

MARTIFER GROUP



- **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**

MARTIFER

FLOW

future lives in ocean waves



NAVALRIA
D R Y D O C K S

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MARTIFER

- 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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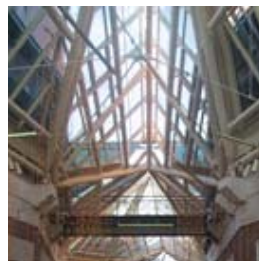
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Metallic Construction is in the basis of MARTIFER, with several emblematic works around the World.



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MARTIFER diversified into the Renewable Energies industry, designing and manufacturing the equipments, building the energy farms, and exploring the production of green energy

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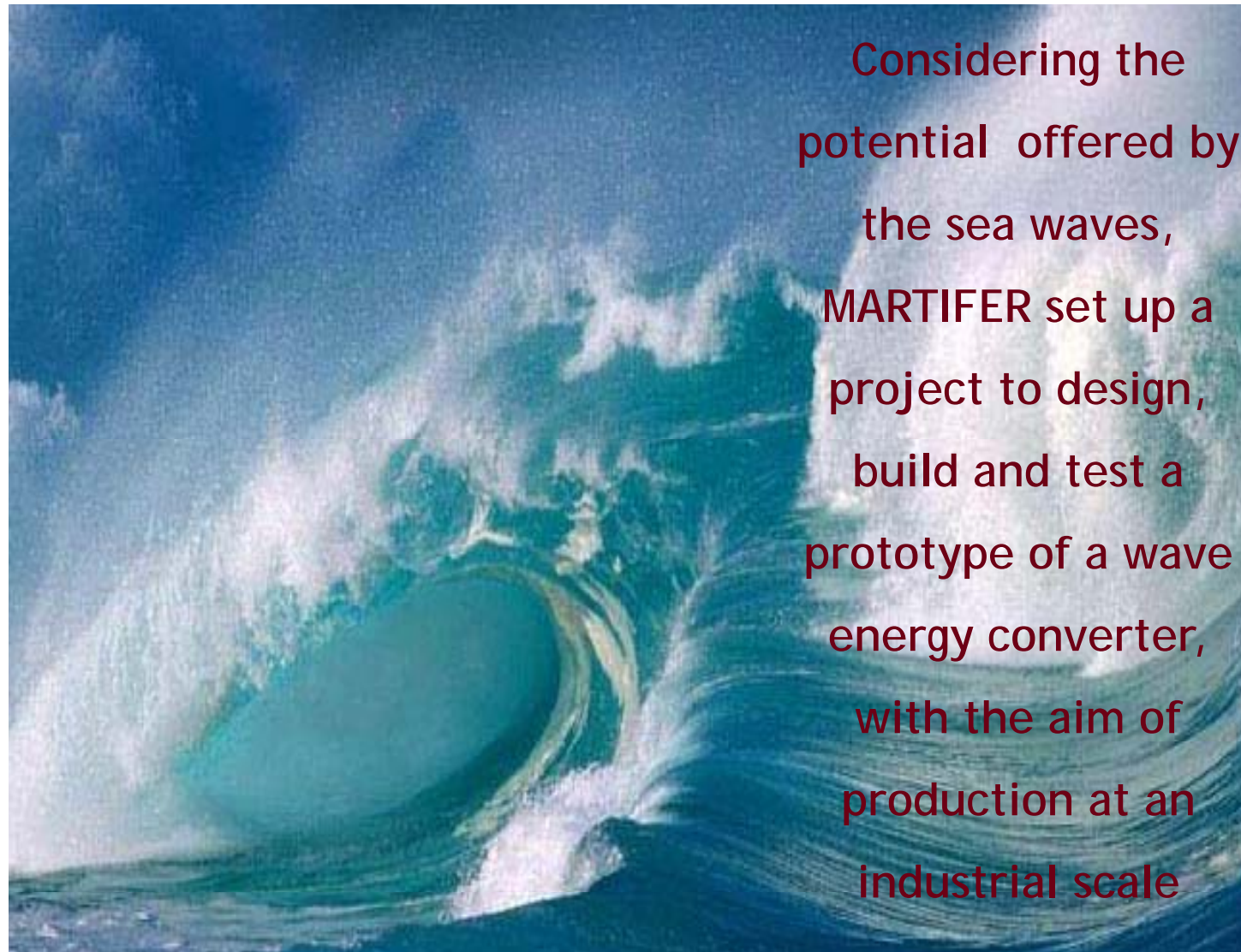
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Considering the potential offered by the sea waves, MARTIFER set up a project to design, build and test a prototype of a wave energy converter, with the aim of production at an industrial scale

