

Keeping the UK on the Crest of the Wave

Gary Shanahan

Assistant Director, Emerging Energy Technologies

Department of Trade and Industry

Four Goals of Energy Policy

- Putting ourselves on a path to 60% cuts in CO₂ by 2050
- Maintaining reliability of energy supplies
- Promoting competitive markets in the UK and beyond
- Ensuring that every home is adequately and affordably heated

Not exclusive goals

2006 Energy Review

- Part of our ongoing commitment to reviewing progress against the goals and, if necessary, taking steps to ensure we stay on track.
- Will consider all options including the role of current generating technologies and new and emerging technologies.
- Will also consider transport and the role of energy efficiency.
- The Review team will work closely with the Stern Review team, who are looking at the economics of climate change, in a wider global context.

Delivering Our Goals

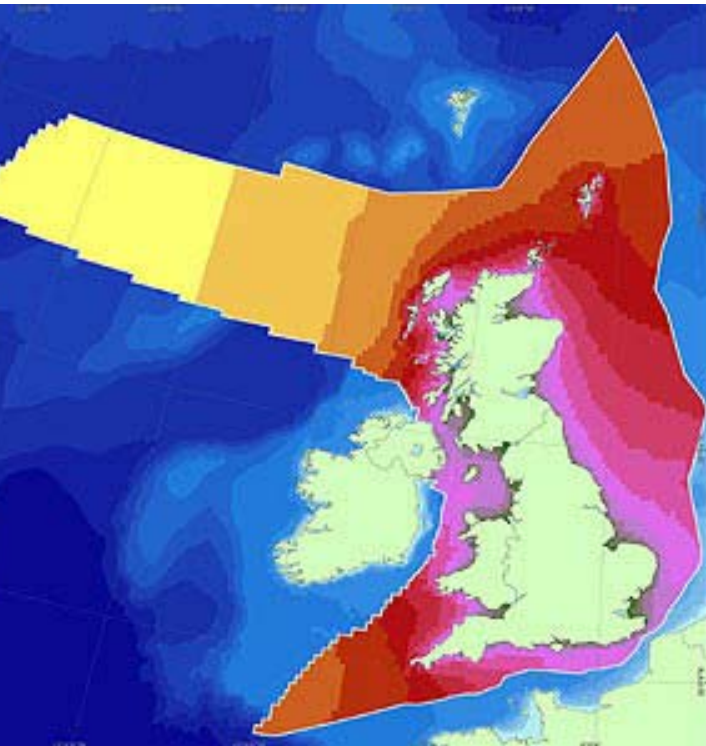
- Need a shift towards no or low(er) carbon energy sources and generation technologies; also important to remember energy efficiency, heat and transport
- Already have target for renewables to supply 10% of UK electricity by 2010 with aspirations to double renewable share of electricity to 20% by 2020
- If we are to achieve 60% reduction in carbon emissions by 2050 likely to need renewables contributing at least 30% - 40%
- Spectrum of support measures – not just electricity

Spectrum of Support

- Market **pull** through the Renewables Obligation
- Research and Development **push** through Dti's New and Renewable Energy Programme / Technology Support Programme
- An expanded programme to support wave was announced in 1999 – tidal in 2000
- Research Councils (SuperGen Marine) and Carbon Trust (e.g. VC and Marine Energy Challenge)
- Testing facilities – EMEC, NaREC, proposed Wave Hub

Barrier Busting

- Grid
- Communication
- Planning
 - Onshore/offshore (including demonstration phase for marine renewables)
- Finance



Annual Mean Wave Height

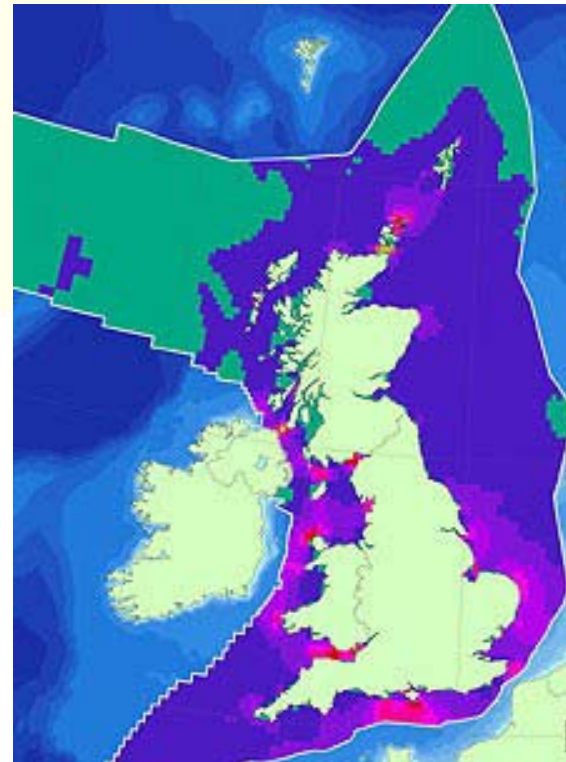
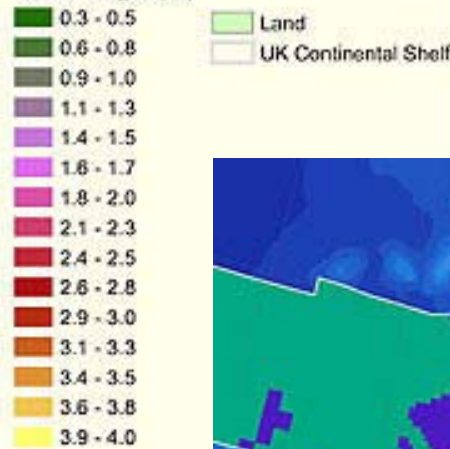
dti Department for Trade and Industry	
Projection Transverse Mercator 4973 1006 UTM Zone 31 N	Scale 1:4,000,000 when printed A4

