Offshore Renewables in Europe: A challenge for the Portuguese metalworking sector

Fundação Calouste Gulbenkian, Lisbon, Portugal
16th November 2015
ASM GROUP | NUMBERS

35 YEARS

20 COMPANIES
(7 fabrication facilities)

+45M€ REVENUE

+80% FOR EXPORTATION

+350 COMMITED, QUALIFIED AND MOTIVATED WORKERS

MAJOR MARKETS:
- EUROPE
- AFRICA
- SOUTH AMERICA
ASM GROUP | ORGANIZATION

ASM METAL

OIL AND GAS
STORAGE SPECIAL EQUIPMENT

ASM EQUIPMENTS

TRANSPORT
ROAD TANKERS, ISSO
CONTAINERS, TRAILERS

ASM INDUSTRIES

RENEWABLES
STEEL EQUIPMENTS FOR
RENEWABLE ENERGY
KEY LOCATIONS

AVEIRO PORT

ASM FACILITIES

LISNAVE SHIPYARD
CURRENT MANUFACTURING

LOCATION AND FACILITIES

ASM ENERGIA
SEVER DO VOUGA

FULLY OPERATIONAL SINCE 2006

~20 000 TON OF STEEL PROCESSED PER YEAR
LISNAVE SHIPYARD (FINAL ASSEMBLY WORKS)
PLANNED MANUFACTURING FACILITIES

AVEIRO PORT

ASM FACILITIES

3Q 2017

OFFSHORE INDUSTRY
ASM EXPERIENCE IN OFFSHORE RENEWABLES
ASM EXPERIENCE

MARINE RENEWABLE ENERGY – EXAMPLE

WAVEROLLER (Peniche, Portugal)

Ø ~ 2.5 m
10 m length
65 m³
13.000 kg

6 floaters
MARINE RENEWABLE ENERGY – EXAMPLE

WINDFLOAT 1 (Aguçadoura, Portugal)

- ~ 1200 ton of steel
- Ø 1,5 m to 8 m
- tubes till 30 m long
- thickness btw 20 to 40 mm
- 6 months - delivery time

FUTURE

BIGGER FOUNDATIONS

ASM EXPERIENCE
### AMBITIOUS GOALS

**Marine Renewable Energy**

* European Wind Energy Association

<table>
<thead>
<tr>
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<th>2013 actual installations</th>
<th>Low 2020 scenario</th>
<th>Central 2020 scenario</th>
<th>High 2020 scenario</th>
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*8,000 MW currently*
MARINE RENEWABLE ENERGY

AMBITIOUS GOALS

**PORTUGAL**
- By 2020
  - 56 MW wave & tidal
  - 27 MW offshore wind

**EUROPE**
- By 2050
  - 1460 GW offshore wind
  - 188 GW ocean energy (wave & tidal)

**WORLD**
- By 2050
  - 1150 GW offshore wind
  - 748 GW ocean energy (wave & tidal)

BIG SCALE
BIG ROLE OF METAL INDUSTRY
SUPPLY CHAIN

FABRICATION
LOGISTICS
O&M

1. European Wind Energy Association
2. EU Ocean Energy Association
3. International Energy Agency
4. Greenpeace Advanced Energy
5. PNAER
MARINE RENEWABLE ENERGY

MARINE RENEWABLE ENERGY PROJECTS (TYPE / TECH)

- WAVE
- TIDAL
- OFFSHORE WIND

lower tech maturity  greater tech maturity

FABRICATION – MASSIVE USE OF STEEL
IS PORTUGAL READY?
POEM
PILOT ZONE
LONG COAST

1,700,000 km² of Exclusivity Economic Zone
(enlargement proposal in UN → ~ 3,800,000 km²)

LONG TRADITION IN NAVAL ACTIVITIES
> 20 ACTIVE SHIPYARDS

PORTS (mainly small/medium)
MARINE RENEWABLE ENERGY - PORTUGAL

METAL WORKS

- Very competitive industry **(driving the costs down)**
  - 2013, 12.500 M € exports (1/3 global Portuguese exports) + 21.55% compared to 2010
  - 46% of total production was exported in 2013
  - 18% Gross National Product
    (DINHEIRO DIGITAL, 2014*)

- Success case - **WIND CLUSTER**

- High quality parameters & international recognition

*http://dinheirdigital.sapo.pt/news.asp?id_news=213163*
CHALLENGES FOR PORTUGUESE INDUSTRY
CHALLENGES FOR PORTUGUESE INDUSTRY

ORGANIZATION OF THE SECTOR

COMMUN VISION & GOALS

COOPERATION, NO CANNIBALIZATION

SUPPLY CHAIN STRUCTURE

VERTICALIZATION

ADD VALUE

ATTEND BIG AND COMPLEX PROJECTS IN A COMPETITIVE WAY
CHALLENGES FOR PORTUGUESE INDUSTRY

- MACHINERY
- SPECIALIZED TRAINING
- ENGINEERING
- FINANCING
- WELDING / AUTOMATION
- INSURANCES
- RISK SHARING
- LOGISTICS

FABRICATION
STEEL WORKS
CONTRACTORS
### CHALLENGES FOR PORTUGUESE INDUSTRY

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<td>CHALLENGES FOR PORTUGUESE INDUSTRY</td>
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CHALLENGES FOR PORTUGUESE INDUSTRY

ADAPTATION
FLEXIBILITY
LOGISTICS SUPPORT
COMPETITIVENESS
CAPACITY RESPONSE
RISK MANAGEMENT

DRIVING THE COSTS DOWN
CHALLENGES FOR PORTUGUESE INDUSTRY

COMPETITIVE & APPROPRIATE RESPONSE

COAST FRONT FACILITIES

SKILLED PEOPLE

SPECIALIZED & RECOGNIZED COMPANIES
THANK YOU!

RICARDO MORGADO
Head of Sales & Marketing