UK Offshore: Pioneering a new industry

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FRONT

BWEA

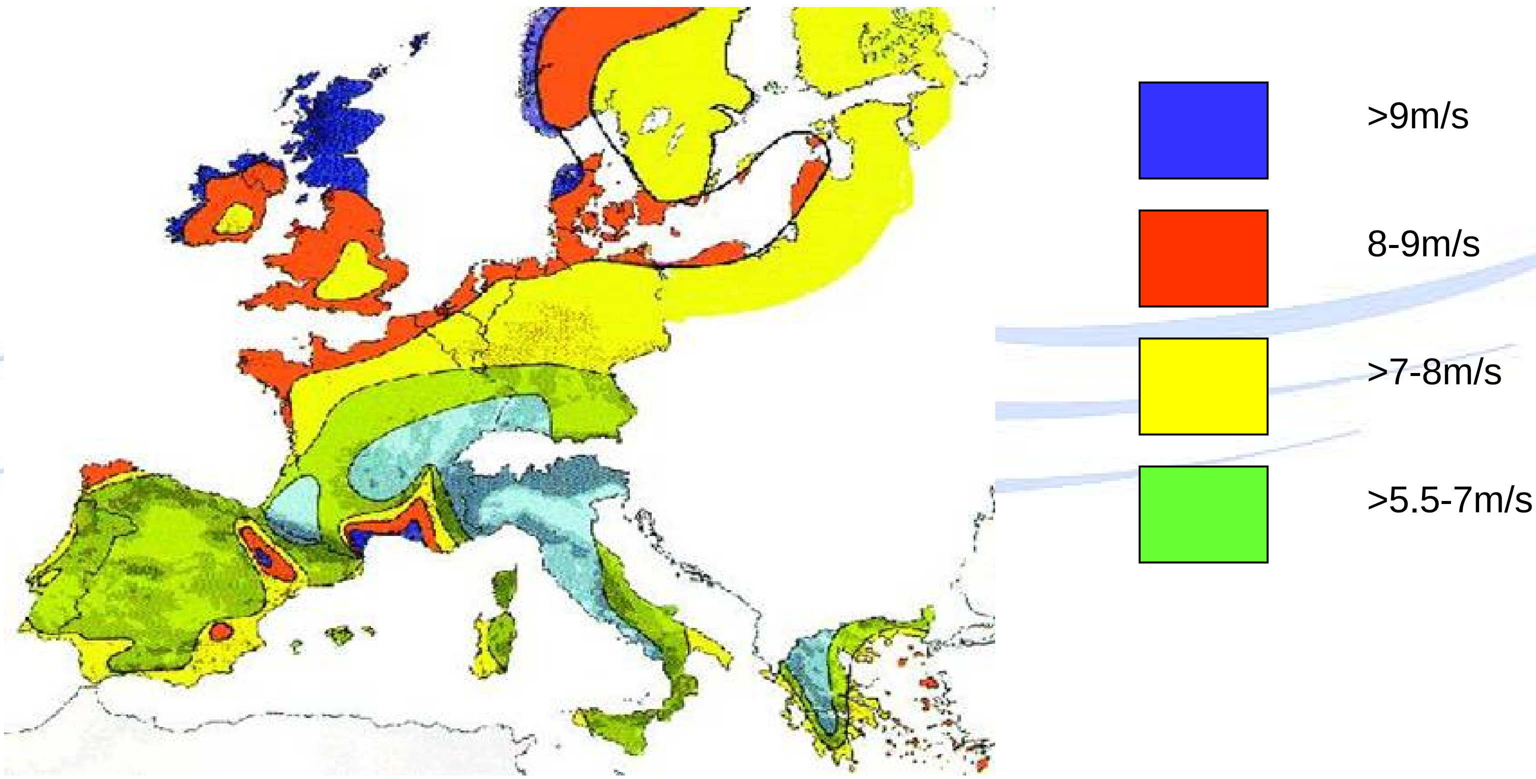
BWEA is the association representing the UK wind energy industry.

