

# Marine Energy Accelerator

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# The Carbon Trust

- Independent company funded by Government
- Our aim is to accelerate the transition to a low carbon economy by:
  - Helping organisations reduce their carbon emissions
  - Developing commercial low carbon technologies

## Save energy

- Free, practical help and advice

## Manage carbon

- Carbon Management
- Work with trade and professional bodies

## Develop technology

- Applied research, development and demonstration
- Business incubator support

## Understand climate change

- Policy and regulation
- Investment

## Commercial arms

- Carbon Trust Enterprises Ltd.
- Carbon Trust Investments LLP

# The potential of marine energy

## ▪ Potential to meet energy demands

- UK: 15-20% annual electricity demand
- Worldwide: 2000-4000 TWh/year

## ▪ Potential to make carbon savings

- UK: Tens of MtCO<sub>2</sub>
- Worldwide: Hundreds of MtCO<sub>2</sub>

## ▪ Potential to create economic benefits

- UK: £600m-4.2bn/year<sup>[1]</sup>
- Worldwide: £60-190bn/year<sup>[2]</sup>

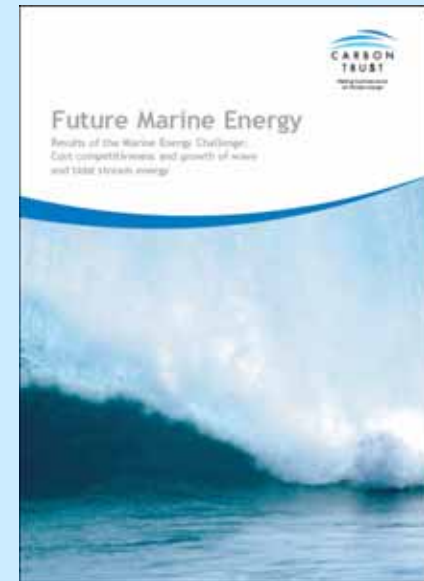
## ▪ UK advantages over other countries

- Large indigenous energy resources
- Strong academic R&D capacity
- Concentration of technology development companies
- Ability to exploit knowledge/skills in traditional maritime/offshore industries

# Carbon Trust activities in marine energy

## Marine Energy Challenge (MEC)

- £3.0m, 18 month project
- Detailed engineering analysis and design of existing wave and tidal stream device technologies, to identify if, and how, reductions in cost of energy could be achieved
- Followed by detailed study to assess future cost-competitiveness and growth of marine energy



MEC report, January 2006

- Applied research grants
- Business incubator support
- Venture Capital investment
- Support for European Marine Energy Centre

# Barriers to marine energy development

- **Strategic barriers**
  - Limited investment in technology development
  - Lack of investment incentive in current policy framework
- **Functional barriers**
  - Costs of energy uncompetitively high
  - Technical track records limited
  - Local environmental impacts uncertain
  - Licensing and consents procedures unclear
  - Electricity networks constrained near energy resources

Potential for cost reduction and technical track records crucial to:

- Justify investment incentive in policy framework
- Trigger greater investment

# UK support for marine energy

## MEC report recommendations

- Accelerate progress of technology development to bring cost reductions
- Encourage early development of farms to accelerate learning effects
- Develop long-term policy framework to give greater investment certainty

