

Wind development in England – the challenge

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Embarking on community wind in England needs careful consideration

- Planning uncertain. Rules requiring high level of community consent that reduced new wind projects to a trickle are due to be relaxed but subject to a consultation. Wait for the result of that!
- Price support mechanisms limited to bidding for a CfD - complex and expensive and even if successful will result in a low price for a small project
- Best sites are ones where:
 - Wind speed high (> 8.0 m/s (?) at 50 m). Appropriate sites limited.
 - Next to high energy use where can supply by direct (private wire). That way energy user benefits from predictable long term prices and wind project from accessing higher prices. Appropriate sites limited, and
 - Can get economies of scale from using large turbines (> 3MW (?)).
- In 2010 where planning policy positive and there was an appeals process:
 - Only about 1 in 12 of sites passing the initial feasibility stage made it to operating wind projects, and
 - At the planning application stage there was an ~50% success rate which includes the 44% of appeals that resulted in applications permitted.
- Development also costly

Onshore Large Wind – The Development Stages > 5 MW



Typical durations but can be shorter and very much longer

Onshore Large Wind work

Site stages in previous slide:

1. Desktop Feasibility (about £1k), Detailed Feasibility and Initial Consultation (about £8k), Initial Public Consultation (about £4k)

2.&3. Development (about £400k) (60% EIA work, 10% grid)

4. Post consent – contracting & detailed design (about £400k);

5. Build (about £1.3 million / MW for wind), PM work (about £100k)

- Timescale >3.5 years
- Funnel: expect consent for only 1 in 12 sites
- All this favours development of large, windy sites near existing grid by people able to afford the financial risk and can take a portfolio approach so develop a number of site and focus effort on the ones making most progress
- It does not favour the development of smaller community projects by communities
- Lets look at what is involved in developing ...

Siting issues

1. Footprint – does renting adjacent land achieve or add to the required space compared to merely the core ‘site’ and its constraint.
2. Wind climate – small issue once windy site chosen
3. Aviation constraints – impact on flight paths, NATS, MOD and Met Office radar
4. Environmental etc designations
5. Location (noise / shadow flicker) proximity to, occupancy of and orientation of Residential properties, Offices, Other buildings with/without windows
6. Location (toppling distance – secondary hazards – safety and business risk)
7. Turbine rating and tower height (IEC Class)
8. Access – roads suitable to transport large blades and nacelle and space for assembly
9. Proximity to existing grid (cost, various options)
10. Avoidance of surface and subsurface utilities
11. Ground conditions
12. Roads – level of use vs overhang
13. Economics

Turbine impacts to assess in design stage

1. Sound - depends on
 - wind speed and time of day (background noise level)
2. Shadow flicker – degree depends on
 - time of year and direction and strength of sun's direct irradiance
3. Glare (rare)
 - time of year and direction and strength of sun's direct irradiance
4. Ground vibration (rare)
5. Ancillary structures – substation (extension of existing), crane hard standing area, access track to road.
6. Modification (temporary) to roads to enable delivery access
7. Temporary construction traffic
8. Servicing traffic (small)
9. Very visible structure
10. Cumulative impact from each additional turbine
11. Avoiding wakes from upwind turbines in the prevailing wind direction – orientate so open to the south-west



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