Atlantic Stakeholder Platform Conference

Knowledge clusters to drive investment and employment

Marine South East (UK)
Pole Mer Bretagne Atlantique (FR)
OCEANO XXI (PT)
Campus do Mar (ES)

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Workshop Content

- Introduction: clusters & the blue economy
  - Jonathan Williams (MSE)
- Growth in offshore renewable energy
  - Phil Monbet (PMBA)
- Growth in offshore aquaculture
  - Carla Domingues (OCEANO)
- Skills in entrepreneurship and innovation
  - Cristina Quelle (Campus do Mar)
- Open discussion
  - Facilitated by Jonathan Williams
- Summary conclusions & actions

Introduction:
How cluster organisations can drive investment in the Blue Economy

Jonathan Williams

Marine South East (UK)

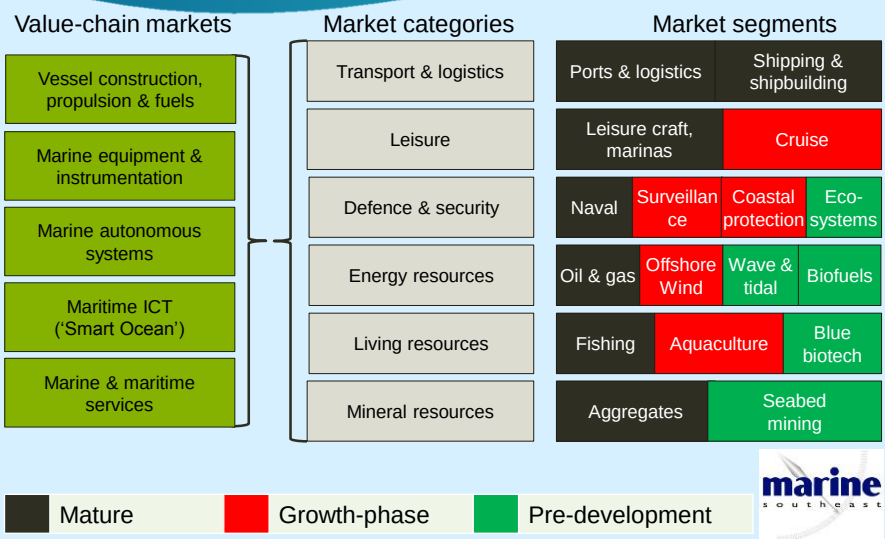
Atlantic Action Plan Priorities

- Promote entrepreneurship & innovation
  - Sharing knowledge
  - Enhancement of competitiveness and innovation capacities
  - Fostering adaptation and diversification
    - Especially fisheries & aquaculture
- Protect, secure and develop the potential of the Atlantic marine and coastal environment
  - Improving maritime safety & security
  - Exploring and protecting marine waters and coastal zones
  - Sustainable management of marine resources
    - Especially seabed mining & blue biotech
  - Exploitation of the renewable energy potential
- Improve accessibility and connectivity
- Create a socially inclusive and sustainable model of regional development

Key Question

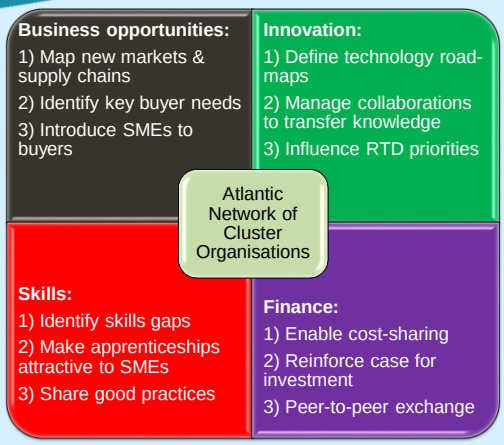
- How to achieve the high level of business engagement needed to attract investment and job creation?

