

## GENERATING WIND ENERGY ON COUNCIL OWNED LAND

### Summary

The aim of this report is to update members of the Climate Change Commission about the progress that is being made in investigating the potential to generate wind energy on Council owned land. It outlines the process adopted by Partnership for Renewables, which has carried out initial feasibility studies.

### Background

1. Renewable energy in the form of wind, solar and hydro will play an important role in meeting the UK's carbon reduction aspirations of an 80% reduction in carbon emissions by 2050. In terms of wind energy the latest version of the Council's corporate Climate Change Action Programme states that the Council will:

*'Assess the wind energy generation potential of Council owned land with Partnership for Renewables' - CL2.*

2. PfR is a Carbon Trust Enterprises venture, the commercial arm of the Carbon Trust. It has the strategic objective to deliver 500MW of renewable generation and help the Government meet its ambitious renewable energy targets which stand at 10% of the UK's electricity coming from renewable sources by 2010.
3. PfR has been specifically set up to work with public sector bodies. Whilst these bodies have significant land holdings, they lack the expertise and the capital required for large energy investments. They also have complex procurement requirements that PfR meet.
4. PfR has established good relationships across the public sector and is currently working with Milton Keynes Council, North Yorkshire County Council, Southampton City Council and Clackmannanshire Council in Scotland.
5. PfR has been specifically set up to deal with public sector bodies. Whilst public sector bodies have significant land holdings, they lack the expertise and the capital required for large energy investments. They also have complex procurement requirements that need to be met.

### How it works

6. The development process consists of three stages:
  - screening of sites
  - project feasibility studies
  - development

### ***Screening of sites***

7. This stage mainly comprises of a GIS search to identify all the potential land holdings that may be suitable for the development of a wind generator and is mainly based around viable wind speeds. Normally to be economically viable a site needs to have an average wind speed of at least 6 metres/second.

### ***Project Feasibility Studies***

8. The aim of this phase is to assess the technical and economic viability of each site that comes out of the initial screening stage. This involves a more detailed screening exercise against a number of parameters including some of the following:
  - potential noise receptors from any third-party residential property (350m buffer)
  - commercial buildings (125m buffer)
  - power lines (125m buffer)
  - microwave links (100m buffer)
  - B-class roads (50m buffer)

### ***Development***

9. If a site passes the technical and economic tests, it can pass to the development phase. To proceed PfR request an option for a 25 year lease on each specific site. This option right is given because PfR will make a significant investment of approximately £200-£300k at its own risk.
10. Terms of Lease - PfR guarantee full market rent for the lease of the site which is based on the predicted amount of electricity which will be generated which, in turn, is based on the predicted annual wind speeds for each site. This is based on 6% of any revenues from selling the electricity in years 1-10 and 8% from year 11 onwards.
11. The District Valuer has been contacted about the terms and conditions of the Lease arrangements proposed by PfR to ensure these conditions are transparent and represent good value for money.
12. Private Wire income – If the Council (or a 3<sup>rd</sup> party) has an electricity demand within around half a kilometre of the turbine, any electricity purchased will be sold at a discount to the retail price – PfR estimate an 18% discount. For loads over about 500kW, this will significantly increase the financial benefit of the project for the Council. For example, Oxford City Council are looking to site a turbine next to the Mini factory and to sell the electricity to the factory.
13. Once a lease option for a site has been successfully negotiated and signed, PfR continue with the development process that will involve: further initial de-risking; preparation for planning, including work for any Environmental Impact Assessment; and consultation with a wide range of stakeholders including statutory consultees (e.g. Natural England) and local resident/interest groups. When this work is complete, PfR will submit a planning application. If, and

when, planning permission is obtained and all the other issues have been resolved, PfR will enter into a 25 year lease.

### **Construction**

14. If the development stage is successfully negotiated in terms of the necessary permissions, consents and licences, this will lead onto the construction phase. A typical tower is 80m high with 45m blades. The turbine foundations are approximately 15m x 15m with the tower base 5m x 5m. The footprint of the development site to allow for cranes and turbine assembly equipment is approximately 20m x 20m. An access track will be needed and this will also need to be retained once the turbine is in place for inspection and maintenance during the 20 year life of the turbine. This stage can typically take 4–6 months depending on the number of turbines and access constraints.

### **Progress to date**

15. PfR have been working with us for the last 12-18 months and have carried out the first 2 phases – initial screening / project feasibility studies. In considering whether to enter the development stage, which entails more detailed feasibility work, a number of issues regarding the conditions of the lease have arisen. A lease could effectively sterilise a significant piece of land for 50 years. There is also no provision for periodically reviewing the rental value of a site.
16. In addition, the annual revenue payment from the PfR model for a turbine is also very modest compared with the overall revenue stream that PfR will gain from selling the electricity. Some very basic calculations on the marginal abatement cost (MAC) of investing in this technology reveal that the turbines would provide a very respectable payback period for anyone investing in this project of between 4 and 10 years.
17. We are currently looking into the various options that are open to the Council In taking this technology forward that maximises the potential revenue within a risk framework that is acceptable.
18. A further report will be prepared for this meeting when this work is complete.

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