**The Camco Staffordshire Renewable and Low Carbon Energy Study Briefing Note in response to Wind Energy and adoption of evidence base documents queries**

## Wind Turbine Buffer Distance

The proximity of large[1] wind turbines to any dwelling in Staffordshire is taken as 600 metres in the Camco report, which is in line with the national guidance written by SQW Energy 'Renewable and Low-Carbon Energy Capacity Methodology,' endorsed and published by DECC in January 2010.

The justification SQW give for using 600 metres as a baseline in their methodology is as follows:

*"The extent of the buffer varies from 400 to 600m. In practice, the minimum distance required between a wind farm and residential properties is site-specific, dependent on the proposed turbine and ambient background noise. There is no definitive guidance on this issue and therefore a rule of thumb has been used based on expert opinion (from wind farm noise specialists) which suggests that the minimum buffer distance that is required for a 2.5MW turbine (to take account of safety and noise constraints) is 600m.[2]"*

It was therefore considered appropriate to use the 600 metre buffer zone in the Staffordshire report, because as the quote above suggests, this is the only accredited national methodology which attempts to quantify this figure. In addition, Camco had also identified 600m as an industry standard figure prior to the release of the DECC methodology. Therefore, using a different figure would have been difficult to justify and there would have been no credible buffer assessments to source it from.

Moreover, the above quote states that each wind scheme should be assessed individually; in some cases, a distance less or greater than 600 metres may be appropriate, a fact which could only be determined by undergoing relevant tests prior to erecting the turbines. The size of each turbine will also alter the buffer distance and again this will differ in each case.

The Energy Minister, Charles Hendry, has recently suggested that *"If one were to say that the presence of one house within a distance of 1 km or 1.5 km could stop a [wind] development from happening, that would prevent us from using some Brownfield sites."*

PPS22 also states that "*Planning policies that rule out or place constraints on the development of all, or specific types of, renewable energy technologies should not be included in regional spatial strategies or local development documents without sufficient reasoned justification."* Accordingly, it was not considered justified to depart from the industry accepted 600 metre buffer.

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[1] The definition of a large turbine is one with a c.2.5MW capacity and its size is approximately 120 metres to the tip of the blade to the top of its swept area (Camco report, page 72).
[2] Taken from the SQW Methodology, page 32.

Figures 1 and 2 over the page demonstrate the level of restriction that would be placed on wind energy development if a one kilometre buffer zone was enforced on a county-wide scale.

Figure 1: Area of Staffordshire covered by 1km buffer from residential properties (white areas represent where turbines could potentially be located).

