

Chapter 5: Environmental issues and methodology

Introduction

5.1 The proposed wind farm comprises:

- six turbines
- anemometer mast.
- temporary construction compound
- switching station
- temporary and permanent access roads
- underground power cable.

5.2 The proposal falls within Schedule 2 (3i) of the Town and Country (Environmental Impact Assessment) (England and Wales) Regulations 1999 (hereafter referred to as the ‘Regulations’). An environmental impact assessment may be required for installations for the harnessing of wind power for energy production (wind farms) where the development involves the installation of more than two turbines, or the hub height of any turbine or height of any other structure exceeds 15 metres. In this case, the proposal exceeds these thresholds. Whether an environmental impact assessment is required ultimately depends on the likelihood of significant environmental effects arising as a result of the proposal. Further guidance, provided in Annex A of Circular 02/99 states:

‘Wind farms

A15. The likelihood of significant effects will generally depend upon the scale of the development, and its visual impact, as well as potential noise impacts. EIA is more likely to be required for commercial developments of five or more turbines, or more than 5MW of new generating capacity.

5.3 Given the size of the proposals, and in accordance with the Regulations and environmental impact assessment guidance and best practice, the applicant has decided to provide an environmental statement to accompany the planning application for the proposal.

5.4 The EIA Regulations provide a flexible framework for the content of an environmental statement. This flexibility adequately reflects and encompasses the range and characteristics of projects to which the 1999 Regulations apply, and allows variation in the content, style and dimensions of the environmental statement. This environmental statement has been prepared having regard to guidance provided in *Preparation of Environmental Statements for Planning Projects, which Require Environmental Assessment: A Good Practice Guide* (Department of the Environment, 1995).

5.5 This chapter explains the identification of the environmental issues considered, via the scoping process and outlines the overall approach taken to the environmental impact assessment. Specific methodologies for each of the specialist studies are given in the relevant chapters.

Scope of the environmental impact assessment

5.6 Scoping is the first stage of an environmental impact assessment and is the key to a good quality environmental statement. The main function of the exercise is to determine the:

- nature / characteristics of the development
- alternatives under consideration
- breadth of the environmental impact assessment
- broad range and complexity of key issues
- extent to which each environmental topic area needs to be investigated.

5.7 Through determining the above, the environmental impact assessment is focussed and issues are subject to assessment at an appropriate level. If the scope of the assessment is too narrowly defined, some critical area of uncertainty or an adverse impact may emerge late in the process. If scoping is too loosely defined, much time, effort and money can be spent on unnecessary detail.

5.8 Scoping is the identification of the range of issues likely to arise as a result of the proposed development. It is an essential part of the process as it sets the boundaries of focus and provides a hierarchical approach for the application of resources and attention for each environmental issue. Scoping ensures that all topics are addressed and provides identification, through a defined methodology, of those environmental issues that require further detailed assessment.

5.9 The scoping exercise for the proposed development was first undertaken in March 2004. Given the time that has elapsed since the original scoping opinion was issued, it was considered prudent in early 2006 to provide an update to the key statutory consultees, to determine whether any material changes had arisen in the interim. The updated scoping report was submitted to the IoWC in March 2006.

5.10 The scoping process analysed each of the environmental issues in turn. The following factors were considered for each:

- the scale and nature of the proposals
- the physical characteristics of the proposals
- site characteristics
- neighbouring land uses
- planning policies and local environmental designations.

5.11 The scoping report was forwarded by IoWC and YEL to the consultees identified in table 5.1. Comments from the consultees were given due consideration and the scope of the environmental impact assessment was amended accordingly. Technical appendix C includes the updated scoping report and the consultation comments received. Responses to the comments have also been included, accompanied by a reference as to where the issues have been addressed within the environmental statement.

Statutory consultees approached by the IoWC	
English Nature	Environment Agency
Council for National Parks and / or the Countryside Agency	English Heritage
New Forest District Council	New Forest National Park Authority
Non-statutory consultees approached by the IoWC	
Council for the Protection of Rural England (CPRE)	Department for Environment Food and Rural Affairs
Hampshire and Isle of Wight Wildlife Trust	IoWC, internal consultations including: Environmental Health, Economic Development, Ecology, Highways Authority, Rights of Way, County Archaeologist, Tourism Officer, Green Tourism, AONB, Historic Buildings and Conservation, Health and Sustainable Development)
Island 2000	Parish Councils, Yarmouth Town Council
Other stakeholders approached by YEL	
Bembridge Airport	Bournemouth International Airport
Civil Aviation Authority	Crown Castle UK Ltd / British Broadcasting Corporation
Farming and Rural Conservation Agency (FRCA)	Friends of the Earth
Greenpeace	Groups / forums established as part of the development of the Community Renewable Energy Strategy for the Isle of Wight
Independent Television Commission c/o National Transcommunications Ltd (NTL)	Isle of Wight and mainland harbour authorities
Isle of Wight Partnership	Local community groups (e.g. THWART)
Local member of Parliament, Andrew Turner	Ministry of Defence (Defence Estates)
National Air Traffic Services (NATS)	National Trust
Ramblers Association	Royal Society for the Protection of Birds (RSPB)
Sandown Airport	Southampton Airport
Southern Electric	Southern Tourist Board
Southern Water	Telecommunications companies Orange, BT, T-Mobile, National grid wireless, Ofcom, White cable
Wight Green Centre	Bournemouth International Airport
Bembridge Airport	Crown Castle UK Ltd / British Broadcasting Corporation
Civil Aviation Authority	Friends of the Earth

