

**REVIEW OF THE ENVIRONMENTAL STATEMENT
FOR CAMBRIDGE WIND FARM**

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Introduction

The Environmental Statement (ES) has been reviewed by two members of staff of the Institute of Environmental Management & Assessment (Appendix 3) in accordance with the Institute Review Criteria and Review Grades (Appendix 1 & 2). The documents reviewed are listed in Appendix 4.

The headings presented in **bold** are from the Institute Review Criteria for assessing the quality of ESs (appendix 1). The Review Criteria and Review Grades have been developed from original work by Lee and Colley (1990)¹ and are based on the legislative requirements of EC Directives 85/337/EEC and 97/11/EEC on environmental assessment², and on current reasonable best practice standards for ESs produced in the UK.

The review is a qualitative assessment of the ES, based on best practice, not just statutory requirements. The review does not involve a site visit, or take account of additional meetings or information supplied to a planning authority, as this information is not normally available to members of the public. ES's are public documents, which should contain all the necessary environmental information for decision makers, and it is on this basis that the Institute of Environmental Management & Assessment reviews ESs. The Institute does not oppose or support developments, but seeks to ensure that all relevant information is made available to decision makers.

The Institute acknowledges that aspects of the proposed development, such as pollution control and monitoring, will be covered by other authorisations. However, the Institute considers that it is reasonable best practice for environmental assessments for planning purposes, to consider many of these issues at the planning application stage. This has been reiterated by Planning Policy Guidance Note 23 *Planning and Pollution Control*,³ which, gives guidance on the roles of planning authorities and pollution control bodies. It states that "*the aim of an ES will be to provide a full and systematic account of a development's likely effects on the environment, including those which are subject to pollution controls, and the measures envisaged to avoid, reduce or remedy significant environmental effects*".

The advice contained in the review is based on the Institutes knowledge and experience of good practice in EIA and understanding of a wide range of environmental issues. Nevertheless, complex technical issues are likely to benefit from the advice of a specialist and in some cases this will be recommended.

Structure of the Report

The criteria are split into three sections and the review report is structured accordingly:

Section 1 addresses all of the information contained within an Environmental Statement with the exception of the assessment of the impacts.

Section 2 addresses the assessment of the impacts on the environment. The section covers the information relating to:

- the baseline conditions
- the prediction of the magnitude of impacts
- the evaluation of significance and
- mitigation measures.
- follow-up

In order to aid decision makers, the review report in this section is structured in accordance with the environmental issues referred to in the ES. However, in order to ensure the report remains concise and focused the comments will primarily focus on those areas where the ES could be strengthened to provide an improved basis for decision-making.

This section of the report provides an overview of the treatment of the above topics within the ES. This is followed by a review of those aspects of each environmental issue that would benefit from additional details being provided to fill gaps in the information or to provide clarification.

Section 3 addresses the presentation and communication of the information. This includes a brief review of the non-technical summary.

General Criteria

1.1 Description of the Development - B

The Environmental Statement supports a full planning application for a wind farm located near Boxworth in South Cambridgeshire. The wind farm will consist of 16 wind turbine generators, an anemometry mast, access roads, an electrical connection to the grid (not part of this application) and an electricity substation. The turbines will be of a three bladed design, have a maximum height of 100m from ground to blade tip, and will have individual generating capacities of 2 MW. The total capacity of the wind farm will be 32 MW and will produce enough energy to supply approximately 19,355 homes with electricity, this equates to approximately 37% of the South Cambridge District area.

The purpose and need for the development are provided in a local, national and global context, and are supported by the inclusion of details of plans and policies supporting the development of sources of renewable energy. The ES provides the renewable energy targets for the East of England (page 8). It would have been useful if the ES had described the level of contribution the development will contribute to the regional targets, e.g. as a percentage.

The ES provides information on the timeframes for construction, operation and decommissioning. Construction is estimated to take 26 weeks (section 3.4.1.1, page 25). A proposed construction programme and associated vehicle movements are included in appendix 2a. Construction works will require a temporary compound to include site offices, welfare facilities, first aid equipment and storage in portacabin buildings, a generator, fuel storage, and a car park. The land take resulting from the operation of the proposal has been identified as 4.06 hectares. It would have been useful if the ES had also provided the additional area of land use that is required for the construction period which 'will be returned to its former use' (page 26, section 3.4.2.2) once operational.