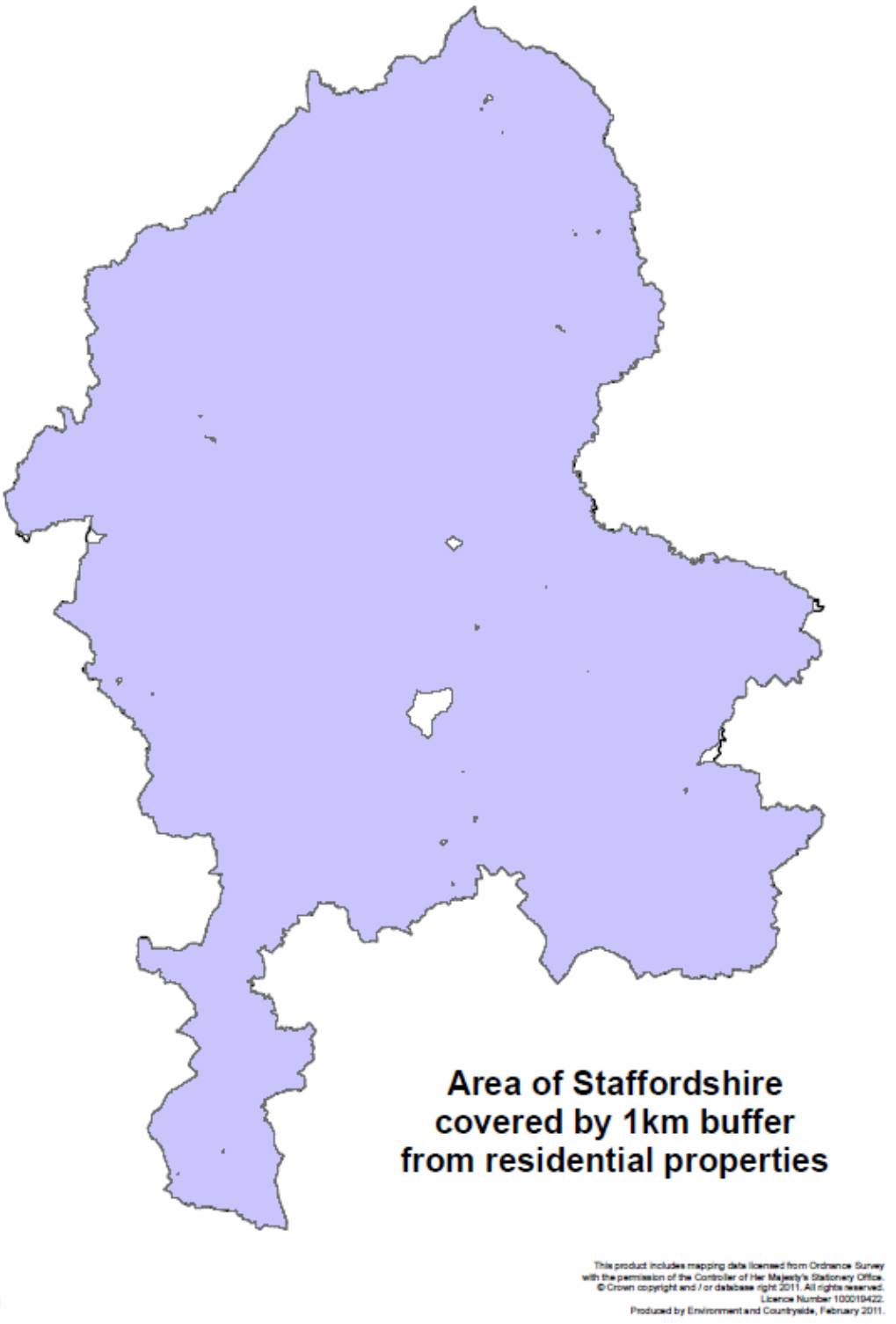
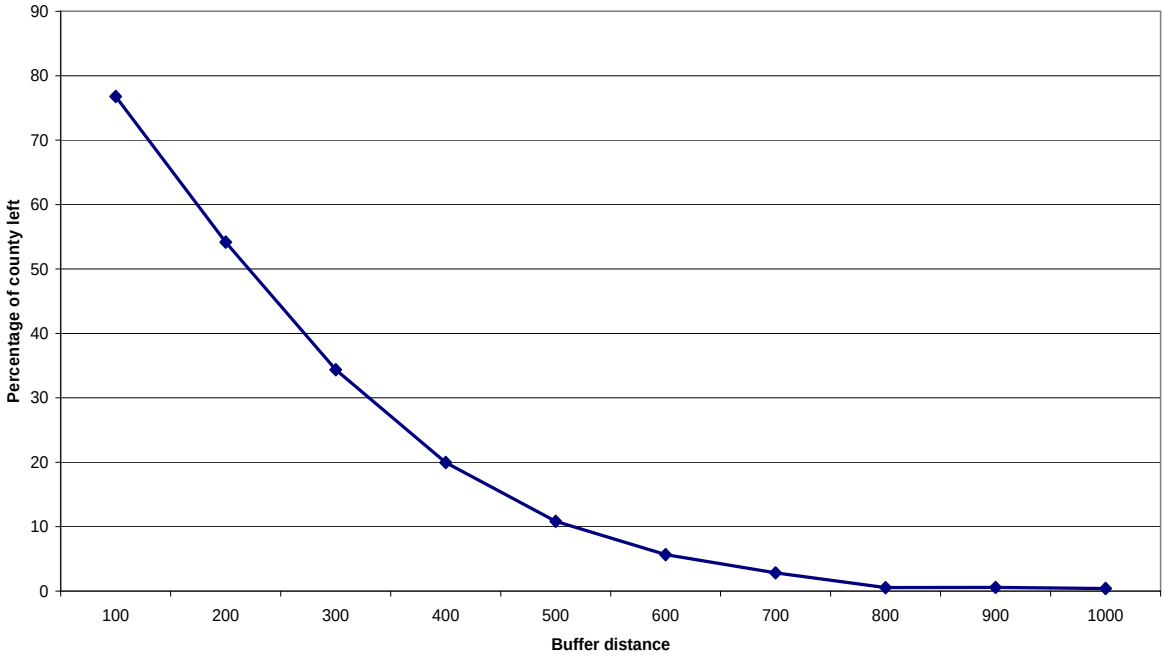


