Wave Energy Innovation Needs

Alessia Elia, Fionn Rogan and Brian Ó Gallachóir

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Centre for Marine and Renewable Energy

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Environmental Research Institute
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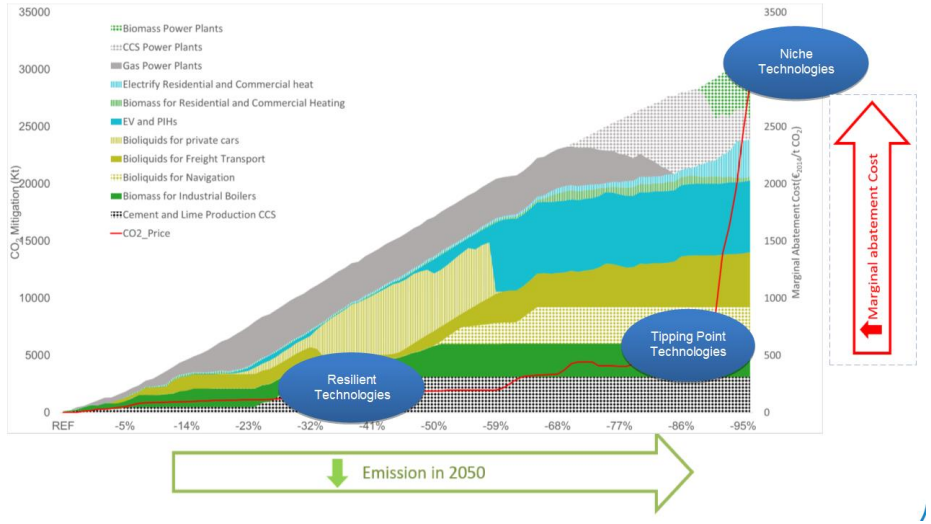
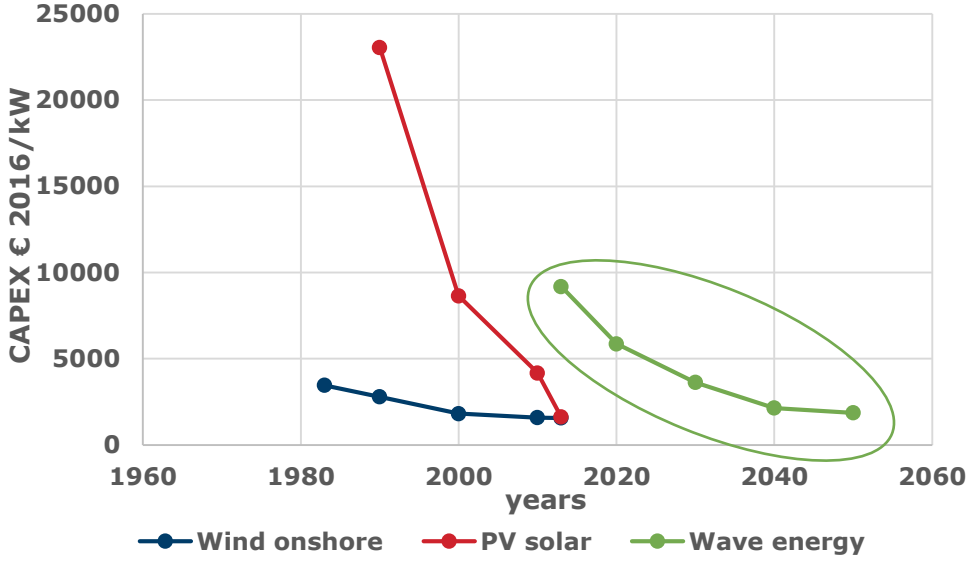
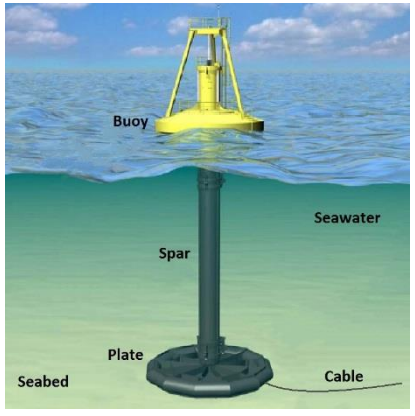
Results: Modelling & Historical Analysis







- 80% reduction in wave energy technology costs (relative to 2015)
- Reduced availability of bioenergy (particularly imports)
- Higher electrification levels

Analysis of wave energy innovation needs based on:

1. Energy system scenario analysis
2. Historical lessons - wind & PV

Results: Innovation Needs

Technology Innovation Needs (research & industry)

- to reach a standard device design
- to scale-up the technology to improve costs and performance
- to knowledge sharing and international collaboration

- **System Innovation Needs (industry & policy)**
  - Local supply chain and industry development
  - To integrate grid infrastructures
  - To integrate marine infrastructures

- **Market Innovation Needs (policy & entrepreneurs)**
  - To explore current niche market opportunities (micro-grids, islands)
  - To explore the routes to access to large markets

- **Policy Innovation Needs (policy)**
  - Of sustained political support
  - To discuss the role of wave energy in the future energy plan
  - To have a prompt regulation and licensing

Policy Insights

Where investment should focus?

- The role of **Niche markets** to unblock the standard design bottleneck
- **Grid infrastructures** development and **potential of scaling-up** of wave energy technology to define the role of wave energy in the future energy system
- Capacity of a **local industry** to pursuit the best design and leading the sector (i.e. as wind onshore Danish Design) and reduce the risk of investment

Impacts

IRENA
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