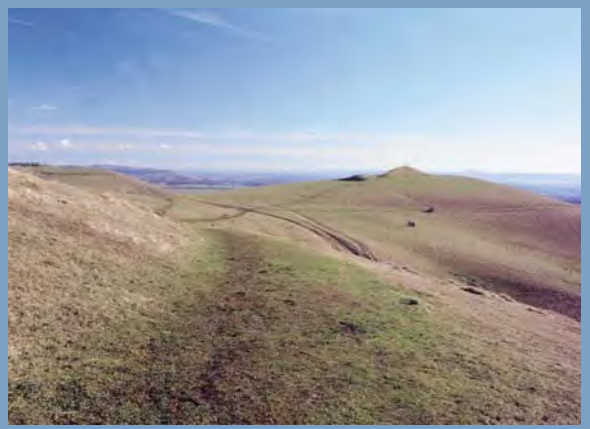
**North Wessex Downs AONB**

# A Study of Landscape Sensitivities and Constraints to Wind Turbine Development

Approved by the North Wessex Downs AONB Council of Partners
March 2006

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# EXECUTIVE SUMMARY

The North Wessex Downs Area of Outstanding Natural Beauty (AONB) is a nationally important and valued protected landscape which was designated in 1972 for the quality of its chalk landscape. The North Wessex Downs AONB Council of Partners commissioned Land Use Consultants (LUC) to prepare a draft study to identify the particular sensitivities and constraints of the landscape to wind turbines. The study has been developed in conjunction with a steering group and the method and outputs have been reviewed by the AONB Planning Officers Working Group. The study was commenced in August 2004 and was subject to consultation between November 2005 and January 2006. It was subsequently amended to take account of the consultation responses and its applicability to a wider audience. The study was then published in March 2006 as an approved Study by the North Wessex Downs AONB Council of Partners.

The study, which encompasses the entire AONB area (some 1730km$^2$), is intended to aid consistent and co-ordinated policies and decision-making across the AONB. It builds on the North Wessex Downs AONB Landscape Assessment which identifies eight landscape character types. The study considers the specific sensitivities of the landscape types to different forms and heights of wind turbines and identifies the key constraints to this form of development.

The study only considers the landscape character of the North Wessex Downs AONB. In this respect the eight landscape character types provide the framework for the study and the basis for understanding sensitivities and constraints. The study does not negate the need for detailed considerations of landscape and visual impact on a case-by-case basis in relation to an individual application or part of an environmental statement. Also, there will be other factors in addition to landscape character which would need to be considered in respect of proposals for wind turbines, and in this respect reference should be made to the relevant local planning authority, where the site is located, for advice on relevant policies and other material planning considerations. The limitations of this Study in terms of what it does not cover are clearly set out in the document.

## Summary of Results

The Study reveals that **all** landscapes within the North Wessex Downs are constrained to turbine development to a degree, with specific sensitivities and values that would be adversely affected by such forms of development. There are four landscape types that are considered to be highly constrained to turbine development, namely the Open Downland, High Chalk Plain, Scarp and River Valleys. These are the landscapes where sensitivities to this form of development are high and any wind turbine is likely to have adverse impacts. There are four landscapes which are considered to be moderately – highly constrained to wind turbine development, namely the Downland with Woodland, Wooded Plateau, Downs Plain, Vales and Lowland Mosaic. Within these landscapes, there may be fewer or lesser sensitivities to some forms of wind turbine development, notably those of lower height classes. The particular landscape characteristics and configuration of these four landscape types means that it may be possible to find locations that are less constrained to some types of turbine development, although these locations are likely to be limited.

## Summary of Sensitivities and Constraints to Wind Turbine Development

| Landscape Type | Landscape Values | Visual Sensitivity | Landscape Character Sensitivity | Constraints to Wind Turbine Development |
|---|---|---|---|---|
| 1: Open Downland | High | High | High | Highly Constrained |
| 2: Downland with Woodland | High | Moderate | High | Moderately – Highly Constrained |
| 3: Wooded Plateau | High | Moderate | High | Moderately – Highly Constrained |
| 4: High Chalk Plain | High | High | High | Highly Constrained |
| 5i: Scarp | High | High | High | Highly Constrained |
| 5ii: Downs Plain | High | High | Moderate | Moderately to Highly Constrained |
| 6: Vales | High | Moderate | Moderate | Moderately to Highly Constrained |
| 7: River Valleys | High | High | High | Highly Constrained |
| 8: Lowland Mosaic | High | Low | High | Moderately to Highly Constrained |

## Constraints to Different Turbine Heights

The study has provided a greater depth of information on the specific sensitivities and constraints to different height classes of wind turbines. It should be noted that the judgements set out in the table below relate to single development of any height class. Guidance on cumulative development is set out for each of the landscape types, where relevant.

## Summary of Constraints to Different Turbine Heights

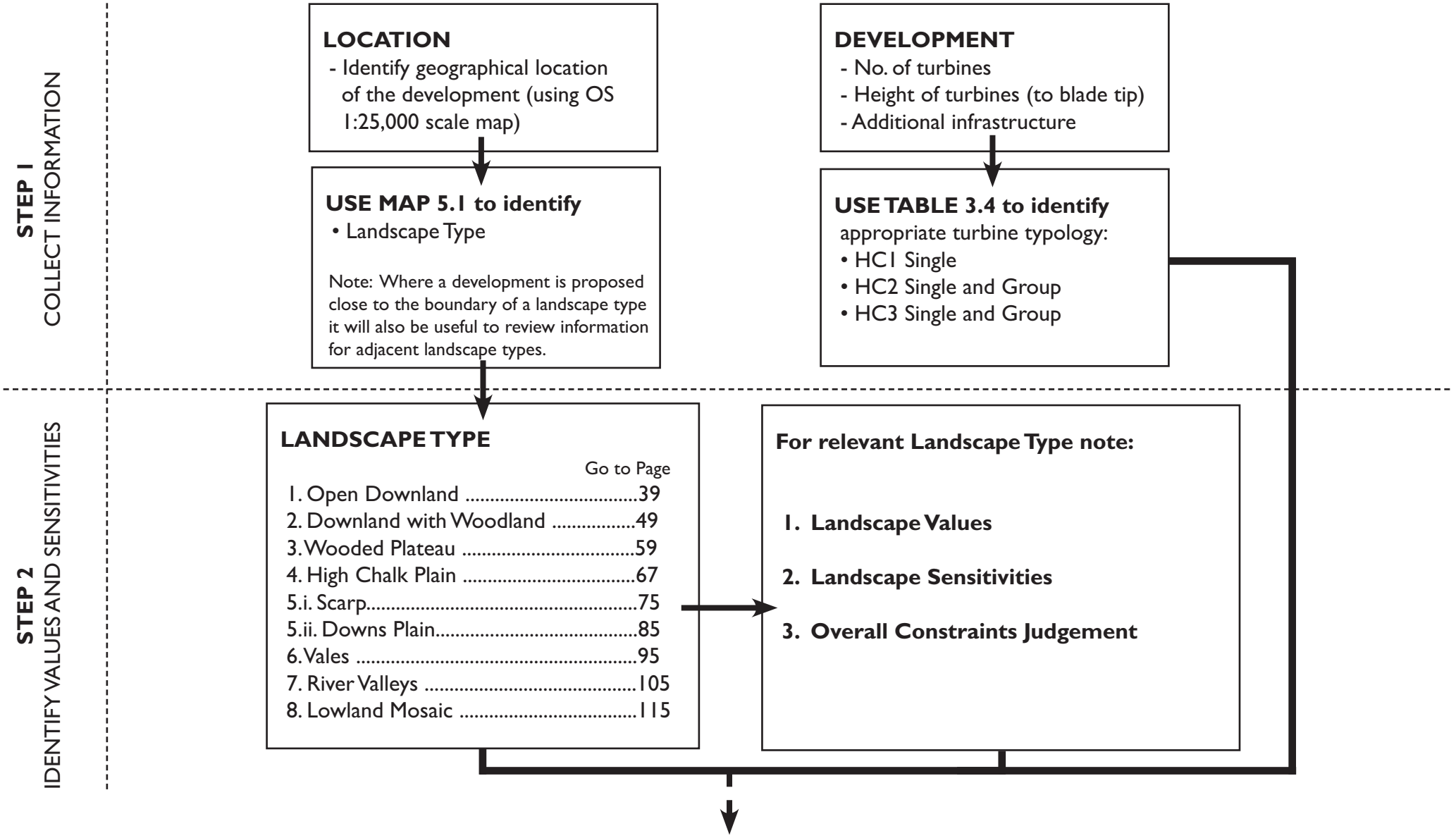
| Landscape Type | Constraint Judgement for each Height Class | | | |
|---|---|---|---|---|
| | **Height Class 1 (25 – 40m) Single Turbine** | **Height Class 2 (40 – 80m) Single Turbine [Lower end of Height Class only]** | **Height Class 2 (40 - 80m) Group of 2 – 4 Turbines** | **Height Class 3 (80m+) Single and Group** |
| 1: Open Downland | Highly Constrained | Highly Constrained | Highly Constrained | Highly Constrained |
| 2: Downland with Woodland | Moderately Constrained | Moderately to Highly Constrained | Highly Constrained | Highly Constrained |
| 3: Wooded Plateau | Moderately Constrained | Moderately to Highly Constrained | Highly Constrained | Highly Constrained |
| 4: High Chalk Plain | Highly Constrained | Highly Constrained | Highly Constrained | Highly Constrained |
| 5i: Scarp | Highly Constrained | Highly Constrained | Highly Constrained | Highly Constrained |
| 5ii: Downs Plain | Moderately Constrained | Moderately to Highly Constrained | Highly Constrained | Highly Constrained |
| 6: Vales | Moderately Constrained | Moderately to Highly Constrained | Highly Constrained | Highly Constrained |
| 7: River Valleys | Highly Constrained | Highly Constrained | Highly Constrained | Highly Constrained |
| 8: Lowland Mosaic | Moderately Constrained | Moderately to Highly Constrained | Highly Constrained | Highly Constrained |

**In conclusion**, this study has developed a transparent, robust and defensible evaluation framework to identify the core landscape values of the North Wessex Downs and the sensitivities of its defining characteristics to wind turbine development. The information on sensitivities and constraints for each landscape type should provide a useful checklist for the preparation of criteria-based policies and to use in assessing future proposals and applications. The result should be consistent and co-ordinated policies and decision-making across these diverse landscapes and local planning authorities of the AONB to ensure that the valued, distinctive and diverse character of the North Wessex Downs is conserved and enhanced as set out in the Countryside and Rights of Way Act 2000.

# North Wessex Downs AONB: Landscape Sensitivity and Constraints to Wind Turbine Development

## **USER GUIDE** (tested at NWD Planning Officer's Workshop 21 June 2005)

This guide is intended to assist those using the report (e.g. planner officers and developers) to identify landscape sensitivities and constraints to wind turbine development within the North Wessex Downs AONB.



**STEP 3**
UNDERSTANDING LANDSCAPE CONSTRAINTS TO WIND TURBINE DEVELOPMENT

**Refer to Turbine Typology**
- HC1 Single
- HC2 Single and Group
- HC3 Single and Group

For relevant Turbine Type identify overall judgement.

| **Highly Constrained** | **Moderately - Highly Constrained** | **Moderately Constrained** |
|---|---|---|
| Wind turbine development would be likely to result in significant adverse change in landscape character and affect key landscape values. It is likely to be highly inappropriate. | Wind turbine development is likely to adversely affect important characteristics of the landscape and landscape values. Appropriate locations for wind turbine development are therefore limited. | There are likely to be key sensitivities and/ or values that must be respected in relation to turbine development of this type. |
| **CONSTRAINED**<br>**WIND TURBINE DEVELOPMENT IS NOT RECOMMENDED** | **CONSTRAINED**<br>**VERY LIMITED SCOPE FOR WIND TURBINE DEVELOPMENT** | **SOME LOCATIONS WITH FEWER CONSTRAINTS TO WIND TURBINES** |
| • Consider if a different turbine type (height class) might be more appropriate.<br>• Consider alternate locations.<br>• Use information on landscape sensitivities and constraints as a checklist to justify decision. | • Consider constraints listed and examine which apply.<br>• Consider if a different turbine type (height class) might be more appropriate.<br>• Use information on landscape sensitivities and constraints as a checklist to justify decision. | • Consider constraints listed and examine which apply.<br><br>Cautious approach:<br>• Some types of wind turbine development may be appropriate providing it is consistent with LPA policies.<br>• Use information on landscape sensitivities and constraints to justify decision. |

*Note that there are no landscapes within the North Wessex Downs AONB that have moderate-low or low constraints to wind turbine development.*

# PART 1:

# INTRODUCTION

# 1. INTRODUCTION

## Background

1. The North Wessex Downs Area of Outstanding Natural Beauty (AONB) is a nationally important and valued protected landscape which was designated in 1972 for the quality of its chalk landscape ranging from remote open downland, dramatic skyline escarpments, contrasting wooded downland, and small scale, intimate settled river valleys. The North Wessex Downs AONB Council of Partners commissioned Land Use Consultants (LUC) to prepare a draft study to identify the particular sensitivities and constraints of the landscape to wind turbines. The study has been developed in conjunction with a steering group comprising representatives of the AONB Council of Partners. The method and outputs have also been reviewed by the AONB Planning Officers Working Group, whose comments have influenced the format and layout of the document. The draft Study was subject to consultation with a wide range of stakeholders, interest groups, members of the public and national, regional and local organisations. Following consultation, the draft study was amended and it is now an approved study by the AONB Council of Partners.

1.2. The study encompasses the entire AONB area (some 1730km$^2$) and includes parts of the South West and South East Regions of England, three counties (Hampshire, Oxfordshire and Wiltshire), two unitary authorities and six district/borough authorities. It is intended to aid consistent and co-ordinated policies and decision-making across these diverse areas. The Local Planning Authorities are indicated on ***Figure 1.1.***

1.3. The study develops policies outlined in the statutory AONB Management Plan. It builds on the North Wessex Downs AONB Landscape Assessment[1] which identifies eight landscape character types, ranging from the remote open sweeps of the rolling downland, incised settled chalk valleys, more intimate wooded chalk landscapes and lower lying vales and heath-woodland mosaics. The study considers the specific sensitivities of the landscape types to different forms and heights of wind turbines and identifies the key constraints to this form of development.

1.4. LUC's assessment work leading to the production of the draft study was undertaken over a nine-month timescale between August 2004 and May 2005.

## Need for the study

1.5. The character of the North Wessex Downs, with its exposed, elevated chalk landform, moderate wind speeds, and close proximity to large centres of population on the periphery of the AONB is potentially a viable area for wind energy generation, although clearly this demand needs to be balanced against the quality and character of the nationally important landscape as recognised

[1] North Wessex Downs AONB Integrated Landscape Character Assessment – Technical Report. 2002. The Countryside Agency

by the AONB designation. Renewable energy technology, specifically wind turbines can, if inappropriately located, have a major impact on valued landscapes. At the present time it is not known what the long term impact of wind turbines could be on landscape character, taking into account the transient nature of wind turbines schemes, whereby planning permissions are typically limited to 20-25 years, reflecting the lifespan of turbines. The likelihood of new planning permissions being granted in future to replace turbines will depend on a range of factors including the policy framework applying at the time, and revised and updated landscape character assessments and sensitivity/constraints studies, which are likely to be required. This study develops a transparent, robust and defensible evaluation framework to highlight the specific sensitivities of the North Wessex Downs landscape and thereby ensure consistent decision-making across the AONB.

## Aims and Objectives

1.6. The overall aim of the study is to set out the sensitivities of the North Wessex Downs landscape to various scales of wind turbine development. It will also help in the formulation of criteria against which specific proposals may be assessed in relation to landscape impact.

1.7. The brief and steering group meeting identified a number of detailed objectives:

i) use the existing North Wessex Downs Integrated Landscape Character Assessment (2002) as an objective framework for and evaluation of the sensitivity of the landscape to wind energy developments;

ii) identify and differentiate between broad typologies of turbines to be considered by defining the key features that produce landscape and visual effects, and including associated infrastructure;

iii) make judgements on sensitivity and constraints to different scales of wind energy developments;

iv) inform the production of Local Development Frameworks prepared by the constituent local authorities in the AONB and contribute to Supplementary Planning Documents;

v) inform decisions on individual proposals for wind energy development, and therefore be transparent, robust and defensible should it be called into question at public inquiry;

vi) contribute to the definition of assessment criteria/guidance to help further inform the planning process.

## Consultation

1.8. The study has been the subject of on-going consultation; full details of which are set out in a Statement of Community Involvement (SCI) which has been produced to accompany this study. In addition, details of membership of the steering group for the study, the

AONB Planning Officers Working Group and participants attending the North Wessex Downs AONB Forum meeting to consider landscape values is provided as **Appendix 1**. The steering group comprised representatives of the North Wessex Downs Council of Partners, constituent authorities and the Countryside Agency led the project. The group have provided guidance and comment on the method and its application. In addition, the study has been subject to consultation by a working group of planning officers, representing both policy and development control, from the constituent local planning authorities within the AONB. This included an initial meeting to explain the method and allow comments on the pilot study and a meeting following completion of the draft to discuss the use and application of the document and test the 'User Guide'. Information on landscape values is used to help determine constraints within each of the individual landscape types. This information was drawn from stakeholders, including people from a wide range of organisations and members of the public, who participated in an exercise at the AONB Annual Forum.

1.9. The steering group and AONB Planning Officers Working Group agreed the consultation arrangements in the autumn of 2005, which were ratified by the AONB Council of Partners at its meeting on 15th November 2005. The consultation was wide ranging, including circulation to the AONB Forum which includes about 470 organisations/individuals, key wind and renewable energy organisations, all of the AONBs and National Parks in England, and Government departments and NGOs nationally and in the South East and South West regions. The consultation on the draft study took place between 21st November 2005 and 13th January 2006 and there were forty seven responses from a wide range of organisations. All these representations were taken into account by the steering group, in consultation with the Planning Officers Working Group, which then agreed amendments to the study. A schedule of comments and agreed amendments (reproduced in full in the SCI) was then sent to the Council of Partners for agreement. Accordingly, this study, which was published in March 2006, is now an approved Study by the North Wessex Downs AONB Council of Partners.

1.10. In terms of the reasons for changes to the study, LUC prepared the draft Study in accordance with their brief to identify the particular sensitivities and constraints of the North Wessex Downs AONB landscape to wind turbines. It has been necessary to make changes to the study to integrate guidance for a wider audience, emphasising more strongly both the scope and the limitations of the study and its applicability in the context of the new planning system. Also amendments have been made to ensure that the study incorporates a robust and up to date factual analysis of wind turbine technology, associated infrastructure and recent planning proposals. In some cases there has been a need to make minor amendments to the landscape character assessment in the study to rectify anomalies and to ensure that LUC's judgements are more explicitly clear to readers of the study. However LUC's judgements and conclusion in respect of constraints to turbines for each landscape character type have not been altered. The steering group were satisfied that these judgements are robust, reasonable, and defensible, and therefore they have not been changed in this final version of the study. **The main changes** to the draft study arising from the consultation are set out below:

- The Executive Summary and Introduction sections have been altered to set out more clearly the scope of the study, its limitations and its applicability within the new planning system;
- The Introduction summarises the consultations carried out on the study;

- The section on wind turbine characteristics and typical landscape impacts has been updated and amended for the sake of accuracy and robustness;
- The policy framework has been updated and the details of current wind turbine schemes amended for accuracy;
- Very minor amendments have been made to the Method Statement for the sake of clarity;
- Some alterations have been made to the Landscape Character Assessment sections for clarity and consistency. In particular in the Downs Plain Landscape type it has been made more explicitly clear why it is classified as moderately-highly constrained in overall terms, taking into account the different characteristics of the area;
- Minor amendments have been made to the appendices and for greater clarity to correct errors.

## How the Report should be used

1.11. Wind turbines can form a very visible feature in the landscape, although not all landscapes are sensitive for the same reasons or to the same degree. This study aims to articulate which specific characteristics of the landscape are sensitive to different forms of turbine development and provide an understanding of any special values attached to the landscape in order to inform overall understanding of constraints to wind energy development across the different landscape types of the North Wessex Downs AONB.

1.12. This document only deals with the landscape character of the North Wessex Downs. Reference must also be made to the Local Planning Authorities, their local policies and all other constraints that have a bearing on wind turbine development when considering proposals of this nature. Clearly, any decision on an application for wind turbines should not be considered in isolation, and should be the subject of a site-specific investigation, drawing on and augmenting the information in this guidance. The information in this report will need to be supplemented by reference to the full North Wessex Downs Integrated Landscape Character Assessment Technical Report. The decision will also need to draw on a range of factors including biodiversity value, historic environment and other planning and economic issues. The effect of cumulative development will be a further key factor influencing individual decisions. Guidance on cumulative development in respect of landscape character is set out in this Study for each of the landscape types.

1.13. **The status of the North Wessex Downs AONB Wind Turbine Sensitivity Study** is as a technical background document which should prove useful to local planning authority (LPA) policy makers in terms of supporting policies in their Local Development Frameworks (LDFs) or the contents of Supplementary Planning Documents (SPDs), as appropriate. In this respect the study should provide part of a robust evidence base for LPAs preparing policies relating to renewable energy or wind energy for inclusion in their new Local Development Documents. It could also be incorporated into more detailed SPD on renewable or wind energy; however, it is unlikely to be adopted in isolation by LPAs as SPD because Planning Policy Statement 12 requires that LPAs must undertake sustainability appraisal "*throughout the preparation process*". The commencement and early stages of the study pre-dated this advice and therefore no sustainability appraisal was carried out. Also, it is anticipated that SPD would be likely to incorporate a range of factors, including, but not confined to, landscape sensitivity and constraints, which LPAs would need to consider before

determining planning applications. Further consultation on this study may be undertaken by individual LPA's in line with their own consultation policies in respect of the evidence base for policies and SPD. The study will also be a material planning consideration in the development control process including the determination of planning applications and appeals.

1.14. A USER GUIDE to the document has been developed and tested at a Planning Officer's Workshop on June 21st 2005.

## Limitations of the Study

1.15. The following points should be noted:

- the study does not debate the merits of wind turbines, including increasing renewable energy generation and reducing greenhouse gas emissions;
- this study only considers impacts on landscape character. Clearly, there are many other factors which will also influence decisions;
- the study provides strategic guidance to inform decision-making at the landscape type level and help focus the approach of officers. Local variations in character (within a landscape type) will also need to be considered in relation to individual applications;
- the study does not negate the need for detailed considerations of landscape and visual impact on a case-by-case basis in relation to an individual application or part of an environmental statement.

## Structure of this Report

1.16. The report is presented in three parts followed by appendices.

**Part 1: Introduction**

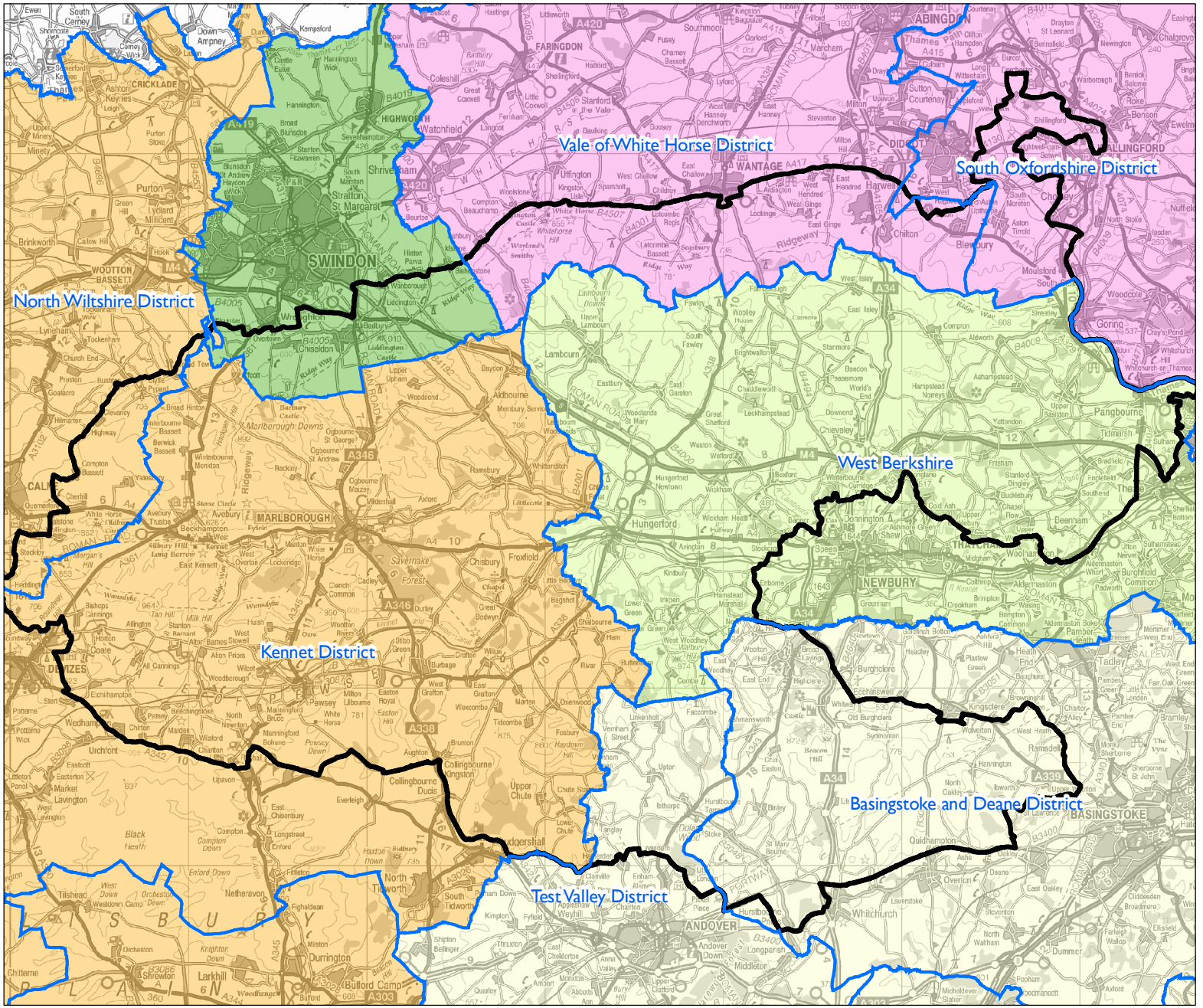
Sets out the background to the study and a summary of the method**.**

**Part 2: The Landscape Types: Sensitivities and Constraints to Wind Turbine Development**

This is the main part of the report and presents the analysis and judgements on constraints for each of the eight landscape character types.

**Part 3: Summary**

The report concludes with a summary of the results.




# North Wessex Downs AONB

## Figure 1.1. Administrative Context

Key

**Counties**

- Hampshire County
- Oxfordshire County
- Wiltshire County

**Unitary Authorities**

- Swindon
- West Berkshire

- District or Borough Boundary
- North Wessex Downs AONB

0 5 10 km

**LAND USE CONSULTANTS**
**43 Chalton Street**
**London NW1 1JD**
**Ph: 020 7383 5784**
**Fax: 020 7383 4798**
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# 2. WIND TURBINE CHARACTERISTICS AND TYPICAL LANDSCAPE IMPACTS

2.1. The purpose of this chapter is to discuss the different types of wind turbines, which are currently in operation in the UK and provide an understanding of the technology and typical effects on the landscape. It provides baseline information, which is developed further in the detailed analysis undertaken for the individual landscape types in the North Wessex Downs in part two of this document. It should be noted that Planning Policy 22 states that landscape and visual effects of turbine developments should be assessed on a case-by-case basis. The information in this chapter is therefore only intended to present a broad generic guide. The chapter does not consider the advantages or disadvantages of wind power in relation to other renewable energy sources and is concerned only with onshore wind energy developments. It is based on the typical turbine types currently operational within England, although it is recognised that technologies are evolving.

2.2. The chapter provides a summary of current thinking and draws on recent published research, as well as LUC in house experience.

## Wind Turbine Characteristics

2.3. **Appendix 2** provides a table summarising a sample of turbines currently on the market with details of power rating and height. The principle characteristics of a wind turbine are indicated on ***Figure 2.1*** and are discussed below:

2.4. **Vertical and Horizontal Axis:** There are two types of wind turbine: vertical axis machines with blades that rotate about a vertical axis, and horizontal axis machines with rotating shafts aligned horizontally. It is the latter type which currently prevails in landscapes across Britain and which will be discussed in detail throughout this chapter. The movement of the blades is a unique feature of wind turbine developments, setting then apart from other stationary tall structures in the landscape such as masts or pylons.

2.5. **Power Rating:** Wind turbines are usually categorised according to the diameter of their blades and their power in kilowatts or megawatts with typical commercial turbines now rated at around 600KW – 2MW. There are a range of smaller turbine types rated at 10KW – 600KW. Currently the largest new generation machines are rated at 3MW.

2.6. **Height:** Turbines with a power rating of up to 50KW typically have a tower height of up to 25m and a blade diameter of approximately 15m (total height to blade tip of up to 32.5m), although this can vary as taller turbines are able to take advantage of a better wind resource. Broadly turbines with a power rating of up to 700KW have a typical tower height of between 20m and 65m with a blade diameter of 30m to 50m (total height to blade tip of up to 71m). The most common commercial turbines with a power rating of 1.3 to 2MW typically have a tower height of between 60m and 80m and blade diameter of 28m - 80m (total height to blade tip of up to 130m). The largest 3MW turbines may have a total height of up to 150m.

2.7. **Arrangement - Single Turbines and Groups:** Turbines may be located singly, in small groups or large groups. Turbines of a lower power rating, i.e. up to 50KW have to date mainly been sited as single turbines, although this is likely to change in the future, for example with small turbines constructed on a 'field scale'.

2.8. **Colour:** The colour of the turbine tower can vary. White, grey and off white are currently the most common colours in the UK (sometimes with a logo along the tower side), with a matt finish being preferable to reduce glint. Towers with a graded colour scheme are also in use.

2.9. **Turbine Spacing:** Turbines are arranged so that energy loss through wind shadowing is lessened. Wind turbines need to be positioned between 3 to 10 blade diameters apart; about 180-600 metres for a wind turbine development using a 60m blade diameter. A wind turbine development of 4 turbines would therefore occupy an area of approximately 0.45-0.6 square kilometres of land. Consistent spacing in a row of turbines is recognised as being important to avoid visual confusion and allow turbines to appear as one cohesive group.

2.10. **Lifespan**: Turbines typically have a lifespan of 20 – 25 years and planning permission is generally for the current development with a requirement for the turbines to be decommissioned, removed and the site reinstated once they have reached the end of their working life.

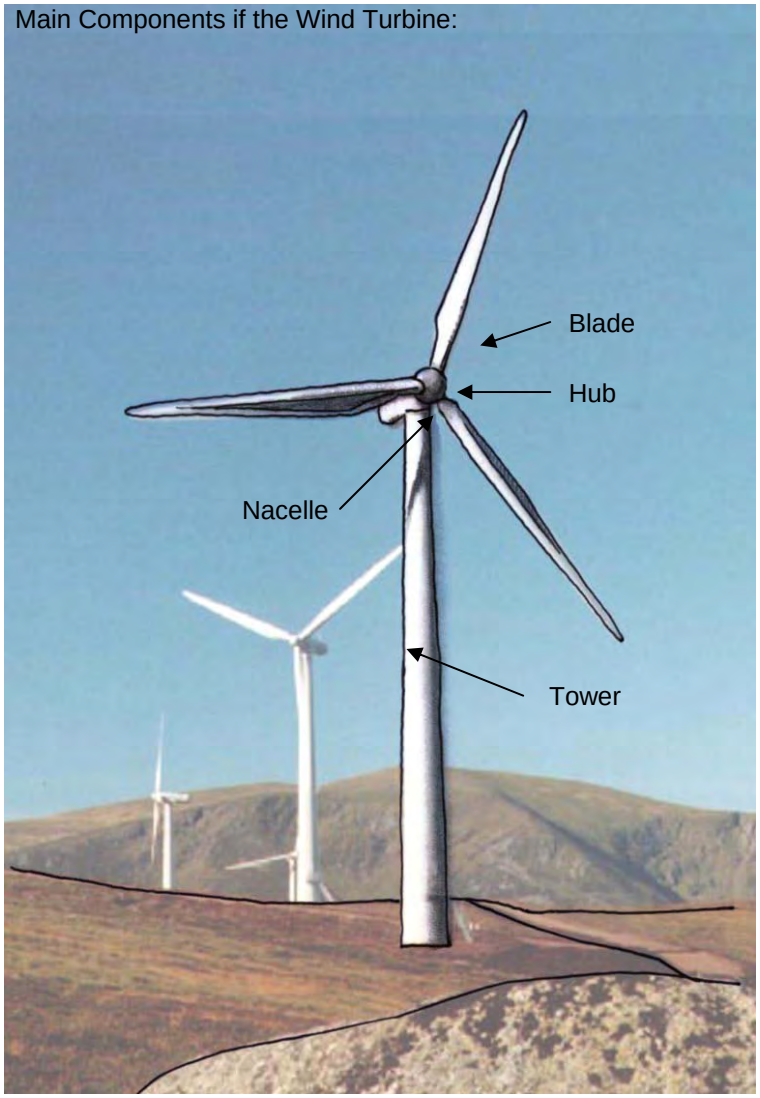
## Wind Turbine Technology

2.11. To turn kinetic wind energy into electricity, wind turbines are made up of the following components:

- Blades (Rotor);
- Hub;
- Gearbox and Generator;
- Controller;
- Anemometer
- Cooling system;
- Yaw mechanism and tower.