Stage 1 Offshore Renewables Atlas - January 2004

Notes

1. South of 62° North East of 12° West model cell size approximately 12km. Model cell size approximately 60km in all other areas.
2. Data quality: 4 (excellent).
3. Model accuracy is best (about 40% error) near 12km to best.
4. Wave model based on fourty predictions throughout three years.
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Wave Height (m)



Average Annual Tidal Power

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Projection Transverse Mercator 4973 1006 UTM Zone 31 N	Scale 1:4,000,000 when printed A4

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5. © Crown Copyright. All rights reserved. 2004.

Average Tidal Power (kW / m² of vertical water column)



Wave and Tidal Programme

- Has committed over £25m since 1999
- Supports for projects leading to full scale demonstrations in wave & tidal stream
- International Energy Agency Ocean Energy Systems – recognise that UK is a leader but isn't the only player

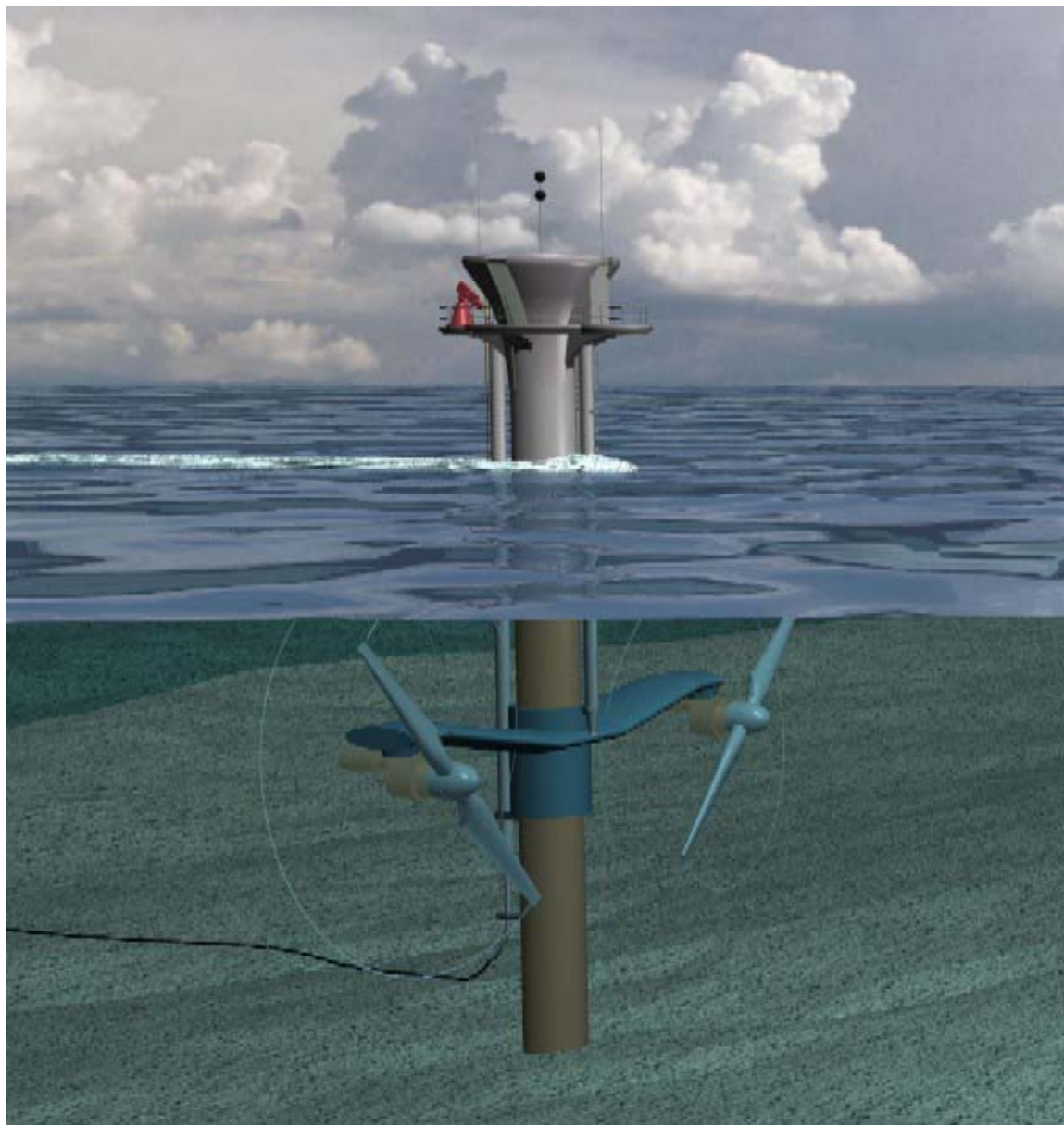
OPD Pelamis



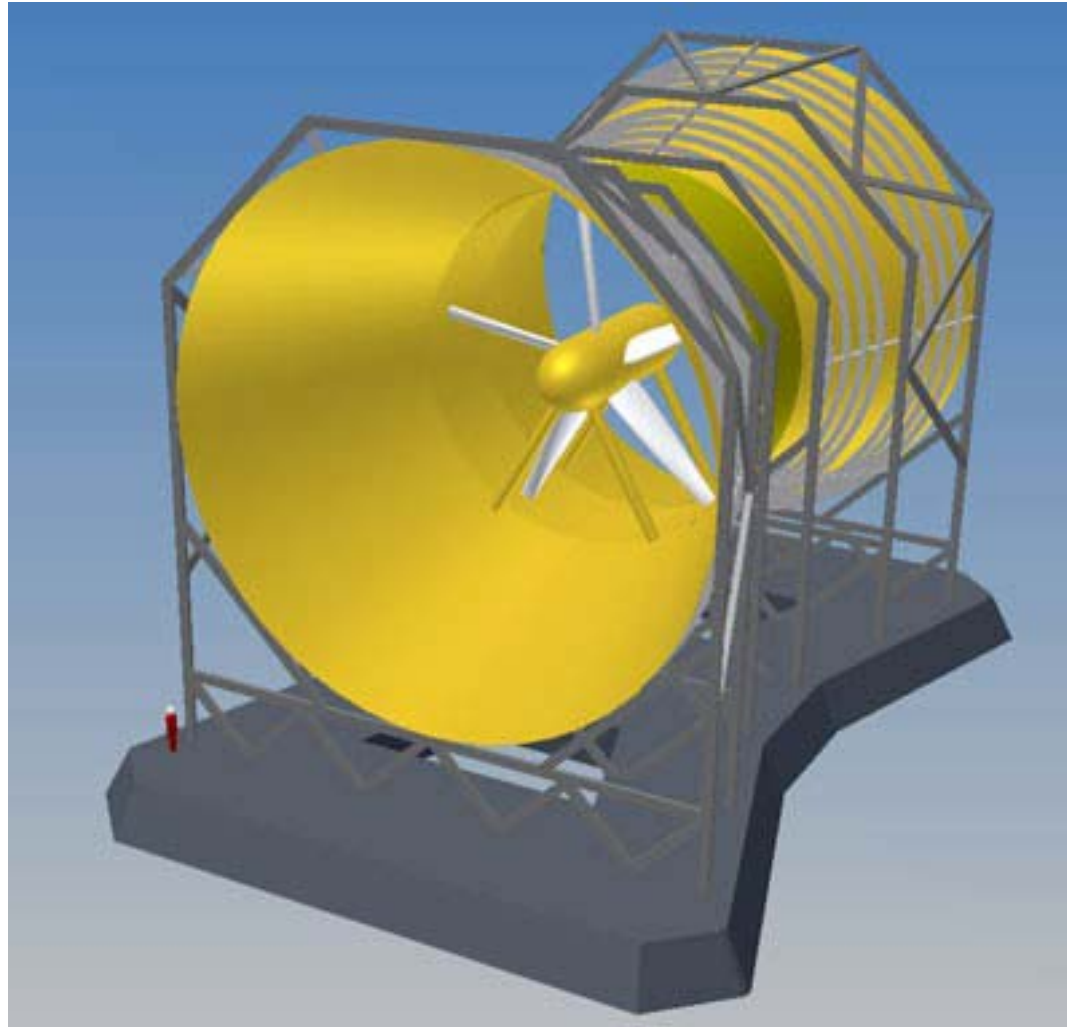
SMD TidEL Project



**MCT
Seagen**



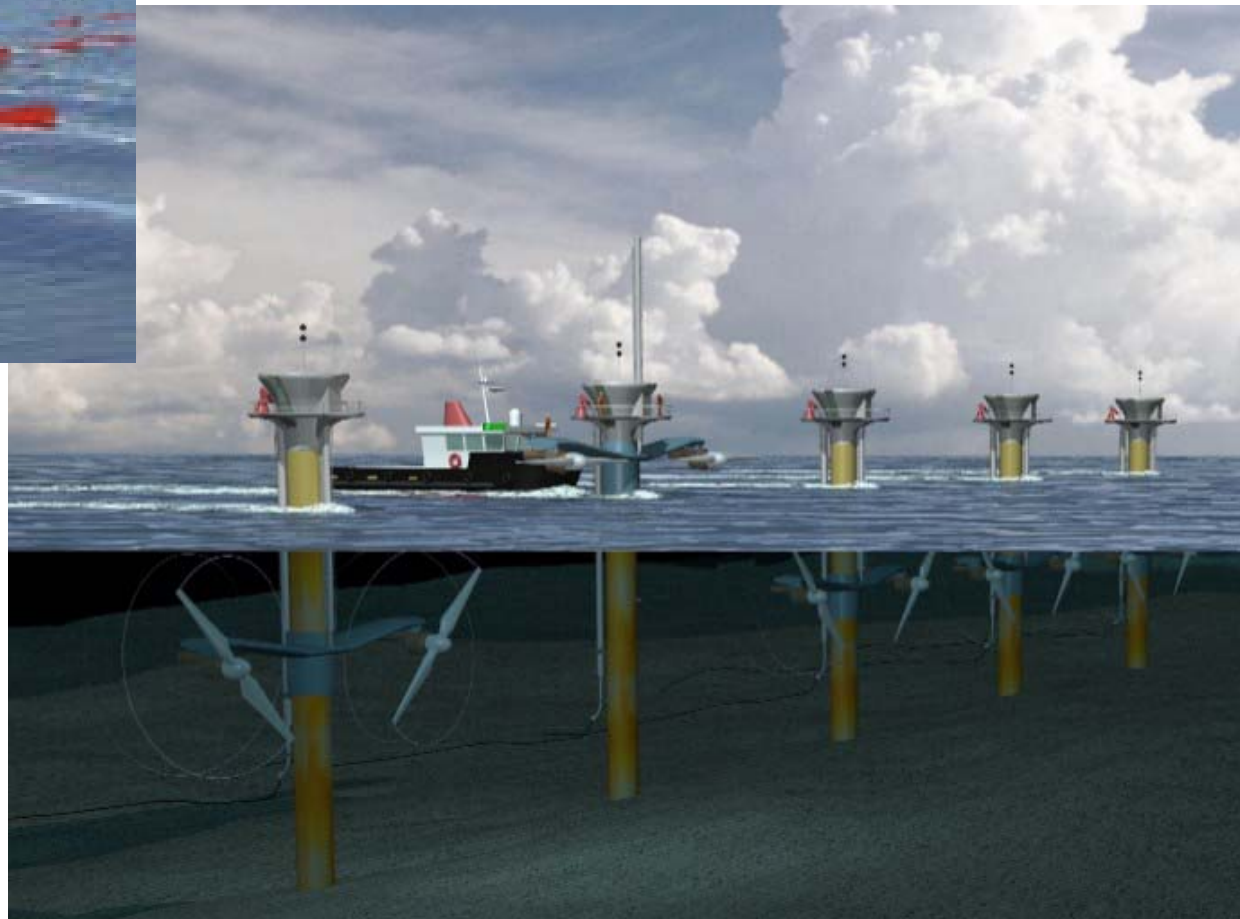
Lunar Energy Rotech Tidal Turbine



Policy Development

- Aim
 - To put in place a framework (funding support mechanism(s)) that supports the UK wave and tidal industry in the continued development of marine technologies towards commercialisation and the eventual exploitation of the potentially huge global market (2050).





Marine Renewables Deployment Fund

- £50M in total
- Wave and Tidal Energy Demonstration Scheme
 - £42M - committed in 3 years
 - £9M max per project - 25% capital grant (max £5M) and £100/MWh for 7 years once commissioned
 - Approved by EU
 - Supports developed prototypes – not R&D
- Remaining £8M planned to support infrastructure projects and underpinning environmental R&D

Marine Renewables Deployment Fund

- Eligible costs can include grid connection but still favour hubs approach
- Time in the water – 3 months continuous / 6 months in 12 month period

Challenge for Wave and Tidal Technologies

- The real challenge for ocean energy technologies is to demonstrate that they can produce energy reliably and economically
- Government will help meet that challenge