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

FLOW

future lives in ocean waves

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

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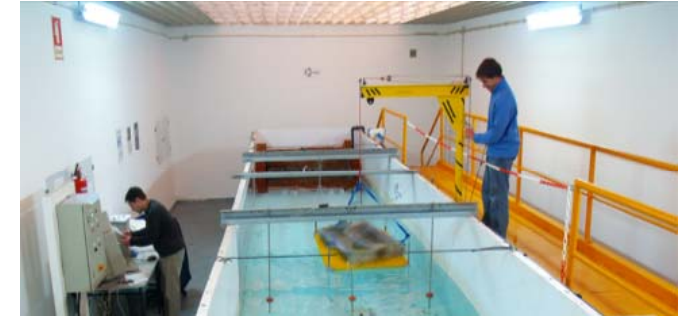
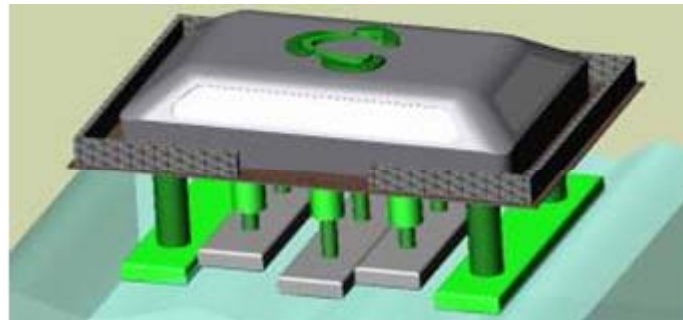
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• NAVALRIA

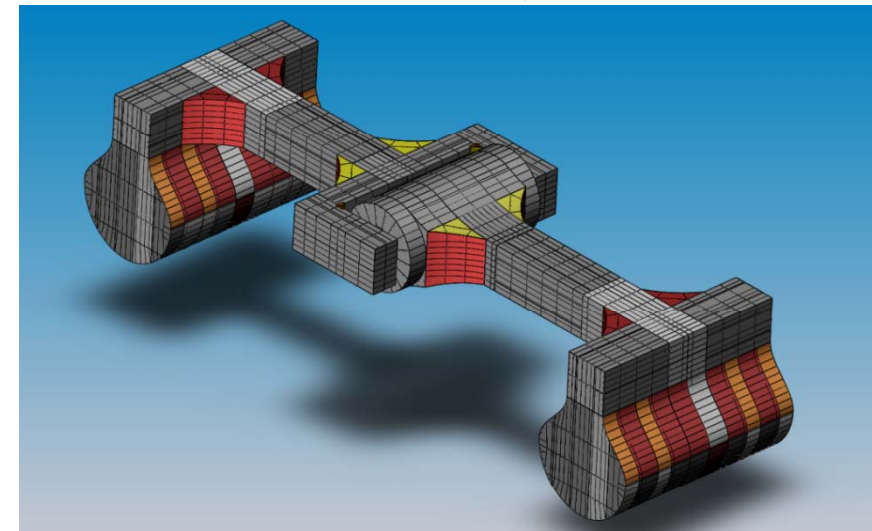
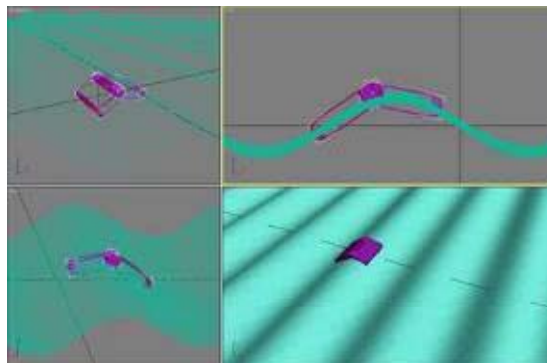
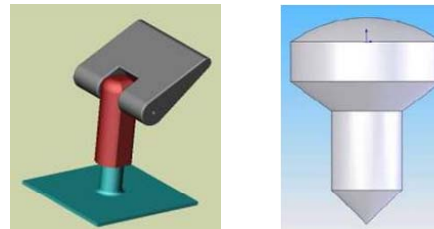
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Several alternative technologies were approached, many of which resulting in dead-ends.