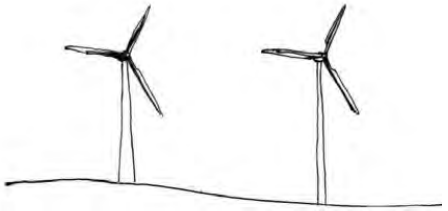
# Figure 2.1 Wind Turbine Characteristics

Main Components if the Wind Turbine:

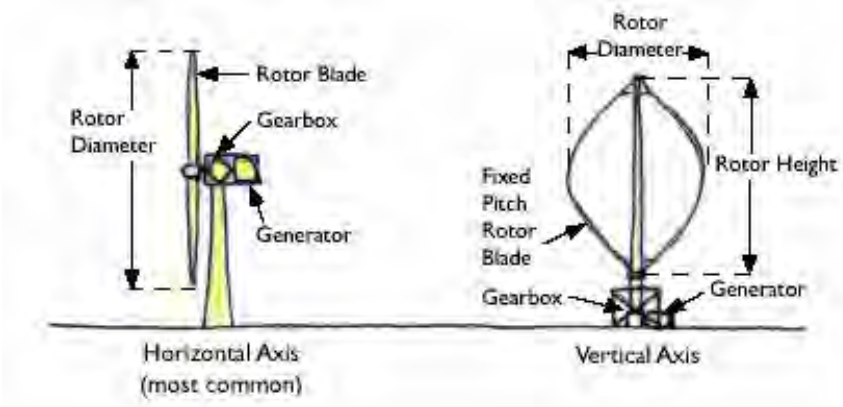





Wind Turbine Types:




Wind Turbine Configurations:



2.12. Wind turbines convert the wind into electrical energy by means of a **rotor** with **blades**. The rotor may have two or three blades, with the later being most common. The blades are usually a glass fibre reinforced structure, which are attached to the **hub** of the turbine. The hub is then attached to a main shaft that drives a **generator** which is housed within the **nacelle** of the turbine.

2.13. The nacelle contains the controller which feeds information to a computer system used to control the operation of the turbine, i.e. stop it from working in high winds to ensure safety. On top of the nacelle an **anemometer** can be found to assess the wind speeds and feed information into the controller. Often before a wind turbine is erected a temporary anemometer may be positioned on site to test wind speeds and will range from between 25-60m in height. A separate permanent anemometer may also be in place once the turbine is operational.

2.14. Attached to the base of the nacelle is a **yaw** which controls the rotor, turning it to face the wind as required. The nacelle is mounted on a **tower** which is normally made from tubular steel with a base of 2-5 metres in diameter. Lattice and tapered towers are also in use but are not common. The tower is usually at least twice the length of the blade and like the other external components of the wind turbine is usually matt white, off white or grey. The taller the turbine the more energy it is likely to capture but currently blade tip heights of commercial turbines' typically ranging from between 25-130m.

2.15. A single turbine is likely to generate electricity at a voltage of 690V. Most turbines start generating electricity at wind speeds of 3-4 metres per second (m/s), generating maximum power at 15m/s and are shut down to prevent storm damage at 25m/s and above. Wind turbines in the UK generate electricity for 80 - 85% of the time depending on the location, whereas their capacity (the ratio of actual electricity production over what could be produced if turbines run continuously at full capacity) is 20 – 40%.

## Associated Infrastructure

2.16. **Transformers** convert the electricity produced by the turbines to a suitable voltage, around 33.000V, for transmission to a nearby substation. Any grid connected turbine feeds into the grid at 50 Hz. In older turbine models, transformers are usually located in a metal container approximately 2m high and wide, adjacent to the turbine. However, modern turbines tend to have the transformer located within the nacelle.

2.17. **Wooden pole lines or cables, which may be either underground or overground** may also be an integral part of a wind turbine development to allow the transmission of electricity to a nearby substation and to allow a grid connection. In some cases the commercial viability of a wind turbine development may be dependant on its proximity to grid connections.

2.18. **Substations:** Substations house transformers which are used to either step up or step down the voltage of power generated by turbines to match the voltage in the grid they are being linked to. The nature of a substation for a wind energy development will vary according to the size and location of the development. Typically the cables from the turbines to the sub-station will be laid underground, although on occasions they can be overground or a combination of both. Sub-stations tend to be located on the

edge of a proposed development and on the side closest to where the grid connection will be. In large developments the sub-stations tend to be housed within the control building.

2.19. Connections from the onsite substation to the grid can again be via cables, which are underground, overground or a combination of both. Whereas onsite cabling generally tends to be underground, connections to the main grid from the onsite substation are often run overground via pylons. Cables only tend to be run underground where there is an unacceptable visual impact, although it is recognised that cabling can also have an adverse environmental impact. Depending on the size of the proposed development, and the nature of the existing grid connection, there may be a need to upgrade or increase the number of transformers at the existing sub-station which connects to the main grid. This may or may not require physical alterations to be made to the sub-station or the building of a new sub-station.

2.20. Other **supporting infrastructure** includes road access for wide loads, on site tracks for routine maintenance, one or more anemometer masts electrical cabling and substation and a control building, although the control building or substation can also be located off site, for example in relation to existing built development.

2.21. Further associated infrastructure is required in relation to **construction** including a construction compound and crane hard standings. A 'lay down' area comprised of concrete pads is also required. The size and depth of concrete required will depend on the number and height of turbines and the site characteristics. The 'lay down' areas can be reinstated once the development is operational, although in practice this does not always happen.

2.22. **Turbine foundations** are also required which are usually square or hexagonal in shape, between 7-20 metres in diameter depending on the size of the turbine. The depth of foundation will be dependent on the foundation type and bedrock. This land can be reinstated after the life of the wind turbine development, which is on average between 20-25 years. The preparation of foundations will require the excavation of spoil which may be utilised on site or removed off site. The creation of spoil bunds can provide local low level screening but can have an adverse landscape impact particularly in open landscapes.

## Generic Landscape Impacts of Wind Turbines

2.23. Wind turbines are substantial vertical structures that will inevitably be highly visible structures within the landscape. However, the extent of their landscape and visual impact is dependent on the nature of individual landscapes. The size and number of turbines is also highly relevant. In general, it is considered that the greater the number of visible turbines the greater the landscape impact and that smaller turbines have a less negative effect on the landscape than large turbines.

2.24. People's perception of wind turbines depends on experience, visual fields, backgrounds and expectations, as well as weather conditions. Although public attitude surveys have been produced following the completion of some wind turbine schemes, there appears to be very little or no evidence of surveys conducted of people's perceptions of turbines located in AONBs relating to the effect on the landscape. The following section of this chapter will discuss the generic impacts that wind turbines can have on the landscape. The information is drawn from a variety of sources noted in the references at the end of this chapter.

***Generic Landscape Impacts of Wind Turbines***

- Wind turbines may conflict with the perceptions of 'wildland', remoteness or tranquillity. Turbines can introduce visual intrusion (of a perceived industrial character) and movement within 'natural' environments valued for their qualities of remoteness, solitude and 'stillness'.

- Loss of natural landscape may occur in relation to the construction of turbines and associated infrastructure, and requirements for cabling or pylons. Natural habitats may be particularly affected by changes to the underlying hydrology. Deposition of spoil or bunding can also have an adverse impact on predominantly open 'smooth' landscapes.

- As tall, vertical and moving structures wind turbines are an unfamiliar feature in the landscape. They are likely to be a highly prominent feature in views especially as they are difficult to conceal. However, the extent to which a turbine will appear in a view will depend on the character of the landform and land cover. The distance from which a wind turbine can be viewed also affects the scale of impact.

- Wind energy developments are unique, in relation to other tall structures, in that they introduce a source of movement into the landscape. The rotating blades, sometimes moving at different speeds catch the eye, drawing attention to the development and increasing turbine visibility. As well as drawing attention, movement of the blades can have a particular impact on landscapes that are otherwise perceived as still.

- Whether all the blades of wind turbines within a grouping move in the same direction or are in a uniform position when not moving also have an impact. It is generally considered that three blades, which rotate in a balanced pattern, are visually more acceptable than two blades.

- Lights are usually only required on structures that are over 150m high. However, lighting may be needed for security purposes or in relation to military or local aviation requirements. Light pollution of 'dark skies' therefore could be an issue.

- The noise level from wind turbines is generally low, with advancing technology having reduced previous problems. The indicative noise level of a wind turbine at 350m is recorded as 35-45db compared to a rural night time background which is between 20-40db. Noise may be a particular issue with older turbines, which use a gear mechanism – newer models are much quieter. It is therefore unlikely that noise will impact on tranquil landscapes.

- Wind turbines may also produce a moving shadow. As the sun passes behind the rotors of a wind turbine a shadow is cast over the adjacent landscape.

- Depending on the colour of the turbine tower and landscape background, a turbine may be more or less visible. A metallic finish of the turbine tower may reflect light and heighten visibility.

***Generic Landscape Impacts of Accompanying Infrastructure & Ancillary Development***

2.25. As noted wind energy developments may involve a range of ancillary structures. It is very difficult to generalise about the effects of these developments and it is advisable to consider them on a case-by-case basis. Some broad generic impacts are indicated below, although it is recognised that these impacts could be mitigated in some circumstances and to some extent:

- Access tracks can have a substantial visual impact and may disrupt the appearance of a landscape, particularly one in which the character is essentially perceived as a remote or wild such as expanses of moorland or where land cover is uniform and consistent, such as chalk downland.
- Wooden poles, overhead lines and infrastructure can also have a disjointing affect, introducing further vertical and linear features into the landscape, although underground cabling can have equally or greater deleterious impact in some sensitive landscapes, notably those that remain undisturbed with semi-natural vegetation cover.
- Ancillary buildings (which are perceived as solid structures separate to the turbines) can seem out of place in exposed areas and those areas where the absence of built features is a characteristic. Security requirements for ancillary buildings, such fencing, may also have a landscape impact.
- In general, it can be concluded that the greater the number of additional structures the greater the perceived landscape impact creating a more cluttered and a disjointed appearance.

## Conclusions

2.26. This chapter has set out the technicalities of wind turbines and their associated infrastructure. It is clear that wind turbines by their nature and siting requirements are likely to have significant impacts on any landscape. In summary the key issues that need to be considered are:

- Wind turbines are substantial vertical structures that may not fit easily into the landscapes typical of many parts of England;
- Wind turbine developments involve movement – the rotating blades, sometimes at different speeds, catch the eye and can increase visibility;
- Wind turbine development may have knock on effects beyond the turbine itself, for example new access roads and connections to the grid;
- Potentially favoured locations for wind turbine developments often coincide with sensitive landscapes that are particularly valued for special perceptual qualities of remoteness and tranquillity. Views to wind turbines in such landscapes can introduce a human/industrial moving element into essentially still remote landscapes.

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# 3. THE POLICY FRAMEWORK, CURRENT WIND TURBINE SCHEMES AND DEFINITION OF TURBINE TYPOLOGIES

3.1. This chapter provides a summary of the national and regional renewable energy policy context, followed by an assessment of the current types of turbine developments coming forward as applications in Southern England as a whole and within AONB and a review of evolving technologies. The information on the policy context and current market situation is then used together to help determine suitable wind turbine typologies to be considered by this study.

## NATIONAL POLICY CONTEXT

***Planning Policy Statement 22: Renewable Energy***

3.2. Planning Policy Statement (PPS) 22 (2004) sets out the Government's national planning policy on renewable energy. It states that in sites with nationally recognised designations (such as SSSIs, National Parks, AONBs), planning permission for renewable energy projects should only be granted where it can be demonstrated that the objectives of the designation will not be compromised by the development, and any adverse effects on the qualities for which the area has been designated are clearly outweighed by the environmental, social and economic benefits.

3.3. PPS 22 goes on to state that regional planning bodies and local planning bodies should outline in Regional Spatial Strategies and Local Development Documents the criteria based policies which set out the circumstances in which particular types and sizes of renewable energy developments will be acceptable in nationally designated areas. It also states that care should be taken to identify the scale of renewable energy developments that may be acceptable in specific areas. In particular, it suggests that small scale development should be permitted within areas such as National Parks, AONBs and Heritage Coasts, provided that there is no significant detriment to the area concerned. PPS22 does not however include a definition of what constitutes a small scale development.

3.4. In terms of the landscape and visual impacts of wind energy developments, PPS 22 asserts that local authorities should recognise that the impact of turbines on the landscape will vary according to the size of the turbines, their location and the landscape setting of the proposed development. It also states that Planning Authorities should take into account the cumulative impact of wind generation projects in particular areas.

***PPS 22 Companion Guide (2004)***

3.5. In December 2004, the Government published the Companion Guide to PPS22: *Planning for Renewable Energy*. This guide does not provide any further guidance on what types of renewable energy development may or may not be suitable for designated landscapes. It does however address the issue of landscape sensitivity and states that applying landscape character assessment at the regional level is recommended to inform strategic planning for renewables.

## REGIONAL POLICY CONTEXT

***Regional Planning Guidance for the South East (RPG 9)***

3.6. Existing regional planning guidance for the South East is contained in Regional Planning Guidance (RPG9) and covers the period to 2016. The South East England Regional Assembly has recently reviewed the energy efficiency and renewable energy content of RPG 9. The draft Proposed Alterations to Energy Efficiency & Renewable Energy policies were published in May 2003 and were subject to a Public Examination in November 2003. The final Energy policies were published by the Government Office for the South East in November 2004 and are incorporated into the draft Regional Spatial Strategy (RSS) The South East Plan, 2005.

3.7. The new renewable energy policies prioritise the development of renewable energy schemes, particularly larger scale ones, in less sensitive areas including previously developed and industrial land and areas where there is already intrusive development or infrastructure. Policy INF8: on the Location of Renewable Energy Development states that:

> *"Renewable energy development, particularly wind and biomass, should be located and designed to minimise adverse impacts on landscape, wildlife and amenity. Outside of urban areas, priority should be given to development in less sensitive parts of countryside and coast, including on previously-developed land and in major transport areas."*

3.8. In terms of development within protected landscapes, Policy INF8 goes on to state that:

> *"The location and design of all renewable energy proposals should be informed by landscape character assessment where available.* ***Within areas of protected and sensitive landscapes including AONBs or the National Parks, development should generally be of a small scale or community-based.*** *Proposals within or close to the boundaries of designated areas should demonstrate that development will not undermine the objectives that underpin the purposes of designation."*

3.9. The accompanying text provides further guidance and states:

*"…. wind and other renewable energy development should not be precluded in AONBs and the new national parks as there will be locations where small scale construction e.g. a wind development of between one and four turbines not generating more than 5MW can be accommodated where conflict with statutory landscape protection purpose set out in PPS7 can be avoided through careful siting and design including reducing the cumulative impact of a number of individual schemes."*

3.10. As noted these policies are incorporated into the draft Regional Spatial Strategy (RSS) The South East Plan, 2005.

***Regional Planning Guidance for the South West (RPG 10)***

3.11. Extant Regional Planning Guidance for the South West (RPG10) (Sept 2001) sets out a vision for the Region and translates this into key development principles and policies. Policy RE 6 focuses on energy generation and use. This policy recognises the important link between the need to both reduce greenhouse gases and increase the proportion of electricity from renewable energy sources.

3.12. The Guidance sets a target that a minimum of 11-15% of electricity production (597MW) should be secured from renewable sources by 2010. This target has been based on the recommendations of the report '*Renewable Energy Assessment and Targets for the South West'* (GOSW, April 2001).

3.13. In terms of development plans, RPG 10 states that these should:

*"Specify the criteria against which proposals for renewable energy projects will be assessed, balancing the benefits of developing more sustainable forms of energy generation against the environmental impacts, in particular on national and international designated sites;*

3.14. No guidance is given within extant RPG 10 regarding the scale of renewable energy developments that may or may not be considered within designated landscapes.

3.15. The South West Regional Assembly has been given the task of developing the new Regional Spatial Strategy (RSS) for 2006 – 2026. In order to inform the development of the new RSS, two studies were commissioned in February 2005 to develop renewable energy heat targets and targets for the development of renewable electricity for 2020. Capacity studies ReVision 2010 and ReVision 2020 are also being used to formulate policy. These studies will lead to the preparation of planning policies for the RSS which will aim to support achievement of the targets that have been set.

## North Wessex Downs Management Plan

3.16. The North Wessex Downs Management Plan (2004) was prepared under the Countryside and Rights of Way Act 2000 by the AONB Council of Partners on behalf of the 12 constituent local authorities and local stakeholders. It sets out as one of its key objectives the

need to develop sustainable community energy projects. However, the Management Plan recognises that these schemes have to be carefully sited, and of an appropriate scale to ensure that the sense of tranquillity and remoteness of the AONB are not compromised. The plan has some weight in local planning decisions because it has been subject to consultation and publicity and is adopted by the all the local planning authorities. This has been demonstrated in a recent appeal for a single turbine (81 metres in height to blade tip) within the Open Downland landscape type at Baydon Meadow.

## CURRENT TURBINE SCHEMES AND EVOLVING TECHNOLOGIES

3.17. The following section provides a summary of the current wind turbine schemes operating in England and types of planning applications being received. It gives an indication of the turbine types (power rating, size and height) coming forward with information presented for England as a whole and within designated landscapes (National Parks and AONBs) in England. The section concludes with a note on evolving technologies and what might be expected in the future. This background information is provided in order to set a realistic context for the study and a basis for identifying appropriate turbine typologies to be considered.

3.18. It is important to note that the information set out in the tables below only considers applications for wind energy developments which are connected to the grid. Comprehensive information on small scale/domestic scale non-grid connected wind energy turbines is not currently available.

## Wind Turbine Schemes and Applications in England

3.19. Since January 2000, 20 grid connected wind energy developments have been constructed and commissioned in England[3]. **Table 3.1** provides a breakdown of the number of schemes, total installed MW capacity, average turbine capacity and average turbine height of wind energy developments commissioned between 2000 and 2005.

**Table 3.1: Summary of Wind Energy Schemes Commissioned in England between 2000-2005**

| Year Commissioned | No. of Schemes Commissioned | Average Total Installed MW Capacity of Scheme | Average Installed MW Capacity of Turbine | Range of Installed MW Capacity of Turbines | Average Height of Turbines to Tip (in metres) | Range of Turbine Heights to Tip (in metres) |
|---|---|---|---|---|---|---|
| 2000 | 5 | 3.6 | 0.9 | 0.6-1.5 | 77.2m | 63.5m-100m |
| 2001 | 3 | 4.7 | 0.7 | 0.6-0.75 | 71.3m | 71m-72m |
| 2002 | 2 | 5.1 | 0.6 | 0.6-1.3 | 88m | 85m-91m |
| 2003 | 2 | 4.8 | 2.2 | 1.8-2.6 | 110m | 100m-120m |
| 2004 | 4 | 4.56 | 1.9 | 0.6-2.5 | 102m | 87m-120m |
| 2005 (until March 2005) | 4 | 2.7 | 1.6 | 0.9-2.75 | 102m | 91m-126m |

*Source: DTI Renewable Energy Planning Monitoring Database*

3.20. **Table 3.1** indicates that the size and height of wind turbines commissioned has significantly increased between 2000 and 2005. In 2000 and 2001, the average installed MW capacity of a newly commissioned turbine was 0.9MW and 0.7MW respectively but by 2003 this had increased to 2.2MW. Similarly the height (to tip) of turbines has increased from an average of 71.3m and 77.2m in 2001 and 2002 to between 102m-110m in 2003-2005.

3.21. Only one wind energy development has been commissioned in the South East (excluding London) since 2000 (and none before this date). This is the Green Park wind turbine, which is located in Reading at junction 11 of the M4 motorway. This scheme consists of a single 2MW wind turbine with a height to blade tip of 120m. Two schemes have been commissioned in the South West region, namely Forrest Moor wind turbine development in Devon, consisting of three 0.9MW turbines (75m to tip) and Bears Down wind turbine development in Cornwall, comprising 16 x 0.6MW turbines (52 - 57m to tip). In addition, a further seven wind energy developments were commissioned in the South West during the 1990s and are still operational.

3.22. The information set out in Table 3. 1 only considers those schemes which have been approved planning permission and constructed. By comparison **Table 3.2** provides further information on the number of planning applications which have been

[3] This is based on monitoring of planning applications for all forms of renewable energy undertaken on behalf of the DTI by Land Use Consultants.

submitted, approved and refused in England between 2000 and 2005 and the average total MW capacity of these schemes. No detailed information is available on the average turbine MW capacity or average turbine height proposed for these schemes.

**Table 3.2: No. and Total MW Capacity of Wind Energy Applications in England between 2000-2005**

| Year | No of Applications Submitted | | No of Applications Approved | | No of Applications Refused | |
|---|---|---|---|---|---|---|
| | **No of schemes** | **Average Total Installed MW Capacity** | **No of schemes** | **Average Total Installed MW Capacity** | **No of schemes** | **Average Total Installed MW Capacity** |
| 2000 | 11 | 3.6 | 6 | 4.2 | 8 | 5.3 |
| 2001 | 15 | 5.6 | 4 | 0.7 | 7 | 1.9 |
| 2002 | 33 | 8.6 | 15 | 5.3 | 4 | 21.6 |
| 2003 | 29 | 14.7 | 14 | 10.7 | 9 | 3.7 |
| 2004 | 26 | 12.3 | 5 | 7.9 | 8 | 7.4 |
| 2005 (until March 2005) | 5 | N/A* | 2 | N/A | 1 | N/A |

*Source: DTI Renewable Energy Planning Monitoring Database*
*Note: the number of applications submitted in each year does not equal those approved and refused as many applications are not submitted and determined within the same calendar year.*

3.23. **Table 3.2** indicates that there has been an increase in the average size of wind energy schemes that have been submitted since 2000. In 2000, the average total MW capacity of a wind energy application was 3.6MW. This increased to 14.7MW in 2004. The size of schemes approved has also increased from an average of 4.2MW in 2000 to 7.9MW in 2004.

3.24. In the South East region nine applications have been submitted since 2000, five applications have been approved and two applications have been refused (including the Baydon Meadow Wind Turbine proposal which is located within the North Wessex Downs). In the South West, 27 applications have been submitted, of which six have been approved and 12 have been refused planning permission.

## Review of Wind Turbine Schemes and Applications within National Parks and AONBs

3.25. There have been no known applications determined for grid connected wind energy developments within a National Park between 2000-2005. Six grid-connected wind energy planning applications have been determined within Areas of Outstanding Natural Beauty since 2000. One of these schemes has been approved planning permission and five have been refused. Further details on these schemes are provided in **Table 3.3**:

**Table 3.3: Summary of Wind Energy Applications within AONBs**

| Project Name | AONB | Planning Application Decision | Construction Status | Total Installed MW capacity of Project | No of turbines (if known) | MW capacity of Turbines |
|---|---|---|---|---|---|---|
| Cheverton Down | Isle of Wight | Application approved | Construction underway | 2 | 3 | 0.66 |
| Baydon Meadows | North Wessex Downs | Application refused (dismissed at appeal) | None | 1.3 | 1 | 1.3 |
| Lynch Knoll Wind Farm (EXTENSION) | Cotswolds | Application refused | None | 2 | 4 | 0.5 |
| Stumpy Post | South Devon | Application refused | None | 1.8 | 1 | 1.8 |
| Summerslade Down Wind Cluster | Cranborne Chase and West Wiltshire Downs | Application refused (appeal dismissed) | None | 1.3 | 2 | 0.65 |
| Windmill Hill | Cotswolds | Application refused (appeal withdrawn) | None | 1.5 | 1 | 1.5 |

*Source: DTI Renewable Energy Planning Monitoring Database*

3.26. The Secretary of State has also recently granted planning permission for the replacement of 10 existing wind turbines with 8 taller 1.8 MW structures on Caton Moor Littledale, Lancashire. This site lies within in the Forest of Bowland AONB.

3.27. AONBs and National Parks are both protected landscapes in terms of national and regional planning policy. Their landscape value is of the same importance as prescribed by planning policy. Although to date there have been no applications for wind turbine developments within a National Park , there have been a number of applications for turbine developments of a range of scales and heights within AONBs, which are considered to be equivalent to National Parks in terms of their landscape. Table 3.3 indicates that the total size (in terms of MW installed capacity) of wind applications that have been submitted within AONBs has ranged from 1.3MW-3MW and that they have consisted of between 1- 4 turbines. The size of individual turbines has ranged from 0.5MW (height of 62m to tip) for the scheme at Lynch Knoll to 1.8MW at Shooters Bottom and Stumpy Post, with 1.8MW turbines typically having a height to tip of 120m. By comparison, the 0.66MW turbines at Cheverton Down, Isle of Wight have a height to blade tip of 52m. This information has suggested the need for the study to embrace a wide range of turbine types to ensure that the results will be useful and robust in relation to any future applications within the North Wessex Downs AONB.

## Looking to the Future

3.28. It is speculative to make statements about future types of wind turbines, since technology is continuing to evolve and respond to different pressures and needs. Some ideas are set out below on current developments in the industry and how the technology might be expected to change in the future.

3.29. Currently the largest onshore turbines are 31MW machines, with planning permission recently being given for seven 3MW turbines near Sedgefield in County Durham. Machines of this power rating in the UK are up to about 125m total height. It is likely that machines with a greater power rating will be developed in the future (4MW and 5MW machines already exist as part of offshore schemes). However, as technology becomes more efficient, a greater power rating does not necessarily imply that turbines will be of a greater height.

3.30. At the other end of the scale micro-generation wind technologies are also set to become more common, with the Energy Act 2004 committing the government to produce a Micro-generation Strategy by early 2006. The British Wind Energy Association (BWEA) defines small-scale wind energy systems as anything from less than 100 W (i.e. for charging batteries) to up to 50KW for individual houses/communities or businesses. These can be standalone turbines or building-integrated. Although, termed small scale, such technologies can include towers of up to 40 m to take advantage of greater wind speeds and blade diameters of up to 15 m. Currently most turbines developments of this size are constructed as single structures, although in the future such technologies may be promoted as mini 'wind-farms' with a greater number of machines for example on a field-scale.

## DEFINING WIND TURBINE TYPOLOGIES

3.31. From the above, it is clear that there is very little or no consistent guidance or definition of what constitutes small-scale wind energy development; definitions are subjective and can vary considerably according to their context. The following section defines a series of turbine typologies for consideration by this study in order to assess sensitivities and constraints to turbine development within the North Wessex Downs AONB. The definition of typologies is not intended to suggest that these are the types of development that are considered appropriate within the North Wessex Downs, nor are they an attempt to provide a definition of what constitutes small scale wind turbine development.

## Defining Upper and Lower Thresholds for Turbine Typologies

3.32. For the purposes of this study we have considered wind turbine developments of up to 12MW in size (i.e. a maximum of 4MW turbines). This is a threshold imposed simply to determine an upper limit of turbine typologies for consideration by the study. It is recognised that a development of this size is not what might conventionally be termed small scale in terms of built structures. Neither, does the use of this upper threshold imply that this might be considered an acceptable scale of development within the North Wessex Downs. Nevertheless, it is clear that developments of this scale (and greater) may come forward in protected landscapes in the future and therefore it is important to consider their likely impacts if this study is not to become quickly dated.

Below this threshold, there are a range of different wind turbine projects that could be developed, varying considerably in size and output, for example from small scale domestic turbines of 0.5KW (approx 5 meters hub height) to larger commercial turbines of up to 3MW (up to about 125m total height). Uses also could range from very small turbines supplying energy for battery charging systems (e.g. on farms or in homes), to turbines grouped on wind farms supplying electricity to the grid. Whilst planning applications for very small 'domestic' scale turbines are likely to come forward in the AONB in the future, it was considered that assessing the capacity for these very small installations is a separate exercise from this strategic 'landscape-scale' study requiring a case-by-case analysis of local impacts. It was therefore decided that the study would only consider turbines of greater than 25m (blade tip) height.

## Turbine Typologies

3.33. Generic wind turbine typologies were developed within the thresholds set out above. These were developed in consultation with the steering group and experts in the renewable energy industry. Rather than attempting a definition of small scale, typologies were defined on the basis of turbine height, plus range of associated infrastructure. Wind turbine developments were subsequently grouped into three broad types based on their overall maximum height (representing turbine blade tip height ranges since tower or hub height can vary according to the manufacturer and individual site considerations). It was not considered appropriate to develop typologies based on individual commercial models as there is a wide range of wind turbines available on the market and the models are constantly changing as technology develops. The chosen types were considered to represent the height categories of development that may come forward as planning applications within the North Wessex Downs AONB. They include single turbines and groups of up to four turbines. Further information on individual commercial turbine types is provided as **Appendix 2**.

**Height Class 1** – Development of a single turbine, 25-40m (height to blade tip)*;

**Height Class 2** – Development of a single turbine, or small group of 2-4 turbines, 40-80m (height to blade tip);

**Height Class 3** – Development of a single turbine or small group of 2-4 turbines, 80-130m (height to blade tip).

* a development of more than one turbine of height class 1 is unlikely with developers preferring to increase the height than the number of turbines.

3.34. Detail on each of these typologies is noted in **Table 3.4** below.

**Table 3.4: Definition of Turbine Typologies**

| Height class | Height range (to blade tip) | Number of turbines | Typical power rating | Grid connection | Typical associated infrastructure |
|---|---|---|---|---|---|
| Height Class 1 | 25 – 40m | Single | 10KW- 50KW | Yes or No | Battery unit or may require a small building to house inverter and controller if connected to the grid. |
| Height Class 2 | 40 – 80m | Single<br>Small group (2-4) | 50KW – 800KW | Yes | Access tracks, control building/ substation, anemometer |
| Height Class 3 | 80 – 130m | Single<br>Small group (2-4) | 800KW +<br>(e.g. up to current largest commercial turbine of 3MW) | Yes | Access tracks, powerlines, fencing, control buildings/sub station(s), anemometers |

3.35. It should be noted that the three turbine typologies are relative terms representing arbitrary divisions of a continuum; they have been developed simply as an aid to the evaluation and making of judgements. Visualising hypothetical height differences in the field is complex. As such, each typology is represented by a nominal blade tip height (the tallest within the range) for the purpose of making judgements as to the effect of different heights of turbines on the landscape. If a planning application is received on the threshold of a type, for example for a turbine of 75m, it is recommended that the sensitivity analysis and judgements are reviewed for both a Height Class 2 and Height 3 development.

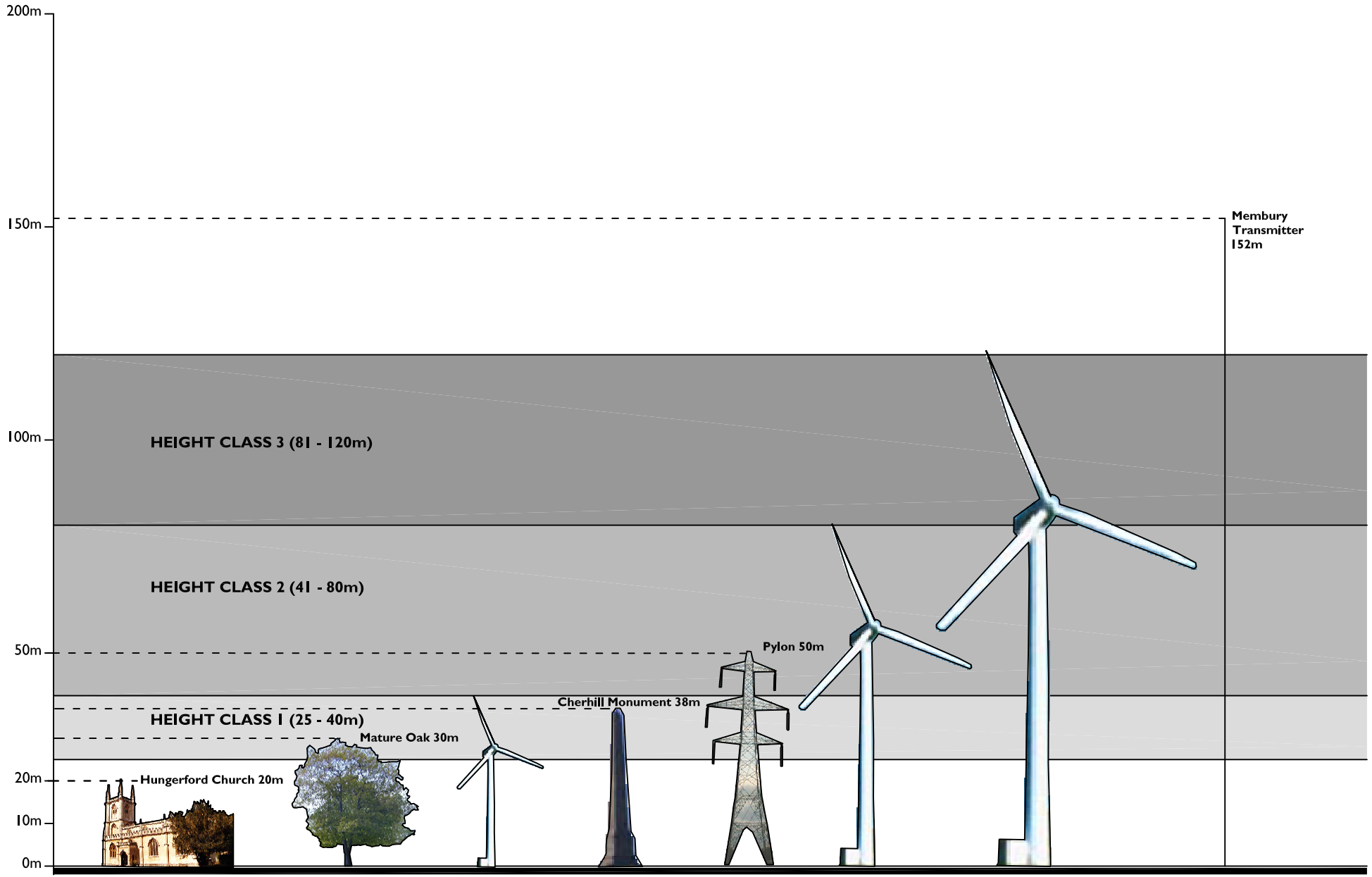
3.36. In addition to the turbines themselves, wind turbine developments may include a range of ancillary structures such as access tracks, power/pylon lines, sub stations, fencing, anemometers. Built structures such as sub stations maybe located on site or off site. The landscape may also be sensitive to these additional structures. It was considered too complex to attempt to define a range of typologies taking into consideration different combinations of infrastructure and it would be virtually impossible to assess such

complexities in the field. Specific sensitivities to ancillary structures are therefore pointed up in the analysis in relation to individual landscape types.

3.37. The generic typologies are taken forward as part of the assessment process to allow visualisation of the effect of different scales of development within the landscape.

