

dti



Large Scale Integration of Wind Energy – EWEA Policy Conference

Development of the offshore transmission regime in the UK

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UK Targets and Aspirations

- Renewables to supply 10% of UK electricity in 2010, subject to the costs being acceptable to the consumer. In 2005 the contribution was 4.22% (all sources including Hydro).
- An ambition to double share of electricity from renewables to 20% by 2020
- Wind energy will make the main contribution.
- No specific target for wind, but expectation that onshore and particularly offshore will be key.
- To work towards cutting emissions of CO₂ by 60% by 2050.

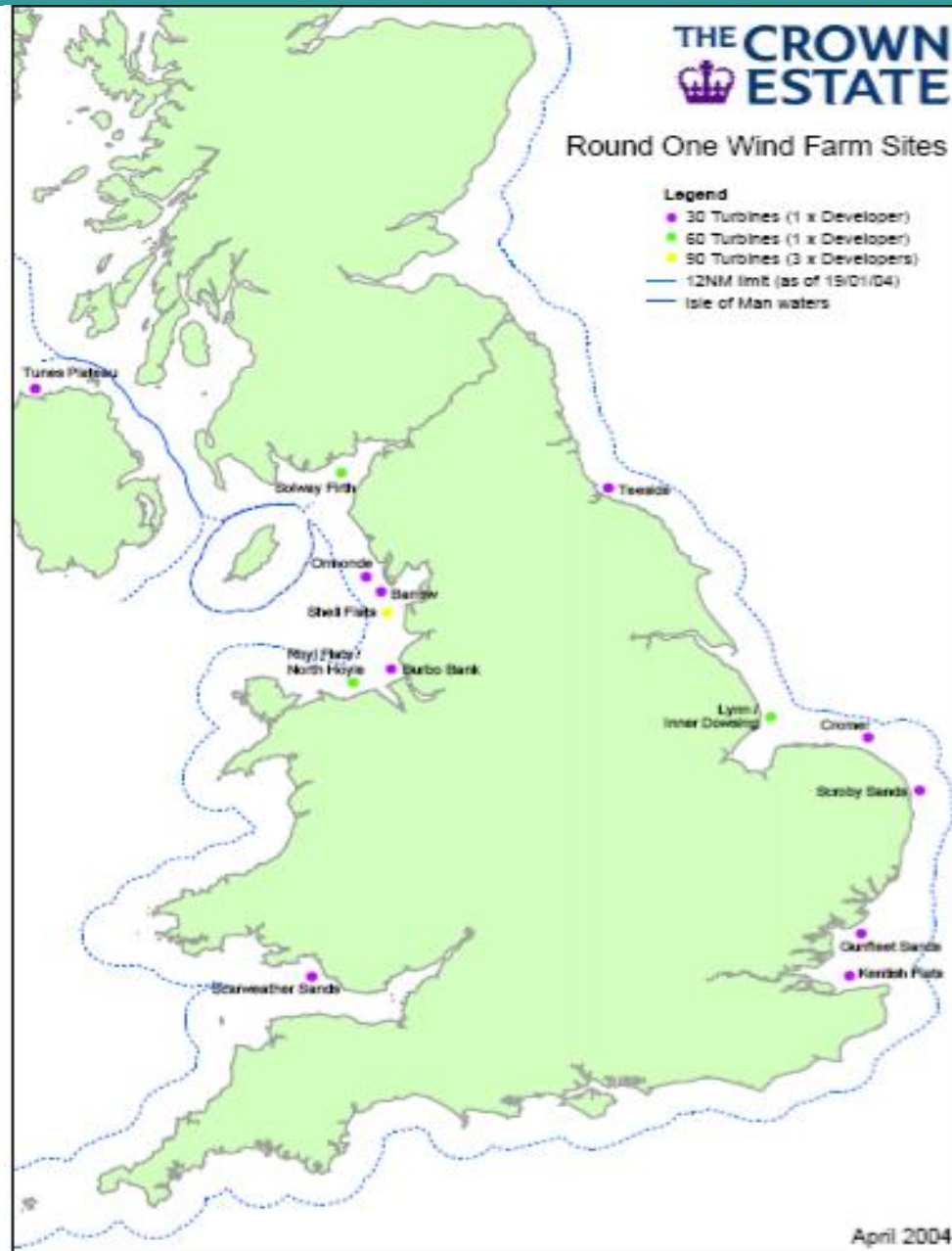
2006 Wind Developments – Highlights

- 2,291 MW is expected to be installed in UK at end 2006 (1,977.2 MW onshore and 303.8 MW offshore) 46% increase on end of 2005
- Over 322.65 MW of wind projects currently under construction
- 7 Round 2 offshore wind projects submitted applications for consent



