Offshore Renewable Energy and its Potential for the Outermost Regions

SESSION I: Portugal and the Situation on Renewable Offshore Energies

Margarida Almodovar

Funchal, Madeira
15 de Setembro 2011
Offshore Renewable Energy and its Potential for the Outermost Regions
Oceano Atlântico do Norte
75% of its population resides in the coastal zone.

Due to the geographical position of Portugal, along the corridors of shipping movements sail about 200 ships a day.

Cruise Ships and No Passenger, more than 260 ships

90% of accommodation capacity in the coastal zone.

Protected areas and marine protected areas.

90% of accommodation capacity in the coastal zone.

Economy of the Sea
Functions and economic value

- TRANSPORT and LOGISTICS
  - Port services, port handling, construction and marine works, communications, construction and repair

- ENERGY
  - Offshore oil and gas, construction of platforms, transport of raw materials, refining, shipbuilding, renewable energy

- DEFENSE and SECURITY
  - Ships, remote sensing, communications, armament, naval bases, arsenals, ocean observation, support for resource conservation, pollution

- LEISURE and TOURISM
  - Transportation of passengers, cruise, ship building marinas, marinas

Economic value of activities associated directly or indirectly to the sea is 5/6% of GDP (without tourism coast but with nautical tourism), but for example Denmark is 50% of the economy.
Guidelines

• National Strategy for the Seas and the three Main Pillars
  a) The knowledge;
  b) The active promotion and protection of national interests;
  c) The planning and spatial management;

Inter-Ministerial Committee for Sea Affaires (CIAM)
To co-ordinate, to follow and to evaluate the implementation of the National Strategy for the Sea, being guaranteed its joint with other strategies, instruments of planning and programs of transversal scope
FRAMEWORK

National Strategy for the Seas (RCM 163/2006) "Maritime space and activities planning
National Strategy for Integrated Coastal Zone Management – ICZM (RCM 82/2009)
Roadmap – Communication from the Commission (COM 2008 791 final)

PORTUGUESE MARITIME SPATIAL PLAN

OBJECTIVES

Identify the present and future uses and activities integrated with the ICZM
Mapping Activities and determining the maritime space settled for each activity.
Ensure the sustainable use, conservation and regeneration of the maritime resources
Promote the economical, social and environmental importance of the sea
Establish a set of indicators to evaluate the sustainable performance of the activities and their monitoring
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- National Strategy for the Seas
- Exclusive Economic Zone
- Maritime Spatial Plan
- Water Framework Directive
- OSPAR Convention
- NSICZM

- Coastal waters
- Territorial waters
- Outer limit of the continental shelf
Maritime areas under the sovereignty or jurisdiction Portuguese

- Maritime boundary, the outer limit of the Continental Shelf (presented to - Commission on the Limits of the Continental Shelf).

- Landward limit: LMPAVE (line of maximum high tide of living water equatorial).

- Portugal without the sea is a small country and peripheral and of no great relevance in terms of economic relations and international political, Portugal with the SEZ is a central country, and geostrategic.

- Portugal with the current EEZ is already the largest in Europe, enlargement is the largest in Europe and one of the largest in the world.

EEZ is 1.7 million km2, about 18 times the continental area (without the extension area).
PORTUGUESE MARITIME SPATIAL PLAN

Area of Incidence

atmosphere, surface, water column, seabed and bottom

Fonte: EU Maritime Policy
## Synthesis of Reflection MSP (European cases)

<table>
<thead>
<tr>
<th></th>
<th><strong>BELGIUM</strong> (Master Plan(^1) e GAUFRE project(^2))</th>
<th><strong>GERMANY</strong></th>
<th><strong>UNITED KINGDOM</strong> (Multiple-use Zoning)</th>
<th><strong>NETHERLANDS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ÁREA (KM(^2))</strong></td>
<td>3 600</td>
<td>33 100 (no total)</td>
<td>44 600</td>
<td>57 000</td>
</tr>
<tr>
<td><strong>Scope</strong></td>
<td>MT + ZEE</td>
<td>ZEE</td>
<td>MT + ZEE (parte)</td>
<td>MT (a partir de 1 km) + ZEE</td>
</tr>
<tr>
<td><strong>PHASE</strong></td>
<td>Em concretização</td>
<td>Em aprovação</td>
<td>–</td>
<td>Em concretização</td>
</tr>
<tr>
<td><strong>BINDING</strong></td>
<td>(a confirmar)</td>
<td>✓</td>
<td>–</td>
<td>✓</td>
</tr>
<tr>
<td><strong>SEA</strong></td>
<td>× AIA</td>
<td>✓</td>
<td>–</td>
<td>× AIA</td>
</tr>
<tr>
<td><strong>PLANNING PROCESS</strong></td>
<td>Analysis and characterization</td>
<td>Identification of uses</td>
<td>Identification of the legislation</td>
<td>Implementation Execution Knowledge management and information Evaluation.</td>
</tr>
<tr>
<td></td>
<td>Introduction into a GIS (database)</td>
<td>Determination of priority uses and areas</td>
<td>Introduction into a GIS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Study of the interaction between uses, infrastructure and environment</td>
<td>Setting goals, principles and justifications analysis of impacts</td>
<td>Proposed zoning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scenarios</td>
<td></td>
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</tbody>
</table>
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German EEZ

North Sea: the synthesis uses (existing and future)
### Thematic Workshops

**Maritime Transport and National Defence** - Ponta do Sal em São Pedro do Estoril
- sessão sobre Transportes Marítimos e Portos
- sessão sobre Segurança Marítima