3.38. The different height classes are illustrated on ***Figure 3.1***. This figure places the three different height classes in context in relation to the Cherhill Monument (38m), standard 400 kV pylons (50m) and the Membury Transmitter (152m). This figure is provided simply as a comparison of heights; a moving wind turbine is perceived in a very different way to a monument or transmitter which may have a greater mass different associations, or a pylon which is perceived as one of many structures forming a linear development.

# Figure 3.1 Illustration of Turbine Heights

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# 4. METHOD STATEMENT

## Introduction

4.1. This chapter sets out method for undertaking the study. The method adopted aims to be transparent, robust and defensible.

4.2. There is clear guidance on landscape assessment as set out in the publication *'Landscape Character Assessment: Guidance for England and Scotland, The Countryside Agency and Scottish Natural Heritage 2002.* The subsequent *'Topic Paper 6*[4]*'*: sets out further guidance on approaches to evaluating landscape sensitivity and capacity. Our approach to the North Wessex Downs study builds on current best practice and LUC's considerable experience from previous and ongoing studies.

4.3. The study is based on the existing North Wessex Downs Landscape Assessment (2002), supplemented by additional fieldwork to collect information specifically relating to sensitivities to wind turbines. A decision was made at an early stage in the study to use the eight landscape types as the framework for the study and basis for understanding sensitivities and constraints. It is considered that the landscape types provide accurate generic information to allow broad judgements to be made. The character areas (of which there are 33 within the AONB) are considered to be too detailed for making broad judgements, however an indication of any significant variation in character within the landscape types is provided. This approach is considered to be the most practical in achieving the desired aim of producing a study that is accessible and transparent with meaningful judgements.

4.4. The approach was piloted within one landscape character type (2: Downland with Woodland) and the results were reviewed by the project steering group and the AONB Planning Officers Working Group. The agreed method was then rolled out across the study area.

## Identifying Landscape Attributes Sensitive to Wind Turbine Development

4.5. Topic Paper 6 states that judgements on overall landscape sensitivity careful consideration needs to be given to two aspects:

- visual sensitivity;
- landscape character sensitivity.

[4] Landscape Character Assessment Guidance for England and Scotland Topic pare 6: Techniques and Criteria for Judging Capacity and Sensitivity. 2004. The Countryside Agency and Scottish Natural Heritage.

4.6. For the purposes of this study the particular attributes of the landscape likely to affect sensitivity to wind turbine development were identified under the following headings. These heading were derived from an understanding of the North Wessex Downs landscape and knowledge of other recent sensitivity studies.

| ***Landscape Character*** | ***Visual*** |
|---|---|
| • Remoteness and Tranquillity | • Skyline |
| • Scale and Enclosure | • Internal Views |
| • Landform | • Visual Connections with Adjacent Landscapes |
| • Land Cover | |
| • Settlement Density and Pattern | |
| • Landmarks/Landscape Features | |
| • Prominent Built Structures | |

4.7. These headings are closely linked and to an extent interchangeable, for example information on scale and enclosure and land cover will influence the extent that any development is visible within the landscape. **It should be noted that this study only considers the general visual sensitivity of the landscape and impact on general views – it is not intended to provide a full visual impact assessment – it does not therefore consider key receptors or viewers of visual effects or identify representative viewpoints.**

## Identifying Landscape Values

4.8. The North Wessex Downs AONB is a nationally designated and valued landscape. The study has attempted to elucidate and articulate the principal landscape values associated with the landscape of the North Wessex Downs and has considered these in association with specific sensitivities to help define constraints to wind turbine development. In a protected landscape these decisions are made more sensitive by the values attributed to landscape protection that have evolved since the planning system introduced controls in the post-war years. The study has concentrated on two main aspects:

- stakeholder values and main valued views (as ascertained by the AONB Annual Forum Workshop, November 2004);
- other special values (e.g. natural, cultural, recreational, artistic/literary).

4.9. Information on how stakeholders value the AONB landscape was obtained through a workshop session held at the AONB Annual Forum. (A list of participants is included in Appendix 1.) In addition to understanding valued attributes, stakeholders were also asked to consider the main location from which the qualities/character of the landscape can be appreciated. This information yielded a number of important views that have been mapped with the resultant viewsheds used to inform judgements on sensitivities and constraints.

4.10. For each landscape type within the North Wessex Downs, the principal natural and cultural values were recorded from the published landscape character assessment (2002), relating to existing designations. The recreational values relating to how the landscape is used, including presence of open access and important rights way (regional or national routes) were also considered. In addition any known artistic/literary values were recorded.

## Study Process

### Step 1: Desk Study – Review of the Landscape Character Assessment

4.11. The North Wessex Downs Integrated Landscape Character Assessment (2002), which identified eight landscape types across the AONB. The review of the landscape assessment considered:

- the appropriateness of the existing classification for the purpose of assessing sensitivity/capacity to turbine development;
- reviewing the key characteristics and descriptions to elucidate those key characteristics to be taken forward as part of the sensitivity analysis and identifying any information gaps to be reviewed as part of the field survey;
- identifying key landscape values.

4.12. The initial desk study confirmed that the classification was appropriate for the study, although noted a number of variations within the character areas, which would need to be considered in the evaluation. In addition it was decided to separate Landscape Type 5: Downs Plain and Scarp Landscape type into two separate landscape types, namely 5(i) Downs Plain and 5(ii) Scarp, reflecting the very different characteristics and sensitivities to turbine development of these areas.

4.13. For each landscape type, the desk study identified key characteristics under each of the headings set out above (para. 4.6). The information was used as checklist to inform the field survey and the basis for the analysis.

### Step 2: Field Survey

4.14. A tailored field survey sheet (**Appendix 4**) was developed to provide a consistent structured means of collating information and making judgements. A rapid survey of each landscape character area was undertaken to verify information obtained from the

desk study and collect additional information where gaps had been identified. As part of the field survey an assessment was made of the sensitivity of aspects of the landscape to the different scales of turbine developments.

## Step 3: Landscape Type Analysis

4.15. The process of analysis followed, using information from the desk study and field survey. For each landscape type an assessment was made of the main landscape values and overall sensitivity. An understanding of both landscape values and sensitivity was used to develop more detailed judgements on the constraints of each landscape type to the three different types (height classes) of turbine development.

### *Making Judgements on Landscape Value*

4.16. For each of the eight landscape types the principal landscape values were identified from the existing assessment and results of the AONB Annual Forum workshop (held in November 2004). The information recorded under the headings noted above was used to develop an overall statement of the specific values associated with each landscape type. An understanding of these special values is helpful in highlighting constraints to wind turbine development.

| **Landscape Values** |
|---|
| Stakeholder Values (AONB Annual Forum Workshop Nov. 2004) |
| Main Valued Views (AONB Annual Forum Workshop Nov. 2004) |
| Other Values<br>• Natural:<br>• Cultural:<br>• Recreational:<br>• Other (artistic and literary associations) |
| **Summary of Landscape Values:** |

### *Making Judgements on Landscape Sensitivity*

4.17. In this study, sensitivity is defined as the extent to which the character of the landscape is vulnerable to being changed as a result of wind turbine development. It should be noted that an assessment of sensitivity is a judgement and not a scientific absolute and recognises that some attributes of the landscape may be more important in defining character than others and maybe more

sensitive. There will be a range of designations within the landscape such as scheduled monuments, Sites of Special Scientific Interest and World Heritage Site. Although there will be separate constraints relating to each relevant designation they may also be recognised as key characteristics within the landscape which have a sensitivity in landscape terms. For example, scheduled monuments, such as an Iron Age Hill Fort, will have constraints to development in their own right in terms of statutory protection but may also have constraints attached to them in terms of being key landscape features.

4.18. For each of the eight landscape types, a matrix was used to highlight the sensitivities of each of the characteristics to turbine development. At this stage sensitivities to generic turbine development (i.e. turbines >25 m height) were identified, without reference to the individual turbine typologies. As noted, it is more difficult to generalise about ancillary developments as these vary considerably from development to development and should be dealt with on a case-by-case basis. However where key sensitivities to ancillary structures are identified they are highlighted for each landscape type. For each landscape type specific sensitivities in relation to each of the 10 characteristics is highlighted, with evidence to back up the judgements.

| **Key Characteristics of the Landscape** | **Sensitivities** |
|---|---|
| Remoteness and Tranquillity | |
| Scale and Enclosure | |
| Landform | |
| Land Cover | |
| Settlement Density and Pattern | |
| Landmarks and Important Landscape Features | |
| Prominent Built Structures | |
| Skyline | |
| Internal Views | |
| Views and Connections with Adjacent Landscapes | |
| **Summary of Visual Sensitivity:**<br><br>**Summary of Landscape Character Sensitivity:** | |

4.19. Summary judgements on visual sensitivity and landscape character sensitivity are given for each landscape type. These are professional judgements drawing on the sensitivities highlighted in the table for each characteristic. The judgements relate to broad thresholds of change rather than absolutes. The judgement is not simply a sum of all the characteristics in any column - as some characteristics maybe deemed to be so sensitive that they have an overriding influence on the overall sensitivity of the landscape. Within the North Wessex Downs all of the landscape types were sensitive to a degree; none of the landscape types were identified as having a low landscape character or visual sensitivity to wind turbines. The overall judgement of sensitivity was therefore made on the following scale.

**Sensitivity Judgements:**

**Moderate** – key characteristics are vulnerable and maybe adversely affected by turbine development. The landscape may have fewer constraints to some types (height classes) of wind turbine development.

**Moderate – High** - some key characteristics would be adversely affected by turbine development. The landscape will have some/considerable constraints to some types (height classes) of wind turbine development.

**High** - key characteristics would be adversely affected by turbine development. There are many constraints to all types (height classes) of wind turbine development. Any development would be likely to result in a significant detrimental change in character.

### *Overall Judgement on Constraints to Wind Turbine Development*

4.20. By combining the summary of landscape values and judgements on sensitivities an overall judgement on the constraints to turbine development within each landscape type was derived. It should be noted that the information on constraints is a professional **judgement** and does not result from any mathematical equation or weighting of landscape values and sensitivity. Given that all landscape types within the AONB are highly valued and sensitivities are judged to be at least moderate, and usually moderate – high or high all landscape types within the North Wessex Downs are considered to be either moderately – highly constrained or highly constrained in relation to wind turbine developments.

| Landscape Values | Visual Sensitivity | Landscape – Character Sensitivity | Constraints to Turbine Development |
|---|---|---|---|
| High | Moderate | Moderate | Moderately – Highly Constrained |
| | Moderate - High | Moderate – High | Highly Constrained |
| | High | High | Highly Constrained |

4.21. The judgements are made on the following scale:

**Constraint Judgements**

**Highly Constrained** to find a site with potential to accommodate wind turbine development. Any form (height class) of wind turbine development would be likely to result in a significant adverse change in landscape character and/or affect key landscape values and is therefore not recommended in the landscape type.

**Moderately – Highly Constrained** to find a site with potential to accommodate wind turbine development. It is likely that many key characteristics of the landscape/landscape values will be adversely affected by most forms (height classes) of development. Appropriate locations for wind turbines will be limited.

**Moderately Constrained** to find a site with potential to accommodate wind turbine development. There are likely to be key sensitivities or values that must be respected in relation to turbine development, although there may be some sites where development is less constrained.

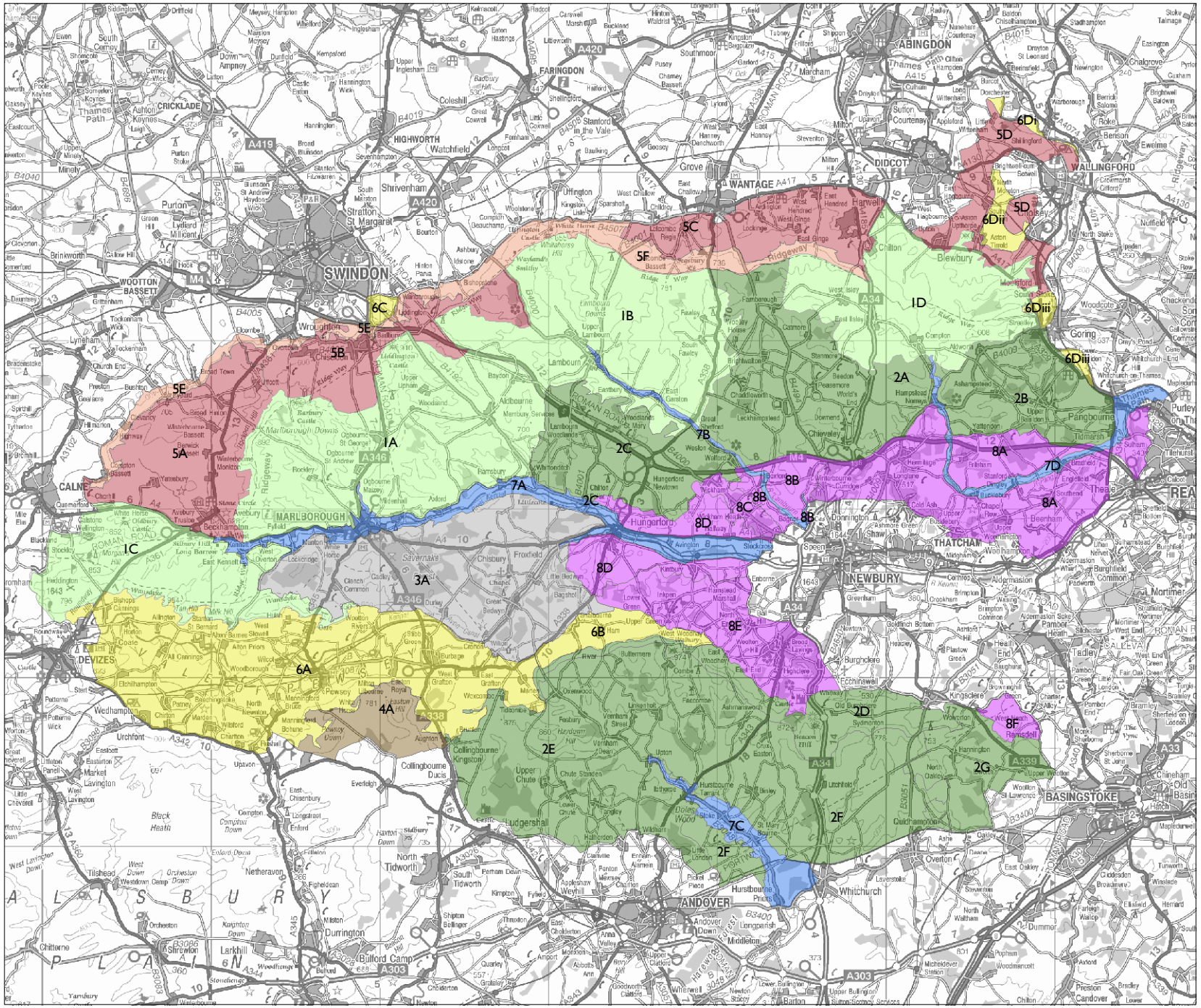
Within the North Wessex Downs AONB, all landscapes were constrained to a degree and thus no landscapes were considered to have:

**Moderate – Low Constraints** or **Low Constraints**.

# 5. THE LANDSCAPE CHARACTER ASSESSMENT

## Landscape Classification

5.1. A landscape assessment of the North Wessex Downs AONB was completed in 2002. The assessment identifies eight generic **landscape types** which are defined as having '*a relatively homogenous character with similar physical and cultural attributes including geology, landform, land cover and historical evolution'*. The landscape types can be further sub-divided into landscape character areas which are *"discrete geographic areas that possess the common characteristics described for the landscape type; each with a distinct and recognisable local identity"*. The eight landscape types are the building blocks for this study and provide the baseline for assessing sensitivities, understanding values and determining capacity for wind turbine development. The landscape types are indicated below and illustrated on ***Figure 5.1*****.**




## Figure 5.1 - Landscape Character Areas

Key

***1. Open Downland***

1A - Marlborough Downs
1B - Lambourn Downs
1C - Horton Downs
1D - Blewbury Downs

***2. Downland with Woodland***

2A - Brightwalton Downs
2B - Ashampstead Downs
2C - Lambourn Wooded Downs
2D - Walbury Hill - Watership Down Scarp
2E - Chute Forest - Faccombe
2F - Litchfield Downs
2G - Hannington Downs

***3. Wooded Plateau***

3A - Savernake Plateau

***4. High Chalk Plain***

4A - Salisbury Plain

***5i. Scarp***

5E - Clyffe Pypard - Badbury Wooded Scarp
5F - Liddington - Letcombe Open Scarp

***5ii. Downs Plain***

5A - Avebury Plain
5B - Chiseldon - Wanborough Plain
5C - Hendred Plain
5D - Moreton Plain

***6. Vales***

6A - Vale of Pewsey
6B - Shalbourne Vale
6C - Wanborough Vale
6Di - Thames Foodplain - Benson
6Dii - Thames Foodplain - Moreton
6Diii - Thames Foodplain - Streatley and Basildon

***7. River Valleys***

7A - Kennet Valley
7B - Lambourn Valley
7C - Bourne Valley
7D - Pang Valley

***8. Lowland Mosaic***

8A - Hermitage Wooded Commons
8B - Winterbourne Farmland
8C - Wickham Wooded Heath
8D - Hungerford Farmland
8E - Highclere Lowlands and Heath
8F - Ewhurst Parkland

N

0 5 10 km

**LAND USE CONSULTANTS**
**43 Chalton Street**
**London NW1 1JD**
**Ph: 020 7383 5784**
**Fax: 020 7383 4798**
**www.landuse.co.uk**



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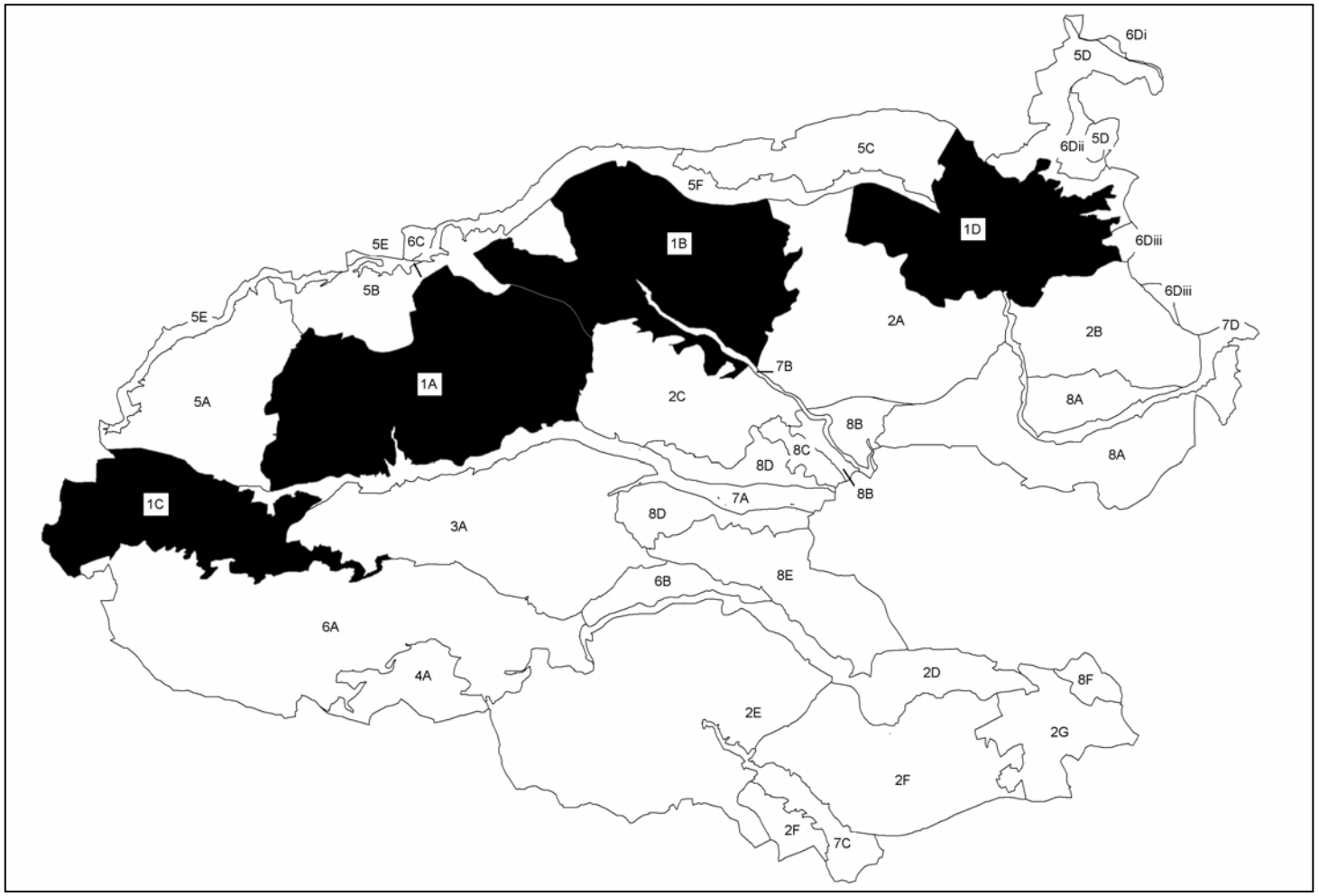
# PART 2:

# LANDSCAPE TYPES:
# SENSITIVITIES AND CONSTRAINTS TO WIND TURBINE DEVELOPMENT

# 1. Open Downland

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# LANDSCAPE TYPE 1: OPEN DOWNLAND

## LANDSCAPE CHARACTER OVERVIEW

The Open Downlands are the remote heart and core of the North Wessex Downs, with the dramatic landscapes created by the underlying chalk being one of the defining features of the AONB. The subtle curves and undulations of the landform create a simple elemental quality accentuated by vast skies creating an open landscape with expansive views. Boundaries are mainly defined by topography and the upper chalk geology. The northern boundary relates to the top of the scarp. To the south, the edge of the chalk forms a distinct boundary with the Greensand, clays and gravels.

## Key Characteristics

**Remoteness and Tranquillity**

- Overall a very strong sense of remoteness and isolation – a result of the elevated, open and spacious topography, lack of settlement, subtly receding horizons and expansive views.
- The remote heart and core of the North Wessex Downs.

**Scale and Enclosure**

- A simple, open and spacious landscape accentuated by vast skies.
- Open, expansive views to strong sweeping skylines.

**Landform**

- Defined by the elevation, the open downland rises to heights of 200-300+m AOD.
- An open, smoothly rolling landform with notable gently rounded summits – a classic chalk landform.
- Dissected by a network of dry valleys and long sinuous steep scarps – appearing in long distance views as a series of skyline ridges in long distance views.
- The dramatic landscape created by the underlying chalk rocks is one of the defining features of the AONB.

**Land Cover Pattern**

- Dominated by intensively managed arable farmland.
- The uniform cropped grass or cereals reveal the subtle curves and undulations of the landform.
- Fragmented and isolated blocks of chalk grassland with herb rich turf surviving along the steep scarp slopes and dry valley sides.

- Few hedgerows and virtual absence of woodland except for occasional linear shelterbelts and distinctive beech clumps crowning the summits.
- Varied field pattern including 'ladder' fields and larger rectangular fields.

**Settlement**

- Very sparsely populated with remote settlements (isolated farms or small hamlets).
- Occasional equestrian establishments associated with the racehorse industry with horse gallops are a distinctive feature.
- Traditional farm buildings include timber framed weather-boarded aisled barns, plus large-scale modern buildings.

**Landmarks/Important Landscape Features**

- A wealth of archaeology including dramatic and highly visible prehistoric monuments (long and round barrows).
- Distinctive sarsen stones.
- Beech clumps crown the summits forming prominent and highly visible landmarks.

**Prominent Built Structures**

- Characterised by the absence of built structures apart from occasional farm units and equestrian buildings.

**Skyline**

- Prominent ridges and strong, sweeping skylines.
- Subtly receding horizons with open and expansive views.
- Prehistoric monuments (long and round barrows) are typically visible on the skyline.
- Beech clumps frequently crown summits.

**Internal Views and Connections with Adjacent Landscapes**

- Views from River Valleys and Downs Plain and Scarp to the Open Downland ridgeline. Visual connections with the Downland with Woodland which is at a similar elevation.
- Spectacular views from high points on the scarps out across the surrounding lower-lying landscapes.

The following tables consider the key values and characteristics of the Open Downland landscape type using information taken from the North Wessex Downs AONB – Integrated Landscape Character Assessment (2002) with additional observations included specifically relating to wind turbine development. It also incorporate the outcomes of a stakeholder participation exercise held as part of the AONB Annual Forum in November 2004.

The information on landscape values and sensitivity is used to identify the constraints to wind turbine development in the AONB.

## LANDSCAPE VALUE

In the following table the key values associated with the Open Downland landscape are noted.

### Table 1.1: Open Downland Landscape Value

| Landscape Values |
|---|
| **Stakeholder Values (AONB Annual Forum Workshop Nov. 2004)**<br>The most valued perceptual elements are:<br>• Strong sense of openness<br>• Extensive views<br>• Strong sense of remoteness, solitude and isolation<br>The most valued physical and cultural elements include:<br>• The beech clumps crowning summits<br>• The visible prehistoric field monuments and Iron Age hill forts<br>Other valued elements noted include:<br>• Dark skies<br>• Birdsong<br>• Peace<br>• Downland flora and fauna<br>• Arable/livestock mosaic |
| **Main Valued Views (AONB Annual Forum Workshop Nov. 2004)**<br>A large number of viewpoints were noted from which the special qualities of the landscape can be experienced. Key viewpoints included Fyfield Downs, The Ridgeway, Windmill Hill, Oldbury Castle. Barbury Castle, Liddington Castle, Ogbourne Hill, Blewbury Hill, Tan Hill, Roundway Hill, Cherhill Down, Pewsey Down, Martinsell, Adam's Grave. The tops of the hills allow expansive long distance views which are valued for their openness, naturalness and absence of (human) interruption. |
| **Other Values**<br>• **Natural:** This Open Downlands contain the largest area of designated chalk grassland within the AONB, with some 15 SSSIs covering approximately 5% of the area. The designated chalk grassland is mainly distributed towards the west although throughout the area chalk grassland survives within small fragmented and isolated blocks on the steep scarp slopes and dry valleys. The open downs also support an important range of farmland birds.<br>• **Cultural:** This landscape perhaps more than anywhere else in England, where prehistoric settlement and landuse can most easily be appreciated. Evidence of the prehistoric survives in the form of prehistoric monuments and field patterns. There are numerous SAM, plus part of the Avebury WHS.<br>• **Recreational:** Linear tracks, byways, green lanes and footpaths cross the landscape including the Ridgeway National Trail plus several long distance bridleway routes. Together these provide an extensive network for informal recreation. Considerable extent of Open Access land relating to areas of chalk downland. |

| Landscape Values |
|---|
| • **Strong artistic and literary associations:** Inspirational landscape reflected in art in literature particular emphasis on 'vast' open remote qualities (see North Wessex Downs Technical Report). |
| **Summary of Landscape Values:** The North Wessex Downs AONB, a nationally designated and valued landscape. The Open Downland landscape is highly valued for its remote, open character and sense of peacefulness. These qualities are enjoyed from a large number of viewpoints, where the open, expansive landscape and absence of built interruptions is particularly valued. |

## LANDSCAPE SENSITIVITY

In the following table the inherent sensitivity of each key characteristic has been identified to give an overall understanding of the intrinsic sensitivities of the Open Downland Landscape Type to wind turbine developments.

### Table 1.2: Landscape Sensitivity

| Key Characteristics | Sensitivities |
|---|---|
| **Remoteness and Tranquillity**<br>• Overall a very strong sense of remoteness and isolation – a result of the elevated, open and spacious topography, lack of settlement, subtly receding horizons and expansive views.<br>• The remote heart and core of the North Wessex Downs. | **Sensitivities:** The Open Downlands provide a reservoir of remoteness and tranquillity – one of the AONB's most important characteristics. It is considered that the introduction of vertical 'industrial' moving features would punctuate the open, expansive landscape and alter the perception of a remote and tranquil and essentially 'natural' landscape. Additional infrastructure would similarly have a disrupting influence. These special attributes are therefore highly sensitive. |
| **Scale and Enclosure**<br>• A simple, open and spacious landscape accentuated by vast skies.<br>• Open, expansive views to strong sweeping skylines. | **Sensitivities:** The simple open large scale landscape could, in theory, be appropriate for turbine development. However, there is potential for a vertical development to appear lost and ungrounded in this open large-scale landscape. The strong sweeping skylines and horizon ridges that are fundamental to the character of the Open Downland would be interrupted by the imposition of vertical features. Similarly requirement for fencing or security structures would be not relate to the open, expensive character. |

| Key Characteristics | Sensitivities |
|---|---|
| **Landform**<br>• Defined by the elevation, the open downland rises to heights of 200-300+m AOD.<br>• An open, smoothly rolling landform with notable gently rounded or flat top summits- a classic chalk landform.<br>• Dissected by a network of dry valleys and long sinuous steep scarps – appearing as a series of skyline ridges.<br>• The dramatic landscape created by the underlying chalk rocks is one of the defining features of the AONB. | **Sensitivities:** The landform of smooth flowing ridges and scarps is reinforced by the uniform cover of close-cropped grass or arable crops; it forms a consistent and strong feature. The disruption caused by location of a vertical structure turbine and associated infrastructure such as pylon lines would be pronounced. Ridgelines, summits, steep scarps of this classic chalk landform are particularly sensitive. |
| **Land Cover Pattern**<br>• Dominated by intensively managed arable farmland.<br>• The uniform cropped grass or cereals reveal the subtle curves and undulations of the landform.<br>• Few hedgerows and virtual absence of woodland except for occasional linear shelterbelts and distinctive beech clumps crowning the summits.<br>• Varied field pattern including 'ladder' fields and larger rectangular fields.<br>• Fragmented and isolated blocks of chalk grassland survive along the steep scarp slopes and dry valley sides. | **Sensitivities:** Although the arable farmland itself is not inherently sensitive, this is a smooth uninterrupted landscape with the absence of trees and woodland cover enhancing visibility. The introduction of any vertical feature would be particularly prominent; the creation of screening cover would not be appropriate in the fundamentally open landscape. For these reasons the land cover is considered to be sensitive. The remnant chalk grassland and areas with potential for habitat creation are also highly sensitive. |
| **Settlement**<br>• Sparsely populated with remote settlements (isolated farms or small hamlets).<br>• Equestrian establishments associated with the racehorse industry with horse gallops are a distinctive feature.<br>• Traditional farm buildings include timber framed weather-boarded aisled barns, plus large-scale modern buildings. | **Sensitivities:** The Open Downland is characterised by its remote character, sparse population and general absence of settlement and built structures. Turbine development would add a dominant built element within this landscape, which is perceived as largely 'undeveloped'. For these reasons it is considered to be highly sensitive. |

| Key Characteristics | Sensitivities |
|---|---|
| **Landmarks/Important Landscape Features**<br>• A wealth of archaeology including dramatic and highly visible prehistoric monuments (long and round barrows).<br>• Distinctive sarsen stones.<br>• Beech clumps crown the summits forming prominent and highly visible landmarks. | **Sensitivities:** The barrows and hillforts have a strong physical and visual expression in the Open Downland landscape with clear relationships between individual sites on the skyline and ridges. Not only are such features intrinsically sensitive to development, their setting and the relationship between features could also be interrupted and disrupted by turbine development. |
| **Prominent Built Structures**<br>• Characterised by the absence of built structures apart from occasional farm units and equestrian buildings. | **Sensitivities:** The location of a vertical structure would result in the introduction of a modern built vertical element into a landscape largely devoid of such intrusions. Although this would allow a turbine to form a focal point in its own right without visual confusion with existing structures, it is considered more important to conserve the uninterrupted 'empty' character of the open downland landscape which is one of the defining features of the AONB. |
| **Skyline**<br>• Prominent ridges and strong, sweeping skylines.<br>• Subtly receding horizons with open and expansive views.<br>• Prehistoric monuments (long and round barrows) are typically visible on the skyline.<br>• Beech clumps frequently crown summits. | **Sensitivities:** The smooth, open skyline and receding horizon ridges are one of the key features of the landscape type. A vertical structure could interrupt the skyline. The open character of the landscape enhances visibility, allowing views to distant skylines. The skylines are therefore highly sensitive. |
| **Internal Views**<br>• Open, expansive long distance views.<br><br>**Views and Connections with Adjacent Landscapes**<br>• Views from the River Valleys, Downland with Woodland and Downs Plain and Scarp to the Open Downland ridgelines and reciprocal views back.<br>• Spectacular views from high points on the scarps out across the surrounding lower-lying landscapes. | **Sensitivities:** The elevated and open character of this landscape type makes its ridgelines particularly visible from adjacent landscapes, notably the River Valleys, Downs Plain and Scarp and Downland with Woodland. The Open Downland is the essence of the AONB landscape and views to the downland ridges are therefore highly sensitive Views from the high points in this landscape out across the adjacent landscapes are also sensitive to intrusive structures which could impact on the perception of remoteness and tranquillity. |

**Summary of Visual Sensitivity:** This is an open landscape of close grazed grass or arable crops with long distance, uninterrupted views, within which any form of vertical development would be highly visible. Of particular high sensitivity is the smooth open skyline and receding skyline ridges which are one of the key characteristics of the North Wessex Downs. The elevated and open character also makes the downland ridges highly visible from other adjacent landscape types and in views to the AONB. **Overall Visual Sensitivity: High.**

**Summary of Landscape Character Sensitivity:** The majority of the Open Downland characteristics are sensitive to the introduction of turbines and associated infrastructure. The fundamental sensitivity relates to the importance of the Open Downland as an essentially 'empty' remote and tranquil landscape, combined with the open expansive views. The imposition of a tall moving structure would have a major impact on the perception of the landscape. Further intrinsically sensitive characteristics include the chalk grassland and the site and setting of historic monuments. **Overall, Landscape Character Sensitivity** is judged to be **High**.

## CONSTRAINTS TO WIND TURBINE DEVELOPMENT WITHIN THE OPEN DOWNLAND LANDSCAPE TYPE

The following table considers both the landscape values and sensitivities, identified above, to indicate the constraints to wind turbine development within the Open Downland landscape type.