Future Markets

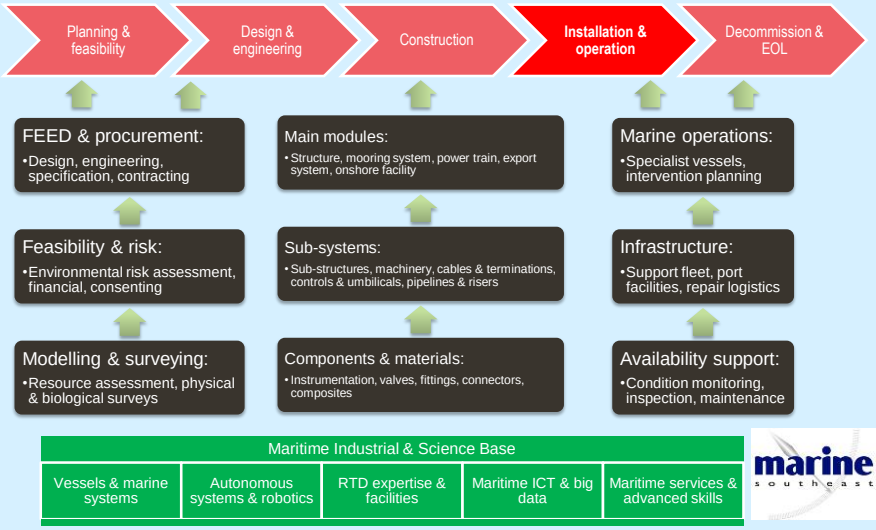


Clusters as Catalysts for Blue Growth

- Cluster organisations can orchestrate new market-led projects and consortia
- Clusters can influence all strands of the triple helix:
  - Business (large & SMEs)
  - Science base
  - Public authorities
- Cluster collaboration across the Atlantic seabasin can exploit specialisations and share knowledge
  - Identify strengths along value chain



Maritime Value Chains



What Next?

- Build on recent & current activities:
  - REMCAP Regions of Knowledge project (www.remcap.eu)
    - Building innovation activities in: Seabed anchoring; novel fuels; offshore aquaculture; autonomous systems
  - Atlantic Power Clusters Interreg project
  - Others
- Create market-led Atlantic project consortia that:
  - Offer clear commercial opportunities to firms
  - Draw on specialist expertise & knowledge across the sea-basin
  - Define specific support measures needed:
    - Research, facility access, training, financing, policy measures
  - Map onto H2020, ESIF, COSME and other programmes

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Opportunities for investment & growth in offshore renewable energy

Phil Monbet (PhD)
Philippe.monbet@polemer-ba.com

1. A favorable context

One goal: become a low carbon economy

Climate change issues

Rising energy demand

Increasingly scarce fossil fuels at fluctuating prices

- 20 – 20 – 20 targets (greenhouse gas emissions reduction, renewable production, improve energy efficiency)

OCEAN ENERGY is one of the 5 pillars from the BG Strategy

- Stimulate tehnological innovation
- Enhance Commercial activities
- Increase competitiveness

2. Where are we now?

On the Atlantic european coastal area

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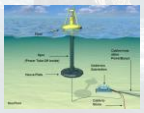
On the Atlantic european coastal area

	IRELAND	UK	FRANCE	SPAIN	PORTUGAL
CURRENTLY INSTALLED	25 MW	3653 MW	---	---	2 MW
	---	3.8 MW	---	0.3 MW	0.7 MW
	---	5.2 MW	240 MW	---	---
TARGET 2020	555 MW	4200 MW	6000 MW	3000 MW	27 MW
	75 MW	700 MW		100 MW	6 MW
	16% of renewables	*15% of renewables*	*23% of renewables*	*20% of renewables*	*31% of renewables*

2. Where are we now?

On the Atlantic european coastal area

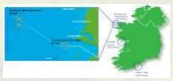
ONGOING PROJECTS

IRELAND	UK	FRANCE	SPAIN	PORTUGAL
Arklow Bank project 25 MW Operationnal	**Seagen** Convertor 1.2 MW Operationnal	**Tidal plant La Rance** 240 MW Operationnal	**Wave plant Mutriku** 300 kW Operationnal	**Wave plant PICO** 700 kW Operationnal
Westwave project / 5MW Design and planning phase	**Swansea tidal** lagoon / 240 MW Planning phase	**Paimpol Brehat** / 2 MW Testing phase	**Ocean Power Tech.** OPT Design phase	**Wave roller Peniche** Testing phase
				

