

North West Renewable Energy Projects

Anthony Hatton, Development Director, Peel Energy



Joule Centre Annual Conference 2009
25 March 2009

Peel Energy

At the forefront of delivering low carbon energy for the UK

Has a balanced portfolio of more than 3 gigawatts in generation or development including:

- Wind Power
- Biomass
- Multi-fuel Generation
- Tidal Power

JV Agreements with:

- UK Coal to develop wind farms across their land portfolio.
- DONG Energy to develop Ayrshire multi-fuel Power Station, Hunterston
- DONG Energy and RWE npower in UK DECC's CCS Demonstration competition

Part of The Peel Group, joint owner of Peel Ports : Mersey Docks and Harbour Company, Manchester Ship Canal, shareholder of Cammell Laird

Peel Energy Onshore Wind – Scout Moor Wind Farm

Twenty-six 2.5 MW turbines installed in 2008

- Generating 65 MW, supplies 40,000 homes



Peel Energy Onshore Wind – Mersey Wind Farms

Six 600 kW turbines installed in 1999

- Generating 3.6 MW, supplies 2,000 homes

Four 2.5 MW turbines completed February 2009

- Generating 10 MW, supplies 5,500 homes



Onshore Wind

- Proven technology
- Established supply chain
... gearing up for offshore (larger, more reliable devices)
- Constrained deployment
 - planning (amenity, radar, environment, ...)
 - economics / wind resource (turbines : steel & supply/demand, site specific issues, grid)



Peel Energy Biomass

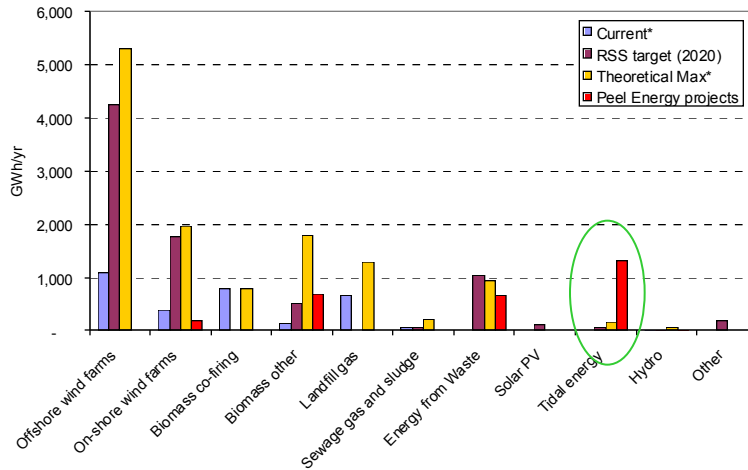
North West Opportunities

- 100+ MW plant fed by imported fuels
 - 20-30 MW plants fed by domestic fuel sources
-
- Proven technology
 - Constrained fuel supply
 - Limited opportunities for good quality Combined Heat and Power



Peel Energy Mersey Tidal Project

Tidal Energy in Mersey has potential to make significant contribution by 2020



* Source: 4NW, Towards Broad Areas for Renewable Energy Development, Report July 2008, Ove Arup & Partners Ltd



Mersey Tidal Power Project : Phase 1 Study

Team: Buro Happold, SPA, RSK, University of Edinburgh

Steering Group: NWDA, Mersey Basin Campaign, Universities of Manchester and Liverpool, Port of Liverpool

Review of Mersey Estuary and available technologies

Matrix of suitable technologies throughout the Estuary

Results presented to Mersey Estuary Forum

Study won ACE Research, Studies and Consulting award, 2008



Several 'viable' options

Tidal Lagoon in Zone 1, 350MW
low impact on shipping

Tidal Barrage in Zone 2, 700MW
impact on shipping but potential
for extension to the Manchester
Ship Canal

Water Wheels in Zone 3, 200MW
minimal impact on shipping

Tidal Barrage in Zone 3, 500MW
low impact on shipping

Tidal Gate in Zone 3, 380MW
minimal impact on shipping



Mersey Tidal – Scheme Objectives

- To deliver **maximum affordable energy** (and **maximum contribution to Carbon reduction targets**) from the tidal resource in the Mersey estuary with **acceptable impacts on environment, shipping, business and the community** either by limiting direct impact in the Mersey estuary or providing acceptable mitigation and/or compensation

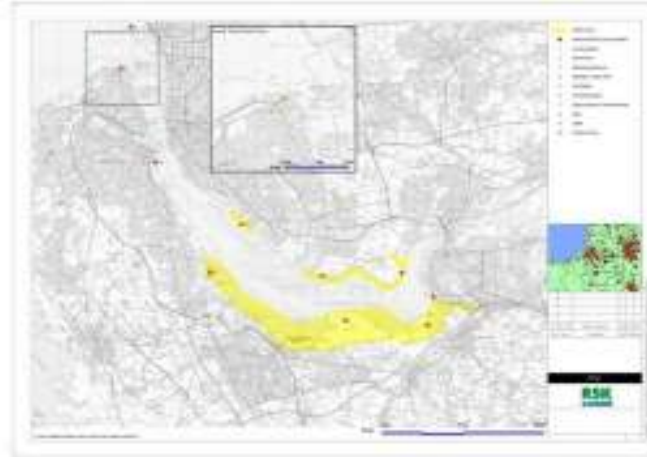
and in doing so:

- To maximise social and economic benefits from the development and operation of a renewable energy scheme, including where appropriate:
 - development of internationally significant facilities and skills to support the advancement of renewable energy technologies and their supply chains
 - improvements to local infrastructure
 - development of a leisure opportunity and tourist attraction.



Mersey Estuary – ecologically diverse and nationally important

Broad environmental scoping and bird surveys started



Selection of Consulting Team continues ...
preferred bidder to be selected by June 2009

Three consortia selected for Phase 2 dialogue:

- Gifford, IT Power, EC Harris, KPMG, GVA Grimley, PPS, APEM, RSK, ABPmer
- Halcrow, Mott MacDonald, RSK, APEM, Environmental Resources Management
- Scott Wilson, Drivers Jonas, EDF.

Team to include all relevant disciplines, including:

- Planning, consenting and stakeholder engagement
- Environmental (multiple disciplines)
- Marine power systems, including mechanical and electrical engineering
- Marine civil and structural engineering
- Hydrodynamics and sedimentary modelling
- Cost management
- Commercial and Financial modelling
- Social and economic benefits modelling / options appraisal
- Project Management



Other Peel Renewable Energy Interests in Northwest

- Tidal energy technology test site
- Hydro power on ship canal
- On-site low carbon generation



Anthony Hatton
ahatton@peel.co.uk
0161 629 8388