### Table 1.3: Summary Table indicating Constraints to Wind Turbine Development in the Open Downland Landscape Type

| Summary of Landscape Values | Summary of Sensitivities | | Constraints to Turbine Development |
|---|---|---|---|
| | **Visual** | **Landscape Character** | |
| **Highly valued** for its remote, open character and sense of peacefulness. These qualities are enjoyed from a large number of viewpoints, where the open, expansive landscape and absence of built interruptions is particularly valued. | **High,** due to the essentially open landscape and long distance, uninterrupted views, within which any form of vertical development would be highly visible. Of particular high sensitivity is the smooth open skyline and receding skyline ridges which are one of the key features of the North Wessex Downs. The downland ridges are highly visible from adjacent landscape types and in views to the AONB. | **High,** the majority of the Open Downland characteristics are sensitive to the introduction of turbines and associated infrastructure. The fundamental sensitivity relates to the importance of the Open Downland as an essentially 'empty' remote and tranquil landscape, combined with the open expansive views. Further intrinsically sensitive characteristics include the chalk grassland and the site and setting of historic monuments. | **Highly constrained** |

## SUMMARY OF CONSTRAINTS IN RELATION TO DIFFERENT TYPES OF TURBINE DEVELOPMENT

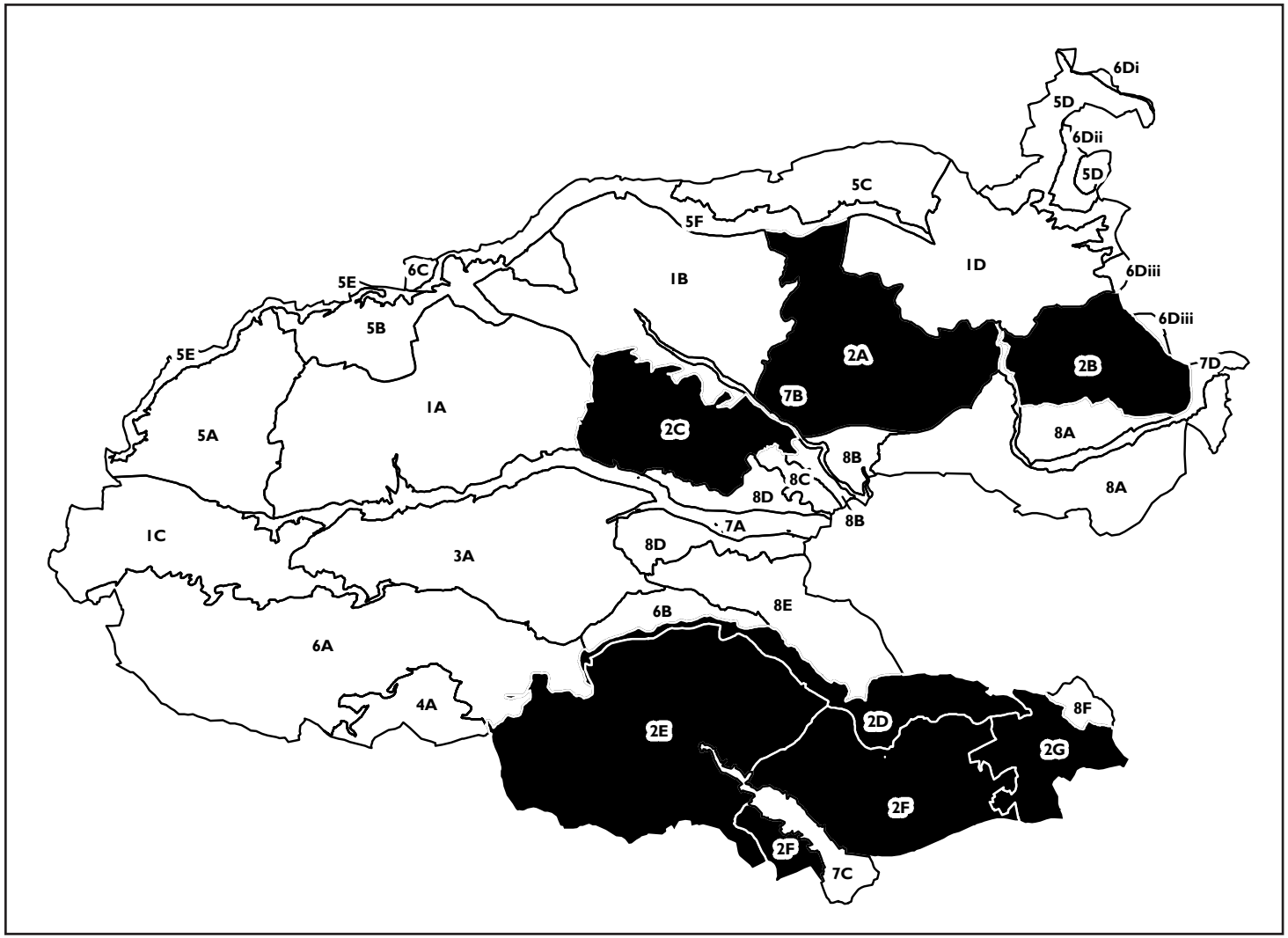
**Height Class 1 (25 – 40m) Single Turbine:** The Open Downland landscape type is judged to be **highly constrained** in relation to a HC1 turbine development. They key constraints to a HC1 turbine development are:

- the strong perception of remoteness and tranquillity strongly associated with the Open Downland;
- the essentially open landscape with an absence of enclosing elements;
- expansive, uninterrupted 'natural' views;
- strongly articulated classic chalk landform of scarps, rolling summits and ridges;
- the open ridges, skylines and successive horizons;
- the historic features notably the Bronze Age round barrows and Iron Age hillforts which follow the lines of ridges and the interrelationship between historic features;
- the 'empty' undeveloped character, sparse settlement and general absence of built structures;
- the surviving chalk grassland and opportunities to reinstate and link sites;
- recreational opportunities and areas of open access associated with chalk downland.

**Height Class 2 (40 – 80m) and Height Class 3 (80m) Single Turbine and Groups (2-4 turbines):** For the reasons noted above, the Open Downland landscape type is also **highly constrained** to the location of any form of height class 2 or height class 3 turbine.

Note: Given the above constraints and the very high sensitivity of the Open Downland landscape; it is likely to be similarly constrained in relation to developments below the HC1 threshold (i.e. <25 m) unless these are of a small scale and integrated with existing built structures. An individual site investigation to assess specific sensitivities and constraints to this scale of development would need to be made on a case-by-case basis. Such investigation should also pay particular note to the cumulative impact of such structures.

# 2. Downland with Woodland




# LANDSCAPE TYPE 2: DOWNLAND WITH WOODLAND

## LANDSCAPE CHARACTER OVERVIEW

The Downland with Woodland landscape type encompasses the downlands found in the east and southern part of the AONB, where extensive deposits of Clay-with-Flint overlie the Chalk. This is a landscape defined by contrast of open rolling downland and enclosed woodland. The landform is typical of chalk scenery with a strongly rolling topography, rising to gently domed hilltops and dissected by river valleys. Sinuous woodlands cling to the steep slopes and, with the interconnected hedgerow network, create a strong framework and sense of enclosure in some areas.

## Key Characteristics

### Remoteness and Tranquillity

- Overall, this is a deeply rural landscape, with a strong sense of peacefulness and tranquillity.
- In some areas, there are high traffic levels on the rural lane network, plus some areas with a greater density of main roads, which have diluted the degree of tranquillity.

### Scale and Enclosure

- A medium to large scale landscape with a contrasting sense of enclosure from open rolling downland to enclosed woodland.

### Landform

- Typical of chalk scenery with a strongly rolling topography, rising to gently domed hilltop and dissected by dry river valleys.
- Notable scarp and dipslope topography – more articulated in some areas compared to the expansive landform of the Open Downlands.
- Summits often subdued by the Clay with Flint capping.

### Land Cover Pattern

- Diverse range of woodlands including shelterbelts, wooded pasture, parkland, copses and ancient and secondary semi-natural woodland.
- Sinuous woodlands cling to steep slopes.
- Interconnected hedgerow network.
- Wide range of field patterns – assarted fields, large wavy sided fields and field bounded by tracks and roads – all typical of medieval enclosure.
- Areas of more open landscape dominated by Parliamentary enclosure fields.

- Intricate network of rural lanes, including characteristic sunken lanes overhung by deep grassy banks and woodland.
- Numerous historic parks and designed landscapes, many originating as medieval deer parks.

**Settlement**

- Small, attractive settlements dispersed throughout the landscape type (greater frequency and density of settlement compared with the Open Chalk Downland landscape type).
- Numerous isolated farms.
- Small clustered hamlets and villages (nucleated and linear) shelter in the folds of the chalk as well as some more exposed hilltop and ridge locations.
- Many settlements characterised by a church and/or manor house.
- Settlements are connected by an intricate network of narrow winding lanes.

**Internal Landmarks/Important Landscape Features**

- Numerous Bronze Age and Iron Age hill forts situated on prominent hilltops.

**Prominent Built Structures**

- Prominent lines of pylons in places.
- Radio/mobile phone masts are infrequent but striking vertical structures.
- Occasional water towers attached to settlements.
- Church spires frequently punctuate tree canopies.

**Skyline**

- Variable skyline ranging from smooth open downland summits to wooded horizons.
- Where scarp landforms occur, the scarp ridges are particularly striking.

**Views and Connections with Adjacent Landscapes**

- In the open, arable areas, views into the adjacent Open Chalk Downland are clear and the change in character is subtle and transitional.
- Certain areas afford a strong visual connection to the River Valleys – the Downland with Woodland landscape forming the prominent valley sides.
- Clear views can be obtained across the Vale of Pewsey and Shalbourne Vale.
- Views into adjacent landscapes are frequently filtered and restricted by the woodland cover.
- Views across and into the Lowland Mosaic landscape type

The following tables consider the key values and characteristics of the Scarp landscape type taken from the North Wessex Downs AONB – Integrated Landscape Character Assessment (2002) with additional observations included specifically related to wind turbine development. It also incorporates the outcomes of a stakeholder participation exercise held at the AONB Annual Forum in November 2004.

The information on landscape values and sensitivity is considered together to identify constraints to wind turbine development in the AONB.

## LANDSCAPE VALUE

In the following table the key values associated with the Downland with Woodland landscape are noted.

### Table 2.1: Downland with Woodland Landscape Value

| **Landscape Values** |
|---|
| **Stakeholder Values (AONB Annual Forum Workshop Nov. 2004)**<br>The most valued perceptual elements are:<br>• Peaceful, tranquil and secluded landscape and contrast with open chalk summits<br>The most valued physical and cultural elements include:<br>• Ancient and secondary semi-natural woodland<br>• Chalk grassland remnants<br>• Bronze Age and Iron Age monuments<br>Other valued elements noted include:<br>• Local wildlife<br>• Ancient trackways<br>• Impression of space and emptiness |
| **Main Valued Views (AONB Annual Forum Workshop Nov. 2004)**<br>A large number of local views were noted from the network of footpaths, bridleways and small winding roads. Extensive views to and from the scarp slopes of Watership Down, Beacon Hill (character area 2D) were also noted. |
| **Other Values**<br>• **Cultural:** The landscape has a number of Bronze Age and Iron Age Hillforts. There are also numerous historic houses and parklands forming important visitor attractions.<br>• **Natural:** This landscape contains two of the largest chalk grassland sites in the AONB. The extensive areas of woodland cover, including ancient semi-natural woodland are also valuable habitats.<br>• **Recreational:** This landscape is an important recreational resource with a high density of footpaths, bridleways and byways. c |

**Summary of Landscape Values:** The North Wessex Downs is a nationally designated and valued landscape. The Downland with Woodland is especially valued for it sense of peacefulness and seclusion with the wooded landscapes contrasting strongly with more open chalk summits. The combination of landform and screening woodland cover also combine to create an impression of space and emptiness within which settlement and development, although present, are not always visible. Also valued are the Bronze Age and Iron Age monuments that have a strong presence in the landscape, historic houses and parkland plus the woodland and chalk grassland habitats. The dense rights of way network allow people to experience and enjoy the local landscape at 'close range'**.**

## LANDSCAPE SENSITIVITY

In the following table, the inherent sensitivity of each key characteristic has been identified to give an overall understanding of the intrinsic sensitivities of the Downland with Woodland landscape type to wind turbines.

### Table 2.2: Landscape Sensitivity

| Key Characteristics | Sensitivities |
|---|---|
| **Remoteness and Tranquillity**<br>• Overall, this is a deeply rural landscape, with a strong sense of peacefulness and tranquillity.<br>• In some areas, there are high traffic levels on the rural lane network, plus some areas with a greater density of main roads which have diluted the degree of tranquillity. | **Sensitivities:** Much of this landscape remains deeply rural and tranquil. These parts of the Downland with Woodland landscape are therefore highly sensitive to the introduction of built form and movement of turbines and their associated infrastructure. The landscape is sensitive to further dilution of these special perceptual characteristics. |
| **Scale and Enclosure**<br>• A medium to large scale landscape with a contrasting sense of enclosure from open rolling downland to enclosed woodland.<br>• Intricate network of rural lanes, including characteristic sunken lanes overhung by deep grassy banks and woodland. | **Sensitivities:** The medium scale and contrasting sense of enclosure created by the landform and woodland cover may allow some lower heights of turbine to be concealed or locally screened within the landscape. The landscape type is more sensitive to taller structures, which would protrude above the tree line and form highly visible features particularly in the context of long views from the summits. The more open rolling downland summits, due to the absence of enclosing elements, are also sensitive, as are the more intimate, intricate landscapes of the valleys and folds in the chalk where a turbine could appear out of scale. |
| **Landform**<br>• Typical of chalk scenery with a strongly rolling topography, rising to gently domed hilltop and dissected by dry river valleys.<br>• Notable scarp and dipslope topography – more articulated in some areas compared to the | **Sensitivities**: The landform is a strong feature of this landscape type. A vertical element punctuating the rounded, rolling terrain could dilute the continuity of the landform. The scarp slopes, ridgelines and prominent landform features (such as Walbury Hill) are particularly sensitive, as are the crests and slopes which enclose the intersecting river valleys. In addition, the strongly articulated topography could create a varying visual relationship between turbines (variable heights of hubs and blade tips) and therefore heightens sensitivity to any |

| Key Characteristics | Sensitivities |
|---|---|
| expansive landform of the Open Downlands.<br>• Summits often subdued by the Clay with Flint capping. | development involving more than one single turbine. |
| **Land Cover Pattern**<br>• Diverse range of woodlands including shelterbelts, wooded pasture, parkland, copses and ancient and secondary semi-natural woodland. Sinuous woodlands cling to steep slopes.<br>• Presence of tracts of chalk grassland<br>• Interconnected hedgerow network.<br>• Wide range of field patterns – assarted fields, large wavy sided fields and field bounded by tracks and roads – all typical of medieval enclosure plus areas of more open landscape dominated by Parliamentary enclosure fields.<br>• Intricate network of rural lanes, including characteristic sunken lanes overhung by deep grassy banks and woodland.<br>• Numerous historic parks and designed landscapes, many originating as medieval deer parks. | **Sensitivities:** The hedgerow network and, particularly, the woodland cover provide a framework for and potential screening of a turbine at the lower end of the height range. Taller structures would be prominent above the tree line particularly in the context of long views that can be obtained from the more open summits and sensitivities are therefore greater. Other sensitive land cover elements include the semi natural woodland, chalk grassland and the site and setting of the historic parks and designed landscapes. In addition to their sensitivity to turbines these land cover elements would also be sensitive to the creation of new access track, underground cabling and/or pylons, which could be required in relation to larger developments. |
| **Settlement**<br>• Small, attractive settlements dispersed throughout the landscape type (greater frequency and density of settlement compared with the Open Chalk Downland landscape type).<br>• Settlements shelter in valleys and folds of the chalk as well as some more elevated hilltop and ridge locations.<br>• Numerous isolated farms.<br>• Many settlements characterised by a church and/or manor house.<br>• Settlements are connected by an intricate network of narrow winding lanes. | **Sensitivities:** The settlements, although small in scale, would not be dominated by single turbine of a lower height range. However greater turbine heights could be overpowering in relation to the size and scale of settlements found within the Downland with Woodland landscape type, and therefore sensitivities are higher. A key sensitivity relates to the setting of villages and relationship to landmarks such as views to church spires/distinctive built features. |
| **Landmarks and Prominent Landscape Features** | **Sensitivities:** The characteristic barrows and hill forts and their settings on prominent hilltops |

| Key Characteristics | Sensitivities |
|---|---|
| • Numerous Bronze Age barrows and Iron Age hill forts situated on prominent hilltops. | are highly sensitive. The visual relationship between these landmark features is also sensitive. |
| **Prominent Built Structures**<br>• Prominent lines of pylons in places.<br>• Radio/mobile phone masts are infrequent but striking vertical structures.<br>• Occasional water towers attached to settlements.<br>• Church spires frequently punctuate tree canopies. | **Sensitivities:** Areas where masts, pylons etc. are already present are especially sensitive to the siting of further vertical structures such as wind turbines and associated infrastructure (including pylons), which have the potential to create visual clutter. The setting of the village churches is a key consideration and the views to these landmarks are sensitive. |
| **Skyline**<br>• Variable skyline ranging from smooth open downland summits to wooded horizons.<br>• Where scarp landforms occur, the scarp ridges are particularly striking. | **Sensitivities:** In some areas the scarp slopes and ridgelines create a particularly prominent and striking skyline. Here, the construction of a vertical feature would punctuate and interrupt the strong landform/skyline. The scarps and ridges are therefore highly sensitive. |
| **Internal Views**<br>• Varied views relating to the scale, enclosure and land cover. Including long range open views from summits and close range local views. In long views the combination of topography and land cover frequently conceals settlement and development and this appears as a very rural 'undeveloped' landscape. | **Sensitivities:** In internal views the combination of topography and land cover frequently conceals settlement and development creating a perception of a very rural 'undeveloped' landscape in long views. Within this context the construction of tall development breaching the tree cover and imposing on the skyline could change this perception of 'ruralness'**.** There are fewer sensitivities to development at the lower end of the height range as the landform and tree cover limits and buffers local 'close range' views. |
| **Views and Connections with Adjacent landscapes**<br>• Views into adjacent landscapes are frequently filtered and restricted by the woodland cover.<br>• In the open, arable areas, views into the adjacent Open Chalk Downland are clear and the change in character is subtle and transitional.<br>• Certain areas afford a strong visual connection to the River Valleys – the Downland with Woodland landscape forming the prominent valley sides.<br>• Clear views can be obtained across the Vales.<br>• Key views out include those from Walbury Hill and Beacon Hill (in Character area 2D) | **Sensitivities:** The transition between the Open Downland and Downland with Woodland landscape types is subtle and there is clear intervisibility between them. Views to a tall development (and associated infrastructure) from the Open Downland could have an effect on the perception of remoteness and tranquillity associated with this landscape type. The views to and from Open Downland are therefore sensitive. In contrast, the river valleys are of a much more enclosed, intimate scale. Here, a tall structure (and associated infrastructure) on the valley crest could be out of scale and overpowering in views. The views to and from the River Valleys are therefore also highly sensitive.<br><br>Nevertheless, there are many areas of the landscape that cannot be perceived from surrounding areas (due to the amount of woodland and variable landform which greatly limits and buffers views) and there are lower sensitivities to turbines at the lower end of the height range. |

| Key Characteristics | Sensitivities |
|---|---|
| **Summary of Visual Sensitivity:** The combination of landform and land cover in the Downland with Woodland can effectively filter and buffer local views. However, a key visual sensitivity is the perception of a rural 'undeveloped' landscape within long distance views from the open summits. Also sensitive are the views to and from the remote Open Downlands, and the views to and from the more intimately scaled intersecting river valleys. Further visual sensitivities include the relationship between historic landscape features and the setting of the villages with landmark features such as church spires. **Overall Visual Sensitivity: Moderate, with higher sensitivities relating to attributes noted above.**<br><br>**Summary of Landscape Character Sensitivity:** There are a number of characteristics, which are sensitive to the introduction of a turbine and associated infrastructure. These are the skyline (open summits and ridgelines being particularly sensitive) and the overriding tranquil and peaceful character of the landscape. Further sensitive attributes include the semi-natural woodland, chalk grassland, historic parks and designed landscapes and their setting, and the historic monuments that characterise the open ridges. **Overall Landscape Character Sensitivity: High.** | |

## CONSTRAINTS TO WIND TURBINE DEVELOPMENT WITHIN THE DOWNLAND WITH WOODLAND LANDSCAPE TYPE

The following table considers both the landscape values and sensitivities, identified above, to indicate the constraints to wind turbine development within the Downland with Woodland landscape type.

### Table 2.3: Summary Table indicating Constraints to Wind Turbine Development in the Downland with Woodland Landscape Type

| Summary of Landscape Values | Summary of Sensitivities | | Constraints to Turbine Development |
|---|---|---|---|
| | Visual | Landscape Character | |
| **Highly valued** for its sense of peacefulness and seclusion and impression of space and emptiness. Also valued are the Bronze Age and Iron Age monuments, historic houses and parkland plus the woodland and chalk grassland habitats. The dense rights of way network allow people to experience and enjoy the local landscape at 'close range'**.** | **Moderate,** with the combination of landform and land cover filtering and buffering views. However, within this overall judgement there are a number of key visual sensitivities. | **High,** with the skyline (open summits and ridgelines) and the overriding tranquil and peaceful character of the landscape being particularly sensitive. The landscape also includes a number of further sensitive attributes. | **Moderately - Highly constrained** |

## SUMMARY OF CONSTRAINTS IN RELATION TO DIFFERENT TYPES OF TURBINE DEVELOPMENT

**Height Class 1 (25 – 40m) Single Turbine:** The Downland with Woodland landscape type is judged to be **moderately constrained** in relation to a HC1 turbine development. The moderate judgement, relates to the potential for the landform and land cover to buffer and filter local views to this height class. They key constraints to a HC1 turbine development are:

- more open downland areas and summits characterised by large tracts of uninterrupted, rolling terrain where HC1 turbine would be a prominent intrusion;

- the distinctive landforms ( such as Walbury Hill, Beacon Hill and Watership Down) including the scarps (ridges and slopes) and summits and their sensitive skylines which would be interrupted by a HC1 turbine;
- the site and setting, of important historic features in the landscape;
- the views to and setting of village land marks such as the distinctive church spires;
- existing vertical elements in the landscape (such as pylons and masts) due to the potential for cluttering on the skyline;
- the visual relationship with the sensitive landscapes of the adjacent Open Downlands, particularly in the context of long open views, where a turbine development could impinge on the special qualities of remoteness associated with this landscape type;
- the relationship with and views into and from the chalk river valleys that cut through the landscape type;
- areas of chalk grassland habitat or in areas where there is the potential for linking chalk grassland sites;
- pattern and character of semi-natural woodland and linking hedgerows.

**Notes on Cumulative Development:** It is judged that this landscape could accommodate more than one single turbine of height class 1. This is due to the large area of land covered by the landscape type (thus the ability to site turbines far from one another to avoid a sense of repetition of elements and prominence in the landscape).

**Height Class 2 (40 – 80m) Single Turbine:** The Downland with Woodland is judged to be **moderately – highly constrained** in relation to a single HC2 turbine development. Given the landscape context and relationship with the adjacent Open Downlands it is considered that developments at the upper end of the height class will not be appropriate. A particular constraint relates to the potential for a tall structure to rise clearly above the tree line and form a very visible 'intrusive' development within an area that is otherwise perceived, in long views, as rural and 'undeveloped'. The constraints outlined above in relation to a HC1 turbine also apply; with the greater height and potential visibility of HC2 development requiring particular attention to the following:

- the relationship with the Open Downlands where, even long distance views to a HC2 turbine could impinge on the special qualities of remoteness associated with this landscape;
- the perception of the Downland with woodland as a tranquil, highly rural area with the land cover and landform effectively concealing settlement and development in long views. Even at the lower end of the height class a HC2 turbine would rise above the tree line and form a prominent development and potentially change the perception of ruralness;
- the size, scale and form of the settlements associated with the Downland with Woodland landscape type, which would be overpowered by a HC2 turbine in proximity.

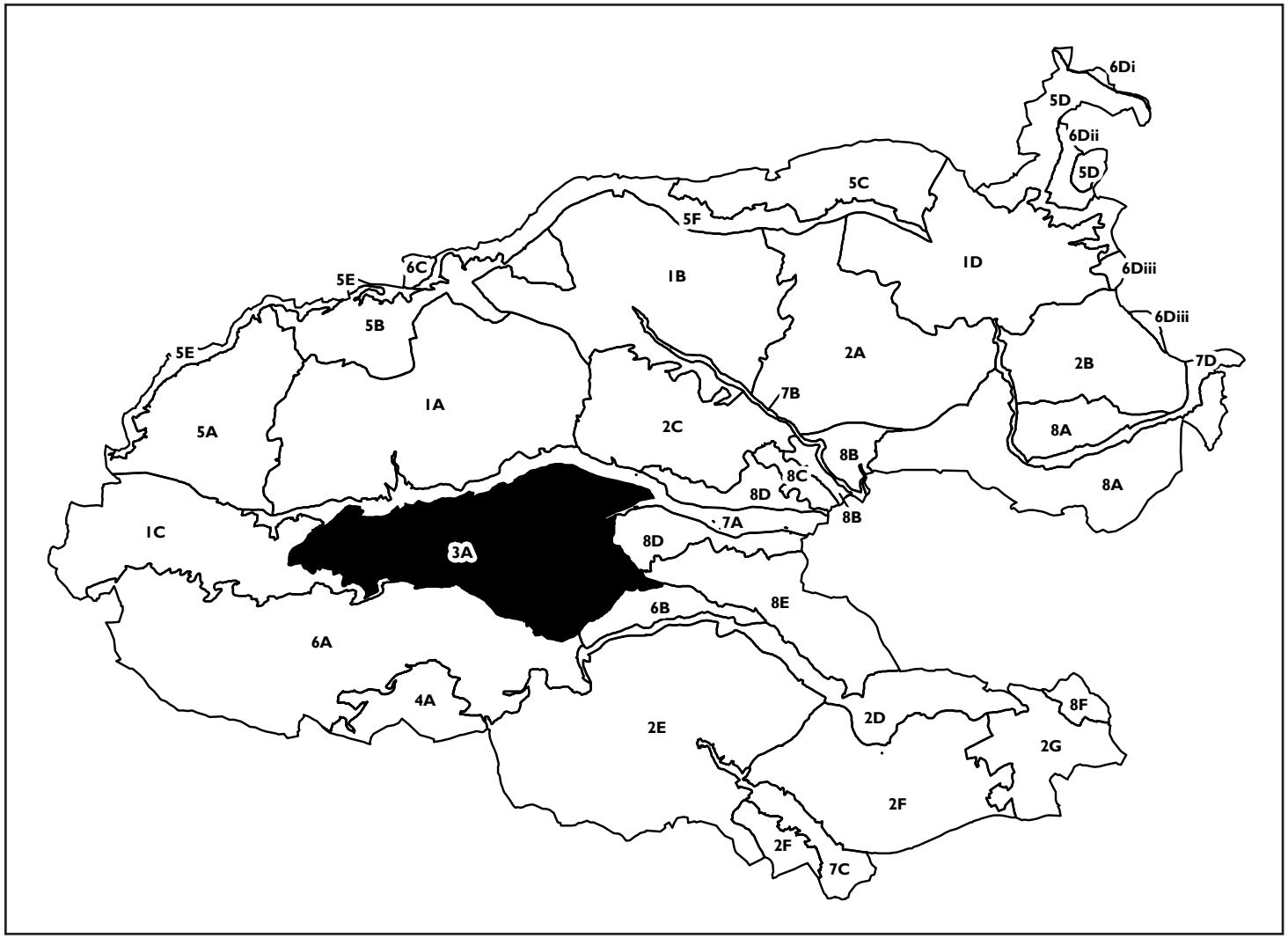
**Notes on Cumulative Development:** It is judged that the Downland with Woodland landscape could accommodate more than one single turbine at the lower end of height class 2. This is due to the large area of land covered by the landscape type (thus the ability to site turbines far from one another to avoid a sense of repetition of elements and prominence in the landscape). However, there is a very delicate balance to be achieved and decisions will need to be made on a case-by- case basis. The essence of the Downland with Woodland as a rural tranquil landscape must be conserved. Single HC2 developments are therefore highly constrained and should form an exception rather than a characteristic element of the landscape.

**Height Class 2 (40 - 80m) Group of 2 – 4 Turbines:** Given visual and landscape sensitivities outlined above it is considered that group of HC2 turbines would form a highly visible development of considerable size and mass. In addition to the constraints noted above, a group of turbines could particularly affect the sensitive relationship with the Open Downlands and have an impact of the perception of the Downland with Woodland as a tranquil, rural landscape. In summary, the Downland with Woodland is considered to be **highly constrained** in relation to a group of HC2 turbines.

**Height Class 3 (80m+) Single and Group:** For the reasons noted above, the Downland with Woodland landscape type is also considered to be **highly constrained** in relation to either a single or group of HC3 turbines.

Note: the Downland with Woodland landscape is likely to have fewer constraints to developments below the HC1 threshold (i.e. <25 m). An individual site investigation to assess specific sensitivities and constraints to this scale of development would need to be made on a case-by-case basis. Such investigation should also pay particular note to the cumulative impact of such structures.

# 3. Wooded Plateau




# LANDSCAPE TYPE 3: WOODED PLATEAU

## LANDSCAPE CHARACTER OVERVIEW

The Wooded Plateau landscape occurs in one location in the western part of the AONB and is defined as a single character area: the Savernake Plateau. It is distinguished by its dense continuously wooded character, with boundaries approximately representing the extent of the medieval Royal Forest of Savernake.

## Key Characteristics

**Remoteness and Tranquillity**

- An essentially peaceful, rural and secluded character.

**Scale and Enclosure**

- A predominantly intimate rural wooded landscape, which becomes larger scale and more open where land is in arable cultivation.

**Landform**

- High plateau of Upper Chalk overlain by thick deposits of Clay-with-Flint. Martinsell Hill is distinctive high point (289m) with dramatic views out across Pewsey Vale.
- Landform of the higher land is typical of the underlying chalk with rolling downland dissected by dry valleys.
- Plateau dips gently down to the east towards Froxfield where it is crossed by the narrow valley of the River Dun and Kennet and Avon Canal.

**Land Cover Pattern**

- Distinguished by its dense, continuously wooded character including ancient wood pasture, semi-natural woodland blocks and beech and oak plantation of Savernake Forest and West Wood plus some more open arable dominated areas occur to the east.
- Extensive areas of ancient woodland are designated as a SSSI consisting of relict oak wood pastures and 18th and 19th century beech plantation.
- Presence of historic parkland and formal designed landscapes at Tottenham Park and Littlecote Park.
- Small areas of remnant chalk grassland confined to scarp slopes on the southern boundary, plus recent relict areas of heathland commons on more acidic clays and gravels.

- Open, modern landscape of large, regular fields to the South and south-west of Marlborough and around Rudge and Froxfield. West of Hungerford boundaries are more sinuous.

**Settlement**

- Remote 'uninhabited' western plateau with a concentration of villages in the east of the area, in the valley of the River Dun (including Great Bedwyn and Little Bedwyn).
- The lack of settlement reflects the extensive woodland area and pattern of land ownership – this is one of the key differences to the Downland with Woodland landscape type.

**Internal Landmarks/Important Landscape Features**

- Distinctive, visible archaeological elements including a Neolithic long barrow and several bronze age round barrow, linear earthworks and a prominent earthwork enclosure.
- Wansdyke (one of the best known early Saxon land boundaries in the country) cuts roughly east to west through the area. Bedwyn Dyke survives as a fragmentary earthwork. Icknield Way (Roman road) although only visible in parts.
- Savernake Forest, plus important historic parkland with associated veteran trees and designed landscape features (Capability Brown).
- Flint churches are prominent landmarks along the Dun Valley.

**Prominent Built Structures**

- Flint churches are prominent landmarks.
- A4 cuts east-west through the area.
- Kennet and Avon Canal with a wealth of associated industrial archaeology including the distinctive brick-built Bruce Tunnel.

**Skyline**

- Extensive woodland cover limits views and the skyline is not a prominent feature.

**Views and Connections with Adjacent Landscapes**

- This area forms an important skyline to the Kennet Valley and Vale of Pewsey with some dramatic views out across adjacent low-lying areas.

The following tables consider the key values and characteristics of the Wooded Plateau landscape type taken from the North Wessex Downs AONB – Integrated Landscape Character Assessment (2002) with additional observations included specifically related to wind turbine development. It also incorporates the outcomes of a stakeholder participation exercise held at the AONB Annual Forum in November 2004

The information on landscape values and sensitivity is used to identify constraints to wind turbine development in the AONB.

## LANDSCAPE VALUE

In the following table the key values associated with the Wooded Plateau landscape are noted.

### Table 3.1: Wooded Plateau Landscape Value

| Landscape Values |
|---|
| **Stakeholder Values (AONB Annual Forum Workshop Nov 2004)**<br>The most valued perceptual elements are:<br>• Quiet, rural and secluded character<br>• Remote, 'uninhabited' western plateau<br>The most valued physical and cultural elements include:<br>• Ancient trees and outstanding lichen flora of Savernake Forest<br>• Extensive and continuous woodland cover<br>• Good access network and rights of way<br>Other valued elements noted include:<br>• Wildlife/biodiversity<br>• Bluebells<br>• Glades and rides – open and closed canopy |
| **Main Views (AONB Annual Forum Workshop Nov 2004)**<br>A number of viewpoints were noted from which the special qualities of the landscape can be experienced. Key views relate to the formal designed linear rides and avenues such as the Grand Avenue and Column Ride. Other important viewpoints include high point on the scarp such as Martinsell Hill and Wilton Windmill which offer extensive views out (across Pewsey Vale) and views from local byways and roads. |
| **Other Values**<br>• **Natural:** Extensive woodland habitats – predominantly ancient woodland. Savernake Forest SSS1 (900 ha) including ancient woodland, oak wood pasture, and 18th and 19th century beech and oak plantations.<br>• **Cultural:** Numerous Scheduled Ancient Monuments plus important registered parks/gardens at Tottenham Park and Littlecote Park.<br>• **Recreational:** Excellent recreational opportunities associated with Savernake Forest plus other areas of publicly accessible woodland. Recreation activity associated with the Kennet and Avon Canal route (Crofton Beam Engine). Sections of the Severn and Thames National Cycle Route. |
| **Summary of Landscape Values:** The North Wessex Downs AONB is a nationally designated and valued landscape. The Wooded Plateau is particularly valued for its peaceful, rural and secluded character and its historic landscape features including the ancient woodland, designed parkland and features such as the Kennet and Avon Canal. It also offers extensive opportunities for recreational access allowing these special qualities to be enjoyed. |

## LANDSCAPE SENSITIVITY

In the following table the inherent sensitivity of each key characteristic has been identified to give an overall understanding of the intrinsic sensitivities of the Wooded Plateau Landscape Type to wind turbine development.