2. Where are we now?

On the Atlantic european coastal area

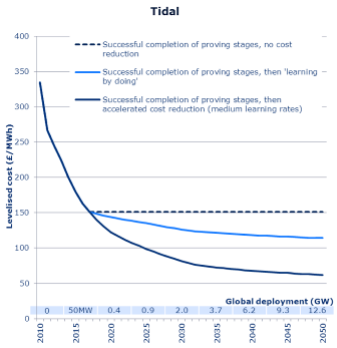
MAIN R&D INITIATIVES

IRELAND	UK	FRANCE	SPAIN	PORTUGAL
MAREI Cluster of research, development and innovation for MRE 29 M€	**Offshore Renew. Energy Catapult** Triple helix approach to bring new products 46 M GBP – 5 yrs	**FRANCE ENERGIES MARINES** Research Institute on MRE 34M € – 10 yrs	**OCEAN Lider** Consortium of companies with strong academic capibility 30M €	**WAVEC** Private organization to develop offshore renewable energy
Beaufort Institute UCC Supporting development and innovation in the maritime and energy fields	**PRIMaRE** Peninsula Research Institute for MRE	**R&D funding** Innovation Clusters Regional dev. Agencies ADEME	**TECNALIA** Research & Innovation	**INEGI** Interface Institution between University and Industry, oriented to R&D, Innovation and Technology Transfer
AMETS Belmullet Test site	**Wave Hub** Test site in Cornwall 4 berths / 20 MW 40 M GBP	**SEM-REV** Test site 4 berths / --- MW 11 M€	**BIMEP** Test site 4 berths / 20 MW 20 M€	**LNEG** R&D institution oriented to respond to the needs of society and enterprises
				
Prototype dev. Funds (SEAI)				

3. Key innovations priorities

Overall: Cutting energy costs by innovating (by 50 -75%)

- Scale of array installation
- Supply chain optimisation
- Appropriate financing



R&D activities dedicated to:

1. First arrays

- Cabling
- Device interactions
- Multi-array deployment

2. Technologies

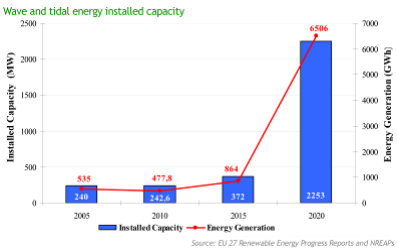
- New and better concept (wave)
- Installation (drilled structures)
- O&M activities (faster / lower specs – retrieval operations)
- wet connections

4. Size of opportunities

Hard to tell! as it depends of:

- Policies (highly policy dependent) / targets raises risks and lower returns
- high capital expenditure requirements (risky investments)
- Regulatory framework and Incentives (FiTs…)
-

But…



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La mer, terre d'innovation

OCEANO XXI | cluster do conhecimento e economia do mar

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Opportunities for investment & growth in aquaculture

Carla Domingues
Porto
20th January 2014

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Aquaculture demands

- Global aquaculture production has grown by an average 8% per year for the last decade; production within the EU has decreased by approximately 10%
- Europe requires a sustainable aquaculture sector capable of contributing to the **current and future global demands** for seafood
- Lack of **available maritime space** for aquaculture activities should be overcome by identifying the most suitable sites
- The production of farmed aquatic animals and the development of farming equipment must be supported by the most **advanced R&D** as well as **innovative technology**

Feufar

Testa e Cunhas

Feufar

Innovation Capacity

To value the sea as a resource by developing a set of activities, products and services

- Promote **networking** activities between companies and R&D partners
- Stimulate new projects ideas and new **business opportunities**
- Support and reinforce **international cooperation**
  - ✓ Open days and Info days
  - ✓ Business Conventions
  - ✓ Exhibition Forums
  - ✓ Participation in Entrepreneurial Missions
  - ✓ Participation in National and International Networks and Projects