We engage with all stakeholders in championing the development of our vast wind resource to maximise economic and environmental benefits to the UK.

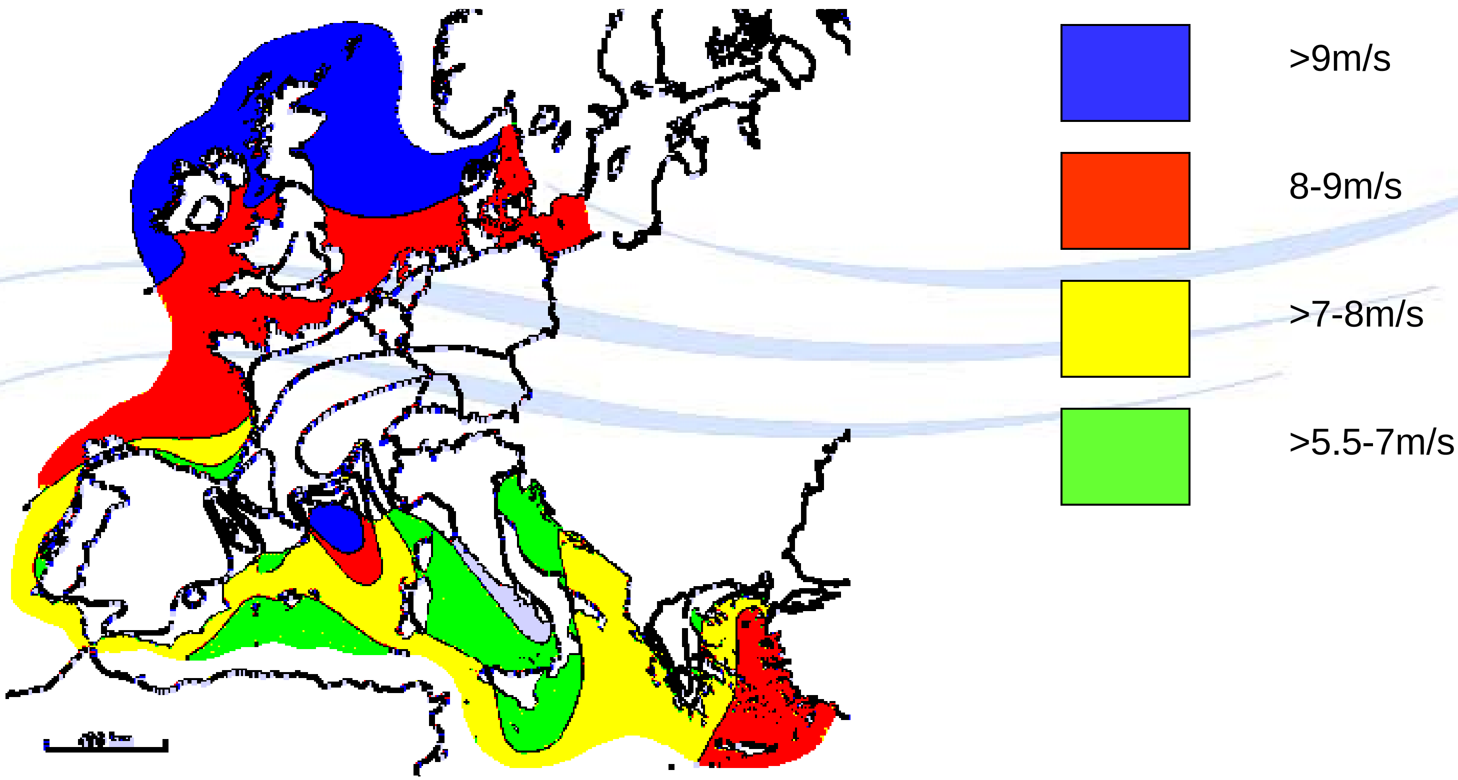
BWEA

- Over 320 Corporate Members
- All sectors of the industry
- Government $\leftrightarrow$ Industry interface
- Lobbying (Energy and Planning policy)
- Coordination with other trade associations
- Best practice
- Information source