Figure 2: Buffers of wind turbines from residential property in Staffordshire.




In addition, the Camco report is an evidence base report rather than a policy document, and therefore the 600 metre buffer zone should only be used as an indication rather than a figure that must be adopted under every circumstance. Dependent upon the site-specific nature of a proposal 600m may be too short a distance, or on occasion considered too far.

**Wind Capacity Factor**

Capacity Factor for wind energy is a key determinant of energy generation and is related both to the wind speed regime and the design of the turbine. Hence, capacity factors change with variations in wind speed, the specific arrangements of wind within the landscape they are in and the type of the wind turbine.

As with the buffer zone methodology, the remit of this project was to provide a robust evidence base for the resource potential for all low carbon technologies, including wind energy, and so the study has sought to do so using independent and reliable data. In the case of wind energy there are a large number of parameters that have been taken into account and capacity factor is just one.

As described in the report (page 72), Camco have a taken 25% capacity factor, which is a notional reduction on the 28% ten year national average published by DECC. This reduction was applied to account for the anticipated lower winds in the study area compared to the rest of the UK. It should also be noted that this is an assumption that operates over the next fifteen years

and over that time it is anticipated that the technology will improve which is likely to see performance and cost effectiveness improve in tandem.

The SQW methodology takes a more aggressive view of wind resources. It makes significant assumptions about wind speed (land with wind speeds greater than $5ms^{-1}$ should be identified) and dwellings constraints (only exclude areas with proximity of "settlements" and do not consider proximity to individual dwellings) and by consequence, if followed to the letter, would identify a far greater wind resource potential for every district. It is therefore considered that the Camco study approach provides a justified, balanced approach based upon local elaboration of national methodologies.

**Overall**

Whilst the distance from dwellings will be a key consideration in the determination of planning applications for wind energy proposals there are also a number of others of equal importance e.g. landscape character or biodiversity interests. The study factors in these constraints to an extent, however the assessment still represents a strategic level one which will need to be subject to further scrutiny at the site-specific scale i.e. the study does not factor in the effects of 'cumulative impacts' upon the landscape. This is very subjective and dependent upon factors such as the proximity of other turbines and the particular sensitivity of the specific location of the proposal.

**Commentary on the role of evidence base documents and their relationship to policy (including the adoption of documents/policy)**

Evidence base documents are not typically adopted by a Cabinet/Council resolution within the local authorities as they often represent an objective view or guidance for the local authority on an issue, rather than concrete policy proposals or requirements. The interpretation of the evidence base into local authority planning policy is the next stage in the process and it is this which is then formally adopted by Cabinet/Council resolutions in the form of the approval of a planning policy document e.g. the Core Strategy. If a local authority wishes to depart from one evidence base document's recommendations then it can do so by formulating an alternative evidence base. In the case of the Camco report the recommendations and analysis are all at a strategic level and for the local authorities to consider further based upon their local circumstances and priorities. For instance, in relation to the wind resources assessment the intention is not for the 600metre distance from residential properties to be adopted in planning policy but for it to merely inform a strategic level assessment of theoretical potential, whilst the recommended carbon targets framework is also still subject to local authorities considering the viability of such policies in their local context.