International Cooperation

National and International Projects

Resource Efficient Maritime Capacity

FP7 REGIONS OF KNOWLEDGE

Imagine the marine bio-resources' sector for 2014-2020

INTERREG IVB

Cooperation in Fisheries, Aquaculture and Seafood Processing

FP7 ERANET

Action lines - Aquaculture

Support research, development, innovation and business

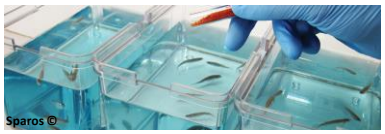
- **Offshore technology** (*i.e.* cage design, construction materials), maintenance and operations (*i.e.* technology for remote fish husbandry, feeding control software, fish processing, monitoring of water quality)
- R&D strategy, technology capacity, innovative solutions and business model for **multi-use off-shore platforms**
- **Integrated multi-trophic aquaculture** (IMTA) systems such as finfish-seaweed-bivalves, as part of the solution for bio mitigation

Tropos

Action lines - Aquaculture

Support research, development, innovation and business

- Studies on the potential of **new high valued species** for offshore facilities towards supply diversification (especially for fish processing)
- Studies on **feeding formulation**, fish nutrient budget and waste dispersion, to maintain high performance and **reduce environmental impact**
- Aquaculture production **best practices**, logistic requirements and safer framework for workers in fish farms
- Improving **processing**, **labelling**, **traceability** and **certification**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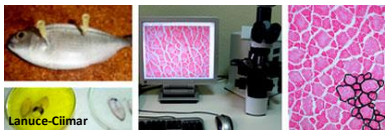
Lanuce-Ciimar

Building cross-border educational and training programmes supporting entrepreneurship and innovation

Cristina Quelle

Campus do Mar (ES)

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Atlantic action plan

Efforts in Three Areas:

- **Targeted Investment**
- **Increasing Research Capacity**
- **Higher Skills→** Need of cross-border educational and training programmes supporting entrepreneurship and innovation

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Priority 1:

Promote entrepreneurship and innovation

- **Knowledge sharing** Networking, cooperative research, knowledge transfer through maritime clusters/platforms..
- **Enhancement of competitiveness and innovation capacities→** cross border educational and training programmes, specialized skill training...
- **Fostering adaptation and diversification in the Atlantic Area**

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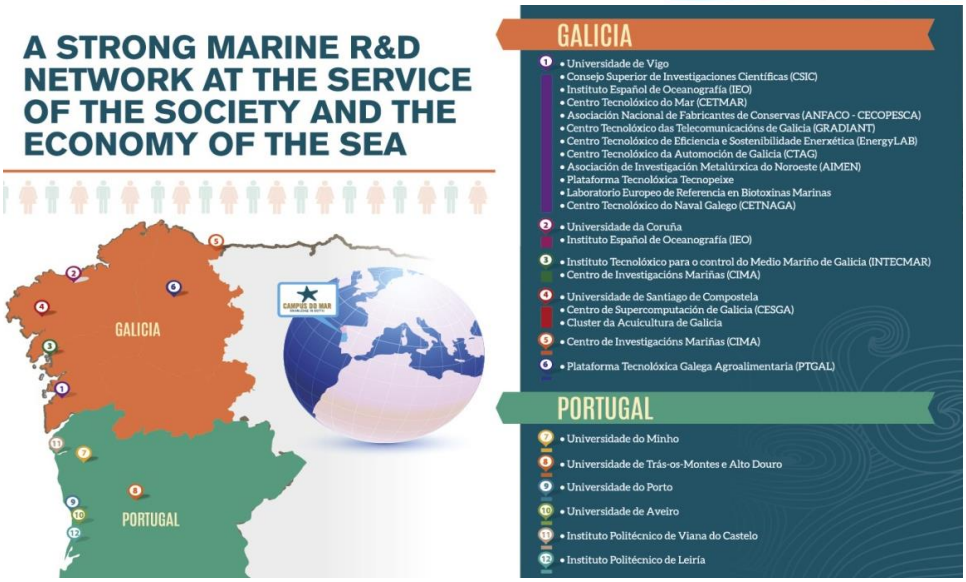
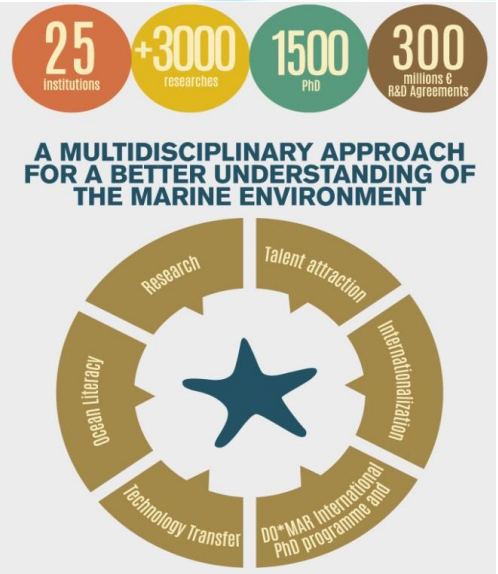
Atlantic clusters to implement Atlantic Action Plan: The Campus do Mar experience