An outline of the materials required for construction is included within the ES. It is estimated that 38,500m³ of stone, 5000m³ of concrete and 800 tonnes of reinforced steel will be required to construct the site tracks, entrances and turbine foundations and bases. The ES estimates the average number and maximum number of HGV movements per day. It also states that the 'number of vehicular return trips generated by the proposal would be unlikely to exceed about 3100 movements (excluding site personnel and visitors' transportation)' (page 23, section 3.3.12). It would have been useful if the ES had identified how many staff will be required on site during the construction phase and their transportation requirements. This would have helped to identify whether there will be any potential impacts to the local road network, access to the site and parking.

1.2 Site Description - B

The location of the proposed wind farm has been identified in a number of figures within the ES covering a range of scales. Figure 1 places the proposal site into the wider geographical context, and Figure 2 provides a more detailed site layout. The ES however does not describe the location of the development. Whilst the site and surrounding area have been described in relation to each environmental issue that has been assessed (chapters 3-10) including designated sites on the proposed application area and within the vicinity, the ES should have provided a brief summary of the location of the proposals in relation to nearby settlements, e.g. the distance from Boxworth, Cambridge.

The ES mentions that the wind resources on site have been taken from the National 'NOABL' wind resource database and from a temporary wind monitoring mast on site that was granted permission in July 2003. The ES states that 'Average wind speed data from this mast has to date exceeded the prediction made by the wind resource database' (page 12, section 2.5.2). It would have been useful if the ES had provided information on how long the actual monitoring has occurred, at what height the measurements have been taken and to have

specified the average wind speed that has been measured. This would have justified the claim that wind speeds are exceeding the database predictions.

The proposal site is currently used for agriculture by three different landowners, the main activity being arable crops. There is a woodland close by adjacent to Boxworth village and the site is bounded by the A14 (T) to the north-east and by arable land on all other sides. There are no public rights of way crossing the site, however a bridleway runs between Boxworth and Conington along the field boundary. The closest residences have been identified as part of the noise assessment and their locations are shown in Appendix 5. It would have been beneficial if the ES had clearly stated the proximity of each residence to the nearest turbine. It appears, by comparing the illustration in Appendix 5 and Figure 1 (the site location), that not all of the nearest properties are located in the application area. It would have been useful if the ES had been clear as to who owns the nearest residences. This is important as it may have a bearing upon the perceived acceptability of the proposal and its associated impacts.

1.3 Scoping – C

The ES has provided details of the scoping process that has been undertaken within Chapter 1. A Scoping Consultation Document was prepared in January 2004 and has been given in Appendix 1. The main ES has mentioned the relevant EIA regulations and scope of each individual assessment (page 3-5). A list of those consulted has been stated within section 1.6 and their full responses are included within Appendix 8.

The ES does not provide any information on whether any issues have been scoped out of the assessment. Section 3.2.3 discusses the electricity connection to either a substation at Oakington or St Ives. The ES states that 'The connection to the grid is subject to a separate planning application' (*sic*, page 18) and has not been further discussed. Given that the proposal is reliant upon a grid connection, the potential environmental impacts associated with the grid connection should have been outlined. It would have also been useful if the ES had stated whether the issue of noise impacts from the construction phase of the proposals had been considered.

The ES mentions that a public exhibition was held on Wednesday 19th May. The event was advertised through various means, including 'through written invitations to residents and local representatives' (page 6, section 1.6.2). The comments made have been listed and summarised. It would have been helpful if the ES had provided information on the number of local representatives and the locality of residents that were invited, and the number of people who attended the exhibition.

1.4 Consideration of Alternatives – A

Chapter 2 discusses the site selection and project evolution. The ES discusses that the site has been selected as a result of a number of technical, commercial, environmental and planning criteria, and that a GIS system has been used to map the technical and environmental constraints in order to search for possible wind farm sites. A map to illustrate the constrained areas has been provided (Figure 3). With the inclusion of the application site, three sites were considered for the proposed development. The ES clearly describes the reasons for discounting two of the sites (page 11). It would have been useful if the ES had provided the positive aspects of each site (including the application site) as well as the negative ones. This would have helped the reader to fully understand the reasons for choosing the preferred option.

The project evolution in section 2.6 describes how the site layout has changed. A figure illustrating an alternative site layout has been provided in Appendix 3. The ES explains that the site layout has been influenced by telecommunications and utility services, highways and public rights of way and potential impacts upon views and ecology. The specific constraints from microwaves, public rights of way, gas pipelines and a 11kV line has been illustrated on

Figure 4 and the ES describes that the telecommunication links and public rights of way buffer zones have been accommodated within the layout.

