Offshore Wind Accelerator

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BWEA 30
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Introduction to Carbon Trust

- An independent company set up in 2001 by UK Government
- Our mission is to accelerate the move to a low carbon economy, by
  - Developing commercial low carbon technologies
  - Helping organisations reduce their carbon emissions
- Five main business areas:

Insights

Explains issues and opportunities surrounding climate change

Solutions

Delivers carbon savings for organisations

Innovations

Develops new low carbon technologies

Enterprises

Creates new low-carbon businesses

Investments

Finances low-carbon business

Perspectives on Offshore Wind

- Offshore wind has massive potential to provide renewable electricity and reduce carbon emissions:
  - Global practical resource has been estimated at >30,000 TWh/year, while in UK, offshore wind could meet >1/3 current demand
  - Offshore wind could save hundreds of $MtCO_2$/year worldwide

- Many issues affect future development of offshore wind:
  - Spanning commercial, technical and regulatory areas
  - Some issues are already being addressed by industry players and government bodies in the UK and other countries

- But certain technical barriers are not being addressed:
  - Key factors related to wind farm design, construction and operation need further research, development and demonstration (RD&D)

Offshore Wind Initiatives

Offshore wind power: Big challenge, big opportunity

- Launched 14th October 2008

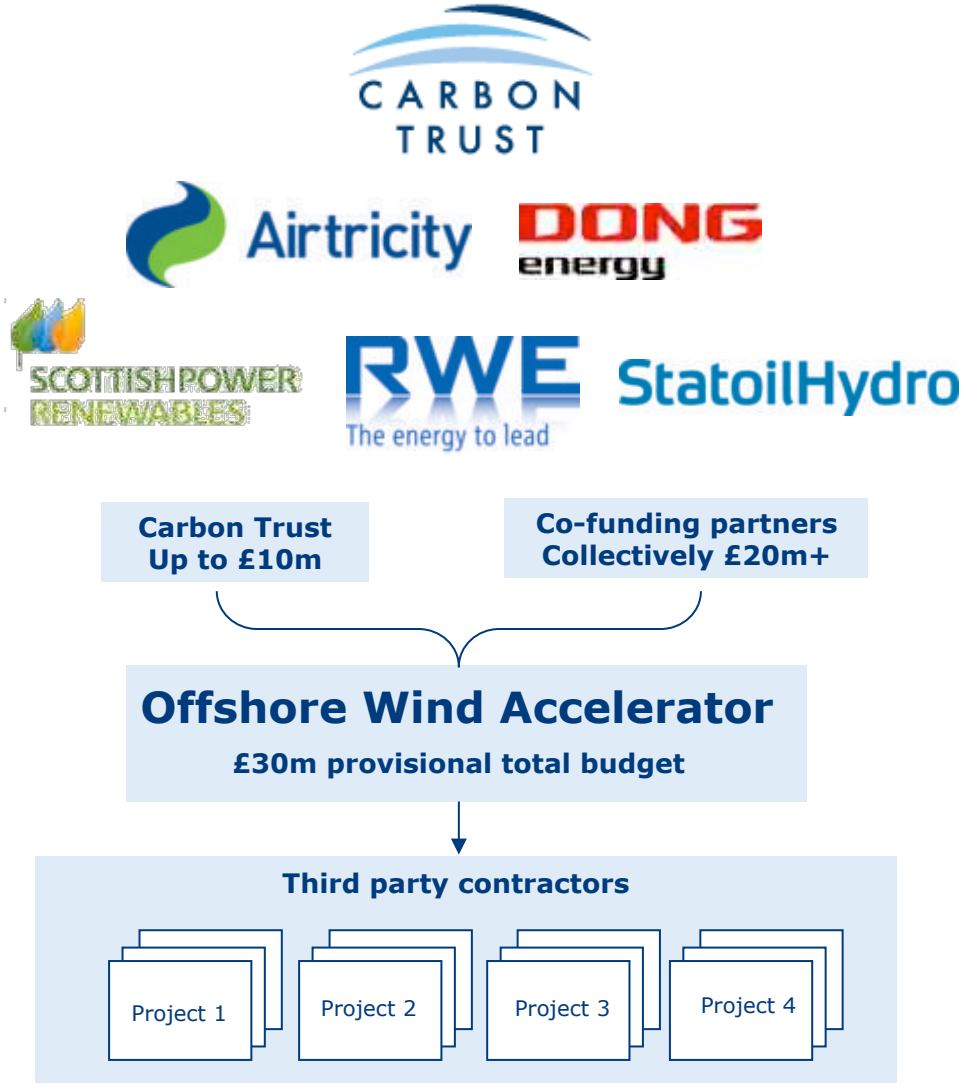
- Study found that up to 29 GW of offshore wind capacity is required for UK to meet its share of EU 2020 renewables target
- This is achievable if UK government and industry take certain key steps

