

CABINET ITEM COVERING SHEET PROFORMA

AGENDA ITEM

REPORT TO CABINET

11 MARCH 2010

**REPORT OF CORPORATE
MANAGEMENT TEAM**

CABINET DECISION

Environment – Lead Cabinet Member – Councillor Mrs Beaumont

WIND ENERGY GENERATION – CAPACITY STUDY

1. Summary

This report presents the results of recent studies commissioned to determine the contribution that renewable energy generation from wind could make to both Regional and National targets for renewable energy. The three studies discussed in this report are:

- Wind Farm Development and Landscape Capacity Studies: East Durham Limestone and Tees Plain (2008);
- Wind Farm Development and Landscape Capacity Studies: East Durham Limestone & Tees Plain addendum study (2009);
- Stockton Renewables Study: Wind Study (2009), commissioned by Stockton Borough Council.

The studies are intended to be an objective technical assessment of capacity of each identified area to accommodate wind energy development. They will be a tool to assess planning applications and to inform the development of the Local Development Framework. The studies should therefore assist in securing a more planned, consistent and coherent approach to the decisions taken on onshore wind applications.

It was clear that wind energy alone cannot deliver sufficient renewable energy for the needs for the borough or for the region and other new and existing technologies will need to be developed and delivered to meet current and future needs.

2. Recommendations

It is recommended that:

1. Members note the content of the Wind Farm Development and Landscape Capacity Studies: East Durham Limestone and Tees Plain (2008); Wind Farm Development and Landscape Capacity Studies: East Durham Limestone & Tees Plain addendum study (2009); and Stockton Renewables Study : Wind Study (2009). These Appendices are available on e-genda and also for viewing in the Members Library.
2. The results of the above studies be considered when developing planning policies in relation to the delivery of renewable energy generation targets.

3. Reasons for the Recommendations/Decision(s)

1. The government has committed to achieving 20% renewable energy generation by 2020 which will require a significant increase over the next 10 years from the position at 2005 which was 1.3%.
2. Planning policies need to be based on robust evidence and this study provides sufficient detail to suggest that wind energy generation will not be significant within the borough.
3. The heavily industrialised nature of the borough with chemical industries requiring large amounts of heat and electricity must be taken into account when considering both the capacity and the nature of renewable energy generation.

4. Members' Interests

Members (including co-opted Members with voting rights) should consider whether they have a personal interest in the item as defined in the Council's code of conduct (**paragraph 8**) and, if so, declare the existence and nature of that interest in accordance with paragraph 9 of the code.

Where a Member regards him/herself as having a personal interest in the item, he/she must then consider whether that interest is one which a member of the public, with knowledge of the relevant facts, would reasonably regard as so significant that it is likely to prejudice the Member's judgement of the public interest (**paragraphs 10 and 11 of the code of conduct**).

A Member with a prejudicial interest in any matter must withdraw from the room where the meeting considering the business is being held -

- in a case where the Member is attending a meeting (including a meeting of a select committee) but only for the purpose of making representations, answering questions or giving evidence, provided the public are also allowed to attend the meeting for the same purpose whether under statutory right or otherwise, immediately after making representations, answering questions or giving evidence as the case may be;
- in any other case, whenever it becomes apparent that the business is being considered at the meeting;

and must not exercise executive functions in relation to the matter and not seek improperly to influence the decision about the matter (**paragraph 12 of the Code**).

Further to the above, it should be noted that any Member attending a meeting of Cabinet, Select Committee etc; whether or not they are a Member of the Cabinet or Select Committee concerned, must declare any personal interest which they have in the business being considered at the meeting (unless the interest arises solely from the Member's membership of, or position of control or management on any other body to which the Member was appointed or nominated by the Council, or on any other body exercising functions of a public nature, when the interest only needs to be declared if and when the Member speaks on the matter), and if their interest is prejudicial, they must also leave the meeting room, subject to and in accordance with the provisions referred to above.

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SUMMARY

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It was clear that wind energy alone cannot deliver sufficient renewable energy for the needs for the borough or for the region and other new and existing technologies will need to be developed and delivered to meet current and future needs.

RECOMMENDATIONS

It is recommended that:

1. Members note the content of the Wind Farm Development and Landscape Capacity Studies: East Durham Limestone and Tees Plain (2008); Wind Farm Development and Landscape Capacity Studies: East Durham Limestone & Tees Plain addendum study (2009); and Stockton Renewables Study : Wind Study (2009). These Appendices are available on e-genda and also for viewing in the Members Library.
2. The results of the above studies be considered when developing planning policies in relation to the delivery of renewable energy generation targets.