2. Issue Specific Criteria¹

General Comments

2.1 Baseline Conditions - B

The current environmental baseline has been identified within each issue specific assessment. Due to the nature of the environmental effects that have been assessed these have been mainly described qualitatively, e.g. landscape and visual. The baseline noise survey results have been provided on graphs from using the ETSU-R-97 methodology (night and amenity hours), however it would have been useful if the ES has provided a brief summary of the baseline results. The methods of any surveys undertaken to support the desk studies have been clearly described. Appropriate reference has been made to threshold limits, international standards and environmental designations in the evaluation of baseline sensitivity and importance, e.g. ecology. In the landscape assessment, it would have been useful for further information on the methodology that has been used to determine the landscape sensitivity (see issue specific comments). The ES does not specifically state how the site could be expected to develop if the project were not to proceed; however, it is not unreasonable to assume the status quo.

2.2 Prediction of Impact Magnitude – C

The predicted impacts from the proposal are described within the individual chapters. Impacts are generally given as a deviation from the baseline and are described qualitatively throughout the ES (e.g. landscape and visual and ecology). However where appropriate, impacts have been quantified, e.g. noise and land take. It would have been helpful if the magnitude of change for the noise environment could have been clearly stated within the main ES (see issue specific comments).

The ES sometimes provides a scale of magnitude with definitions. However, these definitions should have been more clearly described as they currently tend to replace one qualitative term with another. Where predictions have been described qualitatively the parameters upon which those judgements have been made are stated.

The ES has determined impacts from the direct effects of the proposal and considered their nature, e.g. short, medium and long-term, permanent and temporary, positive and negative. It is noted that the worst case scenario for the impact from construction traffic should have been clearly stated (see issue specific comments). The cumulative impacts associated with other wind energy proposals have been assessed; however it is unclear why one of the wind farms has been assessed separately to two others. The ES could also have described the potential cumulative impacts with the nearby housing developments that are planned (see landscape and visual issue specific comments). Residual impacts have been predicted where appropriate.

2.3 Impact Significance - B

Significance has been stated for all impacts, and where relevant this has been with reference to appropriate limits. Professional judgement has been stated as a method which has helped to determine significance for some environmental issues, e.g. landscape and visual impact assessment (page 32). The sensitivity and importance of the receptor has been considered

¹ See 'Structure of the Report' in the Introduction for advice regarding the structure of this section.

for each impact, along with the nature of the impact (e.g. temporary, permanent, reversible). However, the ES contains no separate discussion on the generic approach to predicting impact significance and within certain issue specific chapters could improve the discussion on the methodology used to determine significance based on the relationship between receptor sensitivity, importance and impact magnitude, e.g. ecology. The inclusion of issue specific definitions would have been useful in certain assessments, e.g. ecology. Also, for noise impacts the ES could have assessed the impact significance in terms of the predicted change in noise levels, as well as comparing the predicted noise levels with noise standards. Where mitigation has been discussed the ES predicts 'post-mitigation significance' (e.g. ecology, page 129).

2.4 Mitigation - B

The ES has demonstrated that the site selection and site design processes have followed an iterative approach that has sought to avoid or mitigate the majority of potential impacts. Examples of how site design has altered to account for local environmental factors have been given (section 11.3.1, page 165). Where avoidance has not been possible mitigation measures have been identified for all impacts of significance. The ES should have provided a stronger commitment to the mitigation measures that have been described (e.g. see ecology issue specific comments), especially in chapter 11 which summarises the mitigation measures. Here it states that 'This section sets out the proposed avoidance and mitigation measures already undertaken or proposed' (page 165). Also, in the absence of Appendix 6, the ES could have provided more information on the mitigation measures for great crested newts (see ecology issue specific comments).

2.5 Follow-Up - C

The ES does mention the monitoring of the golden plover, arable flora and great crested newts. The ES could have provided more information on the monitoring that is envisaged, for example, how often and for how long it will occur, the general techniques that will be used and who will be responsible for their occurrence. It is also noted that the commitment to monitoring is vague, for example, the ES states that 'monitoring is a likely requirement' and 'it is anticipated that some post construction monitoring would be appropriate' (page 128, section 6.12.13). A stronger commitment to monitoring would have been welcome.

