



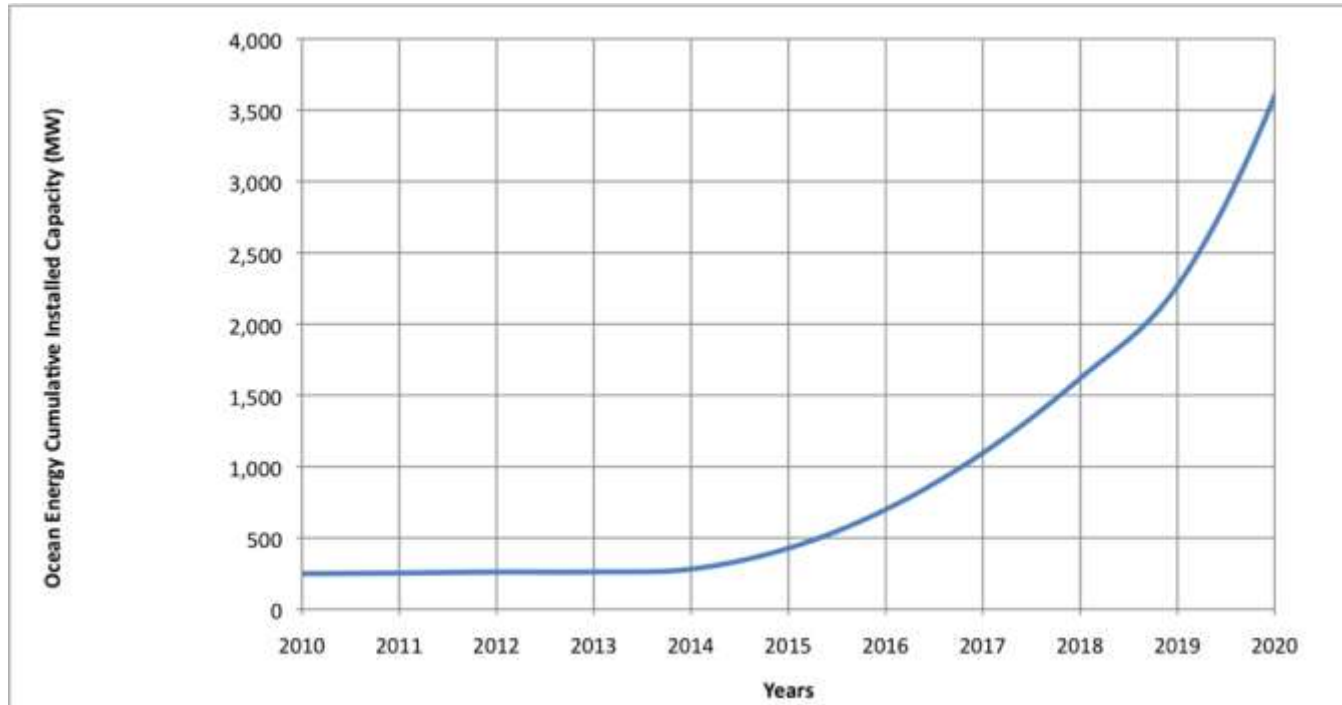
**European Ocean Energy**  
ASSOCIATION

# OCEAN ENERGY A European Perspective

# ● European Ocean Energy Association (EU-OEA)

- Started in 2006 - 60+ members strong
  - » 5 Lead Sponsors
    - Alstom, DCNS, EDF, EVE, Statkraft
  - » 2 Associations
    - WavEC, RenewableUK
- Goals & Objectives:
  - » To strengthen development of OE sector in EU
  - » Act as the single OE sector voice to the EC
- 2010 Ocean Energy events
  - » Mar 22, Brussels – Marine Renewables: “Turning The Tide”
  - » May 6-7, Brussels – “Ocean Energy”, 1<sup>st</sup> Annual Event
  - » May 19-20 - EU Maritime Days, “OE Open House”
  - » Oct 6-8, Bilbao – ICOE 2010, Exhibit coordinator