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



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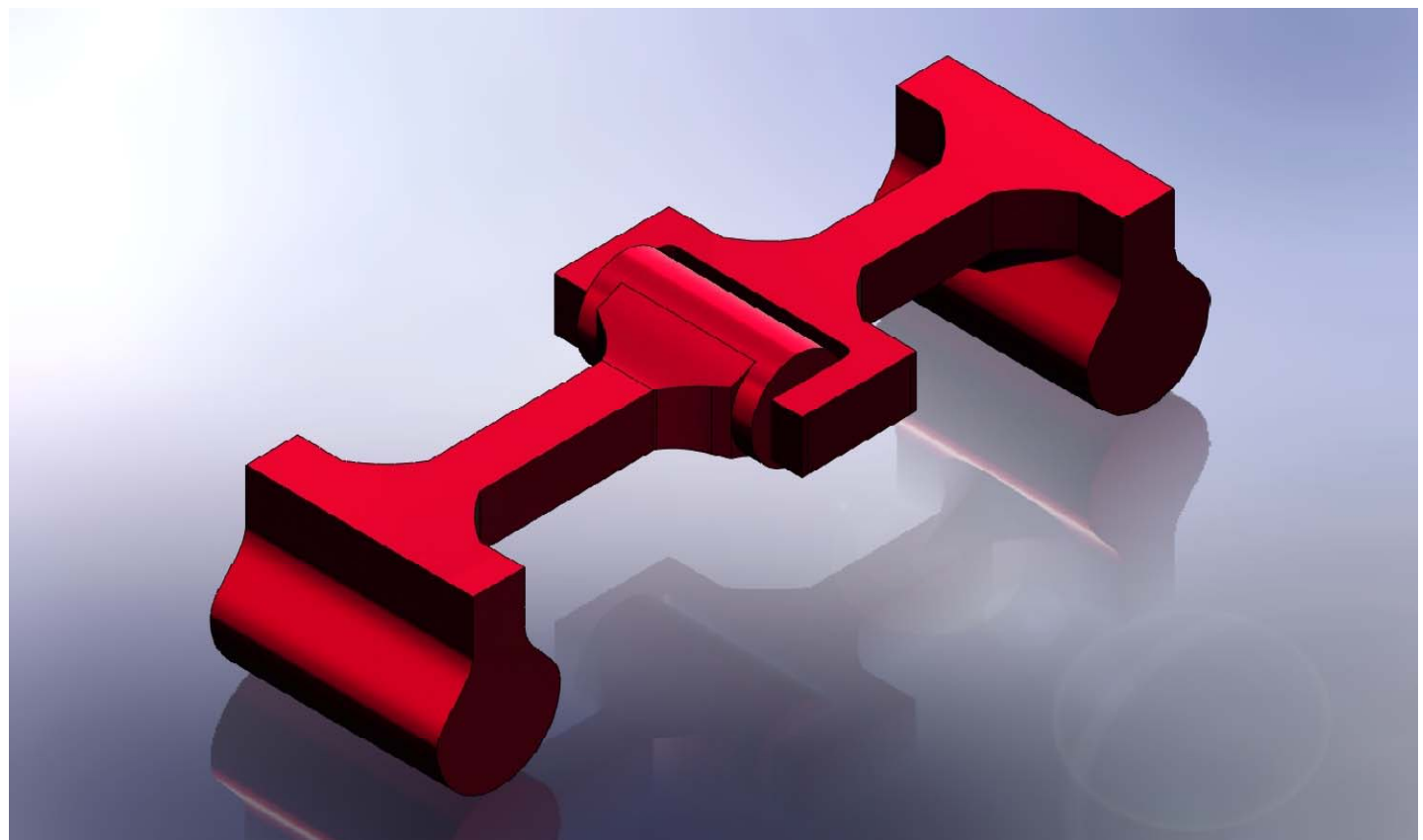
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Length: 75 m
Width: 24 m
Height: 17 m
Draft: 14 m