Offshore Wind Accelerator (OWA)

- Launched 21st October 2008

- Objective: To reduce cost of energy from offshore wind (£/MWh) by 10% + through a set of targeted RD&D activities
- Co-ordinated with ETI Offshore Wind Programme

OWA Collaborative Structure



Collaborative structure

- With project developers due to focus on cost reduction in short-med term
- Activities are prioritised according to industry needs and co-funders provide route to market for results
- Key benefits to co-funders are shared costs/risks and access to additional technical resources
- Benefits to Carbon Trust are leverage, direct industry engagement and accelerated carbon reductions

Budget and timescale

- Provisional total budget of £30m to which Carbon Trust intends to contribute up to £10m
- 4 year timescale

OWA Project Areas

Offshore foundations

- Developing novel forms of wind turbine foundation with potential for lower capital and installation costs than designs currently in use, including consideration of deep water sites

Wake effects

- Consolidating knowledge about wake effects in large arrays to improve the accuracy of yield assessment processes, allowing wind farm layouts to be optimised and financing costs to be reduced

Access, logistics and transportation

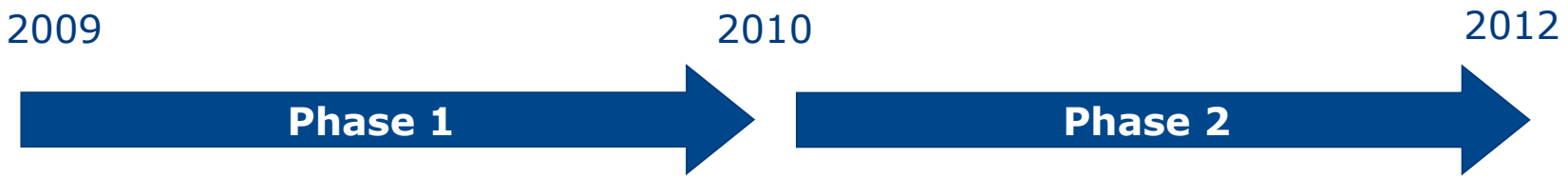
- Developing access systems for wind farm construction and operation that are both economic and safe, to maximise turbine availability and therefore wind farm yields

Electrical systems

- Assessing opportunities to maximise the efficiency of offshore wind farm electrical systems, minimising losses in both the intra-farm array and transmission to shore

OWA Project Delivery

- The OWA projects will be delivered in 2 Phases over 4 years:



Phase 1

- Feasibility studies on project areas
- Overall budget of £1.5m
- Tendering for project delivery will begin late 2008
- Work will commence early 2009
- To be completed in 12-18 months

Phase 2

- Shaped by the outcomes of Phase 1
- Large-scale demonstration projects
- Expected overall budget of around £30m
- Work will commence 2010
- To be completed in 2-3 years

- To register your interest in this work, or to be kept informed of progress, go to www.carbontrust.co.uk/offshore-wind-accelerator

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