DETAIL

Background:

- 1 The Regional Spatial Strategy for the North East (RSS) sets out minimum regional and sub-regional targets for renewables (Policy 39) to support the delivery of national targets. For Tees Valley, this means delivering an installed capacity of 138MW by 2010 within a regional target of 454MW. RSS reiterates the national aspiration that 20% of the electricity consumed should be generated from renewable sources by 2020 and as an aspiration, indicates that the targets for 2020 should be double those for 2010. The RSS targets therefore act as milestones in achieving objectives rather than a ceiling on the level of development required.
- 2 Policy 41 of the RSS set out a number of broad areas of least constraint. These broad areas were displayed on the key diagram of the RSS as “W” symbols (refer to map in Local Study page 7). Areas with medium (defined broadly as up to 20-25 turbines) scale potential related to Stockton include the Tees Plain, Teesside and the Tees Valley.
- 3 In 2008 a regional study was commissioned with the aim of determining the potential for wind energy generation with some clarity following the adoption of the RSS. This covered the area of the region between the Tyne and Wear conurbation and the Tees Valley conurbation. This was followed in 2009 by an addendum study, which, because of significant developer interest, looked exclusively at the Tees Plain area. Given the geographical areas, in particular the Tees Plain north of the river, neither study covered the part of Stockton Borough to the south of the A66.
- 4 To remedy the coverage issue identified above and to provide further evidence base on the capacity for wind energy generation within Stockton-on-Tees Borough, it was clear that a further study was required. In 2009 Arup consultants were commissioned, by the Council, through the strategic partnership arrangement to examine and report upon the capacity for wind energy generation in the borough from commercial scale wind farms, which are taken to be three or more wind turbines of at least 100m to blade tip.

Context

- 5 Energy consumption data is provided by the Department for Business Innovation and Skills and is broken down as follows for 2007 and clearly shows a higher than average consumption of energy within the industrial and commercial sector as we would expect with the chemical and other industrial processes that exist in the area:

2007	Domestic	Industrial and Commercial
Electricity	315 GWh	877 GWh
Gas	1,369 GWh	1,358 GWh

- 6 To provide sufficient electricity from wind turbines to meet the total consumption of the industrial, commercial and domestic sectors would mean 237 turbines rated at 2.5 MW and assuming a 23% capacity factor. The Regional Spatial Strategy has the aspiration to achieve a 20% renewable energy target which would mean 47 of this size turbine in the borough and this does not take into account the need to generate heat from renewable sources.
- 7 Clearly generating energy through wind alone is not going to meet the RSS aspirations or the national targets for renewable energy. Fortunately the borough does have the

opportunity in terms of land availability and accessibility via road, sea and rail to generate energy via other means such as biomass.

- 8 Recent planning applications indicate a significant base for renewable energy generation from biomass and bio fuel is likely to be developed in the borough. Almost 100MW capacity is proposed for the borough with other processes being considered that will generate bio-ethanol for road fuel use. All of which will support the aim of the sub-region to become a low carbon based economy.

Methodology

- 9 The methodology of both the 2008 regional study and the Stockton study includes a review of “technical and environmental constraints”. However, whilst the 2008 study involved a “landscape, visual and technical analysis”, this was excluded from the local study as Stockton Borough Council had already commissioned a separate study on landscape character assessment. Although the Stockton Borough study does not provide a “landscape, visual and technical analysis” work has been undertaken by the consultants to create a basic estimate of the theoretical maximum energy generation capacity from onshore wind within Stockton-on-Tees.
- 10 The “technical and environmental constraints” review process involved a constraint sieving exercise as used by commercial wind farm developers when selecting sites. It identifies land with a sufficient average wind speed to be technically viable for development as well as constraints such as land in close proximity to residential properties and nature reserves amongst other constraints.
- 11 Stage two of the Regional Study, the “landscape, visual and technical analysis”, aimed to determine the relative landscape and visual sensitivity of parts of the study area. This then allowed the consultants to examine what scale of development may be acceptable in each area, leading to the development of scenarios to test the potential for cumulative landscape and visual impact in these areas.
- 12 Following the completion of the initial study there was significant developer interest in the Tees Plain area. As a result the scenarios modelled in the original study were slightly different to the schemes now proposed. The consultants were commissioned to undertake supplementary work to re-investigate the capacity of this area using the turbines numbers and locations now proposed. This work has been completed as an Addendum to the original Study.