Table 5.1 continued...	
Farming and Rural Conservation Agency (FRCA)	Wightlink Ltd
Harbour Master Southampton	Red Funnel Ferries
Cowes Combined Clubs Limited	Yarmouth Harbour Commission
Cowes Harbour Commission	West Yar Estuary Management Committee
Yarmouth Harbour	-
Table 5.1: scoping consultees	

Ranking the issues

5.12 The scoping exercise enabled the identified issues to be ranked according to their significance. These are presented in table 5.2.

Primary significance	Secondary significance
Birds	Air and climate
Community and social effects	Land contamination and waste
Cultural heritage	Land use
Noise and vibration	Natural heritage
Landscape and visual effects	Traffic and transport
-	Water environment
Table 5.2: ranking of environmental issues	

5.13 These issues are expanded and briefly described in table 5.3. These issues will be assessed in each of the subsequent chapters.

Environmental aspect	Key issues identified during scoping
Birds	Potential for disruption of flight lines and for collisions with turbines or wires. Potential for disturbance and displacement of birds during construction and operation. These will be assessed for all species of conservation interest. Loss of habitat, which may be used by breeding, roosting or feeding birds, due to the construction of turbine bases, access roads and associated infrastructure.
Land use, community and social effects	Generation of employment and the potential for increased spending in local businesses during construction. Potential effects on tourism, both in terms of visitor numbers and revenue. Potential for beneficial economic effects from improved renewable energy business relationships with local manufacturers. Potential for the site to provide an educational resource for visitors and the local community. Possible highway safety and driver distraction issues. Potential for reduced agricultural yields on site due to the reduction in the arable area and the restriction of equipment use beneath turbines. Potential for disruption to local and long distance Public Rights of Way.
Cultural heritage	Effects on the historical setting of the area, including archaeological sites, listed buildings and other components of the wider historical landscape. Potential for destruction of unidentified archaeological finds during construction.

Table continued....	
Environmental aspect	Key issues identified during scoping
Noise and vibration	Increase in noise and vibration during construction from traffic movements and construction activities. Potential impacts on sensitive receptors from noise generated by the operation of the wind turbines. Generation of noise during the decommissioning phase due to removal of the turbines.
Landscape and visual effects	Detraction in landscape quality due to the presence of the turbines and change to the landscape character of the area. Potential effects on the historical and cultural landscape setting. Changes to views from sensitive receptors, including population centres and road, river and sea users. Changes to views from protected landscapes, both on and off the island. Potential for cumulative visual effects with other developments.
Air and climate	Potential for reduction in local air quality due to emissions from construction traffic. Potential for generation of dust emissions during construction. Calculation of the potential carbon dioxide and other emissions savings that would result from the proposal's operation.
Land contamination and waste	Potential for compaction of soils during construction, which could reduce soil quality. Potential for ground contamination during construction from the storage of chemicals on site and from mobilisation/remediation of any existing contamination. Generation of spoil and solid residues during the construction process.
Natural heritage	Loss of arable habitats due to construction of the access tracks and turbine bases. Potential for impacts on protected species through loss of breeding and foraging areas. Potential for impacts on bats through loss of roost sites and foraging routes. Possible collision risk to bats from operational turbines. Potential impacts on the on-site SINC and surrounding SSSIs.
Traffic and transport	Increase in traffic volumes during and after construction, and associated potential changes to the accident rate, driver delay and pedestrian severance. Potential requirement for junction and local road improvements to accommodate oversized HGV deliveries of turbine components during construction.
Water environment	Possible changes to the land drainage/run-off regime and flow characteristics of Thorley Brook as a result of the tower foundations and crane pads, and the temporary access track crossing the brook. Potential for reduced groundwater recharge and changes to groundwater infiltration rates due to underground foundation hardstanding. Risk of pollution of surface water and groundwater during construction and decommissioning through leaks or spills. Potential for sedimentation of watercourses during construction.
Shadow flicker, aviation and communication	Potential for a public nuisance to be created by the effects of shadow flicker. Potential for effects on aircraft flight paths and radar sites. Potential for electromagnetic interference to telecommunications and signalling across the island.