Atlantic clusters to implement Atlantic Action Plan: The Campus do Mar experience

International Campus of Excellence consisting of the aggregation of universities, research Centres, institutes and technology platforms of the Eurorregion Galicia-N of Portugal.

Cross-border network of research, teaching and technology transfer units in the field of Marine Science and Technology in order **to provide industry with the best tools to competing on a global scale**



Atlantic clusters to implement Atlantic Action Plan: The Campus do Mar experience

DOMINIQUE FORAY

Fisheries and the canning industry in Galicia, Spain, are again not a *smart* specialisation, even if this sector is economically important in this region. However, the creation of a university in Vigo (*Campus do Mar*) to develop applied science and technological solutions to improve the operational efficiency of traditional fisheries can drive some kind of smart specialisation if a population of firms specialising in the development of these solutions emerges and grows from the merging of the traditional sector and certain applied science domains (bioengineering, chemical engineering, ICT).

new technological infrastructure with the needs and capacities of firms. If we return to the example of Galicia, the *Campus do Mar* in Vigo, Spain, will only be able to trigger the development of new specialities to transform traditional sectors (fisheries and canning) if a sufficient number of firms in these sectors link up with the new university to collectively develop innovative solutions for the modernisation and diversification of the sectors concerned. In other words, the establishment of the knowledge infrastructure must be completed through the organisation of coordination between the latter and industry. This coordination can take the form of programmes to improve the absorption and learning capacities of firms in the sector or plans for supporting the creation of firms specialised in the development of technological solutions at the interface between campus and industry. I am talking here about well-known problems – knowledge and technology transfers.

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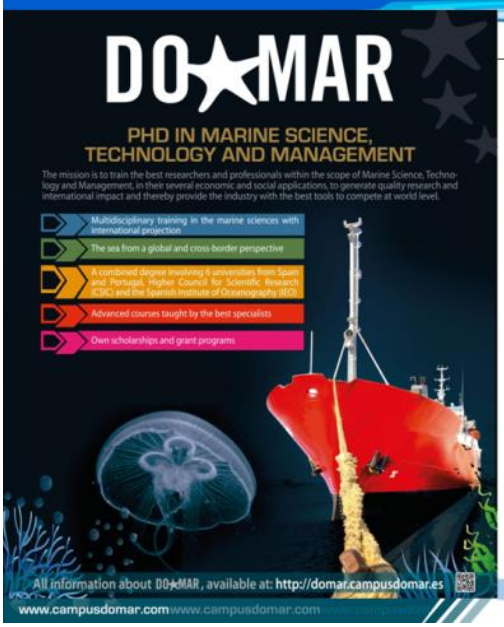
DO*MAR International Phd programme



- **Multidisciplinary training in the marine sciences with international projection**
- **6 universities from Spain and Portugal**
- **The sea from a global and cross-border perspective**
- **Advanced courses taught by the best specialists**

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Thanks for your attention

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Open Discussion

Panel:
Jonathan Williams (facilitator)
Phil Monbet
Carla Domingues
Cristina Quelle

Feedback to: admin@mseuk.org

marine
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