# EU Ocean Energy Potential

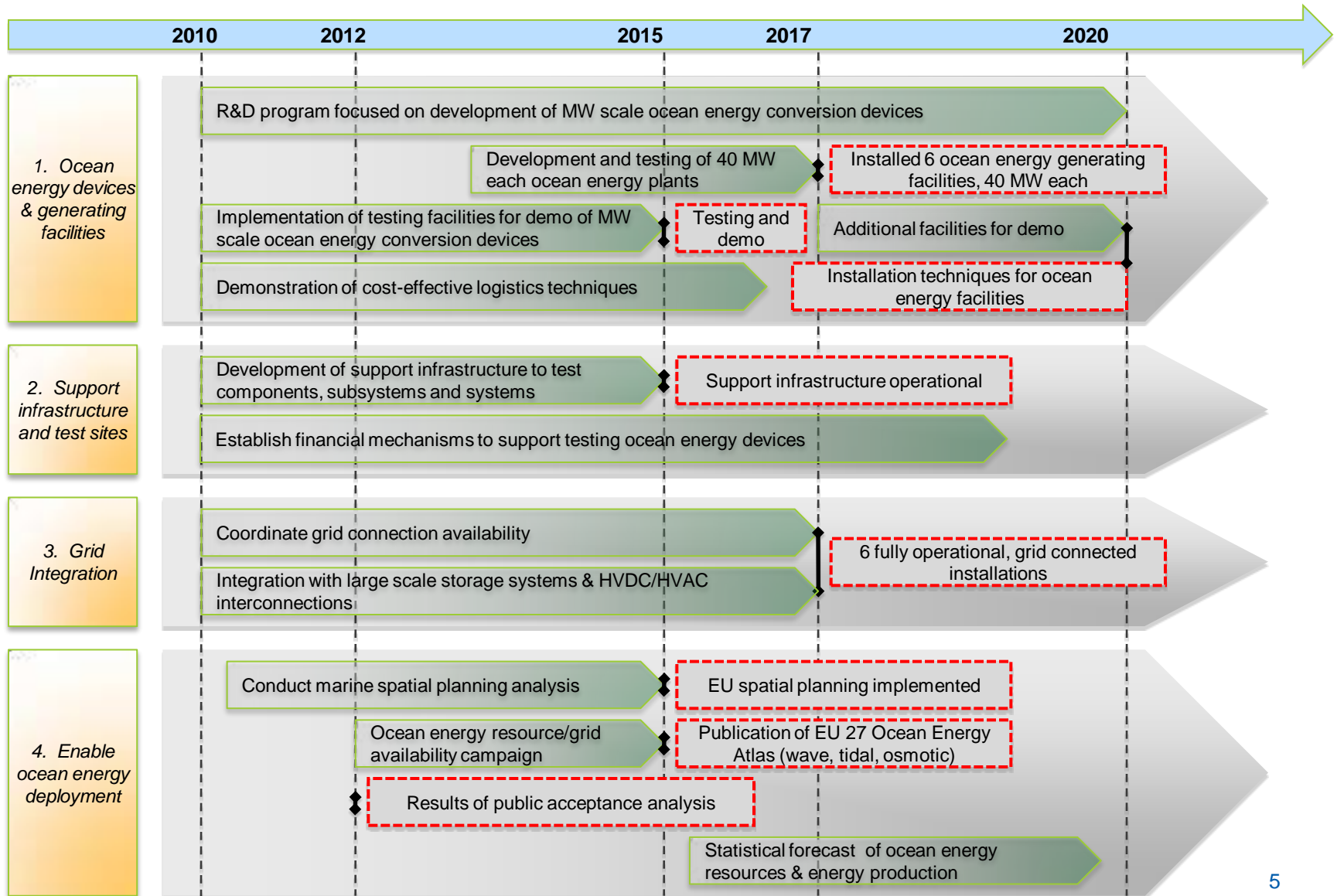


Year	2020	2025	2030	2035	2040	2050
GW	3,6	20	54	105	166	188
TWh/yr	9	53	150	317	546	645