Power: 1.2 - 2 MW



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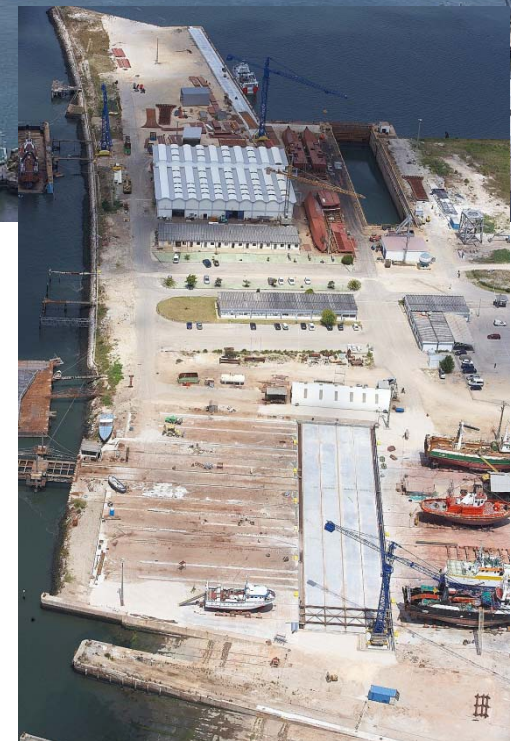
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In January 2008 Martifer Acquired
NAVALRIA Shipyard, with 124000 sqm,
in order to build the FLOW prototype
in-house

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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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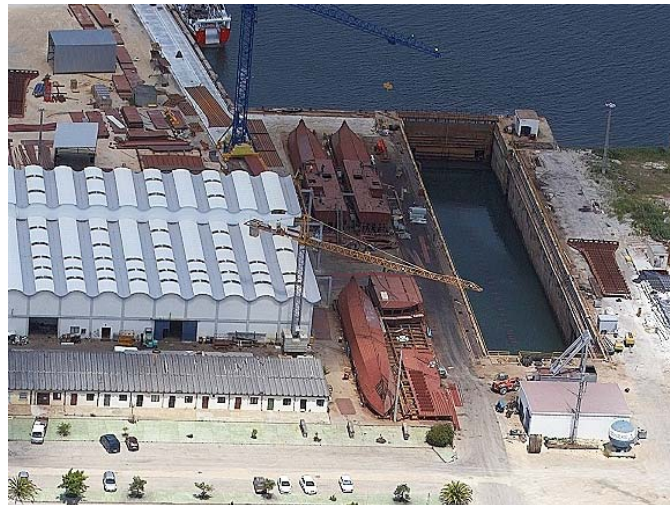
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The Dry Dock accommodates ships with:

- Length 100 m
- Beam 16 m
- Draft 6.5 m



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The Floating Dock accommodates ships with:

- Length 60 m
- Beam 12 m
- Draft 4.2 m



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The Ship Lift accommodates vessels with:

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

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The Slipway accommodates ships with:

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



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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!

Contacts

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