



WavEC
Offshore Renewables

Innovation & Entrepreneurship in Wave Energy

SORAYA HAMAWI

02/12/2013



Background

- Bachelor and Master of Science in Science and Innovation Management
- Track: Energy and Sustainable Development
- Utrecht University, The Netherlands from 2005-2011
- Working on Innovation and Policies at WavEC Offshore Renewables since 2010



WavEC Offshore Renewables

- WavEC Offshore Renewables is a non-profit organisation, founded in 2003 in Portugal
- Dedicated to the development and promotion of wave and offshore wind energy
- Through technical and strategic support to companies, R&D institutions and public entities.
- WavEC strives to have International Cooperation.



WavEC Offshore Renewables

- The WavEC renders services to entities that intend to explore the attractive natural and legal conditions
- This when testing and demonstration of wave and offshore wind energy structures.
- The centre also supports the development of the industry, creation of the ocean energy value chain
- Develops products and is doing effort to stimulate firms to innovate
- The centre has been involved in many European projects



Innovation System Analysis

- In 2011 an Innovation System Analysis was conducted for the Wave Energy sector
- This was conducted in collaboration with Utrecht University
- The idea behind this study is:
 - 1) Success of an innovation is not only dependent on technical characteristics
 - 2) It is also dependent on non-technical factors, such as economical, societal, institutional and political



The Innovation System Concept

- Technology is not simply transferred into an Innovation
- Innovation is a complex process between different actors
- Development and diffusion of a technology is dependent on a well functioning network
- A proper interaction between all the actors is important
- Actors forming part of the system should perform activities known as Functions



Functions of Innovation System

- Entrepreneurial Activities
- Knowledge Development
- Knowledge Diffusion
- Guidance of the Search
- Market Formation
- Resource Mobilization
- Advocacy Coalitions



Results Functions

- Interviews have been conducted with 37 stakeholders
- Functions are very Turbulent
- Functions are very weak!

Why?!

- 1) Very unstable policy scenario
- 2) FITs, introduced, eliminated and then Frozen
- 3) Resource funding not available or properly allocated
- 4) Failures of wave technologies have taken away the trust of the government or public in the technology
- 5) The government does not have a long term vision for the technology
- 6) The strategy of the Portuguese government for wave energy is very unstable!



Why?!

- After 2001 many entrepreneurial activities have taken place
- Due to failure of technologies, lack of financial resources, elimination of FITs and the financial crisis many projects have been stopped
- Technology developers from abroad have also showed interest in testing their device in Portugal
- The delay in the pilot zone has stopped these technology developers from coming to Portugal



Where to start?!

- Actors should be stimulated to collaborate and exchange knowledge
- Actors should have a clear and consistent strategy towards the creation of this industry
- Coordination is important
- Not only top down, but bottom up coordination is important

Wave Energy is risky!

- The Technology is difficult
- High costs are involved
- Many devices are being developed, around the world.
- Due the high risks that are involved, Technology developers are not sharing information
- This is slowing down the development of wave energy devices
- This is a global problem

The Innovative Environment in Portugal

- Companies do not have a long term vision, due to the crisis
- And since the development of Offshore Energy is very slow and risky. They do not include it in their plan.
- At the European Commission Portugal scored as one of the best countries in Research and Development and one of the worst in Innovation.
- This is forcing Portuguese companies to have a better Innovation Management



The OTEO project

- The OTEO project - “Offshore Energy Technology Observatory” establishes as a strategy the Portuguese and the international knowledge of offshore energy technologies
- As well as support technologies in order to increase the competitiveness and the entrepreneurship in this sector
- Workshops with Portuguese stakeholders of the OTEO project have also shown that a better innovation management is necessary in Portugal

Horizon 2020

- The New EU Framework Programme for Research and Innovation for 2014-2020
- With a budget just over €70 billion
- The European Commission will adopt the Horizon 2020 by the 11th of December
- Strong participation by SMEs
- More benefits and risk finance for SMEs



KICInnoEnergy

- KIC InnoEnergy is one of the three KICs (together with ICT labs and Climate) created under the leadership of the European Institute of Technology (EIT)



KICInnoenergy's Strategy

- KICInnoenergy facilitate transitions: from idea to product, from lab to market, from student to entrepreneur
- KIC InnoEnergy strategy is to be the leading engine for innovation and entrepreneurship in the field of sustainable energy
- KicInnoenergy's budget is coming from the Horizon2020!

How to proceed?!

- Focus on a better innovation management
- Collaborate more with each other
- Portugal can also decide to develop
 - 1) Support and O&M technologies
 - 2) Render services instead of focussing on the development of the device itself

What does the WavEC do to stimulate Innovation?!

- Participates in community projects
- Organize networking meetings
- Conferences
- Training networks
- Owns the wave energy power plant Pico in the Azores.
- For more information check www.wavec.org



Thank you!

- Do you have any questions?

References!

- Wave Energy In Portugal, The path towards a successful implementation, ICOE 2012
- Wave Energy Risky or not ?, EWTEC, 2013
- www.oteo.pt