Table 5.3: key issues identified during scoping

Issues scoped out

Contaminated land and waste

- 5.14 Of the issues presented in table 5.3 from the initial round of scoping, land contamination and waste was subsequently scoped out of the assessment. This was due to the site's history of arable use (and hence the extremely low probability of there being any significant contamination on the site), and the absence of any significant waste arisings from the proposals. Issues such as minor fuel spills and the use of chemicals on the site have been addressed in the water environment chapter. This also includes the framework of an

Environmental Management Plan to be followed during the construction phase.

Property values

- 5.15 The IoWC confirmed in its scoping response (technical appendix C) that potential effects on property prices are not a material consideration. They have therefore not been included in this environmental statement.

Assessment methodology

- 5.16 An environmental effect is an alteration, positive or negative, to some aspect of the environment occurring as a result of a development. It is essential that the assessment methodology is comprehensive and focused. The methodology employed must be rigorous and thorough, predict and measure the degree of impact, as well as identify mitigation and monitoring requirements. The method used should be objective, consistent and adaptable and as free from analytical bias as possible.
- 5.17 It is important that the assessment methodology makes a distinction between the sensitivity of the receptors and the type and size of change that will affect them, either directly or indirectly. It is also important that the environmental statement is clear and effective in communicating the results of the assessment to the determining planning authority, the general public and professionals involved with appraising the development project proposals.

Guidance and best practice

- 5.18 The methodologies utilised for the assessment of specific issues are discussed in the relevant chapters. Where appropriate, use has been made of published guidance and information on best practice. Detailed advice on environmental impact assessment is contained in annex 1 of Planning Policy Statement 23 (PPS23); *Planning and Pollution Control*, the DETR document entitled *Environmental Impact Assessment: a guide to procedures* (DETR, 2000) and the newly published *Guidelines for Environmental Impact Assessment* produced by IEMA, November 2004. *Planning Policy Statement: Renewable energy* and its companion guide, *Planning for renewable energy: a companion guide to PPS22* were also consulted in the production of this environmental statement.
- 5.19 The advice given in PPS23 has been considered in conjunction with the Regulations and related guidance in Circular 02/99: *Environmental Impact Assessment* (March 1999).

Determining the significance of the effects

- 5.20 The process of evaluating the significance of an environmental effect is fundamental to the environmental impact assessment process. The level of significance determines the resources that should be deployed in avoiding or mitigating an adverse impact, or identifying the actual value of a positive effect. It is the combined significance of the mitigated effects that determines the overall environmental acceptability of the proposals.
- 5.21 The significance of an effect is determined by the interaction of two factors; first the magnitude, scale or severity of the effect or change, and second, the value, importance or sensitivity of the environmental resource being affected. Hence:
- regardless of the importance or sensitivity of the receptor, there can be no significant effect where the magnitude of the effect is negligibly small
 - there can be no significant effect where the importance or sensitivity of the receptor is negligibly small, regardless of the magnitude of that effect
 - a high level of significance will be attached to large effects on receptors of high importance or sensitivity
 - low levels of significance will be attached to small effects on receptors of high importance or sensitivity, and large effects on receptors of low importance or sensitivity.
- 5.22 In the methodology section of each of the chapters dealing with environmental aspects, a statement is given concerning the process by which effects on receptors have been identified or predicted and how a determination of significance is reached. As far as possible, standard words have been used to define levels of significance (i.e. ‘very substantial’, ‘substantial’, ‘moderate’, ‘slight’ and ‘none’) but not so rigorously as to stifle flexibility or particular individual requirements. These levels of significance have been derived from measures of:
- the importance or sensitivity of a receptor, which includes considerations of importance and capacity to absorb change
 - the magnitude or scale of the effect.
- 5.23 The source and justification for the criteria are set out in each chapter as appropriate, clearly showing how the final assessment of the significance of an effect has been determined. Any assumptions made during the assessment process have been reported in the text. Figure 5.1 shows the general matrix used to determine the appropriate level of significance for each identified effect. This matrix has been developed by Terence O’Rourke Ltd and is used in the assessment of environmental impacts to enable meaningful comparisons to be made wherever possible.

- 5.24 The assessment of the significance of the potential effects also takes account of timescale, permanence and whether the effects are adverse or beneficial, as appropriate (e.g. ‘a long term but reversible, substantial, adverse effect’).

Identification of mitigation measures

- 5.25 Where appropriate the results of the assessment of significance have helped to guide the mitigation measures proposed. There is a ‘residual effects’ table in each of the environmental aspect chapters that summarises the significance of the remaining environmental effects following mitigation. This includes a measure of the confidence for each predicted residual effect, such as ‘absolute’ ‘reasonable’ or ‘limited’.