Status of Round 1 Offshore Wind Installations

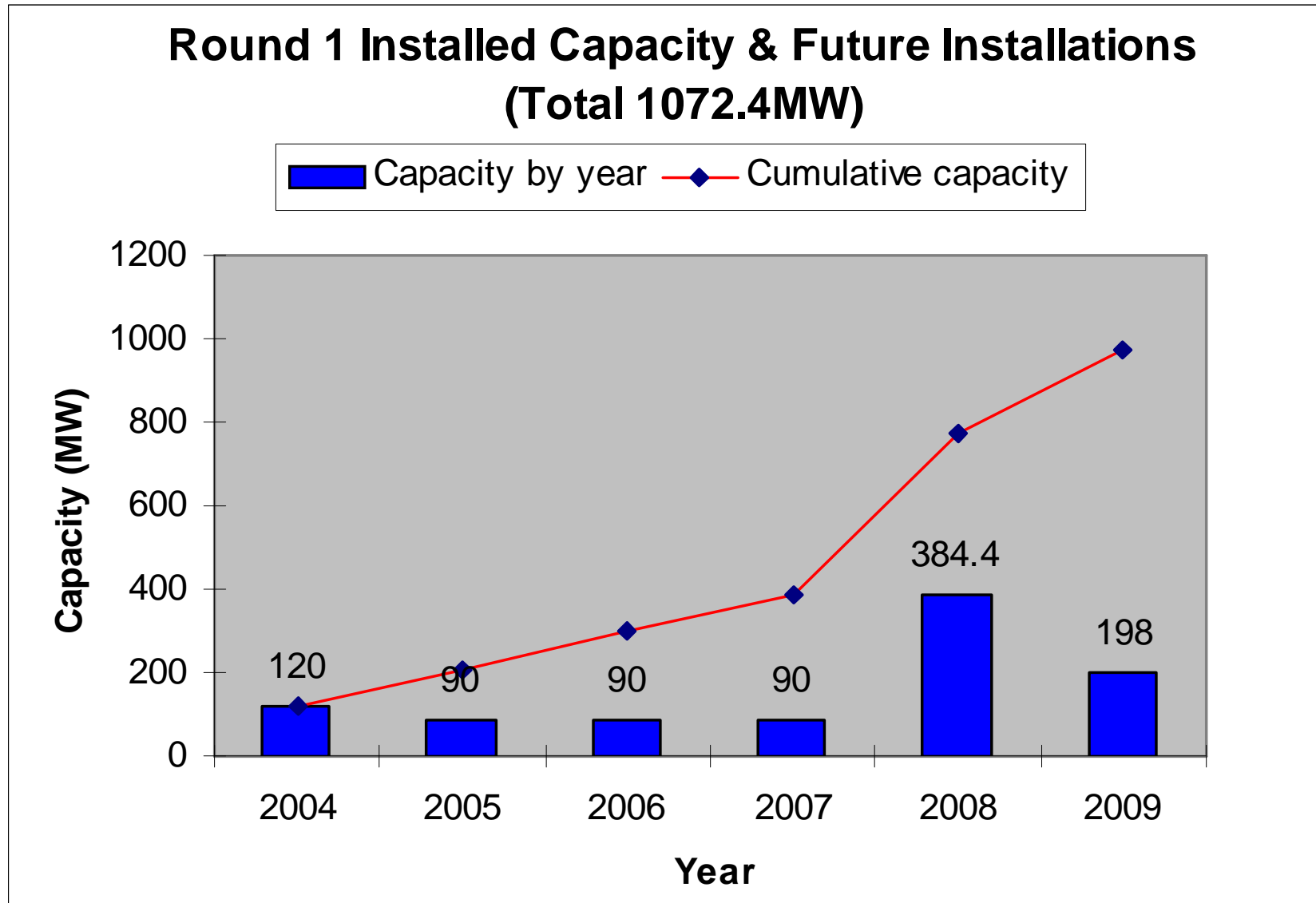
Round 1 - Location



Round 1 Status

- Project development slowed significantly.
- Developers unable to secure EPC contracts
- Demand for turbines means delivery delayed until 2008 or 2009.
- Turbine prices continue to rise.
- Total installed costs of existing projects typically £1.22M to £1.36 M /MW.
- Estimates of £1.55M to £1.85M /MW for the remaining planned projects.