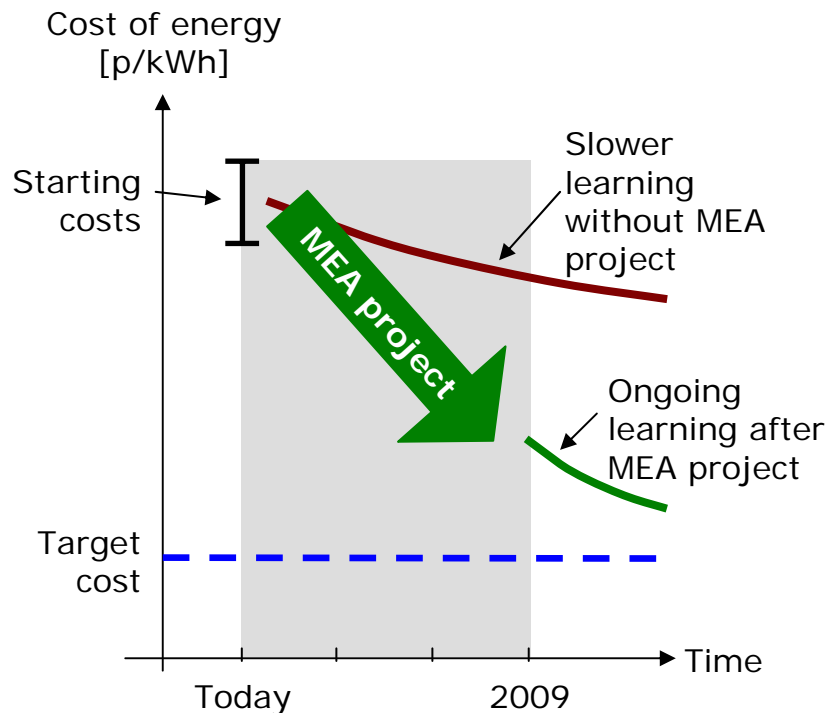


## Support initiatives

- **Carbon Trust Marine Energy Accelerator**
- DTI Marine Renewables Deployment Fund
- Carbon Trust 'Policy frameworks for renewables' report
- Scottish Executive RO(S) amendment consultation
- DTI Energy Review

# Marine Energy Accelerator Overview

- **Objective:** Accelerate progress of cost reduction to bring forward time when marine energy becomes cost-competitive so that significant carbon reductions are achieved



## Key features

- Overall focus on cost reduction
- Building on existing knowledge
- Targeting specific routes to cost reduction
- Bringing new ideas/skills to sector

# Marine Energy Accelerator

## Three strands of activity

	<b>Focus</b>	<b>Objective</b>
<b>Strand A</b>	<b>Device technologies</b>	Development of new device concepts with potential for significantly lower costs than current front-runner devices
<b>Strand B</b>	<b>Component technologies</b>	Research and development into specific component technologies that are common causes of high costs
<b>Strand C</b>	<b>Installation, operation &amp; maintenance</b>	Development of low cost installation, operation and maintenance strategies

# Marine Energy Accelerator Strand A

## **Development of new device concepts with potential for significantly lower costs than current front-runner devices**

- Some early-stage device designs may have lower costs than relatively advanced counterparts
  - Carbon Trust will support initial development of such designs to validate low costs
  - Intended participants are device developers, engineering consultants and academic research groups
- Open to developers of early-stage device designs
  - Cost benchmarks are current costs described in MEC report\*

\* See report 'Future Marine Energy – Results of the Marine Energy Challenge', section 3.2, Figure 7

# Marine Energy Accelerator Strand B

## **Research and development into specific component technologies of devices that are common causes of high costs**

- Certain component technologies are common to many device designs and contribute significantly to costs
  - Carbon Trust will support research and development to reduce costs of these component technologies
  - Intended participants are component technology manufacturers and academic research groups
- 
- Open to developers of component technologies
  - Carbon Trust has identified priority component technologies and invites views on these<sup>\*</sup>

\* See report 'Key Marine Energy Component Technologies for Cost Reduction R&D'

# Marine Energy Accelerator Strand C

## **Development of low cost installation, operation and maintenance strategies**

- Offshore operations to install, operate and maintain devices are likely to contribute significantly to costs
  - Carbon Trust will support development of strategies to minimise costs of offshore operations
  - Intended participants are device developers and engineering consultants/contractors
- 
- Open to developers at relatively advanced development stage

# Marine Energy Accelerator

## Key points

### **Budget and timescales**

- Overall, up to £3.5m funding available
- Activities anticipated to start later in FY 2006-7 and run for up to 2 years

### **Next steps**

- Further details of the MEA, including details of how to apply, will be announced shortly
- To obtain further information and register for updates, visit [www.carbontrust.co.uk/MEA](http://www.carbontrust.co.uk/MEA)

# Making Business Sense of Climate Change

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