Due to the lack of predicted significant impacts it is appreciated that it is not reasonable to expect an extensive follow up regime or environmental management scheme. However it is suggested that an environmental audit of the site could be conducted on a periodic basis, especially after the construction phase, where the majority of impacts will have occurred. This can be used to check the accuracy of impact predictions made within the ES, e.g. noise, landscape and visual and ecological impacts and results used by the developer in further improving the development of wind turbines and predicting environmental impacts.

Issue-Specific Comments

Construction

The ES provides a brief description of the impact of construction traffic on normal traffic movements in section 3.3.12.2. The maximum numbers of HGV movements has been estimated as 55 per day when ready mixed concrete is being delivered. It would have been useful if the ES had given the period of time in which the maximum number of vehicles is expected, e.g. over the full duration of the turbine base construction. The ES then states that the average will be 20 and 'An increase on this scale and subsequent impact on traffic numbers of this magnitude can be considered slight or insignificant' (page 25, section

3.4.1.1). It would have been useful if the ES had stated the impact during the worst case when HGV vehicles movements will be at their greatest.

Landscape and visual

A 20km study area for the landscape and visual assessment has been identified as being 'sufficient for the purposes of these 100m high to tip turbines' (page 31, section 4.2). The ES acknowledges that this differs from the guidelines of a 25km study area. It would have been helpful if a reasoned justification for the reduction in the study area had been provided within the ES, especially as the ZVI map indicates that a considerable amount of turbines can be seen at the 20km boundary.

Whilst the ES states the guidelines and professional judgement that have been used (page 31-32), the methodology could have been described more clearly. For example, definitions for landscape quality, landscape value (pages 37 & 38) and landscape sensitivity (page 41) have been provided. However, it would have been useful if the definitions for landscape sensitivity had included how landscape quality and value have been combined to determine landscape sensitivity. The landscape value definitions indicate that only designated sites are of value. Information outlining how the value of non-designated sites has been determined would have been welcome. Within the discussion of landscape perceptions, the condition of the landscape has been described, e.g. fair for Flat Clayland Edge Landscape Type (page 42). It would have improved the clarity of the assessment methodology if definitions for each condition and an explanation as to how it has been used to determine the landscape sensitivity had also been provided.

The criteria for magnitude of landscape change and visual amenity change have been provided in Tables 4.5 and 4.6 (page 58). The definitions used could have been described more clearly as the descriptions merely substitute one qualitative term for another, e.g. for medium magnitude the definitions states that there will be 'moderate changes in the landscape characteristics'. These could have been improved with the provision of examples of what would constitute a moderate change.

A number of factors are identified in the ES, which form a basis for assessing the significance of visual impacts. It is stated that 'the LI and IEMA Guidelines recommend that conclusions should be based upon a combination of factors including: ... whether impacts are beneficial or adverse' (page 58). The LI and IEMA Guidelines state that 'the significance of visual effects will be assessed by taking into consideration the sensitivity and importance of the receptor and the nature, scale or magnitude and duration of the change or effect' (page 95, paragraph 7.48). The Guidelines do not recommend that the beneficial or adverse nature of impacts is a consideration in assessing the significance of visual impacts. Impacts can be of a significant adverse or significant beneficial nature.

There is an apparent contradiction on what is classified as a 'near view', for which clarification would be welcome. In the description of viewpoint 12: Cottenham, the ES states that it is 'at a distance of 9.739 km...this photomontage represents the near-views of both local residents on the edge of Cottenham ... and more distant vehicular traffic' (page 69, section 4.8.14). However later, the ES states 'For the purposes of this landscape and visual impact assessment near distances have been identified as being less than 3km (page 76, section 4.9.3).

In discussing the effect to the designated landscape of Madingley Hall, it is stated that 'the view will be further reduced by the screening effect of vegetation in the summer. The magnitude of change is low, the sensitivity of the receptor is high, and therefore the impact is assessed as being moderate' (page 77). In order to demonstrate a worst case impact assessment, the effects of summer vegetation screening should not have been included in the assessment.

The cumulative impacts from other wind turbine developments that have either been constructed or consented have been assessed in section 4.11. This consists of a single

turbine at Wood Green Animal Shelter, single turbine at Swavesey, 12 consented turbines at Tick Fen (known as the Red Tile Wind Farm) and the proposed development. The methodology has used a number of ways to assess the cumulative impacts, including the use of Zone of Visual Influence's (ZVI's). Figure 17 b and 17 c illustrate these. It is not clear why the Red Tile Wind Farm and the proposed development ZVI and assessment has been conducted separately to the other developments. It should be noted that the assessment therefore does not illustrate the potential cumulative landscape and visual impacts from all four developments. The ES should have provided a justification for this omission.