UK has 40 % of European wind resource



..and even more offshore



Starting to deliver

- Just over 250MW built in 2004
  - Three times more than 2003
  - Including Scroby Sands (60MW)
- Should increase even more in 2005
  - 500MW will be complete by the end of the year
  - Including Kentish Flats
- Already over 600MW under construction that will be completed in 2006
  - 2006 figure should be higher as more projects enter construction phase in next few months

Future looks rosy

- Strong Government policy
  - 10% by 2010; 20% aspiration by 2020
- Strong mechanism
  - The Renewables Obligation is driving demand
- 10,000MW of renewables needed
  - If target is to be met, wind will have to deliver about 8,000MW of this
    - Already over 1,000MW
  - Roughly half on- and half offshore
  - Investment of about £8bn

The UK's offshore programme

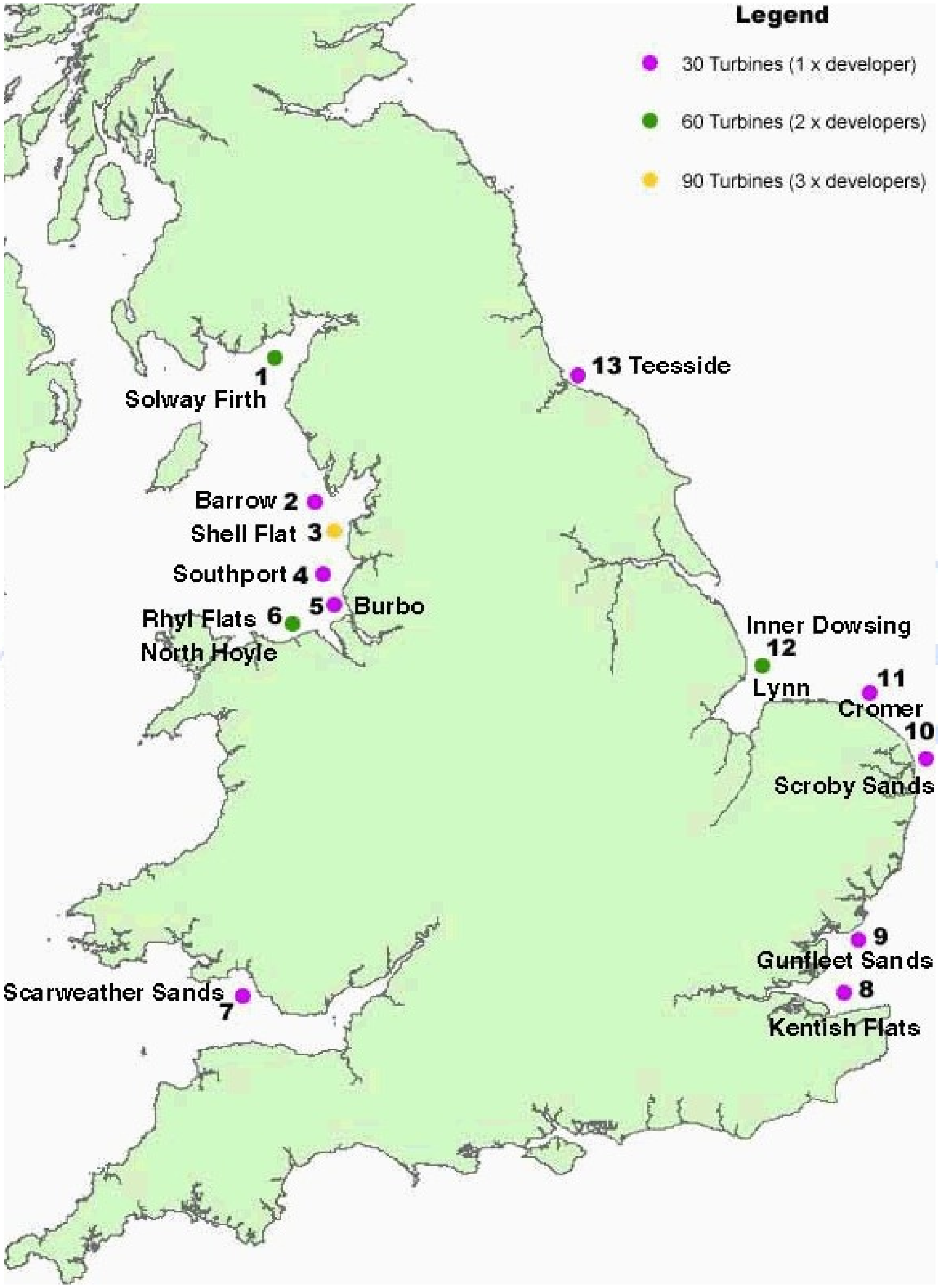
- In addition to the large resource onshore, massive resource offshore
- UK also has huge experience of exploiting marine energy
- Move offshore logical
  - Allows large tranches of capacity to be developed
  - Offshore now key part of UK renewable policy
  - Should be where UK industry can benefit most

