

The European Commission's science and knowledge service

Joint Research Centre

Strategic Energy Technology (SET)-Plan

Introduction & Progress

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SET-Plan: Introduction

Framework strategy for a resilient Energy Union with a forward-looking climate change policy

- Secure, Sustainable, Competitive, Affordable Energy for every European









Strategic Energy Technology (SET-)Plan

- Strategic instrument to implement the R&I and competitiveness dimension of the Energy Union
- Speed up energy transition through:
 - **Implementation of 10 actions to develop and integrate innovative technologies and system solutions**
 - **Better alignment of public & private R&I agendas**



SET-Plan: 10 Key Actions

Energy Union <i>Research, Innovation and Competitiveness Priorities</i>		SET-Plan 10 Key Actions
No1 in Renewables		<ol style="list-style-type: none"> 1 Performant renewable technologies integrated in the system 2 Reduce costs of technologies
Consumers in the Energy System		<ol style="list-style-type: none"> 3 New technologies & services for consumers 4 Resilience & security of energy system
Efficient Energy Systems		<ol style="list-style-type: none"> 5 New materials & technologies for buildings 6 Energy efficiency for industry
Sustainable Transport		<ol style="list-style-type: none"> 7 Competitive in global battery sector and e-mobility 8 Renewable fuels and bioenergy
Carbon Capture Utilisation and Storage		<ol style="list-style-type: none"> 9 Carbon Capture Storage / Use
Nuclear Safety		<ol style="list-style-type: none"> 10 Nuclear safety

SET-Plan: Progress to date

SET Plan 10 Key Actions:

Communication published in September 2015

DONE

Setting targets:

agreed through 'Declarations of Intent'

DONE

Set-up of Temporary Working Groups:

to prepare Implementation Plans

IN PROGRESS

Implementation Plans: to select R&I Activities, identify Flagships, and define mechanisms

IN PROGRESS

FUNDING

**National sources /
Industry mainly**

**In specific cases
at EU Level**

Temporary Working Groups

- Solar thermal electricity
- Photovoltaics
- Offshore wind
- Ocean
- Deep geothermal
- Consumers
- Smart cities
- Energy systems
- New materials and technologies for buildings
- Heating and cooling for buildings
- Energy efficiency in industry
- Batteries for e-Mobility
- Renewable fuels and bioenergy
- Carbon capture, utilisation & storage
- Nuclear safety

SET-Plan Information System (SETIS)

SETIS: INFORMATION SYSTEM of the SET-Plan

- Led & coordinated by JRC in close collaboration with DG RTD and DG ENER



<https://setis.ec.europa.eu/>

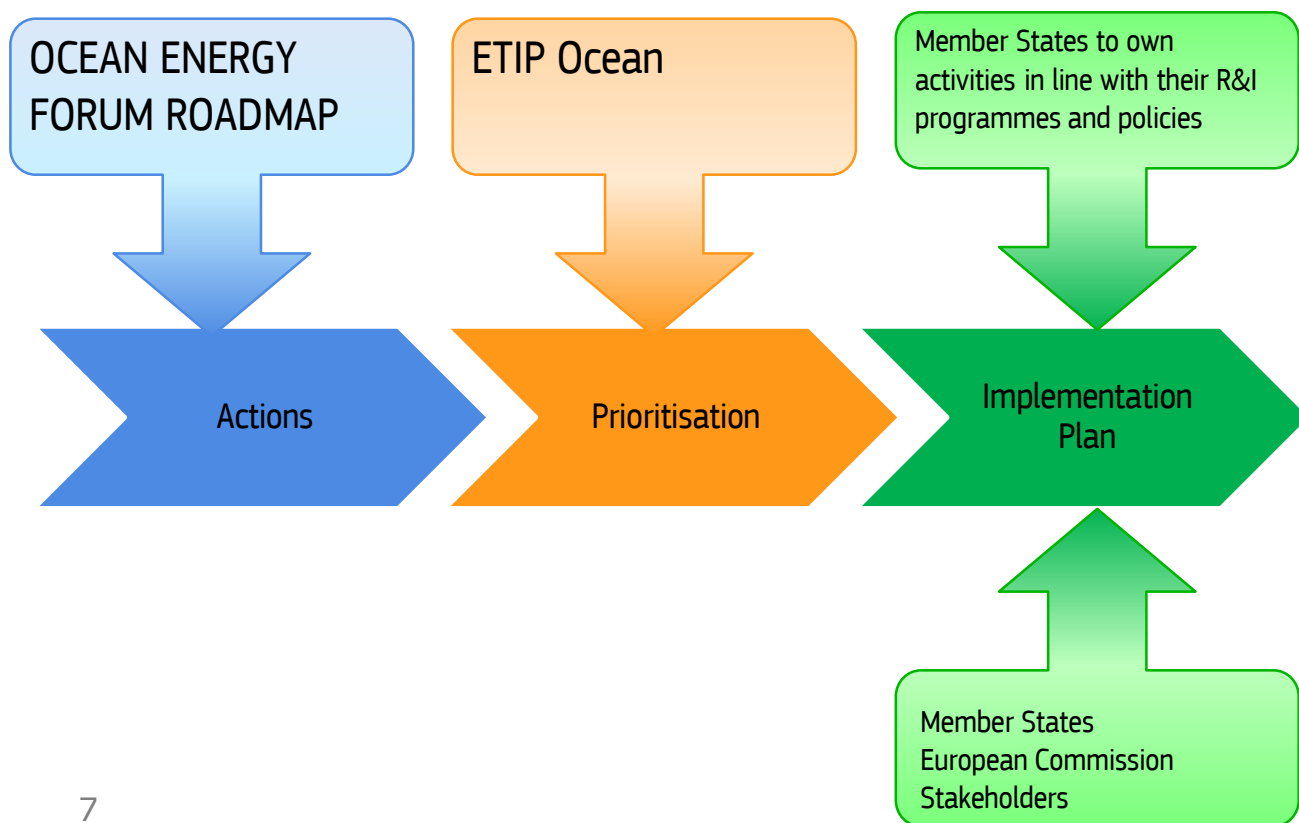
- Further reading: Integrated SET-Plan Progress Report 2016