### Table 3.2: Landscape Sensitivity

| Key Characteristics | Sensitivities |
|---|---|
| **Remoteness and Tranquillity**<br>• An essentially peaceful, rural and secluded character. | **Sensitivities:** Much of the landscape retains a peaceful, rural and secluded character. These characteristics are therefore sensitive to the introduction of built form and movement of turbines and their associated infrastructure. Tall structures would also be on the horizon of or in the view from the more remote Open Downland landscapes. |
| **Scale and Enclosure**<br>• A rural wooded landscape, which becomes larger scale and more open where land is in arable cultivation. Woodland and forestry present on a large scale forming extensive 'blocks' within the landscape. | **Sensitivities:** The contrasting sense of enclosure created by the open arable areas and more enclosed wooded areas may allow some heights of lower turbines to be concealed or locally screened. The landscape is more sensitive to taller structures particularly in the more open areas where they would be very visible especially in relation to the adjacent Open Downland. |
| **Landform**<br>• High plateau of Upper Chalk overlain by thick deposits of Clay-with-Flint. Martinsell Hill is distinctive high point (289m) with dramatic views out across Pewsey Vale.<br>• Landform of the higher land is typical of the underlying chalk with rolling downland dissected by dry valleys.<br>• Plateau dips gently down to the east towards Froxfield where it is crossed by the narrow valley of the River Dun and Kennet and Avon Canal. | **Sensitivities:** The typical chalk landform of rolling downland, dry valleys and scarps is distinctive. Memorable landform elements include the high summits and prominent enclosing ridges above the Vale of Pewsey and Kennet Valley and these are therefore particularly sensitive. The narrow valley of the River Dun is also sensitive to very large scale or groups of tall structures, which would dominate the smaller scale landform. |
| **Land Cover Pattern**<br>• Distinguished by its dense, continuously wooded character including ancient wood pasture, semi-natural woodland blocks and beech and oak plantation of Savernake Forest and West Wood plus some more open arable dominated areas occur to the east.<br>• Extensive areas of ancient woodland are designated as a SSSI consisting of relict oak wood pastures and 18th and 19th century beech plantation.<br>• Presence of historic parkland and formal designed landscapes at | **Sensitivities:** The Wooded Plateau has a large scale land cover pattern with extensive blocks of woodland contrasting with the arable land. The extensive and continuously wooded character provides potential for screening of a turbine at the lower end of the height range. Taller structures would however be prominent above the tree line particularly in the context of long views that can be obtained from the more open summits within the Wooded Plateau and from the adjacent landscapes including the remote Open Downland. There are, in addition, a number of key sensitive land cover elements including pasture, parkland ancient woodland, chalk |

| Key Characteristics | Sensitivities |
|---|---|
| Tottenham Park and Littlecote Park.<br>• Small areas of remnant chalk grassland confined to scarp slopes on the southern boundary, plus recent relict areas of heathland commons on more acidic clays and gravels.<br>• Open, modern landscape of large, regular fields to the south and south-west of Marlborough and around Rudge and Froxfield. West of Hungerford boundaries are more sinuous. | grassland and heathland. |
| **Settlement**<br>• Remote 'uninhabited' western plateau with a concentration of villages in the east of the area, in the valley of the River Dun (including Great Bedwyn and Little Bedwyn).<br>• The lack of settlement reflects the extensive woodland area and pattern of land ownership – this is one of the key differences to the Downland with Woodland landscape type. | **Sensitivities:** While a turbine development would be unlikely to have a direct impact on settlement, it would disturb the 'remote' character of this area created by the absence of settlement. For this reason the Wooded Plateau is considered to be sensitive to the larger forms of turbine development which would be intrusive in the context of an essentially unsettled/undeveloped landscape. |
| **Landmarks/Important Landscape Features**<br>• Distinctive, visible archaeological elements including a Neolithic long barrow and several bronze age round barrow, linear earthworks and a prominent earthwork enclosure.<br>• Wansdyke (one of the best known early Saxon land boundaries in the country) cuts roughly east to west through the area. Bedwyn Dyke survives as a fragmentary earthwork. Icknield Way (Roman road) although only visible in parts.<br>• Savernake Forest, plus important historic parkland with associated veteran trees and designed landscape features (Capability Brown).<br>• Flint churches are prominent landmarks along the Dun Valley. | **Sensitivities:** The landscape type contains a number of important landmarks and prominent landscape features including the earthworks and historic parkland. These features are inherently sensitive to any form of turbine development which would impinge on their site or setting. |
| **Prominent Built Structures**<br>• Flint churches are prominent landmarks.<br>• A4 cuts east-west through the area.<br>• Kennet and Avon Canal with a wealth of associated industrial archaeology including the distinctive brick-built Bruce Tunnel. | **Sensitivities:** The lack of tall built structures means turbines would not contribute to visual clutter in association with other vertical elements. However, the distinctive flint churches are prominent landmarks and views to the churches and their setting are therefore sensitive. |

| Key Characteristics | Sensitivities |
|---|---|
| **Skyline**<br>• Extensive woodland cover limits views and the skyline is not a prominent feature. However, as noted below, the Wooded plateau itself forms an important and distinctive skyline to adjacent lower areas. | **Sensitivities:** The skyline is not a prominent feature and is frequently obscured by woodland cover and therefore it is not considered to be especially sensitive. Nevertheless, within this context local ridges and open summits are important features and are therefore sensitive. The importance of the Wooded Plateau in creating the skyline in relation to the Kennet Valley and Vale of Pewsey should be noted and these form particularly sensitive skyline crests and ridges. |
| **Internal Views**<br>• Generally short, local views framed by woodland cover. Some important channelled views relating to drives and avenues forming part of the designed landscape.<br>**Views and Connections with Adjacent Landscapes**<br>• This area forms an important skyline to the Kennet Valley and Vale of Pewsey with some dramatic views out across adjacent low-lying areas**.**<br>• There is also inter visibility with the Open Downland landscapes of 1A: Marlborough Downs and 1C: Horton Downs | **Sensitivities:** The land cover and landform provide a degree of local screening and hence a turbine of a lower height would not be prominent, except in local views. However, there are a number of extremely visually sensitive relationships with the Kennet Valley, Vale of Pewsey and the Open Downlands. The landform of the Wooded Plateau creates a very distinctive skyline in relation to the lower land of the Vale of Pewsey (6A) and Kennet Valley (7A). The ridges and crests would be dominated by any form of tall development, which would be very imposing in views up/from the vale/valley floor and potentially alter the perception of landscape scale. Similarly, much of the Wooded Plateau is visible from the Open Downlands where even distant views of a moving turbine can impinge of the strong sense of remoteness and tranquillity associated with these landscapes. |

**Summary of Visual Sensitivity:** The combination of landform and land cover on the Wooded Plateau can effectively filter and buffer local views. However, there are also a number of long range views from open summits. Also sensitive are the views to and from the remote Open Downlands, and the visual relationship with the lower lying landscape of the Vale of Pewsey and Kennet Valley, where the Wooded Plateau forms a distinctive skyline and backdrop. **Overall Visual Sensitivity: Moderate, with higher sensitivities relating to attributes noted above.**

**Summary of Landscape Character Sensitivity:** There are a number of characteristics, which are sensitive to the introduction of a turbine and associated infrastructure. These are the skyline (open summits and ridgelines being especially sensitive, particularly where they function as the skyline/backdrop to lower lying land) and the overriding peaceful rural character of the landscape. Further sensitive attributes include the semi-natural woodland, chalk grassland, historic parks and designed landscapes and their setting. **Overall Landscape Character Sensitivity: High**.

## CONSTRAINTS TO WIND TURBINE DEVELOPMENT WITHIN THE WOODED PLATEAU LANDSCAPE TYPE

The following table considers both the landscape values and sensitivities, identified above, to indicate the constraints to wind turbine development within the Wooded Plateau landscape type.

### Table 3.3: Summary Table indicating Constraints to Wind Turbine Development in the Wooded Plateau Landscape Type

| Summary of Landscape Values | Summary of Sensitivities | | Constraints to Turbine Development |
|---|---|---|---|
| | **Visual** | **Landscape Character** | |
| **Highly valued** for its peaceful, rural and secluded character and its historic landscape features including the ancient woodland, designed parkland and features such as the Kennet and Avon Canal. It also offers extensive opportunities for recreational access allowing these special qualities to be enjoyed. | **Moderate** with the combination of landform and land cover effectively filtering local views. Higher sensitivities relate to long range views from open summits and views to and from the remote Open Downlands. The, visual relationship with the lower lying landscape of the Vale of Pewsey and Kennet Valley is particularly sensitive. | **High,** there are a number of characteristics, which are sensitive. These are the skyline (open summits and ridgelines being especially sensitive, particularly where they function as the skyline/backdrop to lower lying land) and the overriding peaceful rural character of the landscape. Further sensitive attributes include the semi-natural woodland, chalk grassland, historic parks and designed landscapes and their setting. | **Moderately to Highly constrained** |

## SUMMARY OF CONSTRAINTS IN RELATION TO DIFFERENT TYPES OF TURBINE DEVELOPMENT

**Height Class 1 (25 – 40m) Single Turbine:** The Wooded Plateau landscape type is judged to be **moderately constrained** in relation to a HC1 turbine development. The moderate judgement, relates to the potential for the landform and land cover to buffer and filter local views to this height class. They key constraints to a HC1 turbine development are:

- the site and setting of all valued landscape features. Key constraints include the important habitats and historic landscape elements;
- the more open chalk ridgelines, which are especially sensitive in the context of views from the 'remote Open Downlands of Horton Downs and the Marlborough Downs;

- the important linear relationships and channelled views which are distinctive to this landscape type;
- the views to and setting of the flint churches, which are prominent in this landscape type (Dun Valley);
- Martinsell Hill and associated ridgeline and its visibility from the adjacent Vale of Pewsey and Open Downland landscape types;
- the setting of the more intimate landscape of the Kennet Valley and the importance of the open uninterrupted slopes and skyline as the setting for the valley and its settlements.

**Notes on Cumulative Development:** The landscape type is relatively small and forms a single character area. Cumulative development is therefore constrained.

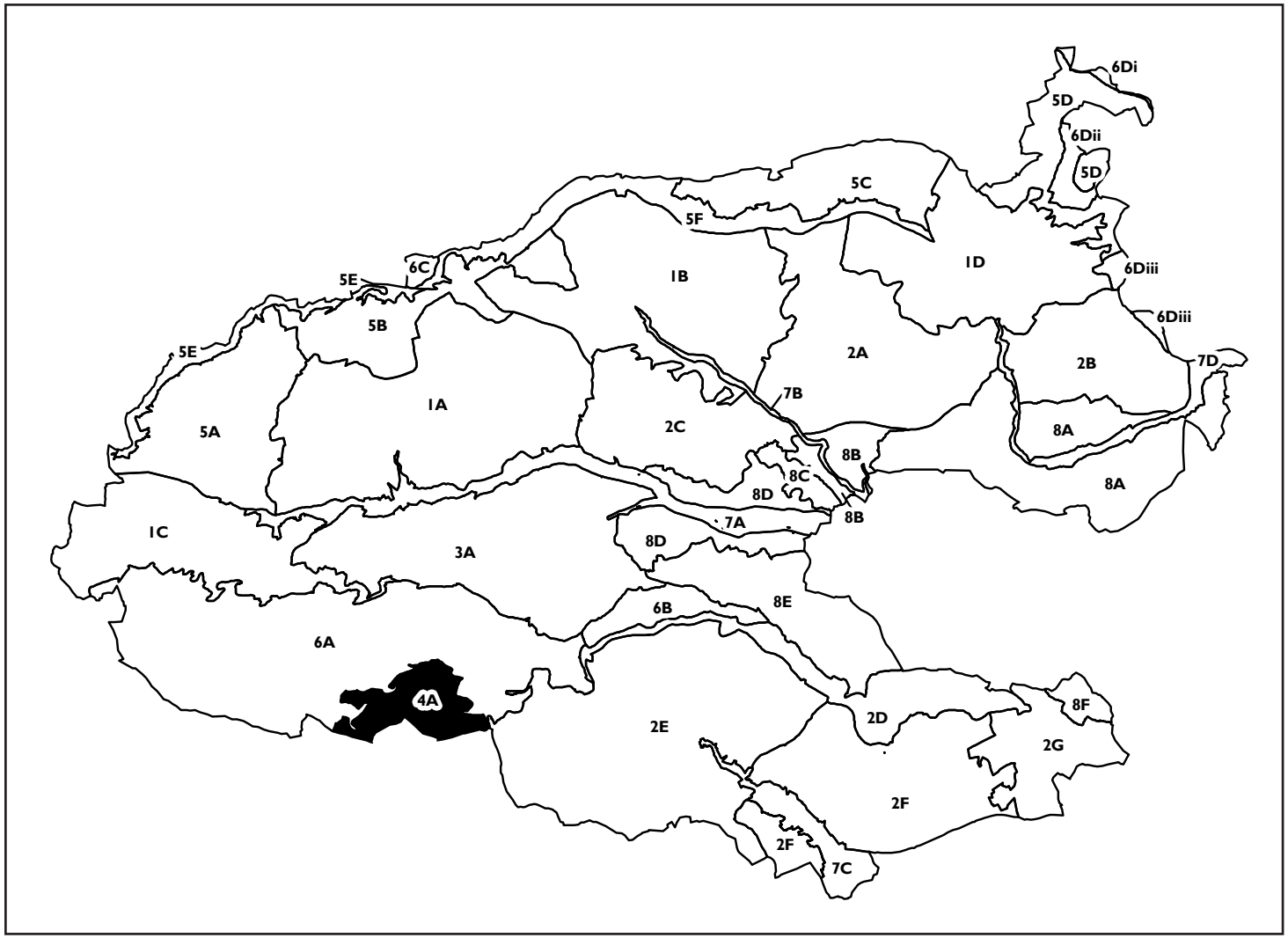
**Height Class 2 (40 – 80m) Single Turbine:** The Wooded Plateau is judged to be **moderately – highly constrained** in relation to a single HC2 turbine development. Given the landscape context and particularly the visual relationship with the adjacent Open Downlands it is considered that developments at the upper end of the height class will not be appropriate. A particular constraint relates to the potential for a tall structure to rise clearly above the tree line and form a very visible 'intrusive' development in views from the more remote, tranquil landscape of the Open Downlands. The constraints outlined above in relation to a HC1 turbine apply; with the greater height and potential visibility of HC2 development requiring particular attention to the impact of any development within both local and long range views.

**Height Class 2 (40 - 80m) Group of 2 – 4 Turbines:** Given visual and landscape sensitivities outlined above it is considered that group of HC2 turbines would form a highly visible development of considerable size and mass. In addition to the constraints noted above, a group of turbines could particularly affect the sensitive relationship with the Open Downlands and have an impact of the perception of the Wooded Plateau as a tranquil, rural landscape. In summary, the Wooded Plateau is considered to be **highly constrained** in relation to a group of HC2 turbines.

**Height Class 3 (80m+) Single and Group:** For the reasons noted above, Wooded Plateau landscape type is also considered to be **highly constrained** in relation to either a single or group of HC3 turbines.

Note: the Wooded Plateau landscape is likely to have fewer constraints to developments below the HC1 threshold (i.e. <25 m). An individual site investigation to assess specific sensitivities and constraints to this scale of development would need to be made on a case-by-case basis. Such investigation should also pay particular note to the cumulative impact of such structures.

# 4. High Chalk Plain




# LANDSCAPE TYPE 4: HIGH CHALK PLAIN

## LANDSCAPE CHARACTER OVERVIEW

The High Chalk Plain landscape type occurs in one location and is represented by the single character area of Salisbury Plain, of which only the northern tip is within the North Wessex Downs AONB, with the main part of the plain extending southwards. The open rolling landform of the Upper Chalk creates a spacious landscape with long views and a strong sense of remoteness and isolation. The land is almost wholly under arable cultivation with large regular fields.

It should be noted that the information provided here only refers to the small northern tip of Salisbury Plain (within the AONB). It is possible that there maybe fewer constraints for wind turbine development in other parts of the Plain, although this area has not been considered as part of the present study.

## Key Characteristics

**Remoteness and Tranquillity**

- High levels of tranquillity, sense of remoteness and isolation.
- There are few obvious human features in the landscape with a lack of roads and movement.
- There is some military activity however this northernmost part of Salisbury Plain has not been heavily disturbed as the main military training area to the south.

**Scale and Enclosure**

- Large-scale, open landscape with absence of enclosing features, apart from occasional woodland blocks.

**Landform**

- Expansive open rolling chalk upland landscape sloping gently to the south.
- Dramatic escarpment forms the northern boundary at Pewsey Hill and Fyfield Down – forming a dominant feature from the low-lying vale of Pewsey.

**Land Cover Pattern**

- Land is almost wholly under arable cultivation within large, straight sided fields – many have had boundaries removed to form very large fields.
- Generally sparse tree and hedgerow cover but with some woodland blocks to the south.
- Isolated fragments of chalk grassland survive.

- Unlike other parts of Salisbury plain, the downland has been intensively cultivated and does not retain the ecological diversity the wilder unimproved grasslands of the military training grounds.

**Settlement**

- Settlement is limited to a very small number of isolated farms.

**Internal Landmarks/Important Landscape Features**

- Pewsey White Horse carved into the scarp slope is a distinctive landmark in views from the Vale.
- A large number of archaeological sites. Several earthworks are visible on ridges and hilltops and stand out as prominent features. These include Giant's Grave Neolithic long barrow and several Bronze Age round barrows.

**Prominent Built Structures**

- Lack of visible built structures apart from occasional large-scale farm units.
- Some modern trackways and earthworks are the result of military activity following the First and Second World Wars.

**Skyline**

- Several earthworks are visible on ridges and hilltops and stand out as prominent features on the skyline when viewed from below. Pewsey White Horse carved into the scarp slope is a distinctive landmark in views from the Vale.
- An open landscape with distant views.

**Views and Connections with Adjacent Landscapes**

- Panoramic views across the adjacent lowland Vale of Pewsey from Pewsey Hill and Fyfield Down.
- Views from the Vale of Pewsey up to the dramatic escarpment, which forms the northern boundary of this landscape type (Pewsey Hill and Fyfield Down).

The following tables consider the key values and characteristics of the High Chalk Plain landscape type taken from the North Wessex Downs AONB – Integrated Landscape Character Assessment (2002) with additional observations included specifically related to wind turbine development. It also incorporates the outcomes of a stakeholder participation exercise held as part of the AONB Annual Forum in November 2004.

The information on landscape values and sensitivity is used to identify constraints to wind turbine development in the AONB.

## LANDSCAPE VALUE

In the following table the key values associated with the High Chalk Plain landscape are noted.

## Table 4.1: High Chalk Plain Landscape Value

| Landscape Values |
|---|
| **Stakeholder Values (AONB Annual Forum Workshop Nov 2004)**<br>The most valued perceptual elements are:<br>• Expansive chalk upland landscape (part of Salisbury Plain)<br>• Prominent scarp to north overlooking the Vale of Pewsey<br>• Large scale, open and remote character<br>The most valued physical and cultural elements include:<br>• Bronze Age round barrows on ridges and hilltops |
| **Main Views (AONB Annual Forum Workshop Nov 2004)**<br>The key views noted were the visual relationship with the Vale of Pewsey e.g. views from the vale to the prominent scarp and features such as the Pewsey White Horse and reciprocal views back across the low lying vale. Views across the Vale and onto the Plain from high points to the north Tan Hill/Milk Hill/Martinsell Hill (in character area 3a and 1a) were also noted. |
| **Other Values**<br>• **Natural:** An important habitat for declining farmland bird species, including stone curlew and skylark. Absence of designated sites<br>• **Cultural:** Large number of designated archaeological sites (SAM).<br>• **Recreational:** Well served by a number of footpaths, bridleways and byways allowing good recreational access to the area and its visible archaeological features. Pewsey White Horse is included on the Wiltshire White Horse Trail.<br>• **Other associations:** Remote nature of this area is a special feature. |
| **Summary of Landscape Values:** The North Wessex Downs AONB and a nationally designated and valued landscape. The High Chalk Plain is valued for its high levels of tranquillity associated with the expansive chalk upland landscape. The views across the Vale of Pewsey that can be obtained from the prominent chalk escarpment to the north (and reciprocal views from the vale to the scarp) are particularly valued. |

## LANDSCAPE SENSITIVITY

In the following table, the inherent sensitivity of each key characteristic has been identified to give an overall understanding of the intrinsic sensitivities of the High Chalk Plain to wind turbines.

### Table 4.2: Landscape Sensitivity

| Key Characteristics | Sensitivities |
|---|---|
| **Remoteness and Tranquillity**<br>• High levels of tranquillity, sense of remoteness and isolation.<br>• There are few obvious human features in the landscape with a lack of roads and movement.<br>• There is some military activity, however this northernmost part of Salisbury Plain has not been heavily disturbed as the main military training area to the south. | **Sensitivities:** This landscape type is characterised by high levels of remoteness and tranquillity. There is only one minor road and an absence of modern vertical development. The location of any form of turbine development would increase the movement in this landscape and could weaken the remote, tranquil character. |
| **Scale and Enclosure**<br>• Large-scale, open landscape with absence of enclosing features, apart from occasional woodland blocks. | **Sensitivities:** This is essentially a large-scale open landscape within which large scale vertical development, although highly visible, could in theory be accommodated. However, there is potential for a vertical development to appear lost and ungrounded in the landscape. The lack of features and pattern in the generally makes it difficult to perceive scale and distance within the High Chalk Plain landscape and a turbine structure could change this perception by introducing a scaleable feature. |
| **Landform**<br>• Expansive open rolling chalk upland landscape sloping gently to the south.<br>• Dramatic escarpment forms the northern boundary at Pewsey Hill and Fyfield Down – forming a dominant feature from the low-lying vale of Pewsey. | **Sensitivities:** A turbine structure would form a prominent vertical feature punctuating the rolling terrain and interrupting the continuity of this landform. The escarpment and associated ridgeline, which forms the northern boundary of this landscape, overlooking the Vale of Pewsey is particularly sensitive. |
| **Land Cover Pattern**<br>• Land is almost wholly under arable cultivation within large, straight-sided fields – many have had boundaries removed to form very large fields.<br>• Generally sparse tree and hedgerow cover but with some woodland blocks to the south.<br>• Isolated fragments of chalk grassland survive.<br>• Unlike other parts of Salisbury plain, the downland has been intensively cultivated and does not retain the ecological | **Sensitivities:** The predominantly arable land cover is not inherently sensitive although a turbine could appear stranded and ungrounded in relation to the land cover pattern. The open character and general absence of enclosure (part from the woodland blocks to the south) means that any development would be highly visible. Screening through woodland planting is not desirable as this would change the essentially open character. |

| Key Characteristics | Sensitivities |
|---|---|
| diversity of the wilder unimproved grasslands of the military training grounds. | |
| **Settlement**<br>• Settlement is limited to a very small number of isolated farms, including some large scale farm buildings. | **Sensitivities:** The High Chalk plain is characterised by its sparse population and general absence of settlement and built structures. Turbine development could add a dominant built element within this landscape, which is perceived as largely 'undeveloped'. For these reasons it is considered to be highly sensitive. It is less sensitive to lower height vertical structures where these could be linked to existing farm buildings, thereby providing functionality to the turbine setting. |
| **Landmarks/Important Landscape Features**<br>• Pewsey White Horse carved into the scarp slope is a distinctive landmark in views from the Vale.<br>• A large number of archaeological sites. Several earthworks are visible on ridges and hilltops and stand out as prominent features. These include Giant's Grave Neolithic long barrow and several Bronze Age round barrows. | **Sensitivities:** The High Chalk Plain landscape includes a number of important archaeological features. The site, setting and visual relationships between these features are sensitive to intrusion of vertical development. |
| **Prominent Built Structures**<br>• Lack of visible built structures apart from occasional large-scale farm units.<br>• Some modern trackways and earthworks are the result of military activity following the First and Second World Wars. | **Sensitivities:** There are no existing tall structures or vertical features in this landscape. This minimises potential for creating visual clutter. However, any form of turbine development could introduce an obvious modern development in a landscape largely without such interruptions. |
| **Skyline**<br>• Several earthworks are visible on ridges and hilltops and stand out as prominent features on the skyline when viewed from below.<br>• The High Chalk Plain forms a strong landform feature and skyline in views form the Vale of Pewsey. Pewsey White Horse carved into the scarp slope is a distinctive landmark in views from the Vale. | **Sensitivities:** The open smooth landform allows for long views and any turbine development would be extremely visible. The area also has an important function in providing a dramatic skyline to lower lying areas to the north (Vale of Pewsey). Any development on this ridge would be highly visible over a wide area and would break the distinctive smooth skyline and impinge on the perceived sense of scale of the scarp slope. It is therefore highly sensitive. |
| **Internal Views**<br>• An open landscape with distant views.<br><br>**Views and Connections with Adjacent Landscapes**<br>• Panoramic views across the adjacent lowland Vale of Pewsey from Pewsey Hill and Fyfield Down. | **Sensitivities:** As noted this is essentially an open landscape with long views, within which any turbine development would be highly visible.<br><br>**Sensitivities:** The scarp and ridgeline is a distinctive and prominent backdrop in relation to the Vale of Pewsey. As noted above, any development on this ridge would be highly visible over a wide area and would break the distinctive smooth |

| Key Characteristics | Sensitivities |
|---|---|
| • Views from the Vale of Pewsey up to the dramatic escarpment, which forms the northern boundary of this landscape type (Pewsey Hill and Fyfield Down).<br>• Intervisibility in long distance view from the Open Downland, Downland with Woodland and Wooded Plateau. | skyline and impinge on the perceived sense of scale of the scarp slope. It is therefore highly sensitive.<br>Long distance views into the High Chalk Plain from the 'remote' Open Downlands and the other upland chalk landscapes of the Wooded Plateau and Downland with Woodland also enhances sensitivity. |

**Summary of Visual Sensitivity:** This is essentially an open landscape with long distance, uninterrupted views, within which any form of vertical development would be highly visible. Of particular high sensitivity is the visual relationship of the High Chalk Plain scarp with the lower lying Vale of Pewsey and long distance views into the High Chalk Plain from the surrounding upland chalk landscapes including the 'remote' Open Downland of Marlborough Downs (1A) and Horton Downs (1C). **Overall Visual Sensitivity: High.**

**Summary of Landscape Character Sensitivity:** The High Chalk Plain has a large number of characteristics that are sensitive to wind turbine development. These primarily relate to the essentially 'undeveloped' character, absence of built structures and associated high levels of remoteness and tranquillity. The open landscape with its smooth landform and skylines, particularly the northern scarp, are also highly sensitive, as are the historic landscape features and their setting. **Overall Landscape Character Sensitivity: High**

## CONSTRAINTS TO WIND TURBINE DEVELOPMENT WITHIN THE HIGH CHALK PLAIN LANDSCAPE TYPE

The following table considers both the landscape values and sensitivities, identified above, to indicate the constraints to wind turbine development within the High Chalk Plain landscape type.

### Table 4.3: Summary Table indicating Constraints to Wind Turbine Development in the High Chalk Plain Landscape Type

| Summary of Landscape Values | Summary of Sensitivities | | Constraints to Turbine Development |
|---|---|---|---|
| | Visual | Landscape Character | |
| **Highly valued** for the high levels of tranquillity associated with the expansive chalk upland landscape. The views across the Vale of Pewsey that can be obtained from the prominent chalk escarpment to the north (and reciprocal views from the vale to the scarp) are particularly valued. | **High,** the key visual sensitivities are the long distance, uninterrupted views, within which any form of vertical development would be highly visible. Of particular high sensitivity is the visual relationship of the High Chalk Plain scarp with the lower lying Vale of Pewsey and long distance views into the High Chalk Plain from the surrounding upland chalk landscapes. | **High,** relating to the essentially 'undeveloped' character, absence of built structures and associated high levels of remoteness and tranquillity. The open landscape with its smooth landform and skylines, particularly the northern scarp, are also highly sensitive, as are the historic landscape features and their setting. | **Highly constrained** |

## SUMMARY OF CONSTRAINTS IN RELATION TO DIFFERENT TYPES OF TURBINE DEVELOPMENT

**Height Class 1 (25 – 40m) Single Turbine:** The High Chalk Plain is judged to be **highly constrained** to a HC1 turbine development. The key constraints to a HC1 turbine development are:

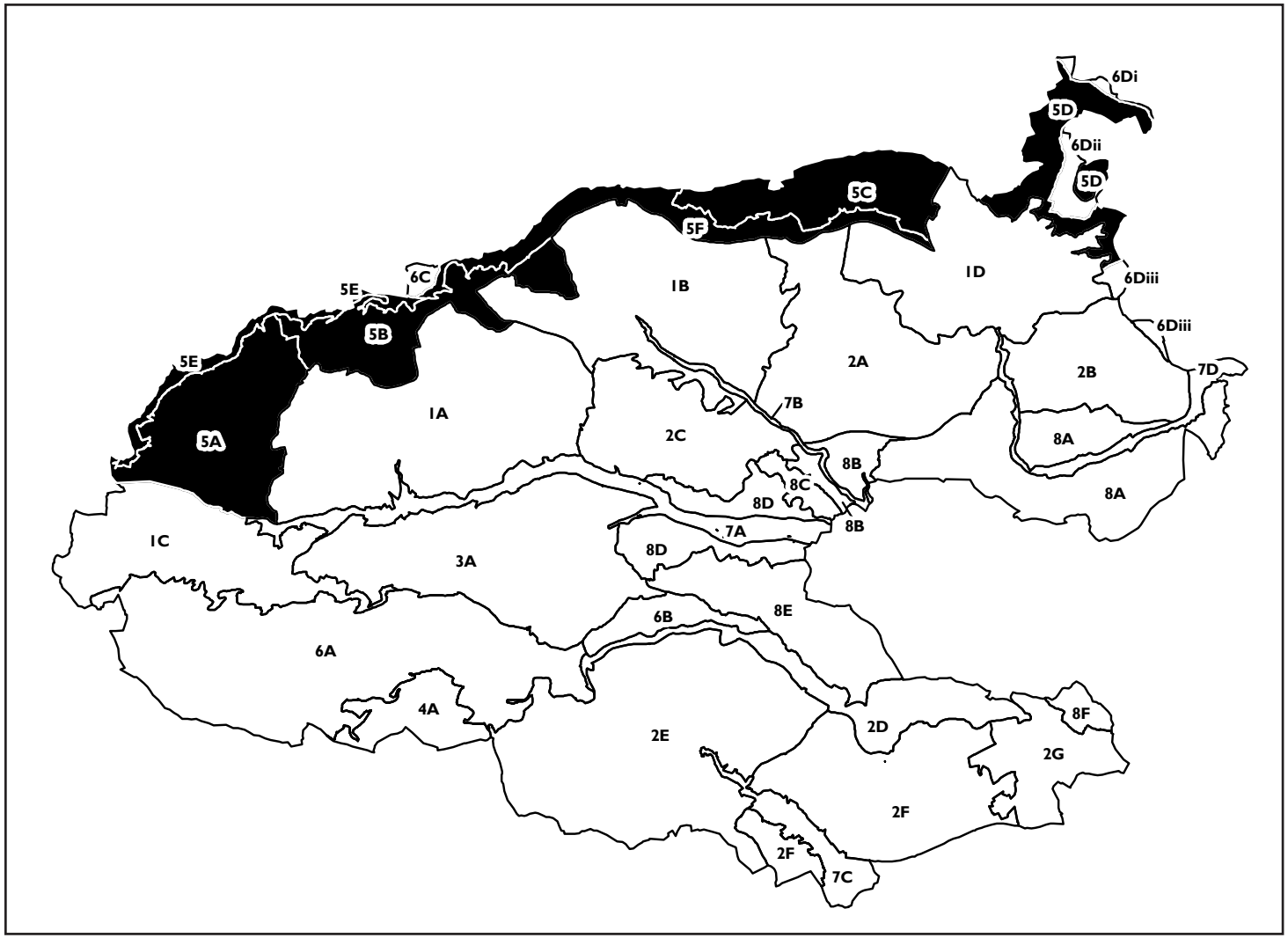
- the essentially open, uninterrupted landscape;
- remote and tranquil character and absence of development/settlement;
- the distinctive northern scarp and skyline ride and views to the scarp from the Vale of Pewsey;
- long distance views into the High Chalk Plain form surrounding chalk upland landscape, particularly views form the 'remote' Open Downland landscapes
- the uninterrupted, rolling chalk landform;
- site and setting of archaeological features and the relationship between sites.

A HC1 turbine at the lower end of the height class could be lesser constrained if located in close association with the few existing large scale farm units, thereby creating a functional image.

**Height Class 2 (40 – 80m) and Height Class 3 (80m) - Single Turbine and Groups (2-4 turbines):** For the reasons noted above, the High Chalk Plain landscape type is also **highly constrained** to the location of any height class 2 or height class 3 turbine development. The scale of such a development would be over dominant in relation to the remote and tranquil landscape character and long distance views into the High Chalk Plain from the surrounding upland chalk landscapes, particularly the Open Downland of the Marlborough Downs (1A) and Horton Downs (1C).

Note: Given the above constraints and the very high sensitivity of the High Chalk Plain landscape; it is likely to be similarly constrained in relation to developments below the HC1 threshold (i.e. <25 m). An individual site investigation to assess specific sensitivities and constraints to this scale of development would need to be made on a case-by-case basis. Such investigation should also pay particular note to the cumulative impact of such structures.