**Fishing, tourism and other uses of the Coastal Zones** - Olhão (Biblioteca)
- sessão sobre Pescas e Aquicultura
- sessão sobre Turismo Náutico
- sessão sobre outros Usos (de Turismo e Lazer) das Zonas Costeiras

**Environment and Energy** - Universidade de Aveiro (Departamento de Ambiente e Ordenamento)
- sessão sobre Investigação do Mar
- sessão sobre Conservação da Natureza e Biodiversidade Marinhas
- sessão sobre Energia
- sessão sobre Recursos Minerais

**Fisheries and other Marine Resources** - Açores (Faial)

*Secretaria Regional do Ambiente - Funchal, 2010 MarBis/EMA*

9 Reuniões no INAG da Equipa Multidisciplinar

### Document Content (MSP)

- Guidelines
- Characterization studies
- Diagnosis
- Summary of Workshops
- Characterization of Workshops
- Vision, Mission, Guidelines, Strategic Alternatives and Options
- Preliminary proposal of spatial plan
- Spatial representation (Proposal)
- Proposed Guidelines for the Management (or the Implementing Rules)
- Proposal of Action Program
- Proposal of Monitoring Program
- Maritime Spatial Plan

### Document Content (SEA)

- Report of the Critical Factors for Decision
- Informal inputs to the SEA planning process
- Report of preliminary assessment of strategic options
- Informal inputs to the SEA planning process
- Environmental Report

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**Discussão Pública**

**PORTUGUESE MARITIME SPATIAL PLAN**

**ENVIRONMENTAL STATEMENT**
PORTUGUESE MARITIME SPATIAL PLAN – EXISTING SITUATION
Offshore Renewable Energy and its Potential for the Outermost Regions

PORTUGUESE MARITIME SPATIAL PLAN – POTENTIAL SITUATION

Conservation and biodiversity

Aquaculture

Fisheries

Wind energy

Wave energy

Petroleum resources

Geological resources - sand and gravel

Geological resources - iron and manganese crusts

Infrastructure

Navigation

Defense and sovereignty
PORTUGUESE MARITIME SPATIAL PLAN - Management and Action Plan

General Guidelines

• Measures
  Deadlines for implementation
  Intensity of application (or concentrated over time)
  Cost associated
  Organization, responsible for implementing

Sector Guidelines

• Recommendations
• Structural measures

Monitoring Program
ENERGY SECTOR - MANAGEMENT GUIDELINES

WAVE ENERGY - The activity
Integration with other activities, uses and functions

Exo

- The development of wave energy parks should not interfere with maritime traffic routes and proximity to ports, pre-existing submarine cables and pipelines.
- The development of wave energy parks should be harmonized with the interests of fishing communities, in particular as regards the preservation of traditional fisheries and the establishment of corridors of movement and access to them.
ENERGY SECTOR - MANAGEMENT GUIDELINES

WIND ENERGY- The activity
Integration with other activities, uses and functions

Ex°

- The establishment of wind farms must be compatible with the interests of fishing communities, in particular as regards the preservation of traditional fisheries and the establishment of corridors of movement and access.
- Coordination between the establishment of a wind farm and the use of geological resources of the seabed and the oil must be temporal and spatial management, where possible.
- Where possible and justified to be exploited the potential synergies between the exploitation of wind farms and wave energy parks, as well as cultivation of seaweeds for the production of biofuels and aquaculture activities, and should also be given to the possibility of their use for other needs and functions as those related to coastal surveillance and maritime traffic and data collection.
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Mapa 1
Enquadramento

Sistema de referência:
"Datum Lisboa/Coord. Militares"
[EPSG:20790]
## Structuring Measures: Short Term

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Structuring Measures</th>
<th>Entidades</th>
</tr>
</thead>
<tbody>
<tr>
<td>✅ Aquaculture</td>
<td>B1.2. Areas for aquaculture and offshore installation conditions. Tender for the concession of local</td>
<td>MADRP/MAOT</td>
</tr>
<tr>
<td>✅ Nautical Tourism</td>
<td>B1.4 New opportunities for nautical tourism, locations for implementation of new infrastructure, upgrading and improvement of existing services (recreational boating and maritime tourism)</td>
<td>MEID/MOPTC/MAOT</td>
</tr>
<tr>
<td>✅ Water Sports</td>
<td>B1.4 Identify locations for water sports (wind, wave and underwater), improve infrastructure and equipment (including clubs and schools) and services</td>
<td>MP/MAOT</td>
</tr>
<tr>
<td>✅ Energy</td>
<td>B1.7 Areas of greatest potential for offshore renewable energy and development of procedures for their licensing and exploitation</td>
<td>MEID/MAOT</td>
</tr>
<tr>
<td>✅ Mineral Resources</td>
<td>B1.8 Create conditions for the exploration and exploitation of mineral deposits and oil (liquid and gas). Standardization of processes</td>
<td>MEID/MAOT</td>
</tr>
<tr>
<td>✅ Knowledge Research</td>
<td>D2.1 Guarantee sources of funding for R &amp; D programs [...], and the integration of research centers, institutions and economic agents in international networks of excellence</td>
<td>MCTES/MAOT</td>
</tr>
</tbody>
</table>

### Licensing / Procedure Simplification - E 1.3.
Ensure coordination between the various entities that have jurisdiction or specific skills on the Maritime Space, and using the Space Marine - clear and transparent processes - Environment / other Ministries

### Environment Ministry / other Ministries
Ensure implementation of international commitments and community monitoring and coordination within the RedeNatura2000, OSPAR, WFD, MSFD, to ensure good environmental status of marine environment.
INTERSIG

View services available in order to allow other organizations can use this information in their Geographic Information Systems.
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Site: http://intersig-web.inag.pt/intersig/

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