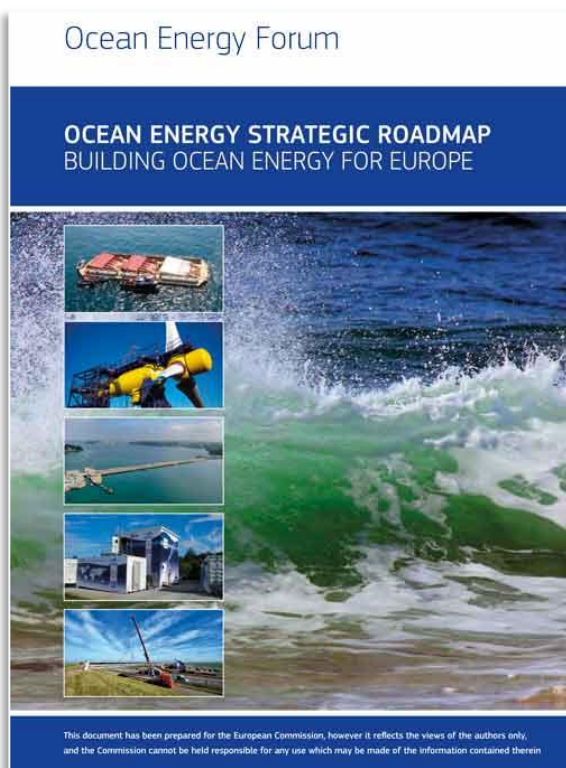
https://ec.europa.eu/energy/sites/ener/files/documents/set-plan_progress_2016.pdf

Ocean Energy Temporary Working Group

- **First Meeting 23-05-2017**
- **Participating: IE, BE, CY, DE, ES, FR, IT, PT, SE, UK**
- **Development of cost competitive ocean energy technologies with high market potential for Europe:**
 - LCoE for tidal stream 15ct€/kWh by 2025 and 10ct€/kWh by 2030
 - LCoE for wave energy 15ct€/kWh by 2030 and 10ct€/kWh by 2035



Ocean Energy Forum Roadmap

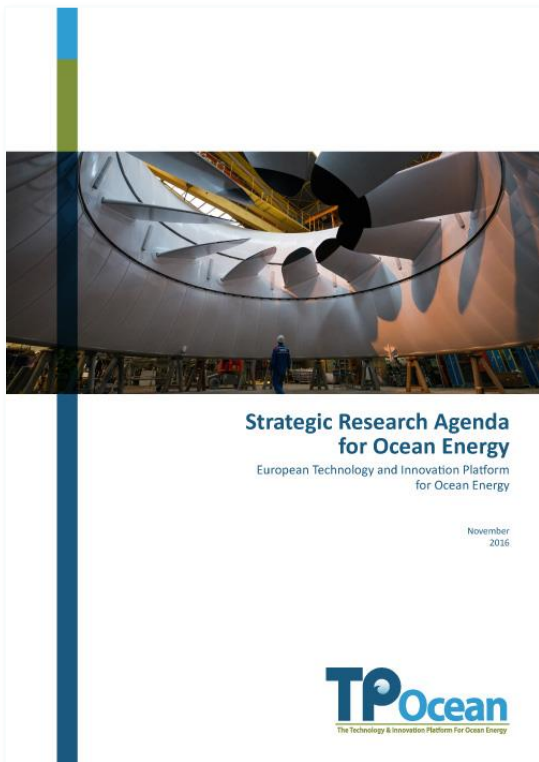


Partnership between Industry and Public Authorities identifying key actions for supporting investments and de-risking Ocean Energy