In the discussion of site selection and in justification of the chosen location, the ES states that 'not only complements proposals for the A14 corridor, through the Cambridge to Huntingdon Multi-Modal Study (which seeks to widen the A14 highway and introduce an integrated rapid transport system between Huntingdon and Cambridge) but also major housing and 'new village' developments at Cambourne (6km from the proposed site),...It is also proximate to the proposed Lonstanton/Oakington development (6.5km from the proposed site)' (page 11). It would have been useful, with the knowledge of these developments, if the ES had summarised the potential cumulative landscape and visual impacts of these with the proposed development.

Noise

The noise impacts associated with the development proposal were predicted using a propagation model as outlined in ISO 9613. These impacts have then been assessed following guidance contained in ETSU-R-97 regarding amenity hours and night time operations. Although the noise impacts have been assessed in line with the ETSU-R-97 guidance, it would have been helpful if, in addition to this, the magnitude of change could also have been clearly stated within the main ES. This would have been beneficial as it would give an indication of the change in noise levels that the receptors will experience and would identify a significant change in the noise environment that could still be below the thresholds set out in the guidance.

The ES states that the baseline 'Noise measurements were carried out at 5 locations representative of the nearest dwellings' and describes each location (page 100, section 5.4.2). The ES then states that 'Raw results of the noise measurements are not included here due to the relatively large amount of data gathered' (page 101, section 5.4.4). In their absence, the ES should have provided a brief summary of the baseline noise level, e.g. the range of results or average, particularly for background noise levels (L_{90}).

Ecology

The ES provides the predicted magnitude of impacts on populations of important species and habitats and impact significance, prior to mitigation in Tables 6.5 & 6.6. For magnitude the terms used are 'major positive/negative', 'positive/negative' or 'neutral', and for significance they are 'minor' or 'moderate'. The ES should have defined these terms. This would have provided clarity on the level of magnitude that has been predicted and how significance has been derived. For example, the level of impact magnitude on bats is considered 'neutral' due to the assumption of 'low numbers' (page 126). Further information on how scarcity is accounted for within the classification of impact magnitude would have helped to justify the award of a 'neutral' impact.

With reference to baseline information on the Golden Plover, the ES states that 'Nocturnal use of the proposed development site by feeding golden plover has not been assessed to date' (page 118). Given that Golden Plover are an internationally important species, and information provided by Dr Simon Gillings, confirms that Golden Plovers disperse from daytime roosts to feed at night, the assessment of the nocturnal use of the site by this species should have either been undertaken and results included within this ES, or a reasoned justification provided for its omission.

A badger survey has been undertaken. The study area is identified as being 'an area covering at least a 50 meter radius of the proposed site for each of the ten wind turbines' (page 119). As the current proposal is for 16 wind turbines, it is not clear if the survey area is appropriate for the proposed development.

Mitigation measures for farmland birds and bats are described in the ES (page 126, section 6.12.10). It would have been useful if the ES had provided stronger commitment to these mitigation measures, especially as, by comparing tables 6.6 and 6.7, they have illustrated a reduction in significance of the majority of ecological impacts to no impact. A brief description of the mitigation for great crested newts has been provided (page 128, section 6.12.10) and 'presented separately in Appendix 6'. It is noted that appendix 6 has not been provided in the review copy of the ES, therefore it would have been useful if the ES had given information as to whether there are to be any additional measures, other than fencing.

Electromagnetic

The ES provides information that an independent aviation study was submitted to Cambridge Airport (page 148, section 8.5) and has been provided in Appendix 7. The report was produced before the alteration of 15 wind turbines to 16. It would have been useful if the ES had stated whether there are to be any implications to the outcome of the report and therefore any potential significant impacts from the increase in the number of wind turbines.

3. Presentation of Results

3.1 Presentation – C

The ES is clear and logical in its layout and presentation. A contents section has been provided, and section 1.4 (page 2) describes the structure of the ES. Technical language has generally been avoided, however where this type of language is unavoidable (e.g. noise) the terms have either been explained within the text or have been provided in the glossary at the end of the main ES. References for each chapter have been provided at the end of the main text. Good quality maps and diagrams have been used throughout the ES; however the graphs which illustrate the noise assessment (pages 104-108) which are photocopies, should have illustrated the 'Measured B/G (Background) Noise' levels. It would also have been useful if the diagram illustrating the selected baseline noise measurement locations (Appendix 5a) had illustrated the application area and location of wind turbines.

