility and dissemination of the SMEs, especially in various emerging areas of renewable energy and power grids.

In the following section, the work recently conducted in these areas is detailed.

3. UNDERSTANDING THE BASQUE PRESENCE IN EMERGING AREAS

From the Basque Energy Cluster's perspective, the key drivers for success in developing new global industrial value chains are the cross-border and cross-sectoral innovation and entrepreneurship collaboration (wind and marine, electrical and electronic) together with a strong industrial and technological base. In this process SMEs need to interact and cooperate with international partners, and the Basque Energy Cluster can offer them added value services in the identification and coordination of convenient partnerships.

As part of such approach, extensive work has been made since 2013 in the areas of smart grids and marine renewables, including offshore wind and ocean energy. To bring together what these firms and organisations have to offer, consolidate their position as technology leaders and identify new opportunities of collaboration, three “Basque Country” brands have been created (see Figures 3 and 4).



Figure 3: The branding of the Marine renewable energy sector, (a) Offshore Wind and (b) Wave Energy



Figure 4: The branding of the power grids sector, Smart Grids Basque Country.

For the ease of the reader, only the work related to Marine renewables will be described in this paper. Please note that this approach is extensive to the area of smart grids.

3.1 Supporting the development of emerging marine energies

For some time already, the Basque Country has started at the business level an independent exercise to understand the Basque presence in the marine energy value chain, including both offshore wind and wave energy. Among 150 companies identified with current capabilities and activities in these fields, 40% develop their activities in at least two of the key segments at the same time. The activities with a stronger presence in the region are equipment and maintenance and operation.

The Basque Energy Cluster, in collaboration with the Basque Maritime Forum, have mapped these two value chains in detail, identifying key companies along the chains and stakeholders supporting horizontal activities such as developing projects and R&D entities.

Both brands, Offshore Wind Energy Basque Country and Wave energy Basque Country (see Figure 3), are the outcome of a joint initiative of the Basque Energy Cluster and the Basque Maritime Forum to represent the strengths and potential of Basque industry throughout the marine energy supply chain. Figure 5 shows an example of one of the activities launched in the wind energy working group of the Basque Energy Cluster.

As may be seen, individual Basque companies are mapped along the key activities of the related supply chain.

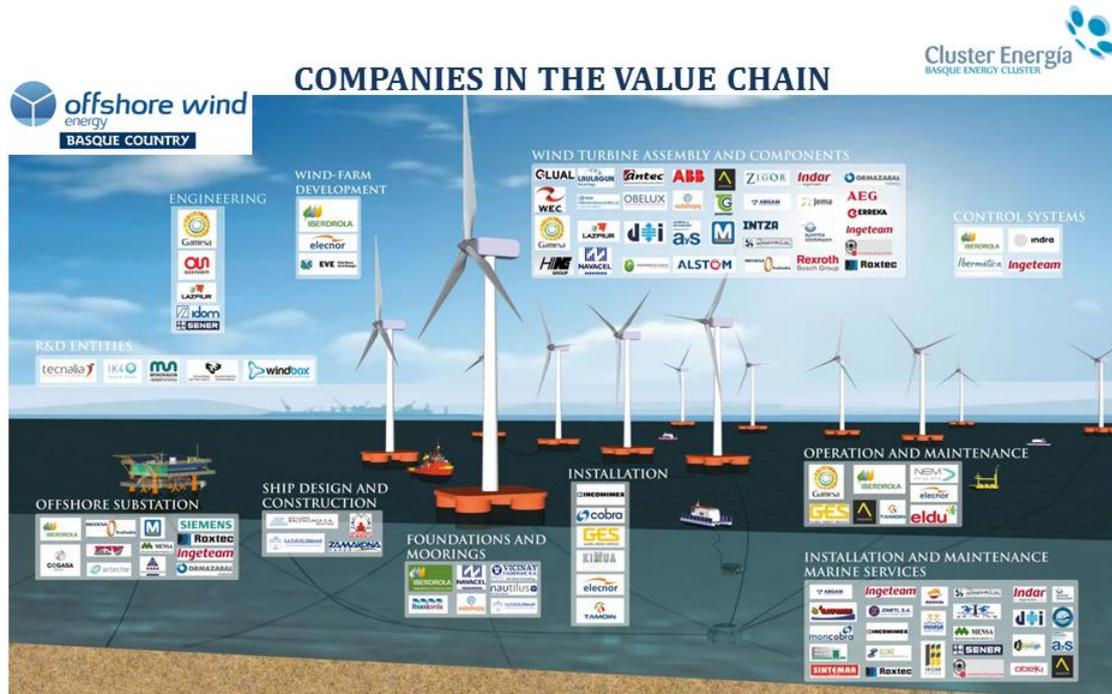


Figure 5: The offshore wind value chain including activities and individual Basque companies.

Offshore Wind Basque Country was first presented at the EWEA Offshore Fair in Frankfurt, in 2013 and this year the Basque Energy Cluster will attend the EWEA 2015 in Copenhagen jointly with 9 companies. On the other hand, Wave Energy Basque Country was successfully launched at the Ocean Energy Europe in Paris in 2014 and in 2015, 6 companies grouped under the brand will take part in the Bilbao Marine Energy Week.

4. CONCLUSIONS

Clusters organisations play a key role in helping SMEs to access finance, new industrial value chains and to go international. This is evidenced by the European Commission’s Enterprise and Industry Directorate-General, which is actively promoting the development of more world-class clusters in Europe and facilitating SMEs’ access to clusters and internationalization activities through clusters. In the case of the Basque Country, cluster policies are playing a very important role in implementing regional smart specialisation strategies.

The initial mapping exercise has allowed mapping of pivotal Basque companies and regional infrastructures in three emerging areas: Smart grids, ocean energy and offshore wind energy. The three related brands, which were created to provide a unified corporate image of these firms in the Basque Country, have reinforced this work.

However, to develop product-services proposals in global value chains, this mapping exercise model should be extended inter-regionally. Clusters can offer in this process added value services in the identification and coordination of convenient partnerships.

To conclude, the Basque Energy Cluster is planning to launch this year two new brands 'Basque Country' related to two strategic areas: electric vehicle and energy storage.