- *EU-wide phase-gate approach for technology development*
- *A public-private Investment Support Fund should be established to finance start-up capital needs*
- *Create a packaged approach for financing farms*
- *An Insurance and Guarantee Fund should help cover the risk associated with deployments of new technologies*
- *Support studies, research and actions on environmental consenting should help de-risk consenting procedures*

ETIP Ocean Strategic Research Agenda

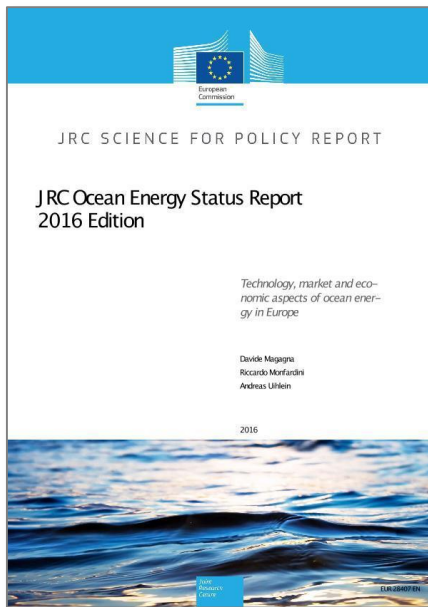
European Technology and Innovation Platform for Ocean Energy (ETIP Ocean)
Industrial stakeholder for SET-Plan



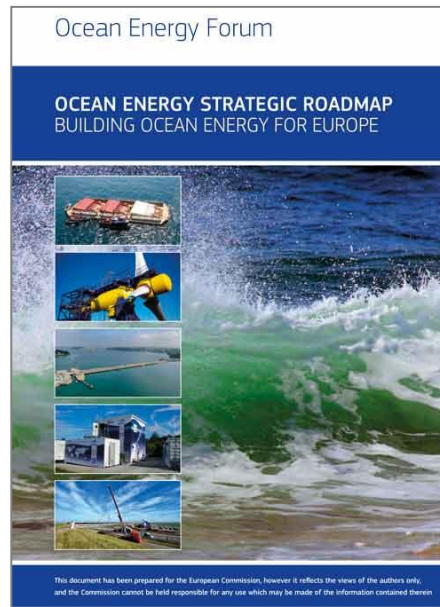
- *Strategic Research Agenda addressing 12 research areas and 54 specific actions*
- *Prioritisation of challenges in line with the actions recommended from Ocean Energy Forum*

Category	Challenge
Technology	Developing novel concepts for improved power take-offs (PTOs)
	Increasing device reliability and survivability
	Investigating alternative materials and manufacturing processes for device structures
	Investigating novel devices before moving towards convergence of design
	Defining and enforcing standards for stage progression through scale testing
	Developing and implementing optimisation tools
Financial	Providing warranties and performance guaranties
	Linking stage-gate development processes to funding decisions
	Maintaining grant funding for early TRL technologies
	Establishing long term revenue support
Environmental and socio-economics	Enhancing social impact and acceptance
	Minimising negative environmental impacts
	Facilitating knowledge transfer and collaboration
	Implementing adaptive management systems

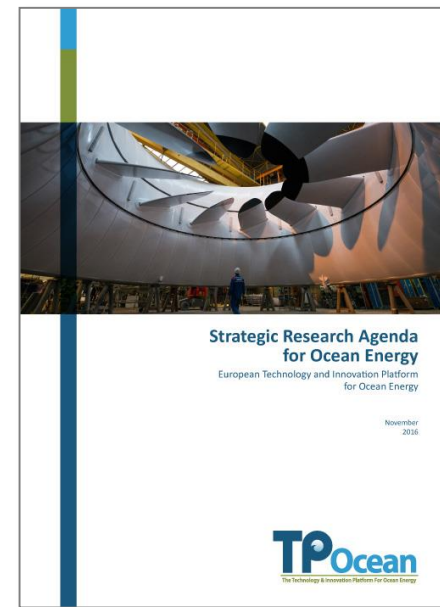
Thanks for your attention!



<https://ec.europa.eu/jrc/en/news/jrc-ocean-energy-status-report-2016-edition>



https://webgate.ec.europa.eu/maritimeforum/sites/maritimeforum/files/OceanEnergyForum_Roadmap_Online_Version_08Nov2016.pdf



<https://www.oceanenergy-europe.eu/en/communication/publications/strategic-research-agenda>