Technical appendices have been provided that include information not necessary to the understanding of the predicted impacts. However, the ES does still contain some unnecessary technical information that would be better placed within the technical appendices e.g. the description of the ISO propagation model within the noise assessment chapter (section 5.5, page 101).

In the copy of the ES received for review the location of appendices are not systematic, e.g. the cover sheet for appendix 9 has been presented after 6b: 'cropping survey report', which actually follows with a copy of the consultees responses and pages 17 & 18 follow pages 19 & 20.

Sections of the ES are repeated on a number of occasions and this affects the readability of the document. For example, the chapter on mitigation re-states a lot of the information on the site selection process and the constraints (section 11.2 & 11.3, page 165); and information on vehicle movements has been repeated on pages 23 and 29. The ES could have avoided this by referring the reader to previous relevant sections.

3.2 Objectivity - C

The ES presents both the positive and negative aspects associated with the proposals. The consultation process that has informed and been incorporated into the EIA process, contributing to the transparency to the document, is described. However, the context of certain information that has been provided in the socio-economic assessment could be seen to be misleading, as the benefits are not always discussed consistently. For example, it is stated that 'the proposed development would make a significant contribution to the reduction of atmospheric pollution on a national and regional level' (page 159, section 10.7.1). Whilst the ES provides the amounts of CO₂, NO_x & SO₂ that the wind farm will displace over both a year and the 25 year lifetime of the project (page 162), to support this claim the ES should have provided the amounts of pollution (CO₂, NO_x & SO₂) produced on a national and regional level over a year and the 25 year lifetime of the project. A further example is in the provision of information on tourism. The ES provides information on surveys that have identified the positive impacts from tourism due to wind farms in areas such as Cornwall and Scotland; however the ES should have provided the current level of tourism in the area of Cambridge and to have provided an indication as to whether the tourism around the proposed development is likely to be affected or not.

In the conclusion on the project construction, the ES states that 'the developer has incorporated a civils design and layout for the wind farm that would be technically viable and, as can be gauged from the assessment included in this ES, environmentally acceptable' (page 30, section 3.6). Also, within the landscape and visual assessment, section 4.12.4 (page 95); the ES concludes that 'adverse and significant effects that have been identified in this landscape and visual impact assessment are judged to be both localised and acceptable'. It should be noted that the purpose of the ES is to provide decision makers with sufficient information regarding the predicted environmental impacts associated with the project and for them to determine the acceptability (or not) of the proposals. The above statement could be viewed as pre-empting this judgement.

3.3 Non-Technical Summary – A

The Non-Technical Summary (NTS) has been provided as a stand alone document that summarises the proposals, the location, the site selection process and scope of the assessment. Four good quality figures have been provided to illustrate the location, layout, wind turbine details and visual impacts of the proposal. Each environmental issue has been provided with a summary of the predicted significant impacts and proposed mitigation measures. The need for the development has been described from a local, national and international perspective. Details of where to obtain electronic and printed versions of the ES have also been provided.

It should be noted however that the NTS could have been summarised in places, as there are paragraphs which appear to have been copied from the main ES, e.g. 'Project Evolution' (NTS pages 10-12, section 2.3 and ES pages 13-15 section 2.6).

4. Areas of Originality / Innovation

It is commended that monitoring of golden plover is to take place to provide further evidence on daily movements of the species and their interaction with wind turbines, thereby helping to inform future developments. It is noted however that this measure is only 'anticipated'. (page 128).

REFERENCES

1. Lee N & Colley R (1990), *Reviewing the Quality of Environmental Statements, Occasional Paper No. 24*, EIA Centre, University of Manchester and as updated by Lee N, Colley R, Bonde R & Simpson J (1999), *Reviewing the Quality of Environmental Statements and Environmental Appraisals, Occasional Paper No. 55*, EIA Centre, University of Manchester.
2. Commission of the European Communities (1985), *Directive on the assessment of the effects of certain public and private projects on the environment, (85/337/EEC)*, Official Journal of the European Communities, 175, Brussels; and as amended by the Directive 97/11/EC.
3. Department of the Environment (1994), *PPG23 - Planning and Pollution Control*, HMSO, London.

