

European funding opportunities for Ocean Energy

Rémi Gruet
Policy & Operations Director
Ocean Energy Europe
www.oceanenergy-europe.eu

The European Ocean Energy Association

Representing a fast growing sector

- **Over €600m** private sector investment in the last 7 years
- EU installed capacity tripled in 4 years
-> Over **10MW in 2013**, 3.5 in 2009
- **2GW** of projects in planning pipelines

Representing ocean technologies

- Wave
- Tidal,
- OTEC
- Salinity gradient...

Our Goals:

- Accelerate market entry & roll-out
- Maximise private-public investment & risk sharing
- Funding stream for project development – at all stages

Deliverables: Pro-investment policy frameworks

- EU political support
- Project bankability
- Level playing field
- NER 300 & beyond

A vision for Ocean Energy

INDUSTRY VISION PAPER 2013



Technology Advancement

- Deliver reliable and affordable technology
- Cost reduction pathway

Project Pipeline

- Supply chain
- Infrastructure
- Leasing, planning & consents
- Public acceptance

Finance & Market Mechanisms

- Market pull – grants
- Market push – revenue support
- Private & public investment strategy to manage risk and increase investor confidence

NER 300 – Demonstration Projects

- 3 Projects for Ocean in Round 1
- 1 project in Portugal (floating wind)
- Next round currently being evaluated
 - Results by april/mai 2014

	M€
BIO	629
WIN	273
CCS industry	264
CSP	203
OCN	59
GEO	39
DRM	8
Total	1476



- NER300 from Emission Trading System
- Potential political appetite for another NER programme
 - « Backloading » discussion included a new NER600
 - Could include CCS or steel/cement innovation
 - But was not approved
- Better design should be considered
 - Enable upfront finance
 - Better match of finance tool and level of innovation



- Emission Trading System (ETS)
 - From 2013, power sector pays for CO₂ emissions
 - About 1 bn tonnes /year
- ETS includes political agreement to:
 - Use at least 50% of revenues for climate change mitigation and adaptation, including Renewables
- Issues
 - Not mandatory
 - Low price of carbon
 - Economic crisis - MS more likely to keep that money
 - Allocation of funds sometimes already made

- « Horizon 2020 » the new Framework Programme for Research and Innovation
- 3 Priorities:
 - Excellent science
 - Industrial leadership
 - Societal challenges
 - Secure, clean and efficient energy
 - Ocean energy calls

Societal challenges (million euro, 2014-2020)

<i>Health, demographic change and wellbeing</i>	<i>8 033</i>
<i>Food security, sustainable agriculture, marine and maritime research & the bioeconomy</i>	<i>4 152</i>
<i>Secure, clean and efficient energy*</i>	<i>5 782</i>
<i>Smart, green and integrated transport</i>	<i>6 802</i>
<i>Climate action, resource efficiency and raw materials</i>	<i>3 160</i>
<i>Inclusive, innovative and secure societies</i>	<i>3 819</i>

**Additional €1 788m for nuclear safety and security from the Euratom Treaty activities (2014-2018). Does not include ITER.*

- Secure, clean and efficient technologies -
Competitive low carbon technologies
 - Basic research (LCE 1)
 - Technology development (LCE 2)
 - Technology demonstration and supply-side market readiness (LCE 3)
 - Demand-side market up-take (LCE 4)
 - Supporting first-of-a-kind, commercial-scale demonstration projects (B.2.11)
- Blue Growth
- SME competitiveness
- Research infrastructure

- LCE 1 - New Knowledge and technologies
 - Bring technology solutions from TRL 2 to TRL 3-4
 - Backbone of the energy system by 2030 and 2050
 - Scale-up technologies developed at laboratory scale
 - Supply chains (e.g. materials) can be supported
- LCE 2 – Developing new generation RES
 - Bring technology solutions from TRL 3-4 to TRL 4-5
 - Need for increased understanding of risks
 - EU contribution - €3-6 million
 - Challenge-based call

- LCE 2 – Ocean energy specific challenge
 - 2014 - *Develop emerging designs and components* – Innovative designs and components are needed to ensure efficient and effective long-term cost reduction as well as to achieve high levels of reliability and survivability for at least 20 years in harsh conditions.
 - 2015 - *Ensure efficiency and effective long term cost reduction and high levels of reliability and survivability* - There is a need to gather experience in open sea operating conditions, structural and power performance and operating data of emerging full scale wave and tidal energy converters and components in single and/or multiple device configuration. For the overall development cycle a better resource assessment is needed as well.