# 5. Downs Plain and Scarp




# LANDSCAPE TYPE 5i: SCARP

## LANDSCAPE CHARACTER OVERVIEW

The Scarp forms a dramatic landscape feature marking the northern edge of the North Wessex Downs and creating a very visible horizon and skyline from the lower lying clay Vales to the north and west. The distinctive steep escarpment descends abruptly to the adjacent Vale, except in the eastern part of the AONB where the slope curves to the south and forms the backdrop to the Downs Plain (landscape type 5ii).

## Key Characteristics

### Remoteness and Tranquillity

- The open and elevated nature of the Northern Scarp, the lack of built features and the long views it affords gives this landscape type a strong feeling of remoteness in places.

### Scale and Enclosure

- Open on the scarp summit with expansive views.
- More enclosed on the lower scarp slopes and where woodland dominates.

### Landform

- One of the most dramatic landform features within the AONB.
- Steep escarpment forms a distinct backdrop to low lying landscapes.
- In places scarp face cut by springs creating a convoluted edge, plus dry valleys and Coombes (e.g. The Manger).

### Land Cover Pattern

- Mix of woodland and pasture, herb-rich chalk grasslands and linear hanging woodlands on the steep slopes.
- Presence of parks and designed landscapes is a particular feature on lower slopes at the springline.
- Water resources present; springs and streams.
- Linear 'hanger' woodlands and estate land give a woodland character to the Western scarp.
- On scarp edge there are some examples of strip lynchets, e.g. Chalbury Hill.

**Settlement**

- Attractive clusters of springline villages at foot of scarp including estate villages as well as houses and associated historic parkland.
- Characterised by a string of attractive, small, clustered springline villages along the base of the scarp.
- Urban development visible on the AONB boundary.

**Landmarks/Important Landscape Features**

- Bronze Age barrows and Iron Age hillforts mark the skyline.
- Waylands Smithy long barrow, Uffington Hill Fort and Uffington White Horse are among many symbolic landmarks that characterise these highly visible slopes.
- The Ridgeway prehistoric route – now a National Trail.
- Parks and designed landscapes are feature on the lower slopes.

**Prominent Built Structures**

- Notable for the absence of development and built structures on the upper scarp face and top.

**Skyline**

- The dramatic scarp landform creates a recognisable horizon visible from the lower lying landscapes to the north and west.
- Summit of the slope is characterised by clusters of Bronze Age barrows and Iron Age hillforts connected by the prehistoric route of the Ridgeway.

**Internal Views and Connections with Adjacent Landscapes**

- The position of the scarp allows extensive elevated views across the Open Downland, Downland with Woodland and Downs Plain Landscape Types and across the Vale north of the AONB boundary.

The following tables consider the key values and characteristics of the Scarp landscape type taken from the North Wessex Downs AONB – Integrated Landscape Character Assessment (2002) with additional observations included specifically related to wind turbine development. It also incorporates the outcomes of a stakeholder participation exercise held at the AONB Annual Forum in November 2004.

The information on landscape values and sensitivity is considered together to identify constraints to wind turbine development in the AONB.

## LANDSCAPE VALUE

In the following table the key values associated with the Scarp landscape are noted.

### Table 5i.1: Scarp Landscape Value

| Landscape Values |
|---|
| **Stakeholder Values (AONB Annual Forum Workshop Nov 2004)**<br>The most valued perceptual elements are:<br>• Dramatic landform marking the northern edge of the AONB<br>• Open landscape<br>The most valued physical and cultural elements are:<br>• Dramatic landform marking the northern edge of the AONB<br>• Combes incised into the slopes<br>• Very visible horizon and skyline from the clay vales to the north and west<br>• Abundance of herb-rich chalk grassland<br>• Uffington White Horse<br>• The Ridgeway<br>• Iron Age hillforts and the Neolithic long mound of Waylands Hill |
| **Main Views (AONB Annual Forum Workshop Nov 2004)**<br>A number of viewpoints were noted from which the special qualities of the landscape can be experienced. The elevated Northern Scarp landform means it is clearly visible from areas within and outside of the AONB.<br>Key views noted include:<br>• From the Southern outskirts of Wootton Bassett<br>• Barbury Castle and the Ridgeway<br>• From Wroughton looking towards Barbury Castle and Compton Bassett<br>• From White Horse Hill towards Swindon |

**Other Values**

- **Natural:** The slopes are alternatively under woodland or pasture, with the variation in land cover reflected in their high biodiversity interest with a notable number of SSSIs (e.g. at Hinton Parva, Burderop Wood and Clouts Wood). 'The Manger' cut into White Horse Hill is a classic example of a chalk karst landform and this site is also designated as an SSSI.
- **Cultural:** The scarp is distinguished by a large number of estates such as Compton Basset, Burderop and Salthrop. There are a number of Neolithic and Bronze Age features and the distinctive chalk cut figure of the Uffington White Horse.
- **Recreational:** A network of footpaths, bridleways and byways connects the many archaeological features and spring line villages within the landscape type. The Ridgeway National Trail runs along virtually the whole of the scarp top. Also includes parts of Thames Valley and Severn Cycle routes, the Chiselden and Malborough Railway path and the Downland Villages Riding Route. The numerous archaeological sites on the site are a much visited recreation resource, offering extensive views and strong sense of elevation/isolation.
- **Strong artistic and literary associations** associated with the scarp, monuments, the Ridgeway and views.

**Summary of Landscape Values:** This is part of the North Wessex Downs AONB, a nationally valued and designated landscape. The Northern Scarp is highly valued for its dramatic landform and skyline that marks the edge of the North Wessex Downs. Extensive views of surrounding landscapes are afforded from the scarp summit and likewise the scarp is appreciated and valued from the lower lying landscapes. The scarp contains a wealth of natural, cultural and recreational features. In particular, the scarp ridge is followed by the route of the prehistoric Ridgeway (National Trail) – the view corridor from this important route is an especially valued element.

## Landscape Sensitivity

In the following table, the inherent sensitivity of each key characteristic has been identified to give an overall understanding of the intrinsic sensitivities of the Scarp to wind turbines.

## Table 5i.2: Landscape Sensitivity

| Key Characteristics | Sensitivities |
|---|---|
| **Remoteness and Tranquillity**<br>• The open and elevated nature of the northern scarp, the absence lack of built features and the long uninterrupted views it affords plus visible antiquity, gives the landscape a strong feeling of remoteness in places. | **Sensitivities:** The scarp retains a strong feeling of remoteness and tranquillity engendered by the absence of built development. The elevated landform and long views contribute to a sense of 'isolation'. The landscape is therefore highly sensitive to the introduction of built form and movement associated with turbines and infrastructure, which could dilute these special perceptual characteristics. |
| **Scale and Enclosure**<br>• Open on the scarp summit with expansive views.<br>• More enclosed on the lower scarp slopes, and where woodland dominates to the west. | **Sensitivities:** The scarp ridge is open and any turbine would appear as a very prominent vertical intrusion, particularly in the context of the expansive views to the scarp. On the lower slopes any form of turbine development would over dominate the small scale of the landscape of the minor valleys, which cut the scarp. The scale and enclosure of scarp |

| Key Characteristics | Sensitivities |
|---|---|
| • Intricate landscape of the valleys that cut the scarp with parkland and woodland cover plus presence of historic houses and estates. | varies from open and expansive to small scale and intimate; both are sensitive for different reasons. |
| **Landform**<br>• One of the most dramatic landform features within the AONB.<br>• Steep escarpment forms a distinct backdrop to low lying landscapes.<br>• In places scarp face cut by springs creating a convoluted edge, plus dry valleys and Coombes (e.g. The Manger). | **Sensitivities:** This elevated landscape forms a distinctive ridgeline and backdrop to the lower-lying landscapes– it forms a classic scarp landform and a symbolic image of the AONB in views from the north. Any turbine development would appear highly visible and awkwardly prominent if located on this pronounced landform. The landform is also highly sensitive to associated infrastructure notably requirement for grid connection and pylon lines/cabling. In addition, the variation in landform from steep, smooth scarp slope to a more convoluted surface is striking and a large scale structure such as a turbine could interrupt this transition. The scarp landform is therefore highly sensitive. |
| **Land Cover Pattern**<br>• Mix of woodland and pasture, herb-rich chalk grasslands and linear hanging woodlands on the steep slopes.<br>• Presence of parks and designed landscapes is a particular feature on the lower slopes.<br>• Water resources present; springs and streams.<br>• Linear 'hanger' woodlands and estate land give a wooded character to the Western scarp.<br>• On scarp edge there are some examples of strip lynchets, e.g. Chalbury Hill. | **Sensitivities:** The scarp contains a concentration of important and intrinsically features including woodland, chalk grassland and parks/designed landscapes. The intricacy and variety of the landscape pattern means that the land cover of the scarp is particularly sensitive. |
| **Settlement**<br>• Attractive clusters of springline villages. Include a number of attractive estate villages as well as houses and parklands.<br>• There are several large settlements immediately to the north of the Downs Plain and Scarp on the edge of the AONB. | **Sensitivities:** The scarp top is characterised by the absence of settlement and modern built structures – a turbine would therefore be incongruous and introduce a prominent built and moving element. On the lower slopes the small springline villages would be overpowered by a tall structure. |
| **Landmarks/Important Landscape Features**<br>• Bronze Age barrows and Iron Age hillforts.<br>• Waylands Smithy long barrow, Uffington Hill Fort and | **Sensitivities:** The distinctive Neolithic, Bronze Age and Iron Age sites along the ridge top are highly sensitive. The visual relationship between these landmark features is also sensitive, as are the uninterrupted views to the ridge top sites and their setting from the landscape |

| Key Characteristics | Sensitivities |
|---|---|
| Uffington White Horse are among many symbolic landmarks that characterise these highly visible slopes.<br>• The Ridgeway National Trail.<br>• Parks and designed landscapes are features on lower slopes. | below. The view corridor from the Ridgeway National Trail is a further highly sensitive feature that could be disrupted by the location of a modern vertical, moving feature. |
| **Prominent Built Structures**<br>• Notable for the absence of development and built structures on the scarp top. | **Sensitivities**: There is an absence of prominent built structures in this landscape type. As noted, a turbine would be incongruous in this open, undeveloped context and introduce a prominent built and moving element. On the lower slopes the small springline villages would be overpowered by a tall structure. |
| **Skyline**<br>• The dramatic scarp landform creates a recognisable horizon visible from the lower lying landscapes to the north and west.<br>• Summit of the slope is characterised by Bronze Age barrows and Iron Age hillforts connected by the prehistoric route of the Ridgeway. | **Sensitivities:** The scarp slopes and ridgeline create a dominant and striking skyline and horizon, visible from a wide area and creating a symbolic image of the AONB. Any vertical development would be very prominent and would punctuate this strong skyline and horizon. The scarp skyline is highly sensitive. |
| **Internal Views**<br>• Important local views along the scarp top particularly relating to the Ridgeway Corridor., Smaller scale contained view along the lower scarp slopes.<br><br>**Views and Connections with Adjacent Landscapes**<br>• The position of the scarp allows extensive elevated views across the Open Downland, Downland with Woodland, Downs Plain and areas north of the AONB boundary. | **Sensitivities:** The view corridor form the Ridgeway and the views to and setting of the archaeological sites are highly sensitive. The ridge top has a strong sense of antiquity and any large scale turbine development within views would interrupt this characteristic.<br><br>**Sensitivities:** As noted, viewed from areas north of this landscape type (beyond the AONB), the scarp is a dominant feature signalling the beginning of the chalk of the North Wessex Downs. Any form turbine development would be highly visible and interrupt this prominent landscape feature. Tall structures would also be highly visible from the adjacent highly sensitive Open Downland landscape and, in parts, from the Down Plain. |

| Key Characteristics | Sensitivities |
|---|---|
| **Summary of Visual Sensitivity:** The highly prominent and elevated scarp landform, predominantly open character and extensive views that can be obtained to and from the ridge are all highly sensitive. Also sensitive is the strong visual relationship between the scarp top archaeological sites and Ridgeway National Trail. **Overall Visual Sensitivity: High.**<br><br>**Summary of Landscape Character Sensitivity:** The scarp is a dramatic landform and a significant feature signalling the northern edge of the chalk of the AONB. It forms a strong recognisable skyline and horizon. Further sensitive attributes include the archaeological features and their setting, woodland, chalk grassland and parks/designed landscapes. All of these elements are highly sensitive to the intrusion of a prominent vertical structure and associated infrastructure. Pylon lines or cabling would be particular intrusive in relation to the distinctive ridge, steep slopes and coombes of the scarp landform. | |

## CONSTRAINTS TO WIND TURBINE DEVELOPMENT WITHIN THE SCARP LANDSCAPE TYPE

The following table considers both the landscape values and sensitivities, identified above, to indicate the constraints to wind turbine development within the Scarp landscape type.

### Table 5i.3: Summary Table indicating Constraints to Wind Turbine Development in the Scarp Landscape Type

| Summary of Landscape Values | Summary of Sensitivities | | Constraints to Turbine Development |
|---|---|---|---|
| | Visual | Landscape Character | |
| **Highly valued** for its dramatic landform, extensive views and wealth of natural, cultural and recreational features. The view corridor from the scarp top Ridgeway is a particularly valued element. | **High,** the prominent, elevated scarp landform, predominantly open character and extensive views that can be obtained to and from the ridge all contribute to the high visual sensitivity. Also sensitive is the strong visual relationship between the scarp top archaeological sites and views from the Ridgeway National Trail. | **High,** the scarp is a dramatic landform and a significant feature forming a strong recognisable skyline and horizon. Further sensitive attributes include the archaeological features and their setting, woodland, chalk grassland and parks/designed landscapes. All of these elements are highly sensitive to the intrusion of a prominent vertical structure and associated infrastructure. Pylon lines or cabling would be particularly intrusive in relation to the distinctive ridge, steep slopes and coombes of the scarp landform. | **Highly constrained** |

## SUMMARY OF CONSTRAINTS IN RELATION TO DIFFERENT TYPES OF TURBINE DEVELOPMENT

**Height Class 1 (25 – 40m) Single Turbine:** The Scarp is judged to be **highly constrained** in relation to a HC1 turbine development. They key constraints to a HC1 turbine development are:

- valued views to the scarp from lower lying areas to the north, and its role in providing an important backdrop, horizon and uninterrupted skyline, signalling the edge of North Wessex Downs;
- strong sense of remoteness and isolation associated with the scarp created by the combination of open elevated landform, expansive views and visible antiquity of the landscape;
- open character and absence of prominent built structures along the scarp top is a notable feature and should be conserved;
- distinctive landform comprising a strong ridgeline, steep scarp sides sometimes convoluted and cut into distinctive coombes;
- the wealth of historic features along the scarp including the setting of archaeological monuments and their visual relationships to each other and the lower lying land below;
- the route of the Ridgeway (National Trail) and the view corridor from the Ridgeway;
- abundance of valued and sensitive land cover features including woodland, parkland, and herb rich chalk grassland;
- small scale, distinctive springline villages, which would be over dominated by tall structures;
- visual connection with the adjacent sensitive landscapes of the Open Downlands and Downland with Woodland.

**Height Class 2 (40 – 80m) and Height Class 3 (80m) - Single Turbine and Groups (2-4 turbines):** For the reasons noted above, the Scarp landscape type is also **highly constrained** for the location of any form of height class 2 or height class 3 turbine. The scale of such a development would be inappropriate in relation to the valued features and high sensitivities noted above.

Note: Given the above constraints and the very high sensitivity of the Scarp landscape; it is likely to be similarly constrained in relation to developments below the HC1 threshold (i.e. <25 m). An individual site investigation to assess specific sensitivities and constraints to this scale of development would need to be made on a case-by-case basis. Such investigation should also pay particular note to the cumulative impact of such structures.

# LANDSCAPE TYPE 5ii: DOWNS PLAIN

## LANDSCAPE CHARACTER OVERVIEW

The Downs Plain (and interlinked scarp) occurs along the northern edge of the AONB extending from Cherhill in the west to Chilton in the east. It is underlain by the eroded surface of the Lower Chalk, a softer clayey substrate compared to the hard Upper Chalks of the Open Downland. The Plain forms a generally low and level surface extending as a ledge at the foot of the high downs, linked to a distinctive steep escarpment. It contains one of the most emblematic features of the North Wessex Downs – Avebury World Heritage Site with its unique collection of Neolithic monuments.

## Key Characteristics

**Remoteness and Tranquillity**

- Essentially a very open landscape with 'pockets' of remoteness and extensive views.

**Scale and Enclosure**

- A generally uniform, open and exposed landscape.
- Variations occur with pockets of enclosed and undulating landscape.

**Landform**

- Low-level flat surface extending as a ledge below the High Chalk.
- Some shallow valleys cut the Plain.
- The landform is more undulating in parts, such as Hendred Plain (5C towards East Ginge) where numerous valleys cut the area and in Moreton Plain (5D) where stranded hills create a more rolling landform.

**Land Cover Pattern**

- Almost entirely in intensive arable cultivation.
- Large regular fields, the product of parliamentary enclosure with more recent boundary removal.
- Close trimmed hawthorn hedgerows form field boundaries or fields occur without enclosure or hedge scrub or tree cover.
- Exceptions occur to the general pattern with local areas of woodland, parkland and springs/ dammed ponds within valleys.

**Settlement**

- Largely uninhabited with former military airfields often the only significant development.
- Small settlement characterise the shallow valleys e.g. on Winterbourne Valley of Avebury Plain and valleys cutting through Hendred Plain.
- New development at Harwell International Business Centre.

**Landmarks/Important Landscape Features**

- Avebury Plain World Heritage Site contains one of the densest concentrations of Neolithic monuments in Britain, including the distinctive stone circle at Avebury, Silbury Hill and a Neolithic causewayed enclosure at Windmill Hill (Character Area 5A).

**Prominent Built Structures**

- Airfields redundant military sites (Harwell/Chilton Campus established on a former airfield) are a particular feature.
- Hangers and MOD structures e.g. at Wroughton.
- M4 cuts through this landscape type.

**Skyline**

- The Downs Plain landscape type is contained by the Open Downland and Downs Scarp, which form a particularly sensitive skyline.

**Internal Views and Connections with Adjacent Landscapes**

- High degree of intervisibility – long open views in areas of flat landform and sparse land cover.
- Dominant Views to the Open Downland and Downs Scarp.

The following tables consider the key values and sensitivities of the Downs Plain landscape type using information taken from the North Wessex Downs AONB – Integrated Landscape Character Assessment (2002) with additional observations included specifically related to wind turbine development. It also incorporates the outcomes of a stakeholder participation exercise at the AONB Annual Forum held in November 2004.

The information on values and sensitivities is used to identify the constraints to wind turbine development in the AONB.

## LANDSCAPE VALUE

In the following table the key values associated with the Downs Plain landscape are noted.

### Table 5ii.1: Downs Plain Landscape Value

| Landscape Values |
|---|
| **Stakeholder Values (AONB Annual Forum Workshop Nov 2004)**<br>The most valued perceptual elements include<br>• Pockets of remoteness.<br>The most valued natural and physical elements include:<br>• The springs and streams.<br>• Woodland clumps.<br>The most valued cultural elements include:<br>• The complex of Neolithic monuments of Avebury World Heritage Site.<br>• Windmill Hill and Silbury Hill<br>• Redbrick, weatherboard and thatch buildings<br>• Spring line settlements (on the boundary with the scarp) |
| **Main Views (AONB Annual Forum Workshop Nov 2004)**<br>Views from the Ridgeway into this landscape type are particularly valued.<br>The extensive views from the Open Downlands across the landscape were also noted, for example:<br>From Barbury Castle looking north<br>From Hackpen Hill<br>From Windmill Hill<br>Views from Swindon towards the AONB were also mentioned |
| **Other Values**<br>• **Natural:** Relatively, little ecological value under present management regimes, although some areas of woodland, parkland and water within shallow valleys.<br>• **Cultural:** This landscape type has one of the densest concentrations of Neolithic monuments in Britain with Avebury Plain World Heritage Site, Neolithic monuments around Avebury including the henge, the West Kennet Avenue, Silbury Hill, the Sanctuary and Bronze Age round barrows.<br>• **Recreational:** Includes part of the Ridgeway National Trail (Avebury Plain), plus much of the remaining area is in the view from the Ridgeway on the scarp top of the adjacent Open Downland. |

**Summary of Landscape Values:** The North Wessex Downs AONB is a nationally designated and valued landscape. The Downs Plain is especially highly valued for the complex of Neolithic monuments associated with Avebury World Heritage Site (in character area 5A). The extensive views across the landscape from valued/important key sites on the adjacent Open Downland, including the Ridgeway National Trail are particularly valued, as are views back to the high downs. The remaining 'pockets' of remoteness, which characterise this largely unsettled landscape are also important.

## LANDSCAPE SENSITIVITY

In the following table, the inherent sensitivity of each characteristic has been identified to give an overall understanding of the intrinsic sensitivity of the Downs Plain Landscape Type to wind turbines.

### Table 5ii.2: Landscape Sensitivity

| Key Characteristics | Sensitivities |
|---|---|
| **Remoteness and Tranquillity**<br>• Essentially a very open landscape with extensive views and 'pockets' of remoteness. | **Sensitivity:** The extensive, open character and long views means that any change is likely to be highly visible. The 'pockets' of remoteness are also sensitive – as any form of large scale (tall) development may be visible from these 'remote' areas. |
| **Scale and Enclosure**<br>• A generally uniform, open and exposed landscape with little enclosure.<br>• Variations occur with some smaller scale enclosed and undulating landscape for example at the foot of the Open Downland and in areas cut by shallow valleys. | **Sensitivity:** The open and exposed landscape scale with the absence of enclosing or screening elements means that any change could be highly visible. The more enclosed, undulating landscape associated with the stream valleys and the foothills of the Open Downland scarps are also sensitive to (tall) development, which would be difficult to integrate within the context of the small scale landscape setting. |
| **Landform**<br>• Low-level flat surface extending as a ledge below the Open Downlands.<br>• Frequently associated with a dramatic scarp slope adjoining the Open Downlands or dropping to the Vales (beyond the AONB)<br>• Some shallow valleys cut the Plain e.g. Winterbourne Valley on Avebury Plain.<br>• The landform is more undulating in Hendred Plain (5C towards East Ginge) where numerous valleys cut the | **Sensitivity**: In its own right the flat, level plain is not sensitive, although the more undulating stream valleys and foothills have a higher sensitivity. Although the landform in these more undulating areas provide a greater enclosure and potential for screening views, the small scale landscape context is not appropriate for tall development. Proximity to a dramatic scarp makes many parts of the Downs Plain particularly sensitive due to the issues of scale with the presence of a tall structure potentially reducing the sense of scale associated with the scarp landform.<br>In addition, in South Oxfordshire – the chalk outliers form distinctive hills which are striking visual features – the landform here is highly sensitive to interruption. |

| Key Characteristics | Sensitivities |
|---|---|
| area and in Moreton Plain where stranded hills create a more rolling landform.<br>• In South Oxfordshire the landform includes distinctive stranded hills – outliers of the chalk as at Cholsey Hill and Sinodun Hills. | |
| **Land Cover Pattern**<br>• Almost entirely in intensive arable cultivation.<br>• Large regular fields, the product of parliamentary enclosure with more recent boundary removal.<br>• Close trimmed hawthorn hedgerows form field boundaries or fields occur without enclosure or hedge scrub or tree cover.<br>• Exceptions occur to the general pattern with local areas of woodland, parkland and springs/ dammed ponds within valleys. | **Sensitivity:** In itself the arable land use and land cover pattern of large fields is not inherently sensitive. However, the lack of enclosure provided by field boundaries and general absence of woodland outside the valleys make this a particularly open landscape where any form of tall development would be visually prominent. The lack of woodland and hedgerow cover is a characteristic of the landscape and the creation of new screening measures would generally not be appropriate in this open landscape. Within the stream valleys a development could conflict with more intricate land cover elements (woodland, parkland, pasture and water). |
| **Settlement**<br>• Large parts of the plain are characterised by the absence of settlement with former military airfields/hangars are often the only significant development.<br>• Small settlement characterise the shallow valleys e.g. on Avebury Plain and Hendred Plain.<br>• There are several large settlements immediately to the north of the Downs Plain and Scarp on the edge of the AONB.<br>• | **Sensitivity:** The small-scale hamlets, estates and parklands associated with the shallow valleys that cut the plain are particularly sensitive to the location of large scale structures in close proximity. |
| **Landmarks/Important Landscape Features**<br>• Avebury Plain World Heritage Site contains one of the densest concentrations of Neolithic monuments in Britain, including the distinctive stone circle at Avebury, Silbury Hill and a Neolithic causewayed enclosure at Windmill Hill. | **Sensitivity:** The Neolithic features (Avebury World Heritage Site) and setting are extremely sensitive. A tall development within the view of the site or setting of monuments would conflict with the historic landscape. |
| **Prominent Built Structures**<br>• Hangers and MOD structures e.g. at Wroughton. | **Sensitivity:** The presence of a number of existing large scale developments may reduce the sensitivity of the receiving landscape to wind turbine structures, but it does |

| Key Characteristics | Sensitivities |
|---|---|
| • Extensive development at Harwell/Chilton Campus.<br>• M4 cuts through this landscape type. | not necessarily diminish the sensitivity of such development in the wider landscape context. |
| **Skyline**<br>• The Downs Plain landscape type is contained by the Open Downland and Downs Scarp, which form a particularly sensitive skyline. | **Sensitivity:** The Open Downland and scarp slopes form an elevated and very sensitive skyline. As noted, proximity to a dramatic scarp makes many parts of the Downs Plain particularly sensitive due to the issues of scale with the presence of a tall structure potentially reducing the sense of scale and 'drama' associated with the scarp landform. |
| **Internal Views**<br>• High degree of intervisibility and long views created by a combination of the flat landform and sparse tree and hedge cover.<br>**Views and Connections with Adjacent Landscapes**<br>• Important visual connections with the Open Downland and Downs Plain scarp forming a strong backdrop and containment. In some areas the Down Plain is elevated above the scarp.<br>• Downs Plain has an important function in the experience of AONB landscape, for example, travelling on roads leading up from Vale – the Downs Plain (located above a first scarp) provides a transitional landscape and prelude to the drama of the higher downs beyond.<br>• Extensive views across parts of the plain can be obtained from key visitor sites such as Barbury Castle and Hackpen Hill and Liddington Castle and the Ridgeway National Trail.<br>• The larger settlements lying just outside the Downs Plain and Scarp, including Swindon, Wantage, Didcot and Wallingford have an impact on the area in visual terms and in respect of loss of tranquiltiy. | **Sensitivity:** As noted, the generally, open flat landscape has a high degree of intervisibility within which any tall structure would be visually prominent. The views from this landscape (to the Open Downlands) and across the landscape from key visitor sites on the Open Downland scarp are particularly sensitive. The role of the Downs Plain in the experience of the AONB i.e. as a step up to, and prelude to the high remote downs is also sensitive. |

| Key Characteristics | Sensitivities |
|---|---|
| **Summary of Visual Sensitivity:** In summary, the key visual sensitivity of the Downs Plain landscape is its open character within which tall development would be highly visible. Of particular sensitivity are the views to, from and within the Avebury WHS. The extensive views across the Downs Plain from a number of important/valued sites on the Open Downlands including the Ridgeway National Trail are also highly sensitive to visual intrusion. In this landscape type sensitivity is heightened due to the open character and sparse woodland and hedgerow cover. The openness is a key characteristic and in this context extensive screen planting would not be appropriate. **Overall Visual Sensitivity: High**<br><br>**Summary of Landscape Character Sensitivity:** Particularly high sensitivities relate to the site and setting of Avebury WHS (in character area 5A), and also the proximity of the dramatic landform of the Open Downland and Downs Scarp which provides an important skyline, dramatic backdrop and containing feature. Within this landscape the presence of a tall structure could potentially reduce the sense of scale associated with the scarp landform and the role of the Downs Plain in the experience of the AONB landscape – as a transitional area and 'step' up to the remote open downlands. Further sensitivities relate to the more intricate small-scale landscape pattern of the minor valleys that cut through the plain and include a greater concentration of settlement, parkland and woodland. **Overall Landscape Character Sensitivity: Moderate,** with higher sensitivities in relation to the site and setting Avebury WHS and areas in close proximity to the Open Downland. | |

## CONSTRAINTS TO WIND TURBINE DEVELOPMENT WITHIN THE DOWNS PLAIN LANDSCAPE TYPE

The following table considers both the landscape values and sensitivities, identified above, to indicate the constraints to wind turbine development within the Downs Plain landscape type.

### Table 5ii.3: Summary Table indicating Constraints to Wind Turbine Development in the Downs Plain Landscape Type

| Summary of Landscape Values | Summary of Sensitivities | | Constraints to Turbine Development |
|---|---|---|---|
| | Visual | Landscape Character | |
| **Highly valued** in relation to Avebury WHS, the Ridgeway, relationship with, and key views to and from, the Open Downlands and 'pockets' of remoteness. | **High** with the key visual sensitivity of the Downs Plain landscape being its open character within which tall development would be highly visible. The extensive views from a number of important/valued sites on the Open Downlands are also highly sensitive. | **High** sensitivities relating to the site and setting of Avebury WHS (in character area 5A), and also the proximity of the dramatic landform of the Open Downland and Downs Scarp which provides an important skyline, dramatic backdrop and containing feature. Areas of **Moderate** sensitivity relating to prominent built structures and the location of large settlements lying just outside the Downs Plain and Scarp Landscape Types. | **Moderately – Highly constrained** taking into account the very high sensitivities within the area with key constraints relating to the need to respect/protect the site and setting of Avebury WHS, and the interrelationship and visibility with the adjacent Scarp and Open Downlands. This judgement also takes into account areas of moderate sensitivity relating to prominent built structures and the location of settlements. |

## SUMMARY OF CONSTRAINTS IN RELATION TO DIFFERENT TYPES OF TURBINE DEVELOPMENT

**Height Class 1 (25 – 40m) Single Turbine:** Notwithstanding the site and setting of Avebury WHS and the open areas of the Downs Plain which are all highly constrained, the Downs Plain landscape is judged to be **moderately constrained** in relation to a single HC1 turbine development. The moderate judgement takes into account major development sites located within the area at the Harwell/Chilton Campus and Wroughton Airfield, and the presence of several urban areas to the north which are situated just outside the AONB. The key constraints are:

- the site and setting of Avebury WHS. Here, even a single turbine development of a relatively low height would not be appropriate in relation to the site and setting of the monuments; the introduction of a modern, vertical development could conflict with the historic landscape character;
- the essentially open landscape where any turbine would have the potential to be highly visible. The openness of the Downs Plain is a key characteristic and in this context screen planting would not be appropriate;
- the transition with the adjacent dramatic backdrop landscapes of the Open Downland, and areas which retain a highly remote and tranquil character.

**Notes on Cumulative Development:** Given the constraints outlined above opportunities for cumulative development are limited.

**Height Class 2 (40 – 80m) Single Turbine:** The Downs Plain landscape is judged to be **moderately – highly constrained** in relation to a single HC2 turbine development. Given the landscape context and relationship with the adjacent Open Downlands it is considered that developments at the upper end of the height class will not be appropriate. They key constraints to a single HC2 turbine development are:

- the site and setting of Avebury WHS;
- sensitive views to and from the Open Downlands particularly views across the plain from key visitor/archaeological sites and from the Ridgeway National Trail;
- the Open Downland and Downs scarp backdrop where a Height Class 2 turbine could potentially reduce the sense of scale, if located in close proximity;
- pockets of remoteness and tranquillity with roads and development largely absent, and where the access requirements, plus the built form and movement associated with a turbine could have an adverse impact;
- the more enclosed, intimate landscapes that characterise the shallow stream valleys that cut through the plain where the smaller landscape scale could not support a tall HC2 structure.

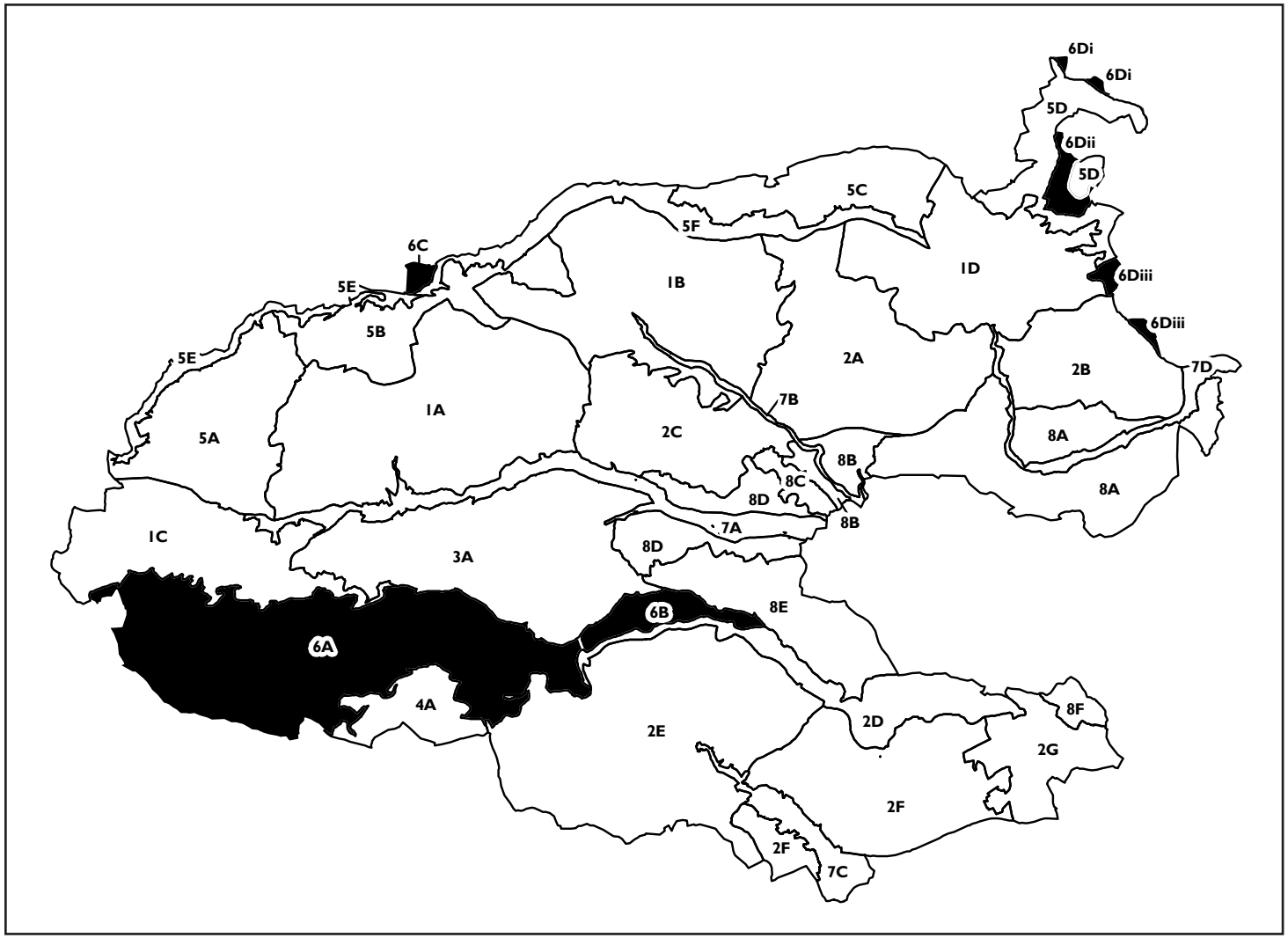
**Notes on Cumulative Development:** Given the constraints outlined above opportunities for cumulative development are limited.