APPENDIX 1 – IEMA ES REVIEW CRITERIA

1. General Criteria

1.1 Description of the Development

The ES should describe the purpose and objectives for the development. The proposal and its need should be placed in the context of local/regional/national plans/objectives/strategies. The anticipated time scales of construction, operation and (where appropriate) decommissioning of the proposal should be given. The likely methods of construction (techniques and equipment to be used) should be given where construction could give rise to significant impacts. In instances where the likely methods of construction are unknown the ES should indicate possible methods and adopt the worst-case scenario approach in prediction of related impacts. The description should include the physical characteristics of the proposal, including its location, the design and size of the development and the area of land take during construction and operation. The ES should describe the main characteristics of any production processes, for instance the nature and quantity of materials to be used. The description should be illustrated by the use of maps and/or diagrams. A brief outline of the experience of the operator and the operational process (es) that will be employed should be included within the ES. The ES should provide reasoned estimates for the quantities and type of traffic that will arise during construction and operation. Where materials are considered to be an important resource, the ES should describe and quantify the materials to be used. The quantities and types of residues and emissions generated at each of the above phases should also be estimated.

1.2 Site Description

The area of proposed land take should be clearly described and indicated on an appropriate map or diagram. The land uses on the site and the surrounding area should be described and illustrated. The ES should describe any policies, plans or designations that are relevant to the site and its surroundings. The study area should be consistent with the area potentially affected by the development. The description should place the affected land in the context of its surroundings. The ES should also describe how the affected land would be expected to develop without the proposal and the future status of the land in the absence of the project (e.g. is the site allocated for development or how would the conservation status change over time).

1.3 Scoping

The Environmental Statement (ES) should describe the scoping process that has been undertaken to identify key impacts. The description should include details of consultation with appropriate statutory and non-statutory consultees, including the public. The ES should identify those parties consulted and provide a summary of their responses. Where issues raised by the consultees are not to be addressed in detail in the ES, a reasoned justification for their exclusion should be given. The scoping process should identify those aspects of the environment that are likely to be significantly affected by the development (including in particular, population, fauna, flora, geology and soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, landscape and the inter-relationship between the above factors). The ES should also evaluate any direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects, resulting from the existence of the development, the use of natural resources and the emission of pollutants, the creation of nuisances and the elimination of waste. The ES should clearly state what effects will, and what effects will not, be addressed and how this decision was reached, together with the spatial and temporal scope of the assessment. The ES should identify the regulations under which the EIA is required, and indicate whether it is also to be used to address other regulatory requirements

(e.g. Appropriate Assessment under the requirements of the Habitats Directive, or as part of a Pollution Prevention and Control Application).

1.4 Consideration of Alternatives

The ES should describe the main alternatives to the proposal that have been considered. For example, alternative sites, construction practices, plant and equipment, operating processes and site layouts should be considered (where appropriate). The advantages and disadvantages of each option should be clearly stated. The main reasons for the selection of the preferred option should be described in outline, taking into account the environmental effects. Other factors influencing the choice of alternative should be noted, e.g. feasibility, cost-effectiveness and reasonableness of each option. If a formal option appraisal has been carried out it should be described and the relevant decision factors noted.

2. Issue Specific Criteria²

2.1 Baseline Conditions

The ES should describe the current condition of those aspects of the environment that are likely to be significantly affected by the development. An indication of how these aspects could be expected to develop if the project were not to proceed should also be given. Where existing data has been used to establish the baseline the source of the data should be identified in the ES. The ES should provide a clear description of the methods used to supplement existing information. Where possible, the data gathered should be expressed quantitatively. The baseline environment should be evaluated, for example in relation to its sensitivity and importance. This could be achieved by comparison to relevant threshold limits (WHO Limits, EU Quality Standards etc.) or by reference to appropriate environmental designations. Any limitations of baseline surveys should be recognised.

2.2 Prediction of Impact Magnitude

The predictions for the magnitude of the likely significant effects of the development should be identified in the ES. The magnitude of the impact should be predicted as a deviation from the established baseline conditions, for each phase of the proposal. The information and data used to predict the magnitude of impact should be clearly described. Where there are any gaps or uncertainty, these should be identified. The methods used to establish magnitude should be clearly described and be appropriate and reasonable in relation to the importance of the impact. Where assumptions or unsupported data has been used in the predictions these should be highlighted and accompanied by an indication of the reliability/confidence of those assumptions or data. The data given should be quantified and levels of confidence in the estimates given. The ES should identify quantitatively the impacts that remain following mitigation. The ES should evaluate any direct effects and any indirect, secondary, cumulative, short, medium and long-term, permanent and temporary, positive and negative effects, resulting from the existence of the development, the use of natural resources and the emission of pollutants, the creation of nuisances and the elimination of waste.

