Seminar - Wave Energy in Portugal in the International Context
WEC Development in Portugal

15th June 2009, Lisbon

Marc Hadden
AGENDA

- Overview Martifer + FLOW
- Today's Scenario in Portugal... a Martifer perspective
- NavalRia, sink or swim
- Conclusions
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Business Areas

- Metallic Constructions
- Energy Systems
- Electricity Generation
- Agriculture and Biofuels
Martifer is present in 18 Countries in 5 Continents
• Execution of turn-key projects with a great metallic construction component

• Iberian Leader and one of the top 10 European players

• Industrial presence in Portugal, Poland and Angola (currently under creation)

• Focus on large and complex projects (design and engineering)

• Activities
  • Metallic Constructions
  • Facades in glass and aluminium
  • Stainless steel solutions
  • Mono Units
Energy resources

Wind
Solar
Hydro
Wave

Target Markets
Portugal, Spain, Poland, Romania, Slovakia, Ukraine, the USA, Brazil, Greece, Ireland, Italy and Australia

Business Model

Create/ Acquire means of electricity generation

Production of electricity for the network and operation and maintenance

Supply and distribution of electricity for the ultimate user
• Group Martifer holds 60%

Biofuels value chain

Agriculture ➔ Extraction ➔ Commercialization and Logistics ➔ Production of Biodiesel ➔ Distribution of fuels

• At present:
  • 2 Biodiesel production units (Romania and Portugal) - 200 thousand Ton/year of total production capacity
  • Farm lands in Romania and Brazil and exploratory activities in Mozambique

• Build a strong brand:
  • PRIO as the “top of the mind” brand

• Customer loyalty development by the uniqueness of the product:
  • High inclusion of biofuels
Main lines of strategic orientation

• Become one of the main *players* in the supply of energy systems for renewable energies.
• Take advantage of the market opportunities that arise from the changes in the energy industry.
• Take advantage of the synergies of the various business lines of the Group.
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Today's Scenario in Portugal... a Martifer perspective

- Ideas → Models → Systems = Prototype

Therefore Three main steps can be considered

1. Ideas → Models (R&D Phase)
   - First phase development (experience)
   - Numerical Model Analysis (Freq & Time) etc..
   - Model building and wave tank testing
   - Finite Element Analysis etc...

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## 2. Models → Systems (R&D and Engineering Phase)

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NavalRia, sink or swim

During 2004/5 over 20 Shipyards contacted in Portugal & Spain

Montego, Figueira da Foz

NavalRia, Aveiro

In some European shipyards there exists a waiting list of over 1 year

Decision taken in mid 2007 to acquire a shipyard in Portugal

Fonte: CESA – Community of European Shipbuilders Associations.
Shipbuilding Yard acquired by Martifer in late 2007

- 126,000 m² of Land
- Dry Dock
- Floating Dry Dock
- Slipway
- 400Ton Shiplift
  - 12 berth horizontal plans
Shipbuilding Yard acquired by Martifer in late 2007

- 126,000 m² of Land
- Dry Dock
- Floating Dry Dock
- Slipway
- 400Ton Shiplift
- 12 berth horizontal plans
Dry Dock
• Length 103.5 mts
• Breadth 20 mts
• Draught 7 mts
Shipbuilding Yard acquired by Martifer in late 2007

- 126,000 m² of Land
- Dry Dock
- Floating Dry Dock
- Slipway
- 400Ton Shiplift
  - 12 berth horizontal plans
Floating Dry Dock

- Length 60mts
- Breadth 12mts
- Draught 4.5mts
Shipbuilding Yard acquired by Martifer in late 2007

- 126,000 m² of Land
- Dry Dock
- Floating Dry Dock
- Slipway
- 400Ton Shiplift
- 12 berth horizontal plans
Slipway
• Length 85mts
• Breadth 26mts
• Capacity 900T
Shipbuilding Yard acquired by Martifer in late 2007

- 126,000 m² of Land
- Dry Dock
- Floating Dry Dock
- Slipway
- 400 Ton Shiplift
  - 12 berth horizontal plans
Ship Lift
• Capacity 400T
Shipbuilding Yard acquired by Martifer in late 2007

- 126,000 m² of Land
- Dry Dock
- Floating Dry Dock
- Slipway
- 400 Ton Shiplift
- 12 berth horizontal plans
Investments are being made to better its infra structure and equipment
State of the Art Operational Processes
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Conclusions

• Portugal has excellent R&D capabilities
  • But lacks adequate test facilities
• Portugal has excellent natural resources for wave energy
  • But still lacks its Pilot Zone which is fundamental to the future of Wave Energy in PT
• Important that Wave Energy in PT is seen as a potential industry in the making, and not “boys with toys” (slowly but surely)
• Important for Portugal to have necessary conditions for any potential developers (infra structure, engineering and construction capabilities)
  • HAS TO BE a government strategy AND PRIORITY
Thank You!!

Any Questions?

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