Results

- 13 The 2008 study concluded that the Tees Plain area could potentially exceed the identified RSS recommended levels of development within the capacity of the landscape. The study developed a “least impact area” which has the potential for around 9-15 turbines in addition to the existing and consented development. The least impact area is substantially outside Stockton Borough but does cross the administrative boundary in the west of the Borough.
- 14 The study found that the main impact on land and properties within Stockton Borough would be via potential cumulative impact that could occur from multiple wind farm developments in the broad area between Sedgfield and Darlington.
- 15 The Stockton Borough Study found that the borough is heavily constrained offering limited potential for wind energy development. In fact there are no areas of “unconstrained” land in the borough. Major constraints cover much of the borough with pockets of “variably constrained” land located in the north east, north west, west and south east of the borough, generally towards the borough boundary.

- 16 The study did not look at these areas in more detail as it may be that further constraints exist such as bird migration routes, telecom links and land owner attitude to wind farms may further restrict potential sites.
- 17 Based upon the amount of land that was considered “least constrained” and “variably constrained” it was possible to calculate the theoretical maximum energy capacity from wind farms in the borough. As wind farms by their nature are intermittent in generating electricity a capacity factor is applied that in the North East of England based on recent data is taken as 23%.
- 18 Taking the area of land that is “variably constrained” and using the industry standard of 6.5MW per km² the total “theoretical maximum” capacity for wind turbine development is 52MW for the borough.
- 19 It must be remembered that this is the “theoretical maximum” and will not in practice be capable of being developed to this level. Also the theoretical maximum is:
- A hypothetical estimate and not a suggested level of development.
 - An estimate of the possible generating capacity and not actual capacity which is only calculated by applying the capacity factor.
 - Subject to site specific constraints such as land ownership.
 - Not taking into account landscape sensitivity.

Next Steps

- 20 The outcome of this report is to be utilised as evidence in the formulation of planning policies. Policy CS3 point 7 from the emerging Core Strategy states that, “where suitable locations are identified for medium to small scale renewable energy generation ... these will be supported. Broad locations for renewable energy generation may be identified in the Regeneration DPD.
- 21 Policy CS3 recognises guidance in PPS22: Renewable Energy, which states that Local Planning Authorities should only allocate specific sites for renewable energy generation where a developer has already indicated an interest in a site. As there are currently no representations to the authority regarding new sites for wind turbines and given the evidence in these reports it is unlikely that the Regeneration DPD will include allocations for this form of development.
- 22 It is anticipated that any planning applications for renewable energy and wind farms in particular, will be determined using policies already included in the Regional Spatial Strategy.

FINANCIAL IMPLICATIONS

- 23 No direct implications for the Authority although a low carbon economy is the aim of the sub-region and a feature of the regeneration strategy.

LEGAL IMPLICATIONS

- 24 The development of the planning policies to underpin the Local Development Framework may be subject to challenge on policy basis or in respect of their application to individual development proposals.

RISK ASSESSMENT

- 25 Failure to adopt a clear and robust policy in respect of renewable energy generation capacity may lead to challenge by developers. There is a need to make a significant

contribution to the generation of renewable energy in the borough to meet the higher than average energy consumption due to the industrial demands.

SUSTAINABLE COMMUNITY STRATEGY IMPLICATIONS

Economic Regeneration and Transport

26 Contributes to the aspiration to become a low carbon economy.

Environment and Housing

27 Opportunities to locate renewable energy technology within the borough will contribute to a reduction in carbon emissions and locally produced energy, improving the environmental sustainability and liveability of communities within the Borough. This will support the delivery of the climate change action plan.

EQUALITIES IMPACT ASSESSMENT

28 Not required.

CONSULTATION INCLUDING WARD/COUNCILLORS

N/A

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Background Papers

1. Wind Farm Development and Landscape Capacity Studies: East Durham Limestone and Tees Plain (2008);
2. Wind Farm Development and Landscape Capacity Studies: East Durham Limestone & Tees Plain addendum study (2009);
3. Stockton Renewables Study : Wind Study (2009)

Ward(s) and Ward Councillors:

Not ward specific

Property

N/A