**Height Class 2 (40 - 80m) Group of 2 – 4 Turbines:** Given the very open landscape, high visibility and absence of opportunities for screening it is considered that group of HC2 turbines would form a highly visible development of considerable size and mass. In addition to the constraints outlined for a single HC2 development, a group of turbines could particularly affect the sensitive relationship with the Open Downlands by masking or diluting the contrast with the dramatic backdrop scarps. In summary, the Downs Plain is considered to be **highly constrained** in relation to a group of HC2 turbines.

**Height Class 3 (80m+) Single and Group:** For the reasons noted above, the Downs Plain is also considered to be **highly constrained** in relation to either a single or group of HC3 turbines.

Note: the summary of constraints in relation to a Height Class 1 turbine (see above) are likely to apply equally to developments below the HC1 threshold (i.e. <25 m) given the high sensitivity of the site and setting of Avebury WHS, the essentially open landscape where any turbine would have the potential to be highly visible, and the transition with the adjacent dramatic backdrop landscapes of the Open Downland. An individual site investigation to assess specific sensitivities and constraints to this scale of development would need to be made on a case-by-case basis. Such investigation should also pay particular note to the cumulative impact of such structures.

# 6. Vales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# LANDSCAPE TYPE 6: VALES

## LANDSCAPE CHARACTER OVERVIEW

The Vales are defined topographically and are distinct areas of lowland on Greensand and clays. The transition to these low lying landscapes is often dramatic, marked by steep scarp slope, which forms an imposing backdrop and a dominant borrowed landscape. The Vale of Pewsey, including its narrow eastern extension towards Shalbourne, separates the two main chalk upland blocks of the Downs. In addition there are a number of smaller areas of low-lying vale landscape along the northern and eastern edge of the AONB which relate to the Thames Valley.

### Key Characteristics

**Remoteness and Tranquillity**

- This is for the most part a landscape of movement and activity compared with the tranquil and often empty character of the surrounding downland landscapes. Some variations within the landscape type for example 6B: Shalbourne Vale is noted for its high levels of rural tranquillity.

**Scale and Enclosure**

- A strong sense of enclosure and containment produced by the rising scarp slopes of the downs.
- Although contained by the surrounding downland, some extensive areas of flat vale land can have a more open character and a larger sense of scale.
- Views are frequently constrained and framed by hedgerows and the surrounding topography.

**Landform**

- Distinct areas of lowland with a level surface, contrasting with the adjacent downs. Some low-lying foothills of Lower Chalk (Vale of Pewsey).
- Steep chalk escarpments form a dramatic backdrop and edge landscape.

**Land Cover Pattern**

- A rich, productive agricultural landscape, with a mix of both arable and pasture in fields bound by thick, tall hedgerows.
- Large-scale straight sided fields are dominant.
- Woodland cover is sparse, except where linear belts of willow alder and scrub accentuate the line of the watercourses that weave across the vales.
- Alongside the streams, remnant waterside pastures and riparian woodlands form a 'wetland' landscape of considerable ecological value.

**Settlement**

- Distinct concentration of settlement compared with adjacent downland landscapes.
- Settlement includes compact large villages of Pewsey and Burbage, clustered villages, hamlets and many dispersed residential and farm buildings.
- Swindon located on edge of Wanborough Vale (6C) on the northern edge of the AONB.

**Landmarks/Important Landscape Features**

- The tree belts and bands of riparian vegetation are important visual components that pick out the courses of the various streams.
- The character of the vales is greatly informed by the surrounding areas of downland - landmarks such as the chalk carvings e.g. white horses at Pewsey and Uffculme occur and form important, prominent features from the vales.
- In the Vale of Pewsey the Lower Chalk forms undulating foothills on the flanks of the vale plus some isolated 'stranded' hills within in vale.
- The Kennet and Avon Canal (6A: Vale of Pewsey) and the River Thames (6D: Thames Floodplain) are important features.

**Prominent Built Structures**

- A number of pylon lines cross the flat land of the vales.
- Spires and towers of village churches often punctuate the tree cover and draw the eye.
- Kennet and Avon Canal with its traditional structures including bridges and locks and Pumping Station (Vale of Pewsey).

**Skyline**

- The skyline of the vale is greatly influenced by the ridgelines of the surrounding downland landscapes – forming both open and wooded horizons.
- Where they occur, pylons and church spires are prominent features on the skyline.

Generally, short distance local rural views constrained by hedgerow cover. Vertical elements such as pylon lines are locally prominent.

**Internal Views and Connections with Adjacent Landscapes**

- Generally, short distance local rural views constrained by hedgerow cover. Vertical elements such as pylon lines are locally prominent.
- The chalk downs form an imposing backdrop to the flat low lying Vales – the scarps have an exaggerated elevation in contrast to the vales and create a dramatic imposing skyline.
- In the small vale landscapes on the north-east edge of the AONB there is a strong connection with the River Thames forming the eastern boundary of the AONB and the rising chalk slopes of the Chilterns AONB beyond.

The following tables consider the key values and sensitivities of the Vales landscape type using information taken from the North Wessex Downs AONB – Integrated Landscape Character Assessment (2002) with additional observations included specifically related to wind turbine development. It also incorporates the outcomes of a stakeholder participation exercise held as part of the AONB Annual Forum in November 2004.

The information on values and sensitivities is used to identify the constraints to wind turbine development in the AONB.

## LANDSCAPE VALUE

In the following table the key values associated with the Vales landscape are noted.

### Table 6.1: Vales Landscape Value

| **Landscape Values** |
|---|
| **Stakeholder Values (AONB Annual Forum Workshop Nov. 2004)**<br>The most valued perceptual elements are:<br>• The open character.<br>• Strong contrast with the adjacent higher downs.<br>• High levels of rural tranquillity associated with Shalbourne Vale (6B)<br>The most valued physical and cultural elements include:<br>• The River Avon – important chalk river and Kennet and Avon Canal (6A: Vale of Pewsey).<br>• Mixed arable and pasture farming.<br>• Varied pattern of hedgerows and woodland.<br>• Streams and waterside pastures. |
| **Main Valued Views (AONB Annual Forum Workshop Nov. 2004)**<br>The extensive views that can be obtained across the vales from the adjacent chalk escarpments (Open Downlands and Downlands with Woodland) were noted e.g. from Wilton Windmill, Inkpen Beacon, Adam's Grave, Martinsell Hill, Alton Barnes White Horse, Pewsey White Horse. Similar long views across the Vales in South Oxfordshire (Thames Valley) can also be obtained e.g. from Wittenham Clumps on the Sinodun Hills. |
| **Other Values**<br>• **Natural:** Streams, remnant waterside pastures and riparian woodlands provide variety and ecological interest. The upper part of the River Avon and its tributaries for example, where they thread through the Vale of Pewsey, include a number of SSSIs, part of the River Avon cSAC.<br>• **Cultural:** Relatively few Scheduled Ancient Monuments and Registered Parks and Gardens – occasional sites in Vale of Pewsey.<br>• **Recreational:** There are a number of well-promoted recreational routes within the Vales, including the Severn and Thames National Cycle Route and the Wiltshire White Horse Trail. The Kennet and Avon Canal is a valued recreational feature in the Vale of Pewsey. The Thames Path National Trail follows the course of the River Thames (character area 6). |

**Summary of Landscape Values:** The North Wessex Downs AONB is a nationally designated and valued landscape. The Vales are especially valued for their open character and strong contrast with the Open Downlands. Within this context the pattern of arable and pasture farming and chalk rivers (6A) and streams are particularly important. The extensive views that can be obtained across the lowlying Vale landscapes from the adjacent chalk 'upland', notably from key visitor/archaeological sites are also valued, as are the reciprocal views back to the high downs.

## LANDSCAPE SENSITIVITY

In the following table, the inherent sensitivity of each characteristic has been identified to give an overall understanding of the intrinsic sensitivity of the Downs Plain Landscape Type to wind turbines.

### Table 6.2: Landscape Sensitivity

| Key Characteristics | Sensitivities |
|---|---|
| **Remoteness and Tranquillity**<br>• This is for the most part a landscape of movement and activity reflecting the concentration of settlements and communication routes, compared with the tranquil and often empty character of the surrounding downland landscapes. Some variations within the landscape type for example 6B: Shalbourne Vale is noted for its high levels of rural tranquillity. | **Sensitivities:** The existing activity and movement within the Vales means that the landscape is not highly sensitive to the introduction of built form and movement. |
| **Scale and Enclosure**<br>• A strong sense of enclosure and containment produced by the rising scarp slopes of the downs.<br>• Although contained by the surrounding downland, some extensive areas of flat vale land can have a more open character and a larger sense of scale.<br>• Views are frequently constrained and framed by hedgerows and the surrounding topography. | **Sensitivities:** For areas in close proximity to the enclosing slopes of the downs, any vertical structure would have the potential to reduce the sense of scale and contrast and this is a key sensitivity. Away from the edges, the more open parts of some of the vales are less sensitive. In these areas views are also framed and constrained by the landform and presence of enclosing/screening land cover elements. |
| **Landform**<br>• Distinct areas of lowland with a level surface, contrasting with the adjacent downs. | **Sensitivities:** As noted above, the edges and foothills and the dramatic backdrop created by the surrounding downs could be adversely affected by the imposition of a tall structure that would reduce the sense of scale and contrast; this is a key |

| Key Characteristics | Sensitivities |
|---|---|
| • Steep chalk escarpments form a dramatic edge landscape.<br>• Some low-lying foothills of Lower chalk (Vale of Pewsey).<br>• Numerous small watercourses thread across the vale floor. | sensitivity. The generally level vale floor is not especially sensitive. |
| **Land Cover Pattern**<br>• A rich, productive agricultural landscape, with a mix of both arable and pasture in fields bound by thick, tall hedgerows.<br>• Large-scale straight sided fields are dominant.<br>• Woodland cover is sparse, except where linear belts of willow alder and scrub accentuate the line of the watercourses that weave across the vales.<br>• Alongside the streams, remnant waterside pastures and riparian woodlands form a lush 'wetland' landscape of considerable ecological value. | **Sensitivities:** The agricultural land cover pattern is not inherently sensitive providing key sites such as the wetlands and waterside pastures are respected. The presence of a strong hedgerow network helps provide screening and framing of views. |
| **Settlement**<br>• Distinct concentration of settlement compared with adjacent downland landscapes.<br>• Settlement includes compact larger villages, clustered villages, hamlets and many dispersed residential and farm buildings.<br>• Swindon located on edge of Wanborough Vale (6C) on the northern edge of the AONB. | **Sensitivities:** The generally small and medium scale of settlement would be overwhelmed by very tall structures, if situated in close proximity, although lower height structures may respond to the larger villages that are characteristic of part of the Vales. |
| **Landmarks/Important Landscape Features**<br>• The tree belts and bands of riparian vegetation are important visual components that pick out the courses of the various streams.<br>• The character of the vales is greatly informed by the surrounding areas of downland - landmarks such as the chalk carvings e.g. white horses at Pewsey and Uffculme form important, prominent features from the vales.<br>• In the Vale of Pewsey the Lower Chalk forms undulating | **Sensitivities:** The valued nature conservation sites associated with the streams and rivers are sensitive. A particular sensitivity occurs in relation to the surrounding downland and views to landmarks such as the carved white horses on the scarp slopes.<br>. |

| Key Characteristics | Sensitivities |
|---|---|
| foothills on the flanks of the vale plus some isolated 'stranded' hills within in vale.<br>• The Kennet and Avon Canal (6A: Vale of Pewsey) and the River Thames (6D: Thames Floodplain) are important features. | |
| **Prominent Built Structures**<br>• A number of pylon lines cross the vales.<br>• Spires and towers of village churches often punctuate the tree cover and draw the eye.<br>• Kennet and Avon Canal with its traditional structures including bridges and locks and Pumping Station (Vale of Pewsey). | **Sensitivities:** Sensitivities relate to the existing vertical features such as pylon lines and the need to ensure that further vertical elements do not result in visual clutter. In addition key views to landmarks such as church towers and spites should be respected. |
| **Skyline**<br>• The skyline of the vale is greatly influenced by the ridgelines of the surrounding downland landscapes – forming both open and wooded horizons.<br>• Where they occur, pylons and church spires are prominent features on the immediate skyline. | **Sensitivities:** The surrounding 'distant' skyline of the adjacent downs is sensitive and turbine should not conflict with this skyline – e.g. by being dominant in the foreground and reducing/diluting the perceived scale of the surrounding ridges. The local skyline is also sensitive with existing vertical features including church spires and pylons often prominent. |
| **Internal Views**<br>• Generally, short distance local views constrained by hedgerow cover. Vertical elements are occasionally prominent.<br>**Views and Connections with Adjacent Landscapes**<br>• The chalk downs (Scarps, Open Downland, Wooded Plateau and Downland with Woodland) form an imposing backdrop to the flat low lying Vales – the scarps, in particular, have an exaggerated elevation in contrast to the vales and create a dramatic imposing skyline.<br>• In the small vale landscapes on the north-east edge of the AONB there is a strong connection with the River Thames forming the eastern boundary of the AONB and the rising chalk slopes of the Chilterns AONB beyond.<br>• The Wanborough Vale has a distinct 'urban fringe' | **Sensitivities:** The surrounding downland landscapes offer clear views across the Vales and conversely form an important backdrop in views. As noted above, the connections with the adjacent chalk landscapes are especially sensitive due to the potential for tall structures to reduce/dilute the perceived sense of scale. In the north east of the AONB there is a particularly sensitive relationship with the chalk bluffs and rising slopes of the Chilterns AONB. |

| Key Characteristics | Sensitivities |
|---|---|
| character due to the presence of the M4 and A346 and views to the edge of Swindon. | |

**Summary of Visual Sensitivity:** In summary, the key sensitivity of the Vales landscape is the visual relationship with the enclosing backdrop slopes and skyline of the adjacent downlands, and views to landmarks such as the distinctive chalk cut white horses. There are also a number of expansive views across the Vales from important archaeological/visitor sites on the downland edges, for example Wittenham Clumps across the Thames Floodplain. The strong hedgerow cover provides screening and framing of local views, although in places existing vertical elements are prominent.
**Overall Visual Sensitivity: Moderate.**

**Summary of Landscape Character Sensitivity:** The key sensitivity relates to the relationship with the dramatic backdrop provided by the enclosing downlands and slopes. Within this landscape the presence of a tall structure could potentially reduce the perceived sense of scale and 'drama' associated with the adjacent landform. Other sensitivities include the relationship with existing vertical structures (including church spires and pylons) and the need to minimise clutter and retain key views to features such as church spires. **Overall Landscape Character Sensitivity: Moderate.**

## CONSTRAINTS TO WIND TURBINE DEVELOPMENT WITHIN THE VALES LANDSCAPE TYPE

The following table considers both the landscape values and sensitivities, identified above, to indicate the constraints to wind turbine development within the Vales landscape type.

### Table 6.3: Summary Table indicating Constraints to Wind Turbine Development in the Vales Landscape Type

| Summary of Landscape Values | Summary of Sensitivities | | Constraints to Turbine Development |
|---|---|---|---|
| | Visual | Landscape Character | |
| **Highly valued** for their open character and strong contrast with the chalk downlands, the pattern of arable and pasture farming and chalk rivers (6A) and streams, and the extensive views that can be obtained across the Vale landscapes from the adjacent chalk 'upland'. | **Moderate** with key sensitivities being views to the enclosing backdrop slopes and skyline of the adjacent downlands, and views to landmarks such as the distinctive chalk cut white horses. Also sensitive are expansive views across the Vales from important visitor sites on the downland edges. | **Moderate** with the key sensitivity being the relationship with the dramatic backdrop provided by the enclosing downlands and slopes. Other sensitivities include the relationship with existing vertical structures. | **Moderately – Highly constrained** |

## SUMMARY OF CONSTRAINTS IN RELATION TO DIFFERENT TYPES OF TURBINE DEVELOPMENT

**Height Class 1 (25 – 40m) Single Turbine:** The Vales landscape is judged to be **moderately constrained** to a HC1 turbine development taking into account landscape values and sensitivities. Key constraints include:

- those areas of the vales that retain a highly remote and tranquil character;
- the focal role and setting of church spires within the settled vale landscape;
- the transition and connection with the adjacent backdrop landscapes of chalk foothills and scarps;
- key views to and from the adjacent downland landscapes including view to historic features such as chalk carvings;
- the need to avoid visual clutter in relation to existing elements, such as pylon lines which are a feature of some parts of the vales landscape.

**Notes on Cumulative Development:** It is judged that the Vales landscape type could accommodate more than one single HC1 turbine, providing the constraints noted above are respected.

**Height Class 2 (40 – 80m) Single Turbine:** The Vales landscape is judged to be **moderately – highly constrained** in relation to a single HC2 turbine development. Given the landscape context and relationship with the adjacent downland landscapes it is considered that developments at the upper end of the height class will not be appropriate. They key constraints to a single HC2 turbine development include:

- those areas of the vales that retain a highly remote and tranquil character;
- the connection with the adjacent downland landscapes including key views to and from these areas;
- the focal role that church spires play in the landscape, and the need to maintain their setting and avoid diluting their perceived value and symbolic image;
- the value, and setting, of important historic features visible from the landscape – such as the chalk carvings on the adjacent downland scarps;
- existing vertical structures such as pylons that cross the vales, due to the potential for cluttering;
- the site and setting of valued landscape features particularly the important wetland habitats associated with the steams;
- Relationship with the River Thames landscape setting (character areas 6D).

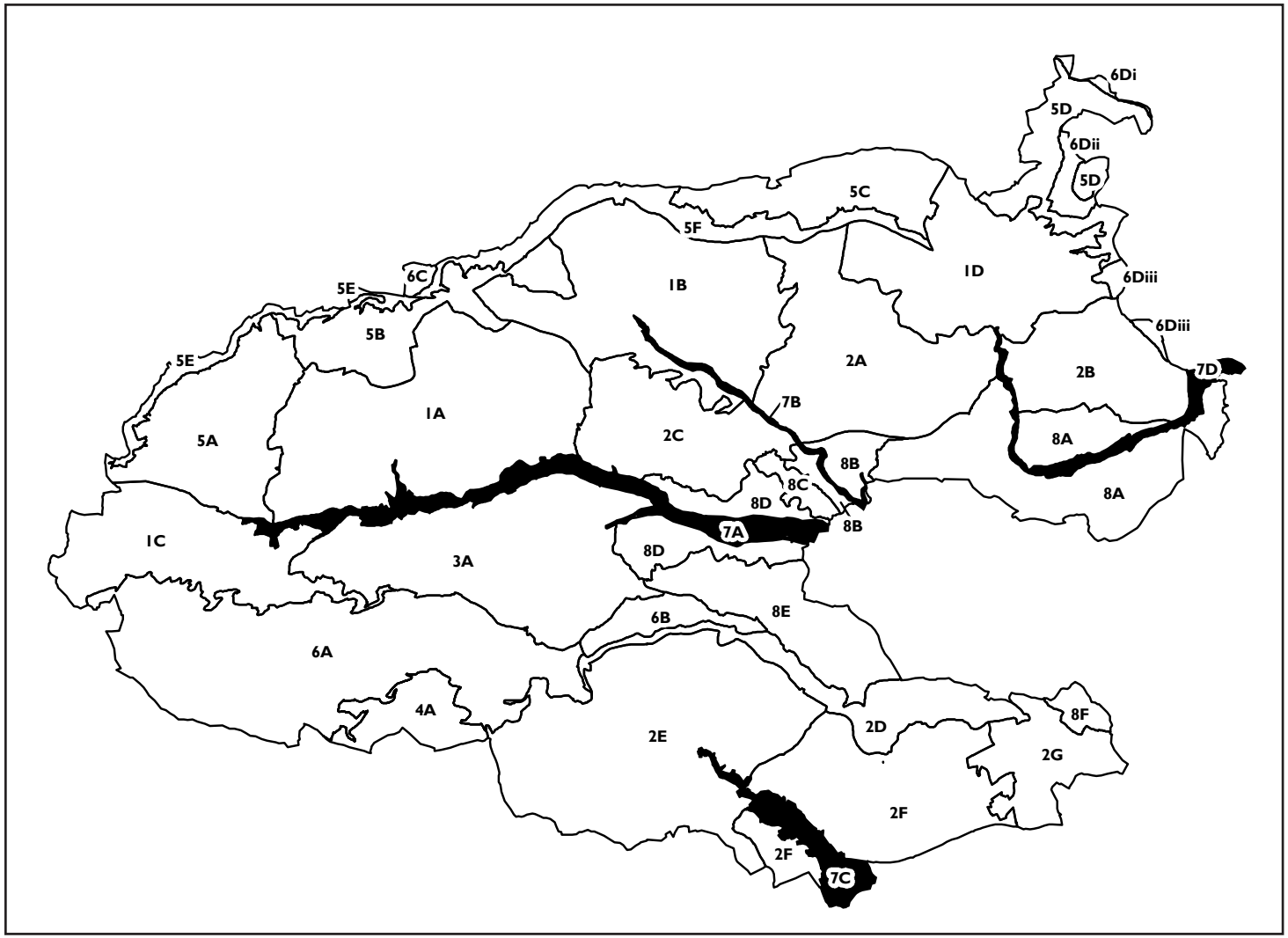
**Notes on Cumulative Development:** There is limited capacity for cumulative development of more than one HC2 turbine development within the Vale landscapes (6A, 6B and 6C). Given the relatively small land area of each of the Vales and their contained character created by the adjacent downland, intervisibility between developments of this scale and height would be likely, and they would become a very dominant feature.

**Height Class 2 (40 - 80m) Group of 2 – 4 Turbines:** The Vales are essentially a settled landscape and therefore it is considered that a group of HC2 turbines would form a highly visible development of considerable size and mass in relation to the scale of existing hamlets, villages and small towns. In addition to the constraints outlined for a single HC2 development, a group of turbines could particularly affect the sensitive relationship with the adjacent downland landscapes by masking or diluting the contrast with the dramatic backdrop scarps. In summary, the Downs Plain is considered to be **highly constrained** in relation to a group of HC2 turbines.

**Height Class 3 (80m+) Single and Group:** For the reasons noted above, the Vales are also considered to be **highly constrained** in relation to either a single or group of HC3 turbines.

Note: the Vales landscape is likely to have fewer constraints to developments below the HC1 threshold (i.e. <25 m). An individual site investigation to assess specific sensitivities and constraints to this scale of development would need to be made on a case-by-case basis. Such investigation should also pay particular note to the cumulative impact of such structures.

# 7. River Valleys




# LANDSCAPE TYPE 7: RIVER VALLEYS

## LANDSCAPE CHARACTER OVERVIEW

The landscape type encompasses the four rivers of the Kennet, Lambourn, Bourne and Pang. The boundaries of the River Valleys identify a relatively narrow corridor comprising the floodplain and immediate valley sides. Incising the chalk uplands the valleys form a distinct linear landscape characterised by a rich mix of grazed pastures, water meadows, wetland and woodland. The valleys are enclosed by steeply rising slopes which limit vistas and create an intimate and enclosed character.

## Key Characteristics

**Remoteness and Tranquillity**

- This is not a remote landscape and although tranquil in places there are obvious busy corridors through the river valleys of roads and settlement.

**Scale and Enclosure**

- Boundaries of the river valley identify a relatively narrow corridor comprising the floodplain and immediate valley sides.
- A small scale landscape with the steeply rising slopes of the valley creating an intimate and enclosed character.

**Landform**

- The chalk rivers incise the uplands of the North Wessex Downs forming a distinct linear landscape.
- Valley landform typically has short relatively steep sides enclosing a narrow flat alluvial floodplain.
- Include some upper dry valleys heads with ephemeral winterbournes.

**Land Cover Pattern**

- Diverse texture and structure created by the floodmeadows, grazed pasture, calcareous fen, marsh, damp woodland and lines of pollarded willow.
- Remnant 'floated' water meadows and watercress beds.
- Fields are characteristically small, hedged enclosures with sinuous boundaries, which may reflect the shape of former medieval strips and furlongs.
- Ancient woodlands and parklands are distinctive historic features.

**Settlement**

- Concentration of settlement in the river valleys in contrast to the uninhabited downland areas.

- Linear and nucleated villages characteristically located along a road on the first contour above the winter flood level on the south facing side of the valley.
- Settlements include tiny hamlets clustered around a church, small villages and the two market towns of Marlborough and Hungerford.

**Landmarks/Important Landscape Features**

- Lines of poplars along ditches and willow pollards are distinctive features.
- A range of archaeological sites and artefacts from the prehistoric period onwards (continuity of settlement).
- One of the most notable historic features are the floated water meadows.
- Remnants of mill systems including leats and ponds.
- Archaeological monuments associated with Avebury World Heritage Site (WHS) including the Sanctuary (in character area 7A).

**Prominent Built Structures**

- Rail and road corridors often follow the valley route with smaller roads and lanes climbing the valley sides perpendicular to the river course.
- Where they cross the river valley overhead power lines and pylons are highly visible.
- Mills and churches are prominent built features.
- Kennet and Avon canal and associated built structures are a dominant feature in 7A: Kennet Valley.

**Skyline**

- The steeply rising slopes limit long vistas.
- Sensitive downland skyline in view from the river valleys. Pylons in some areas form prominent features on the skyline.

**Internal Views and Connections with Adjacent Landscapes**

- Within the valleys views are constrained by the rising slopes and land cover elements. Short, framed local views frequently encompass attractive features such as parkland, grazed wet meadows, vernacular settlement, mills etc.
- Valley sides are predominantly formed by the Open Downland, Downland with Woodland and Wooded Plateau landscape types so although there is visual connection into this landscape type, views are constrained to the immediate (sensitive and often empty) ridgelines of the scarps and more gentle slopes.
- There is a more subtle transition with the Lowland Mosaic in the lower reaches of the Kennet, Lambourn and Pang.

The following tables consider the key values and characteristics of the River Valleys landscape type taken from the North Wessex Downs AONB – Integrated Landscape Character Assessment (2002) with additional observations included specifically relating to wind turbine development. It also incorporate the outcomes of a stakeholder participation exercise, which formed part of the AONB Annual Forum held in November 2004.

The information on landscape values and sensitivity is used to identify constraints to wind turbine development in the AONB.

## LANDSCAPE VALUE

In the following table the key values associated with the River Valleys landscape are noted.

### Table 7.1: River Valleys Landscape Value

| Landscape Values |
|---|
| **Stakeholder Values (AONB Annual Forum Workshop Nov. 2004)**<br>The most valued perceptual elements are:<br>• Rural, small scale, intimate and pastoral character plus sense of isolation in parts<br>The most valued physical and cultural elements include:<br>• The chalk rivers and associated habitats.<br>• Diverse and rich land cover mosaic.<br>• Water meadows.<br>• Scattered farmsteads, hamlets and villages & distinctive buildings.<br>• In CA:7A the Kennet and Avon Canal and The Sanctuary part of the Avebury World Heritage Site are particularly valued features.<br>Other valued elements noted include:<br>• Recreational and leisure opportunities.<br>• Dark skies.<br>• Sense of slow gentle movement (water). |
| **Main Valued Views (AONB Annual Forum Workshop Nov. 2004)**<br>The stakeholder consultation exercise indicated a large number of small scale local views of representative river valley landscapes. These often related to views from the extensive public access and lanes within the valleys. Some valued sites include Ramsbury Water Meadows, Kennet and Avon Canal, The Sanctuary, Membury Hillfort, Pangbourne Moors, Perborough Castle, Bourne Valley villages etc. An interesting quote notes the "feeling of looking upwards/sidewards to the 'landscape' around you". The visual relationship from the surrounding slopes looking down into the valleys is also valued. |
| **Other Values**<br>• **Natural:** Large number of designated sites including SSSI and several candidate Special Areas of Conservation (cSAC). In addition to the chalk |

| Landscape Values |
|---|
| streams and rivers, important habitats include wet woodlands meadows and fen. Ancient woodlands and parklands are distinctive historic features. The riparian copses and linear woodland in combination with the hedgerows provide a valuable habitat network<br>• **Cultural:** Range of archaeological sites and artefacts from the prehistoric period onwards. Each valley includes at least one registered historic park/garden. Range of settlements – valued for their historic buildings and distinctive local vernacular.<br>• **Recreational:** Opportunities for walking, riding and cycling along the numerous Public Rights of Way. The canals and rivers also provide opportunities for boat trips, water sports and fishing. |
| **Summary of Landscape Values**: The North Wessex Downs is a nationally designated and valued landscape. Key valued features of the River Valleys include the rural, small scale, intimate and pastoral character, the historic settlements, the range of important habitats including the chalk rivers, and associated historic sites including water meadows and mill systems. The valleys also provide an accessible and valued recreational resource. |

## LANDSCAPE SENSITIVITY

In the following table, the inherent sensitivity of each key characteristic has been identified to give an overall understanding of the intrinsic sensitivities of the River Valleys to wind turbines.

### Table 7.2: Landscape Sensitivity

| Key Characteristics | Sensitivities |
|---|---|
| **Remoteness and Tranquillity**<br>• This is not a remote landscape and although tranquil in places there are obvious busy corridors through the river valleys of roads and settlement. | **Sensitivities:** The existing activity within the River Valleys suggests that they are not highly sensitive to the introduction of built form and movement associated with wind turbines. Nevertheless, larger structures or groups of structures would appear very dominant within the confined intimate, generally rural landscape of the river valleys. |
| **Scale and Enclosure**<br>• Boundaries of the river valley identify a relatively narrow corridor comprising the floodplain and immediate valley sides.<br>• A small-scale landscape with the steeply rising slopes of the valley creating an intimate and enclosed character. | **Sensitivities:** A tall vertical structure would appear dominant and out of proportion within the intimate scale and confined, enclosed character of the river valleys. The small-scale of the river valleys is therefore considered to be highly sensitive to the imposition of tall vertical structures. |
| **Landform**<br>• The chalk rivers incise the uplands of the North Wessex Downs forming a distinct linear landscape.<br>• Valley landform typically has short relatively steep | **Sensitivities:** The narrow floodplain and steep enclosing valley sides are a key feature of the river valleys. A tall vertical structure would dominate the valley floor and would sit uncomfortably in relation to the valley sides. It would alter the perceived sense of scale created by the valley sides in relation to the floodplain. It would also be very difficult to |

| Key Characteristics | Sensitivities |
|---|---|
| sides enclosing a narrow flat alluvial floodplain.<br>• Include some upper dry valleys heads with ephemeral winterbournes. | accommodate associated infrastructure, such as pylon lines in relation to the confined valley landform. For these reason it the landform is judged to be sensitive. |
| **Land Cover Pattern**<br>• Diverse texture and structure created by the flood meadows, grazed pasture, calcareous fen, marsh, damp woodland and lines of pollarded willow.<br>• Remnant 'floated' water meadows and watercress beds.<br>• Fields are characteristically small, hedged enclosures with sinuous boundaries, which may reflect the shape of former medieval strips and furlongs.<br>• Ancient woodlands and parklands are distinctive historic features. | **Sensitivities:** The land cover of the river valleys is formed by a number of important elements, including – meadow, pasture, ancient woodland and parkland, and small hedged fields. All of these elements are important in contributing to the distinctive character of the river valleys and their strong contrast with the adjacent downlands. These land cover elements are intrinsically sensitive and their sites and setting should be conserved. |
| **Settlement**<br>• Concentration of settlement in the river valleys in contrast to the uninhabited downland areas.<br>• Linear and nucleated villages characteristically located along a road on the first contour above the winter flood level on the south facing side of the valley.<br>• Settlements include tiny hamlets clustered around a church, small villages and the two market towns of Marlborough and Hungerford. | **Sensitivities:** In the context of the enclosing valley sides, even a relatively low vertical structure could be over-powering in relation to the small settlements and hamlets characteristic of the river valleys. The larger villages and market towns may be less sensitive but the need to retain the clear valley skylines and enclosure in relation to these settlements is a key consideration. |
| **Landmarks/Important Landscape Features**<br>• Lines of poplars along ditches and willow pollards are distinctive features.<br>• A range of archaeological sites and artefacts from the prehistoric period onwards (continuity of settlement).<br>• Archaeological monuments associated with Avebury World Heritage Site (WHS) including the Sanctuary (in character area 7A).<br>• One of the most notable historic features are the floated water meadows. | **Sensitivities:** The river valleys contain a collection of historic landscape features which provide and important contributor to local character. These features and their settings are sensitive to large-scale development. |

| Key Characteristics | Sensitivities |
|---|---|
| • Ancient woodlands and parklands are distinctive historic features. | |
| **Prominent Built Structures**<br>• Rail and road corridors often follow the valley route with smaller roads and lanes climbing the valley sides perpendicular to the river course.<br>• Where they cross the river valley overhead power lines and pylons are highly visible.<br>• Mills and churches are prominent built features.<br>• Kennet and Avon Canal and associated built structures is a dominant feature in 7A: Kennet Valley. | **Sensitivities:** There is the potential for an uncomfortable visual relationship should a turbine be located close to pylons (cluttering due to different function and form). The mills and churches are prominent built features and their site and setting is sensitive and should be conserved. |
| **Skyline**<br>• The steeply rising slopes limit long vistas.<br>• Strong 'empty' downland skyline in view from the river valleys.<br>• Pylons in some area form prominent features on the skyline. | **Sensitivities:** Skylines largely relate to the adjacent downland landscapes, which form the rising slopes of the valleys – these are form a strong enclosing feature and are therefore particularly sensitive to intrusion of large scale built features, which would break the strong ridgeline and would be visually dominant and overpowering in views from the small scale valleys. |
| **Internal Views**<br>• Within the valleys views are constrained by the rising slopes and land cover elements. Short, framed local views frequently encompass attractive features such as parkland, grazed wet meadows, vernacular settlement, mills etc.<br>**Views and Connections with Adjacent Landscapes**<br>• Valley sides are predominantly formed by the Open Downland, Downland with Woodland and Wooded Plateau landscape types so although there is visual connection into this landscape type, views are constrained to the immediate (often empty) ridgelines of the downland slopes.<br>• There is a more subtle transition with the Lowland Mosaic in the lower reaches of the Kennet, Lambourn and Pang. | **Sensitivities:** In the context of the local, framed views that can be obtained within the river valleys any form of tall development has the potential to be very dominant.<br>Sensitivities: Long views out are limited by the immediate downland slopes and views into the valley are similarly constrained by topography. As noted above, the 'empty' ridgelines of the downland slopes that enclose the valleys are important providing enclosures and containment and are extremely sensitive to turbine development. |

| Key Characteristics | Sensitivities |
|---|---|
| **Summary of Visual Sensitivity:** In summary, the key visual sensitivities of the River Valley, relate to the small scale and consequent local framed views within which any form of tall development would appear very dominant and overpowering. A further visual sensitivity relates to the enclosing downland slopes and 'empty' ridgelines, which frequently form a strong skyline in views from the valley floor. **Overall, the Visual Sensitivity of the River Valley landscape is judged to be High.**<br><br>**Summary of Landscape Character Sensitivity**: The River Valleys are inherently sensitive to any form of large scale or tall developments by virtue of their small scale and confined topography. They also contain a high number of sensitive features including the chalk rivers and associated habitats, water meadows, pasture, ancient woodland and parkland, plus small hedged fields. The attractive settlements, vernacular and historic buildings including churches, manor houses and mills are also sensitive. All of these elements are important in contributing to the distinctive character of the river valleys and their strong contrast with the adjacent 'downlands'. **Overall, Landscape Character Sensitivity is judged to be High**. | |

## CONSTRAINTS TO WIND TURBINE DEVELOPMENT WITHIN THE RIVER VALLEY LANDSCAPE TYPE

The following table considers both the landscape values and sensitivities, identified above, to indicate the constraints to wind turbine development within the River Valley landscape type.