Other reasons to act

- UK can be number one offshore wind market
  - Most serious programme over next five years at least
    - Some projects in Denmark, Holland, Germany, France, Spain, Sweden, but not as many as UK
  - 20-30% long-term of global offshore capacity
- Potential for up to 20,000 jobs
- Carbon-free and indigenous power

Offshore wind key to targets

- Government needs offshore to deliver or risk a major hole in renewable target and hence carbon reduction target
- National Audit Office optimistic about offshore
  - Foreseeing over 4,000MW by 2010
- While NAO might be over-optimistic, still looking at perhaps 3,000MW by 2010
  - Timing risks to this level of delivery
  - Question is not if, but when



Round One

18 projects of 30 turbines each offered sites in 2001

~500 turbines

1.5GW

ca.

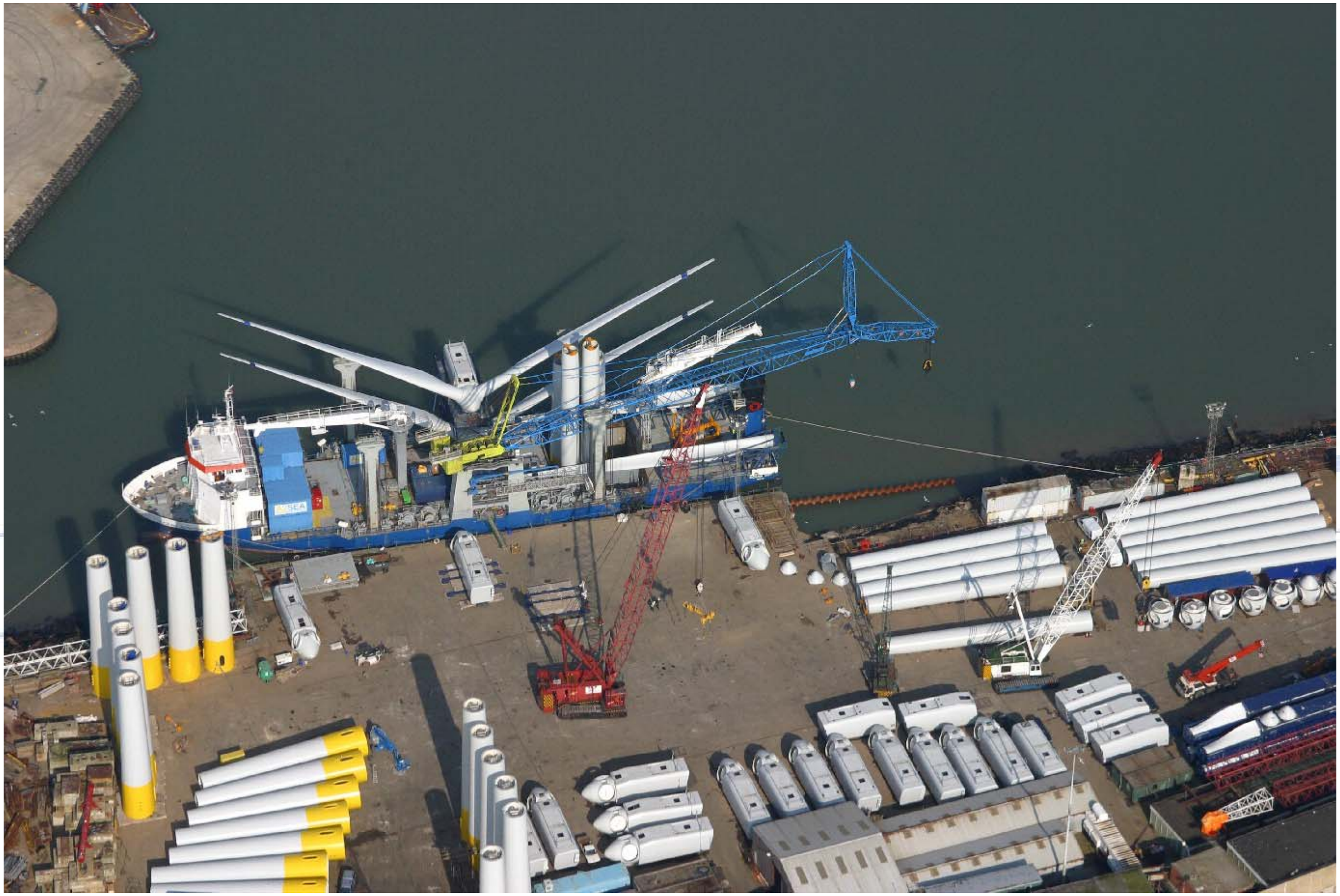
1% of total UK electricity supply

Round One progress

- Two projects built
  - North Hoyle and Scroby Sands: total 120MW
- Two projects under construction in 2005
  - Kentish Flats and Barrow: total 180MW
  - Complete or near-complete by end-2005
- Projects tendering
  - Lynn & Inner Dowsing, Robin Rigg, Burbo Bank, Gunfleet Sands, Scarweather Sands
  - Construction complete in 2007-08?
- By the end of 2006, perhaps 300 turbines totalling 860-910MW could be commissioned, under construction or contracted

Some other initiatives

- Ormonde – gas/wind hybrid
  - Consent application under consideration
- Beatrice – large turbine/deep water demonstrator
  - Two turbines due for installation in 2006
- Tunes Plateau – Northern Ireland
- Aberdeen – flagship project for city attempting reinvention as renewable energy capital