Round 1 - Operational Data

Wind Farm Operational Information						
	Installed Capacity	Turbines	Output GWh	Capacity Factor %	Mean Availability %	Year Period Covered
North Hoyle	60 MW	V80 2MW	190.7	36	84	Jul 2004 to Jun 2005
Scroby Sands	60 MW	V80 2MW	152.6	28.9	84.2	2005

A copy of the North Hoyle report can be found here (2 parts):

www.dti.gov.uk/files/file32843.pdf

www.dti.gov.uk/files/file32844.pdf

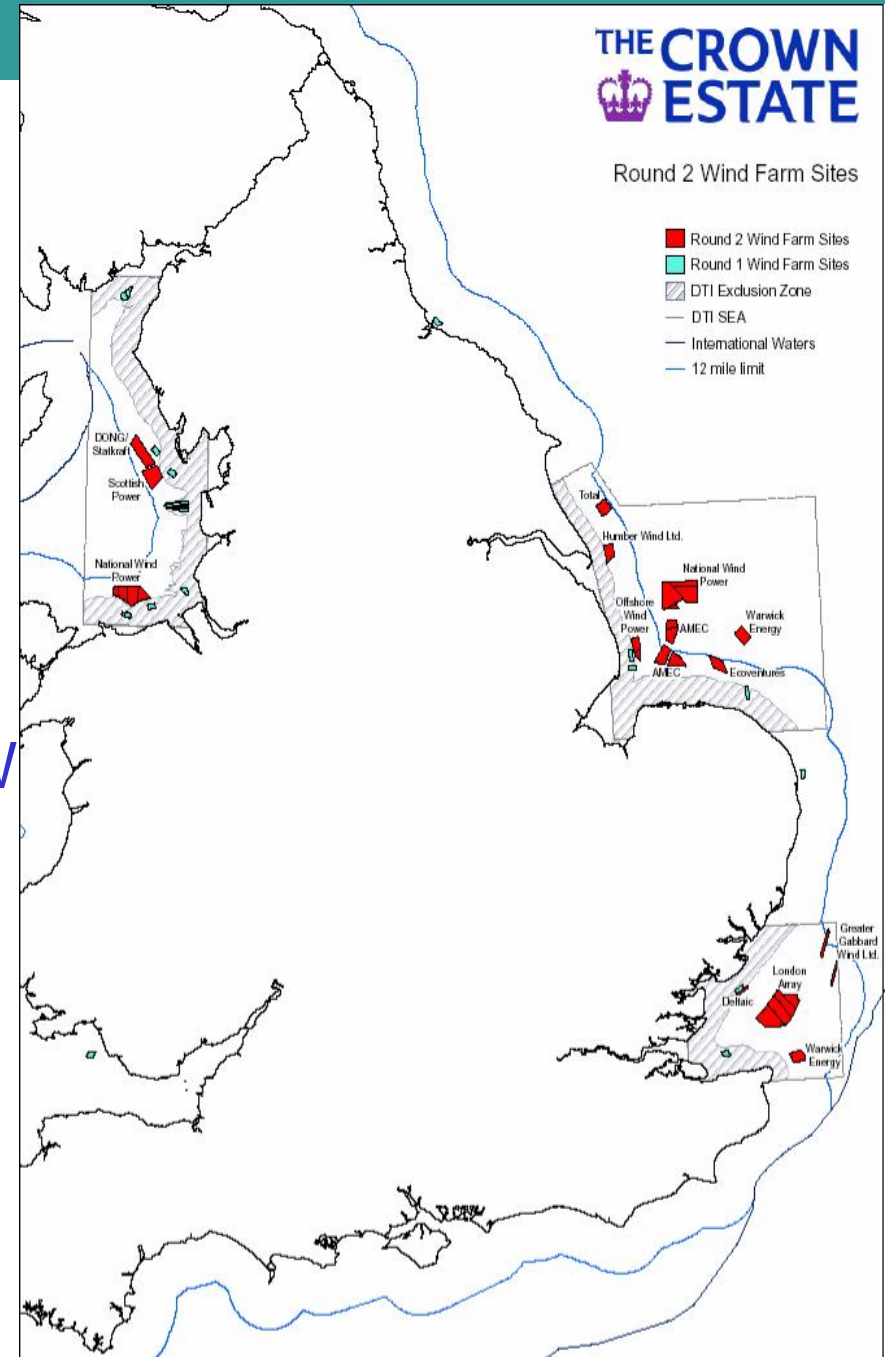
A copy of the Scroby Sands report can be found here:

www.dti.gov.uk/files/file32785.pdf



Round 2 Status

- 3 Strategic development areas:
 - Greater Wash
 - Thames Estuary
 - North West (Liverpool Bay)
- Expected Capacity 5.4 to 7.2 GW
- 15 Wind Farms sites



