• INTRODUCTION

• MARTIFER
  • Metallic Construction
  • Renewable Energies
    • Wind, Sun, Biodiesel
    • Wave Energy

• FLOW Project
  • Evolution
  • Prototype

• NAVALRIA
  • The Shipyard
  • Dry Dock
  • Floating Dock
  • Ship Lift
  • Slipway
  • Halls

• CONCLUSIONS
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CONCLUSIONS

• Launched its first operations in 1990 in the metal structure industry, in the center of Portugal

• Later, MARTIFER diversified into the Renewable Energies industries

• Over 3,000 employees work with MARTIFER

• Has approx. 150 companies and 20 factories in 20 countries around the Globe

• 902 million EUR revenues in 2008
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CONCLUSIONS

Metallic Construction is in the basis of MARTIFER, with several emblematic works around the World.
MARTIFER diversified into the Renewable Energies industry, designing and manufacturing the equipments, building the energy farms, and exploring the production of green energy.
Considering the potential offered by the sea waves, MARTIFER set up a project to design, build and test a prototype of a wave energy converter, with the aim of production at an industrial scale.
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CONCLUSIONS

A multi-disciplinary Team was assembled to approach the subject with consideration to all aspects involved.

Mechanical Engineers - Electrical Engineers - Naval Architects - Meteorologists - Environment Engineers - Biologists - Hydraulics Engineers - Economists - Shipboard Chief Engineers

Powering the Future – Marine Energy Opportunities  Nuno Antunes dos Santos, 2009.11.05
Several alternative technologies were approached, many of which resulting in dead-ends.

The evolution of the fittest designs resulted in the FLOW prototype:
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• CONCLUSIONS

Length: 75 m
Width: 24 m
Height: 17 m
Draft: 14 m

Power: 1.2 - 2 MW
In January 2008 Martifer Acquired NAVALRIA Shipyard, with 124000 sqm, in order to build the FLOW prototype in-house.
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• CONCLUSIONS

• NAVALRIA was founded in 1978 as a repair shipyard

• Located in Aveiro, Portugal, it has excellent accessibilities:
  • Oporto Airport, 1 hour distance
  • 2 motorways to Lisbon, 2 motorways to Oporto, 1 motorway to Spain
  • Railway
  • 7 m deep access channel to the sea

• Undergoing investments:
  • Human Resources
  • Infrastructures
  • Equipment

• NAVALRIA is now suited to:
  • Ship Repair
  • Shipbuilding
  • Build the FLOW Prototype
  • Build other offshore energy equipment
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• CONCLUSIONS

The Dry Dock accommodates ships with:

• Length    100 m
• Beam      16 m
• Draft     6.5 m
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• CONCLUSIONS

The Floating Dock accommodates ships with:

- Length 60 m
- Beam 12 m
- Draft 4.2 m
The Ship Lift accommodates vessels with:

- **Length**: 36 m
- **Beam**: 8 m
- **Draft**: 4.6 m

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Nuno Antunes dos Santos, 2009.11.05
The Slipway accommodates ships with:

- Length: 50 m
- Beam: 10 m
- Draft: 5 m

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• CONCLUSIONS

Carpentry
Metal shaping
Classrooms

Office buildings
Warehouse
Mechanics
Electricity
Metal-cutting
Pre-fabrication
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• CONCLUSIONS

• MARTIFER has a strong commitment towards Renewable Energies
  • NAVALRIA is available to perform further investments in industrial capacity, as needed
  • We are willing to welcome new partners for the development and commercialization of the FLOW Project

• As a manufacturer of offshore energy equipment, NAVALRIA is eager to participate in YOUR Project

NAVALRIA DRYDOCKS
READY TO WORK WITH YOU!

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