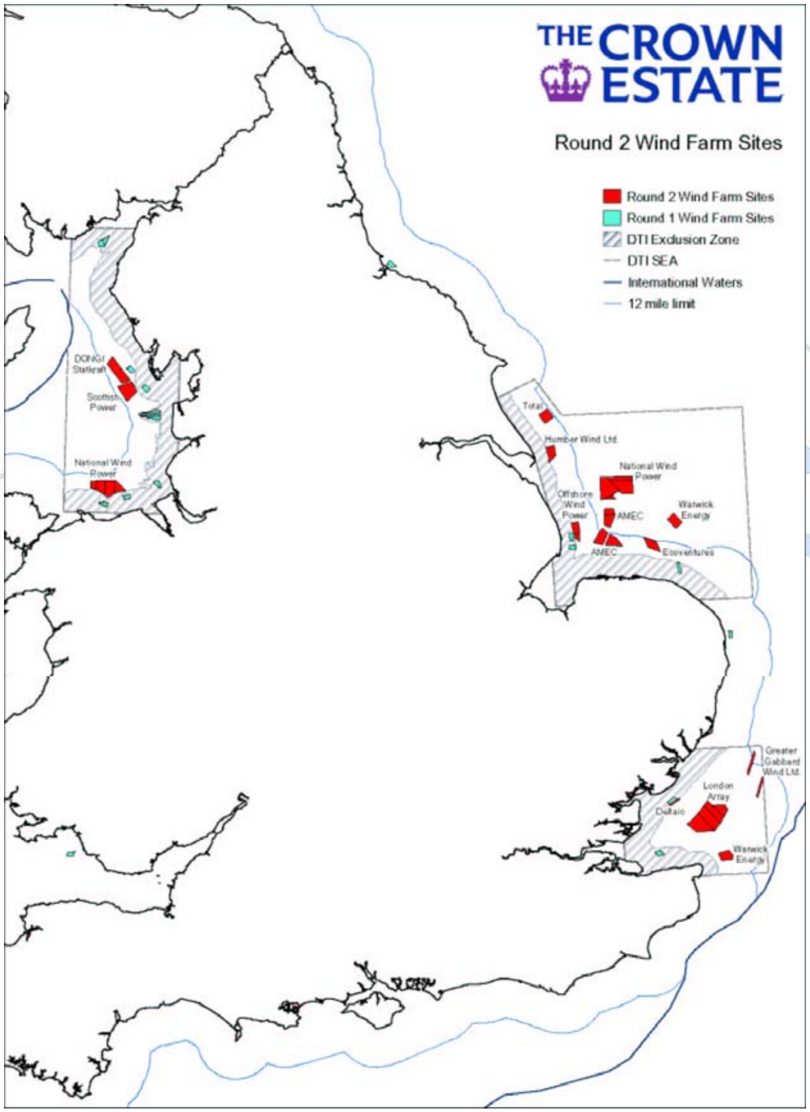
Round Two

The Future Offshore
Offshore Windfarms
EXISTING
ROUND ONE SITES
UNDER CONSTRUCTION
CONSENTED
UNDER APPLICATION
APPLICATION AWAITED
ROUND TWO APPLICATION AREAS
BLYTH
SOLWAY FIRTH
TEESSIDE
GREATER WASH
NORTH WEST
BARROW
SHELL FLAT
BURBO
RHYL FLATS
NORTH HOYLE
LYNN
INNER DOWSING
CROMER
SCROBY SANDS
THAMES ESTUARY
GUNFLEET SANDS
KENTISH FLATS
SCARWEATHER SANDS

Headlines

- Projects much larger than Round One
  - No limits as there were for Round One
  - Largest project 1,200MW
- Further offshore (8-13km limits)
  - Some outside territorial waters
- Construction
  - Start in 2008 at the earliest
  - Will be phased through a number of seasons

Round 2 projects



•15 projects awarded options to lease seabed in December 2003

•Total of 5.4-7.2GW

•Projects entering consenting process from mid-2005

•London Array first of seven likely to submit this year

Challenges ahead - the 4 C’s

- Cost
- Contracting and supply chain
- Consenting
- Connections

Cost

- Increasingly obvious that there is a gap between income available under RO and that required to give return commensurate with the risks involved
  - Round One projects with capital grants (c£10m per project) possible, but still risky
- Costs have risen, not come down as hoped
  - Commodity prices a problem

Contracting and supply chain

- Key issue on costs is sharing risks equitably to bring down costs overall
- Turnkey (EPC) contracting route appears to have failed in this respect
- Most projects now going down multi-contract route
- BWEA acting to bring together all sides
  - Find suitable contracting strategies
  - Increase confidence so that necessary capacity is in place for Round Two

Consenting

- While Round One consenting relatively straightforward, still challenges for Round Two
  - Larger projects, further from shore
  - Bigger issues for fishing, navigation, impact on wildlife
- Much work being done
  - Dialogue and engagement with key stakeholders proving fruitful, though time-consuming

Connections

- Consultation just finished on bringing connections to shore into regulated transmission system
  - Will bring some economic benefit to projects
- Issue of Final Sums Liability
  - Potential showstopper for a number of projects
  - Would be avoided by making strategic upgrades of onshore grid part of regulated asset base immediately

You Need Us!

- Challenges severe but not insurmountable
  - Not a done deal yet, however
  - UK Government supportive
  - We're pioneering solutions you will need
    - Particularly those in the field of contracting and supply chain necessary for cost reduction
- UK will provide bulk of market for a minimum of the next five years
  - If UK fails, then offshore is set back for several years at least

See you soon in Britain!