- LCE 3 - Demonstration of renewable technologies
 - Bring technology solutions from TRL 5-6 to TRL 6-7
 - EU contribution - €5-20 million
 - Challenge:
 - *Demonstrate advanced full scale devices in real world conditions in order to gain further understanding and certainty over installation, operations and decommissioning costs, as well as of high levels of reliability and survivability*
- LCE 4 – Market uptake existing/emerging renewable
 - Ensure level of growth needed to deliver EU targets
 - For existing systems at TRL 7-9
 - EU contribution - €1-2 million
 - Challenge: public acceptance, permitting, one-stop-shops and best practice, capacity building in policy and finance

- B.2.11.: Supporting first-of-a-kind, commercial-scale demonstration projects
 - Establish a sub-facility for making loans...
 - ...Or extending guarantees to financial intermediaries who will make such loans
 - Aim: de-risks first-of-a-kind investments
 - Target: scale-up technologies currently at TRL 6-8
 - Timing: likely to be available from S2 2015

- Blue Growth – New offshore challenges
 - BG 5 - 2014: Preparing for the future innovative offshore economy
 - Aim: assess the most promising and sustainable business models and identify the corresponding technological challenges
 - Target: surface support facilities, control systems, fluid and solid transport or remotely operated robots / vehicles
 - EU contribution - €2 million
 - BG 6 - 2014: Delivering the sub-sea technologies for new services at sea
 - remotely execute unmanned underwater operations
 - observation / data collection and transmission of information to more complex industrial operations
 - EU contribution - €8-10 million

SET-Plan Integrated Roadmap



European
Ocean Energy

- EU Commission initiative
- Stakeholders consultation on research priorities
 - OEA + members representing ocean energy sector
- Aim: provide input for WP 2016-2017
- Tasks
 - Identify the main overall challenge for a sector
 - Present 3 programmes addressing different TRLs
 - Also split according to TRLs
 - Propose about 5 actions per programme
- Final result February 2014

- OEA contacted by EU Commission – DG ENER
- OEA organised a half-day workshop in Edinburgh
- Combining H2020 and structural funds for the same project
- New possibility – previously forbidden
 - Getting the structural fund agreement first as it is longest
 - Getting the Horizon 2020 answer next
- Should help
 - Projects get more funding for different parts (e.g. grids)
 - better use of structural funds
- Further discussions with stakeholders to be done



- Communication in January
- Calling for an Ocean Energy Forum should address
 - Technology issues
 - Access to finance and licensing
 - Environmental impacts
- Stakeholders forum
- Strong interactions with EC, EU Member States and Regions
- Aim: understanding issues and find solutions for deployment



EUROPEAN COMMISSION

COMMUNICATION FROM THE COMMISSION

ON

OCEAN ENERGY



- Industry-led stakeholder forum
 - Objectives – facilitate and orient EU-wide research
 - Activities e.g. devise Strategic Research Agendas
 - Structure with secretariat
 - Open to all (industry + academia)
- 36 TPs are recognised by the EC
 - Wind, PV, Geothermal....
 - Ocean ?
- New communication: « Strategy for EU TPs to 2020 »
 - Provides clarity for new and existing TPs



Brussels, 12.7.2013
SWD(2013) 272 final

COMMISSION STAFF WORKING DOCUMENT
STRATEGY FOR EUROPEAN TECHNOLOGY PLATFORMS: ETP 2020

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European
Ocean Energy

Any questions ?

Remi Gruet
Policy and Operations Director
Ocean Energy Europe
Mob: +32 473 50 64 23
Email: r.gruet@eu-oea.com

Mission and activities



- Develop a Strategic Research & Innovation Agenda
 - Consensus among ocean industry players
 - Define research priorities for the next 5-10 years
 - Develop a roadmap to commercialisation
- Organise events for TP members, institutions and stakeholders
 - Regular stocktaking meetings
 - Reports launches (Vision Papers, Policy issues)
- Can make use of existing research guiding initiatives
 - SI Ocean
 - SET-Plan Integrated Roadmap
- Orient and increase project funding opportunities