# EU Ocean Energy Targets

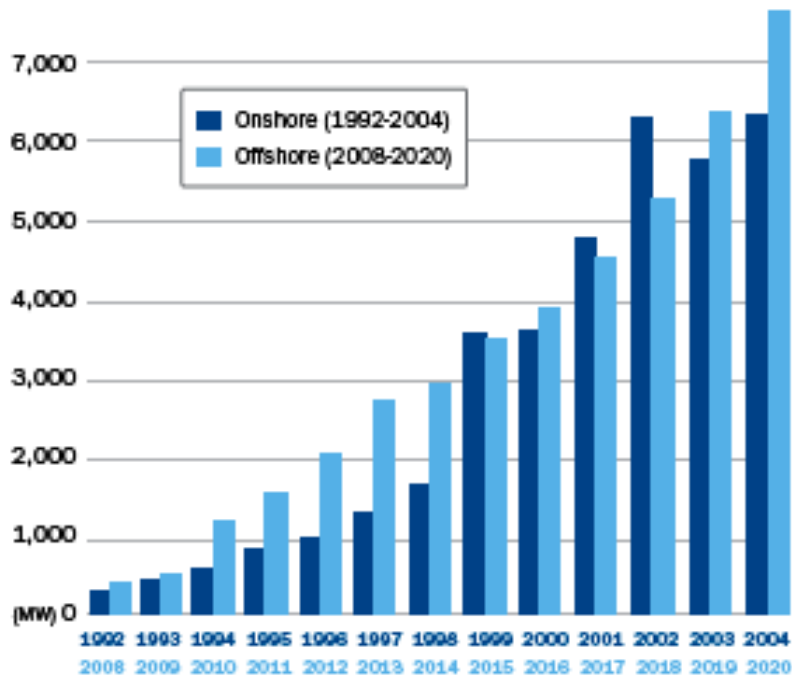
- Generation Targets:
  - » 2020 - 1% of EU electricity generation
  - » 2050 – 15% of EU electricity generation
- What:
  - » 5-6 operational offshore test site; financial support mechanisms; grid integration techniques; spatial planning tools
- How:
  - » demo funding; up to 240 MW of installed capacity; new manufacturing;
- Cost:
  - » 850 M€ for the 2020 time frame

# Ocean Energy - Technology Roadmap 2010-2020



# ● The Front Runner – Offshore Wind

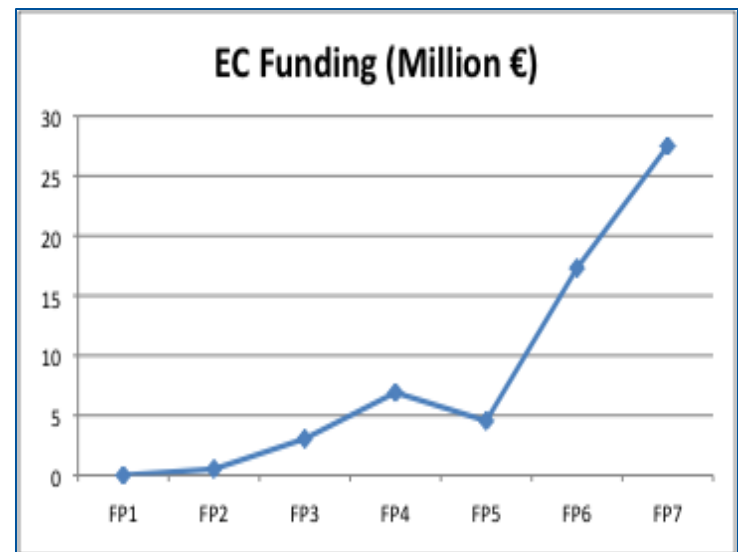
FIGURE 1: Historical onshore growth 1992-2004 compared to EWEA's offshore projection 2008-2020 (MW)



- Goal:
  - » 2020 - 40 GW
- Annual WTG growth
  - » 2011 - 1.5 GW
  - » 2020 - 6.9 GW

# EC funding for Ocean Energy

- Period - 1990-2009
- Amount - 60.85M€
- DG RTD & TREN
  - » FP 7 27,50 M€
  - » FP 6 17,30 M€
  - » FP 5 4,54 M€
  - » FP 4 (Joule III) 6,91 M€
  - » FP 3 (Joule II) 3,05 M€
  - » FP 2 (Joule I) 0,52 M€
  - » IEE 1,00 M€



# Ocean Energy Funding Needs

- To reach 2020 target of 1% of EU generation

Technology objectives	Total Cost (M€)	EC Contribution (M€)
1. Install at least 6 ocean energy farms, each @ 40MW nameplate capacity	1500	600
2. Develop, operate, support use of 6 ocean energy test sites	150	60
3. Offshore test platform	125	50
3. Grid integration & feed-in tariffs	250	100
4. R&D	100	40
<b>Total</b>	<b>2125</b>	<b>850</b>

# European Industrial Initiatives

	<b>2020 Objectives</b>	<b>Funding</b>
<b>Wind</b>	20% of EU gen	6 bn €
<b>Solar</b>	15% of EU gen	16 bn €
<b>Bioenergy</b>	14% of EU gen	9 bn €
<b>Smart Grid</b>	50% of networks	2 bn €
<b>CCS</b>	12 plants	13 bn €
<b>Sustainable fission</b>	1 prototype	7 bn €
<b>Smart-Cities</b>	40% reduction	11 bn €
<b>Ocean Energy</b>	1% of EU gen	0.85 bn €



# Conclusions

- Ocean Energy contribution to the EU energy needs:
  - » 2020 – 1%
  - » 2050 – 15%
- European Industrial Initiative on Ocean Energy can pull the critical mass together