2.3 Impact Significance

The significance of all impacts should be assessed using the appropriate national and international quality standards limits (WHO Limits, EU Quality Standards etc). Where no such standards exist, the ES should describe the judgements (assumptions and value systems) that underpin the attribution of significance. The assessment of significance should consider the impact's deviation from the established baseline condition, the sensitivity of the

² See 'Structure of the Report' in the Introduction for advice regarding the structure of this section.

environment and the extent to which the impact will be mitigated or is reversible. The range of factors which are likely to influence the assessment of significance should be clearly identified. The ES should also detail how these variables will affect the significance of the impacts over the life of the development. The ES should identify the significance of impacts that remain following mitigation.

2.4 Mitigation

The ES should describe the measures proposed to avoid, reduce, and if possible, remedy significant adverse impacts. The ES should provide an indication of the effectiveness of the stated measures. The ES should demonstrate a clear commitment to implementing the mitigation measures and indicate how and when these measures will be implemented. Where there is uncertainty over the effectiveness, or it is dependent on assumptions, justification should be provided for the acceptance of the assumptions.

2.5 Follow-Up

The ES should provide details of any management plans that are to be implemented to deliver mitigation measures and to monitor the environmental impact of the project. These should also provide details of the time scales of the management plans and their geographical extent. Where a management plan is to be integrated into an environmental management system, the ES should describe how this would be implemented. The ES should identify those responsible for the follow-up programme and describe how the results of such a programme will affect the proposal's operation.

3. Presentation of Results

3.1 Presentation

The ES should be clear and logical in its layout and presentation and be capable of being understood by the non-specialist. The use of technical terms should be kept to a minimum, with a glossary provided. A full list of references should be provided. The inclusion of information not directly relevant to the nature of the proposal and its associated impacts should be avoided. Plans should be provided to assist in understanding the locations of impacts and should be labelled with all places mentioned in the text.

3.2 Objectivity

The ES should be a balanced document, providing an unbiased account of the environmental effects with reasoned and justifiable arguments. The ES should give appropriate prominence to both positive and negative effects relative to their importance. The ES should summarise the issues raised by consultees. The ES should be explicit in recognising areas of limitations within the ES, any difficulties that have been encountered and assumptions on which the assessment is based. How these have affected the ES and what measures were taken to limit them should be detailed.

3.3 Non-Technical Summary

The NTS should provide sufficient information for the non-specialist reader to understand the main environmental impacts of the proposal without reference to the main ES. The NTS should include a summary of the description of the development, the main alternatives considered, the aspects of the environment likely to be significantly affected by the development, the likely significant impacts and the mitigation measures to be implemented. The NTS should make appropriate reference to maps and diagrams. The NTS should be

provided as a separate, stand alone document to facilitate a wider readership.

4. Areas of Originality / Innovation

Any areas of innovation or originality will be noted in this section. If the ES does not merit comment in this section, it will be deleted from the review. This section will be not be graded.

APPENDIX 2 - INSTITUTE REVIEW GRADES

A	Excellent, no tasks left incomplete
B	Good, only minor omissions and inadequacies
C	Satisfactory despite omissions and inadequacies
D	Parts well attempted, but must as a whole be considered unsatisfactory because of omissions and/or inadequacies
E	Poor, significant omissions or inadequacies
F	Very poor, most tasks left incomplete
N/A	Not applicable. The review topic is not applicable or relevant in the context of this statement

APPENDIX 3 - REVIEWERS

Jayne Pearson - Institute of Environmental Management and Assessment
Claire Pettit - Institute of Environmental Management and Assessment

APPENDIX 4 - DOCUMENTS REVIEWED BY THE IEMA

- Cambridge Wind Farm Environmental Statement: July 2004: Volume 1: Non Technical Summary
- Cambridge Wind Farm Environmental Statement: July 2004: Volume 2: Written Statement
- Cambridge Wind Farm Environmental Statement: July 2004: Volume 3: Figures
- Cambridge Wind Farm Environmental Statement: July 2004: Planning Appraisal