Offshore wind - Trends

- Slow down since 2004/05
- **But** confidence is returning to the UK sector
 - Consents
 - Funding
 - Offshore transmission

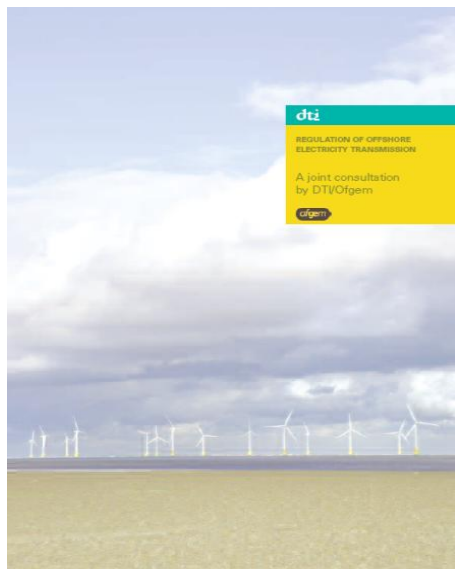


Regulation of Offshore Transmission



- The Energy Act 2004 gave Secretary of State power to regulate offshore grid connections.
- System should deliver Govt's renewable targets and be consistent with onshore arrangements
- Econnect report showed that most economic connections to be radial spurs shared in 50% of cases

Joint DTI / Ofgem consultation document - launched in July 2005



- Set out high-level regulatory options
 - Price-control regulation with or without capping or cross-subsidy
 - Licensed merchant approach

Consultation closed October 2005

31 responses received. Majority favoured regulated approach

<http://www.dti.gov.uk/energy/sources/renewables/whats-new/page25958.html>

Government Announcement 30 March 2006



SoS decided that... 'the extension of the current onshore regime offshore is the correct approach to take for the licensing of offshore electricity transmission'

In practice this means:

- Transmission Owners (TOs) will be responsible for building the lines & for upfront costs;
- Single system operator for GB
- Developers pay charges annual charges to use system (TNUoS charges);
- Cost-reflective – reflect demands placed on system;

<http://www.dti.gov.uk/files/file27137.pdf>



This approach:

- Ensures consistency with onshore arrangements
- Provides extra financial assistance to offshore wind developers as costs of grid connection spread over number of years
- Responsibility for creating offshore connections shared with System Operator and licensed TOs

Delivering the new regime

- DTI and Ofgem project to implement offshore regime
- Areas to be considered
 - Geographic scope of offshore transmission licences
 - Allocation of offshore transmission licences
 - Technical rules for offshore networks
 - Design of offshore price controls
 - Modifications to licences and codes

Project Objectives

- Delivering 2010 target (speed)
- Delivering 2020 aspiration (capacity)
- Enduring Regime
- Reliability and Security of Supply
- Consistency with onshore regime
- Minimises environmental impact
- Compliance with EU and domestic legislation
- Timeliness - providing certainty to industry
- Consumer protection and prices
- Meets Better Regulation principles (complexity)
- Increases competition
- Increases innovation

3 Key Pillars of new regime

- Appointing GBSO
- Establishing the TO licensing model that will apply offshore
- Determining the Security and Quality of Supply Standard (SQSS) that will apply offshore

GBSO Appointment

- DTI “Minded TO” Statement issued in May
- National Grid confirmed as Offshore System Operator (Designate) in August.
- Relevant provision of Energy Act 2004 will be commenced at the appropriate time.

SQSS

- Sub-group of OTEG considered changes for offshore
- Cost-benefit analysis undertaken to determine optimum security standard solution
- Recommendations consider:
 - Offshore Platform (i.e. transformers/HVDC converters)
 - Offshore cable network (I.e number and capacity of cables)
 - Single and multiple windfarm connections considered

SQSS

- Recommendations
 - Single windfarms – platform and cable capacity should be, at least, equal to export capacity of the windfarm
 - Multiple windfarms – platform and cable capacity should be, at least, equal to 90% of total export capacity of the windfarms
 - Windfarms > 120MW, post outage of platform transformer, sufficient capacity should remain to export 50% of installed platform transformer capacity
 - For HVDC, post outage of DC converter, loss of power infeed should not exceed 1000MW

Exclusive licenses

- Single TO with responsibility for a defined geographic area
- Areas could be divided up in a number of ways
- Competitive tender approach to awarding monopoly zones

Non-exclusive licences

- TOs licenses issued to any party which applies and meets the application criteria
- After connection application from generator – all offshore TOs have the right bid to connect
- TOs bid revenue stream
- Winning TO gets price control and has assets absorbed into its RAB