### Table 7.3: Summary Table indicating Constraints to Wind Turbine Development in the River Valley Landscape Type

| Summary of Landscape Values | Summary of Sensitivities | | Constraints to Turbine Development |
|---|---|---|---|
| | **Visual** | **Landscape Character** | |
| **Highly valued** for the rural small-scale, intimate and pastoral character, the historic settlements, the range of important habitats including the chalk rivers, and associated historic sites including water meadows and mill systems. The valleys also provide an accessible and valued recreational resource. | **High,** the key visual sensitivities are the local, framed views within which any form of tall development would appear very dominant. A further visual sensitivity relates to the enclosing downland slopes and 'empty' ridgelines, which form a strong skyline in views from the valley floor. | **High, t**he River Valleys are inherently sensitive by virtue of their small scale and confined topography. They also contain a high number of sensitive features, all of which are important in contributing to the distinctive character of the river valleys and their strong contrast with the adjacent 'downland'. | **Highly constrained** |

## SUMMARY OF CONSTRAINTS IN RELATION TO DIFFERENT TYPES OF TURBINE DEVELOPMENT

**Height Class 1 (25 – 40m) Single Turbine:** The River Valleys are judged to be **highly constrained** in relation to a HC1 turbine development. They key constraints to a HC1 turbine development are:

- the enclosed and confined valley landform, whereby turbine development could appear over dominant and reduce the perceived sense of scale of the valley sides;
- the relatively narrow flat floodplain which could rarely accommodate a turbine structure;
- the wealth of important landscape features including valued habitats – chalk rivers, fen, marsh, wet woodlands etc.
- important historic features including parkland and historic houses, flood meadows, mills, churches and in area 7A: monuments associated with the Avebury WHS;

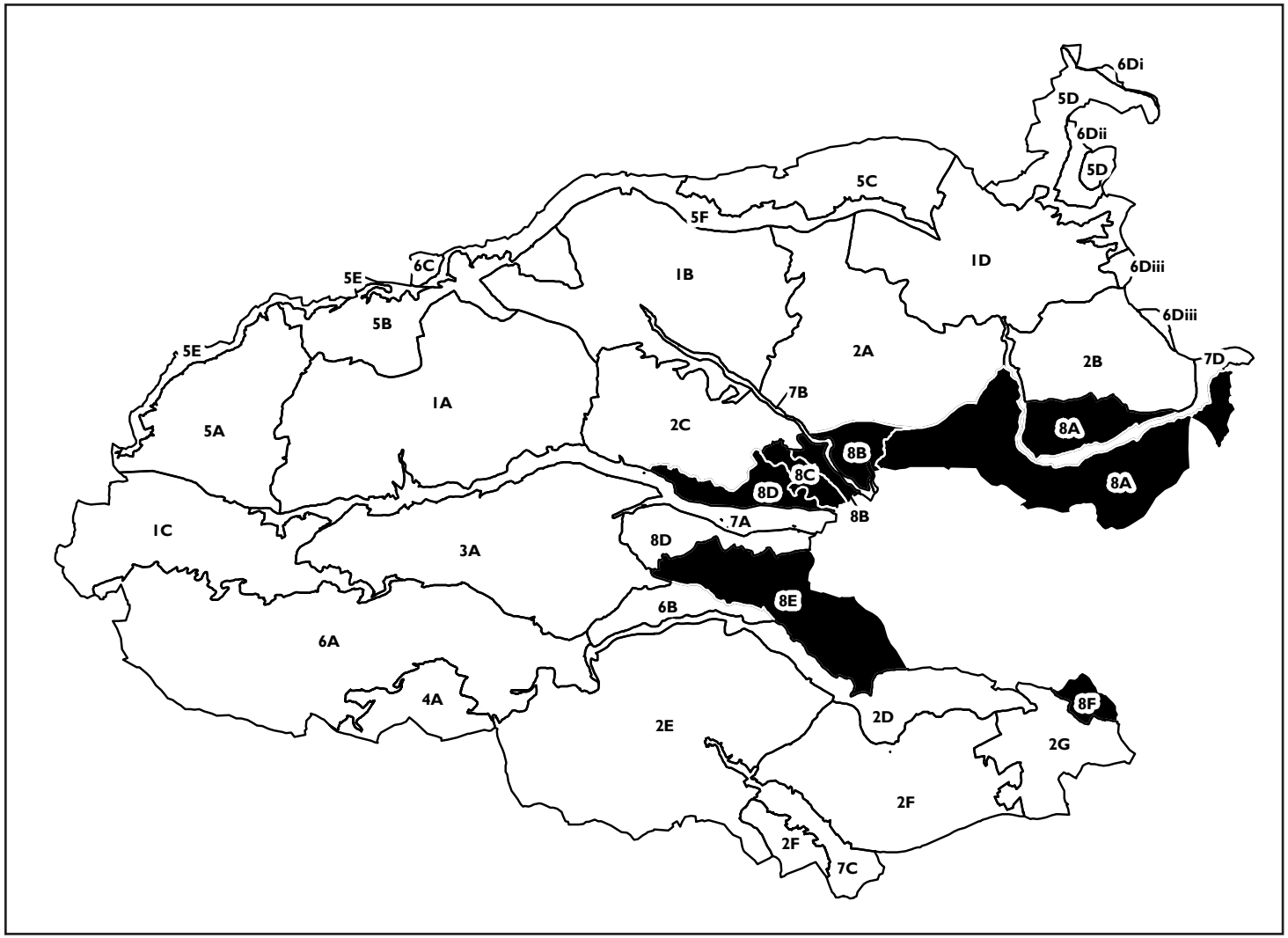
- sensitive downland skyline and enclosing ridges;
- attractive vernacular historic settlements – notably the small villages and hamlets which, within the confined valley setting would be overwhelmed by turbine development;
- the need to retain the clear valley skylines and enclosure in relation to the larger villages and market towns;
- valued local views;
- essentially quiet, rural character.

In some parts of the valley landscape these constraints are not present or are present to a lesser degree.

**Height Class 2 (40 – 80m) and Height Class 3 (80m+) Single Turbine and Groups:** For the reasons noted above, the River Valley landscape type is also **highly constrained** for the location of any form of height class 2 or height class 3 turbine. The scale of such a development would be over dominant in relation to the intimate, small scale of the river valley landform and high density of sensitive landscape features.

Note: Given the above constraints and the very high sensitivity of the River Valley landscape; it is likely to be similarly constrained in relation to developments below the HC1 threshold (i.e. <25 m) unless these are of a small scale and integrated with existing built structures. An individual site investigation to assess specific sensitivities and constraints to this scale of development would need to be made on a case-by-case basis. Such investigation should also pay particular note to the cumulative impact of such structures.

# 8. Lowland Mosaic




# LANDSCAPE TYPE 8: LOWLAND MOSAIC

## LANDSCAPE CHARACTER OVERVIEW

The Lowland Mosaic comprises a low lying area in the eastern part of the AONB to either side of the Kennet Valley and between the two main chalk upland blocks to the north and south. The boundaries are essentially defined by the geology with a change from the chalk to clays, sands and gravels. This is a small-scale wooded landscape distinctive for its lowland topography, and mixed land cover of woodland, pasture and common land, with a pattern of dispersed, relatively dense settlement. It provides a strong contrast to the elevated downland landscapes.

### Key Characteristics

**Remoteness and Tranquillity**

- The enclosed contained character, including presence of extensive woodland cover, which limits visual and aural intrusions, enhances the perception of tranquillity.
- Not a remote or tranquil landscape due to the proximity to large urban centres, (Reading and Newbury) presence of main roads M4, A4 and A34 plus relatively dense settlement. Nevertheless it is an intact, rural landscape with some considerable pockets of tranquillity.

**Scale and Enclosure**

- Generally, a small-scale intimate landscape. Visually enclosed, except at high points where there are glimpses to the higher chalklands.
- An intricate network of narrow rural lanes frequently overhung by deep grass or woodland banks contribute to the secluded enclosed character.
- A diverse and complex landscape.

**Landform**

- A predominantly low-lying undulating landscape, enclosed by the chalk to the north, south and west.
- Crossed by the river valleys of the Pang, Lambourn and Kennet.
- Local, topographic diversity with clays separated by gravel ridges.

**Land Cover Pattern**

- A land cover mosaic comprising fragments of remnant heathland, extensive woodlands and pasture as well as some more open areas of arable land.
- Characterised by irregular fields cut from woodland in the medieval or post-medieval period, interspersed with parcels of woodland or commons. In some areas more open arable landscapes are dominant. Also some larger regular fields of parliamentary enclosure.

- Network of ancient semi-natural woodland with connecting hedgerows plus areas of historic parkland including wood pasture and veteran trees.

**Settlement**

- One of the most densely settled landscape types in the AONB with a diverse range of settlement types.
- Some villages clustered around a nucleus associated with a church or village green and others with a more dispersed pattern scattered along the intricate network of rural lanes.

**Landmarks/Important Landscape Features**

- Former medieval deer parks many refashioned in the 18th century as formal designed parks and gardens, plus associated houses are a notable feature.

**Prominent Built Structures**

- Local presence of main roads and infrastructure (e.g. M4, A34, A343), plus development pressures.

**Skyline**

- The woodland cover limits vistas and the skyline does not form a distinctive feature.
- Occasional glimpsed views to prominent skyline of adjacent Downland with Woodland landscape type.

**Internal Views and Connections with Adjacent Landscapes**

- Occasional glimpsed views to prominent skyline of adjacent Downland with Woodland landscape type.
- Subtle transition with the river valley landscapes of the Kennet, Lambourn and Pang.

The following tables consider the key values and characteristics of the Lowland Mosaic landscape type taken from the North Wessex Downs AONB – Integrated Landscape Character Assessment (2002) with additional observations included specifically related to wind turbine development. It also incorporates the outcomes of a stakeholder participation exercise held as part of the AONB Annual Forum in November 2004.

The information on landscape values and sensitivity is used to identify constraints to wind turbine development in the AONB.

## LANDSCAPE VALUE

In the following table the key values associated with the Lowland Mosaic landscape are noted.

### Table 8.1: Lowland Mosaic Landscape Value

| Landscape Values |
|---|
| **Stakeholder Values (AONB Annual Forum Workshop Nov. 2004)**<br>The most valued perceptual elements are:<br>• rural, quiet character.<br>The most valued physical and cultural elements include:<br>• ancient hedgerows with mature hedgerow trees.<br>• ecologically important habitats.<br>• large number of footpaths and bridleways.<br>• field patterns. |
| **Main Valued Views (AONB Annual Forum Workshop Nov. 2004)**<br>In the north east part of the Lowland Mosaic (character areas 8A, 8B, 8C) a number of local small scale views were noted e.g. from footpaths. In the south east (character areas 8D, 8E) the impressive views that can be obtained across the area from the adjacent scarp (2D) at Beacon Hill, Walbury Hill and Watership Down are especially valued. |
| **Other Values**<br>• **Natural:** Important habitats include the extensive network of ancient woodland, parkland including permanent pasture and mature/veteran trees and small areas of heathland. Represented by a number of SSSI.<br>• **Cultural:** Ancient woodlands, parklands and designed parks plus large number of historic houses are valued historic features. There are a number of Registered parks and gardens and Scheduled Monuments.<br>• **Recreational:** An extensive network of footpaths, bridleway and byways plus open access to some woodlands and commons. Visitor attractions include the large number of historic houses and gardens. |

**Summary of Landscape Values:** This is part of the North Wessex Downs AONB, a nationally designated and valued landscape. The Lowland Mosaic landscape type is particularly valued for its perception of tranquillity and intact rural character, historic features, habitats (woodland, heathland and parkland) and wealth of recreational opportunities.

## LANDSCAPE SENSITIVITY

In the following table, the inherent sensitivity of each key characteristic has been identified to give an overall understanding of the intrinsic sensitivities of the Lowland Mosaic to wind turbines.

### Table 8.2: Landscape Sensitivity

| Key Characteristics | Sensitivities |
|---|---|
| **Remoteness and Tranquillity**<br>• The Lowland Mosaic is not a remote or tranquil landscape due to the proximity to large urban centres, (Reading and Newbury) presence of main roads M4, A4 and A34 plus relatively dense settlement. Nevertheless it is an intact, rural landscape with some considerable pockets of tranquillity. The enclosed contained character, including presence of extensive woodland cover, which limits visual and aural intrusions, enhances the perception of tranquillity and peacefulness. | **Sensitivities:** The existing activity within the Lowland Mosaic means that the parts of the landscape are not highly sensitive to the introduction of built form and movement. The presence of lower heights of turbine would also be buffered to an extent by the extent of woodland cover. However the presence of groups of turbines particularly those of greater heights extending far above the tree canopy would be perceived as a major development with impacts on the perception of the rural tranquil character. The landscape therefore would be more sensitive to very tall structures and groups of structures. |
| **Scale and Enclosure**<br>• Generally, a small-scale intimate landscape. Visually enclosed, except at high point where there are glimpses to the higher chalklands.<br>• An intricate network of narrow rural lanes frequently overhung by deep grass or woodland banks contribute to the secluded enclosed character.<br>• A diverse and complex landscape. | **Sensitivities:** The enclosed contained character suggests that a structure of a low height would not be visually prominent. Taller structures, groups of turbines and associated infrastructure such as pylon lines could appear out of scale in relation to the small-scale intimate landscape and sensitivities to such structures are therefore higher. A key sensitivity relates to areas in close proximity to the chalk scarps where the introduction of a vertical structure could create a discordant feature in relation to the scale of the landform. |
| **Landform**<br>• A predominantly low-lying undulating landscape, enclosed by the chalk to the north, south and west. | **Sensitivities:** The low-lying gently undulating landform is it itself not sensitive to wind turbines. However, a key sensitivity relates to areas in close proximity to the chalk scarps where the introduction of a vertical structure could create a discordant feature in relation to the scale |

| Key Characteristics | Sensitivities |
|---|---|
| • Crossed by the river valleys of the Pang, Lambourn and Kennet.<br>• Local topographic diversity with lower clays separated by gravel ridges. | of the adjacent landform. |
| **Land Cover Pattern**<br>• A land cover mosaic comprising fragments of remnant heathland, extensive woodlands and pasture as well as some more open areas of arable land.<br>• Characterised by irregular fields cut from woodland in the medieval or post-medieval period, interspersed with parcels of woodland or commons. Also some larger regular fields of parliamentary enclosure.<br>• Network of ancient semi-natural woodland and connecting hedgerows, plus areas of historic parkland including wood pasture and veteran trees. | **Sensitivities:** The more open, arable areas are least sensitive in land cover terms, although visibility will be greater within these areas. Sensitive land cover elements include the heathland, semi-natural woodland, and historic parkland and the intricate vegetation mosaic that they create together. |
| **Settlement**<br>• One of the most densely settled landscape types in the AONB with a diverse range of settlement types.<br>• Some villages clustered around a nucleus associated with a church or village green and others with a more dispersed pattern scattered along the intricate network of rural lanes.<br>• Proximity to urban areas of Reading, Newbury and Basingstoke. | **Sensitivities:** Small structures of lower heights could be accommodated in relation to the settlements. However, taller structures or groups of structures could appear overpowering in relation to the pattern of small-scale dispersed settlement and sensitivities to larger structures are therefore greater. |
| **Landmarks/Important Landscape Features**<br>• Former medieval deer parks many refashioned in the 18th century as formal designed parks and gardens, plus associated houses are a notable feature. | **Sensitivities:** The site and setting of the historic parks and gardens are sensitive to the intrusion of prominent vertical structure, particularly larger structures or groups which would be very dominant in views. |
| **Prominent Built Structures**<br>• Local presence of main roads and infrastructure (e.g. M4, A34, A343), plus development pressures. | **Sensitivities:** The existing built development, plus sense of movement and activity associated with the main road corridors through the landscape type is not sensitive. However, care will be required to prevent further dilution of rural character. |
| **Skyline** | **Sensitivities:** The introduction of a vertical structure could create a discordant feature and |

| Key Characteristics | Sensitivities |
|---|---|
| • The woodland cover limits vistas and the skyline does not form a distinctive feature within this landscape type. In some areas there are views to low wooded horizons.<br>• Occasional glimpsed views to prominent skyline of adjacent Downland with Woodland landscape type. | alter the perception of scale in relation to the prominent skyline of the Downland with Woodland Landscape Type and areas in proximity to the scarps are therefore judged to be sensitive to this type of development. |
| **Internal Views**<br>• Mostly short local views contained by hedgerows and woodland cover. Some more longer views from rises in topography and from within more open arable areas.<br>**Views and Connections with Adjacent Landscapes**<br>• Occasional glimpsed views to prominent skyline of adjacent Downland with Woodland landscape type.<br>• Extensive views across character area 8E from key public access points on the chalk scare e.g. at Walbury Hill and Beacon Hill.<br>• Subtle transition with the river valley landscapes of the Kennet, Lambourn and Pang.<br>• Proximity to urban areas of Reading, Newbury and Basingstoke resulting in development pressures, increased road traffic and loss of tranquillity. | **Sensitivities:** The land cover creates a strong screening element, which reduces sensitivities to lower structures. In character area 8E there are particular sensitivities with regard to the relationship with the adjacent chalk scarp (2D). The lowland area at the foot of the scarp provides a strong contrast with the steep slopes and there are extensive views out across the area from popular viewpoints. |

**Summary of Visual Sensitivity:** The presence of dense woodland cover and network of connecting hedgerows creates an enclosed and contained visual character, with longer views only possible within more open arable areas or from rises in the ground. Within one character area (8E) a key visual sensitivity relates to the views to the adjacent prominent chalk scarp and views from key public viewpoints along the ridge. **Overall Visual Sensitivity is judged to be Low, with higher sensitivities within character area 8E**.

**Summary of Landscape Character Sensitivity:** There are a number of characteristics, which are sensitive to the introduction of a wind turbine and associated infrastructure. These primarily relate to the small scale, intricate and intact rural character and pattern of dispersed settlement. Within this context a tall structure could appear overwhelming and dominant. Other sensitivities include perception of peacefulness and tranquillity which is susceptible to further dilution. The high density of important features including semi-natural woodland, heathland, parkland and historic houses are also sensitive. **Overall Landscape Character sensitivity is judged to be High.**

## CONSTRAINTS TO WIND TURBINE DEVELOPMENT WITHIN THE LOWLAND MOSAIC LANDSCAPE TYPE

The following table considers both the landscape values and sensitivities, identified above, to indicate the constraints to wind turbine development within the Lowland Mosaic landscape type.

### Table 8.3: Summary Table indicating Constraints to Wind Turbine Development in the Lowland Mosaic Landscape Type

| Summary of Landscape Values | Summary of Sensitivities | | Constraints to Turbine Development |
|---|---|---|---|
| | Visual | Landscape Character | |
| **Highly valued** particularly for its perception of tranquillity and intact rural character, historic features, habitats (woodland, heathland and parkland) and wealth of recreational opportunities. | **Low,** with the dense woodland cover and network of connecting hedgerows creating an enclosed and contained visual character. However, within character area (8E) a key visual sensitivity relates to the views to and from the adjacent chalk scarp, including views from important public viewpoints along the ridge. | **High,** with the small scale, intricate and peaceful rural character and pattern of dispersed settlement being particularly sensitive. Other sensitivities include the high density of important features including semi-natural woodland, heathland, parkland and historic houses. | **Moderately - Highly constrained** |

## SUMMARY OF CONSTRAINTS IN RELATION TO DIFFERENT TYPES OF TURBINE DEVELOPMENT

**Height Class 1 (25 – 40m) Single Turbine:** The Lowland Mosaic landscape type is judged to be **moderately constrained** in relation to a HC1 turbine development. The moderate judgement, relates to the potential for land cover of woodland and connecting hedgerows to buffer and filter local views to this height class. It is also considered that this scale of turbine would not appear over dominant in relation to the intricate landscape pattern and small dispersed settlements. They key constraints to a HC1 turbine development are:

- the perception of rural tranquillity;
- the sites and setting of all valued landscape features including the views to/from and setting of the historic houses and parkland and valued habitats (woodland, parkland, pasture and heathland);
- the views to and setting of villages and hamlets;

- in character area 8E the relationship with and views to and from the adjacent chalk scarp.

**Notes on Cumulative Development:** It is judged that this landscape could accommodate more than one single turbine of height class 1. This is due to the large area of land covered by the landscape type (thus the ability to site turbines far from one another to avoid a sense of repetition of elements and prominence in the landscape).

**Height Class 2 (40 – 80m) Single Turbine:** The Lowland Mosaic is judged to be **moderately – highly constrained** in relation to a single HC2 turbine development. Given the small and intricate landscape scale, it is considered that developments at the upper end of the height class will not be appropriate. The constraints outlined above in relation to a HC1 turbine also apply; with the greater presence and dominance of a HC2 development requiring particular attention to the following:

- the intact landscape of irregular fields bound by hedgerows and woodland;
- the small dispersed settlement pattern associated with the Lowland Mosaic landscape type, which could be over dominated by a HC2 turbine (even at the lower end of the height class) if located in close proximity.

**Notes on Cumulative Development:** It is judged that this landscape could accommodate more than one single turbine at the lower end of height class 2. This is due to the large area of land covered by the landscape type (thus the ability to site turbines far from one another to avoid a sense of repetition of elements and prominence in the landscape). However, there is a very delicate balance to be achieved and decisions will need to be made on a case-by-case basis. The perception of the Lowland Mosaic as in intact rural tranquil landscape should be conserved. Single HC2 developments are therefore highly constrained and should form an exception rather than a characteristic element of the landscape.

**Height Class 2 (40 - 80m) Group of 2 – 4 Turbines:** Given visual and landscape sensitivities outlined above it is considered that group of HC2 turbines would form a highly visible development of considerable size and mass within this essentially small scale, rural, lowland landscape. In summary, the Lowland Mosaic is considered to be **highly constrained** in relation to a group of HC2 turbines.

**Height Class 3 (80m+) Single and Group:** For the reasons noted above, the Lowland Mosaic landscape type is also considered to be **highly constrained** in relation to either a single or group of HC3 turbines.

Note: Given the nature of the landform and landcover the Lowland Mosaic is likely to have fewer constraints to developments below the HC1 threshold (i.e. <25 m). An individual site investigation to assess specific sensitivities and constraints to this scale of development would need to be made on a case-by-case basis. Such investigation should also pay particular note to the cumulative impact of such structures.

# PART 3:

# SUMMARY

# 6. NORTH WESSEX DOWNS AONB: SUMMARY OF SENSITIVITIES AND CONSTRAINTS TO WIND TURBINE DEVELOPMENT

6.1. The North Wessex Downs Area of Outstanding Natural Beauty (AONB) is a nationally designated, high quality landscape of remote open downland, dramatic skyline escarpments, contrasting wooded downland, small scale, intimate settled river valleys and lower lying vales and heath-woodland mosaics. It is the dominance of the chalk, geology and landform combined with the interaction of human activity over the millennia that has created the distinctive character of the North Wessex Downs today. The diversity of the landscape is recognised by the North Wessex Down AONB Landscape Assessment[5] which identifies eight landscape character types. The character of the North Wessex Downs is also defined by its special perceptual characteristics, not least the strong sense of remoteness and isolation that pervades the AONB, and makes it a highly distinctive place in the context of the densely populated southern part of England.

## Summary of Constraints to Wind Turbine Development

6.2. In recognition of the high quality and highly valued landscape of the North Wessex Downs, this study has considered the specific sensitivities of the landscape types to wind turbine development and identifies the key constraints to this form of development. A summary of the results of the study is set out in **Table 6.1**.

- **Landscape Values:** By virtue of being designated as an AONB, the North Wessex Downs is a highly valued landscape of national importance. The study has sought to articulate the specific valued attributes of each of the eight landscape types to understand what is valued and why. This understanding of specific landscape values is helpful in identifying constraints to turbine development.

- **Landscape Character Sensitivity:** The study indicates that many of the fundamental characteristics of the North Wessex Downs landscape are sensitive to the introduction of tall structures, not least because of its outstanding importance as a remote and tranquil landscape. The long uninterrupted views that can be obtained across the subtly receding horizontal ridges of the chalk landscapes are especially vulnerable to development that would punctuate the skyline or tangible sense of history.

6.3. The study concludes that **all** landscapes within the North Wessex Downs are constrained to turbine development to a degree, with specific sensitivities and values that would be adversely affected by such forms of development. There are four landscape types that are considered to be highly constrained to turbine development, namely the Open Downland, High Chalk Plain, Scarp and River Valleys. These are the landscapes where sensitivities to this form of development are high and any wind turbine is likely to

[5] North Wessex Downs AONB Integrated Landscape Character Assessment – Technical Report. 2002. The Countryside Agency

have adverse impacts. There are four landscapes which are considered to be moderately – highly constrained to wind turbine development, namely the Downland with Woodland, Wooded Plateau, Downs Plain, Vales and Lowland Mosaic. Within these landscapes, there may be fewer or lesser sensitivities to some forms of wind turbine development, notably those of lower height classes. The particular landscape characteristics and configuration of these four landscape types means that it may be possible to find locations that are less constrained to some types of turbine development.

## Table 6.1: Summary of Sensitivities and Constraints to Wind Turbine Development

| Landscape Type | Landscape Values | Visual Sensitivity | Landscape Character Sensitivity | Constraints to Wind Turbine Development |
|---|---|---|---|---|
| 1: Open Downland | High | High | High | Highly Constrained |
| 2: Downland with Woodland | High | Moderate | High | Moderately – Highly Constrained |
| 3: Wooded Plateau | High | Moderate | High | Moderately – Highly Constrained |
| 4: High Chalk Plain | High | High | High | Highly Constrained |
| 5i: Scarp | High | High | High | Highly Constrained |
| 5ii: Downs Plain | High | High | Moderate | Moderately to Highly Constrained |
| 6: Vales | High | Moderate | Moderate | Moderately to Highly Constrained |
| 7: River Valleys | High | High | High | Highly Constrained |
| 8: Lowland Mosaic | High | Low | High | Moderately to Highly Constrained |

## Summary of Constraints to the Different Turbine Typologies

6.4. A summary of the constraint to each of the three typologies (height classes) is set out in **Table 6.2**. This indicates that all landscape types are highly constrained in relation to Height Class 3 developments i.e. any developments of > 80m height to blade tip. All landscapes types are also highly constrained to groups of Height class 2 turbines i.e. 2 - 4 turbines of 40 – 80m height. Throughout the North Wessex Downs any developments of these Height Classes are likely to adversely affect key landscape values and characteristics. With regards to single Height Class 2 turbines i.e. a single turbine of between 40 – 80m height to blade tip it is considered that there may be some landscapes with slightly fewer constraints to this type of development providing it is at the lower end of the height range. Those landscapes which are considered to be moderately to highly constrained to a single Height Class 2 development are the Downland with Woodland, Wooded Plateau, Downs Plain, Vales and Lowland Mosaic. Within these landscapes it is considered that the combination of landform and land cover, combined with the landscape scale and presence of existing human influences means that in some area there may be fewer constraints to this type of development. These same four landscapes are also considered to be moderately constrained to height class 1 developments i.e. single turbines of up to 40m height to blade tip.

6.5. It should be noted that the judgements set out in the table below relate to single development of any height class. Guidance on cumulative development is set out for each of the landscape types, where relevant.

## Table 6.2: Summary of Constraints to the three Wind Turbine Development Typologies

| Landscape Type | Constraint Judgement for each Height Class | | | |
|---|---|---|---|---|
| | **Height Class 1 (25 – 40m) Single Turbine** | **Height Class 2 (40 – 80m) Single Turbine [Lower end of Height Class only]** | **Height Class 2 (40 - 80m) Group of 2 – 4 Turbines** | **Height Class 3 (80m+) Single and Group** |
| 1: Open Downland | Highly Constrained | Highly Constrained | Highly Constrained | Highly Constrained |
| 2: Downland with Woodland | Moderately Constrained | Moderately to Highly Constrained | Highly Constrained | Highly Constrained |
| 3: Wooded Plateau | Moderately Constrained | Moderately to Highly Constrained | Highly Constrained | Highly Constrained |
| 4: High Chalk Plain | Highly Constrained | Highly Constrained | Highly Constrained | Highly Constrained |
| 5i: Scarp | Highly Constrained | Highly Constrained | Highly Constrained | Highly Constrained |
| 5ii: Downs Plain | Moderately Constrained | Moderately to Highly Constrained | Highly Constrained | Highly Constrained |
| 6: Vales | Moderately Constrained | Moderately to Highly Constrained | Highly Constrained | Highly Constrained |
| 7: River Valleys | Highly Constrained | Highly Constrained | Highly Constrained | Highly Constrained |
| 8: Lowland Mosaic | Moderately Constrained | Moderately to Highly Constrained | Highly Constrained | Highly Constrained |

6.6. **In conclusion**, this study has developed a transparent, robust and defensible evaluation framework to identify the core landscape values of the North Wessex Downs and the sensitivities of its defining characteristics to wind turbine development. The information on sensitivities and constraints for each landscape type should provide a useful checklist for the preparation of criteria-based policies and to use in assessing future proposals and applications. The result should be consistent and co-ordinated policies and decision-making across these diverse landscapes and local planning authorities of the AONB to ensure that the valued, distinctive and diverse character of the North Wessex Downs is conserved.

# APPENDIX 1

# MEMBERSHIP OF STEERING GROUP, PLANNING OFFICERS WORKING GROUP AND PARTICIPANTS IN FORUM TO CONSIDER LANDSCAPE VALUES

# APPENDIX 1: MEMBERSHIP OF STEERING GROUP, PLANNING OFFICERS WORKING GROUP AND PARTICIPANTS IN FORUM TO CONSIDER LANDSCAPE VALUES

**Appendix 1** provides a note of the main people who have been consulted during the project.

## Steering Group

Richard Clarke - Director of North Wessex Downs AONB
Paula Amorelli - West Berkshire Council
David Carman (DC) - Hampshire County Council
Graham Bryant/Fiona Frazer-Bolton - Countryside Agency
Garry King/Maxine Russell -Wiltshire County Council
Will Harley - Kennet District Council

## Planning Officers Working Group (POWG)

There were two meetings of the AONB POWG during the course of the study. The first discussed the method, approach and the results of a pilot study. The second reviewed the draft report and commented on the User-Guide.

### *POWG – 17th November 2004*

David Rapley - Wiltshire CC
Charlotte Riggs - Swindon BC
Paula Amorelli - West Berkshire
Claire Combs - Kennet DC
Ed White - Kennet DC
Andrew Lane - North Wilts DC
Julian Evans - Basingstoke & Deane BC
Lucy Murfett- South Oxfordshire DC
Maxine Russell -Wiltshire CC
Garry King - Wiltshire CC
Huw Williams - Hampshire CC
Andrew Herring - Hampshire CC
Richard Clarke - NWD AONB

### *POWG - 21st June 2005*

David Rapley - Wiltshire CC
Paula Amorelli - West Berkshire
Dawn Hancocks - West Berkshire
Ed White - Kennet DC
Garry King - Wiltshire CC
David Dewart - Swindon BC
Huw Williams - Planning Policy Advisor to NWD AONB
Anne Shattock - Basingstoke & Deane BC
Graham Bryant - Countryside Agency
Lucy Murfett - South Oxfordshire DC
Peter Moore - South Oxfordshire DC
Helen Thomas - Government Office for South West
Richard Clarke - NWD AONB

## North Wessex AONB Forum: 16th November 2004

The following people participated in the AONB Annual Forum and contributed to an exercise to understand landscape values associated with the different landscape types within the North Wessex Downs.

| | |
|---|---|
| Acworth, Cllr Bill | Hungerford Town Council |
| Allen, Mrs Sheila | Basingstoke District Association of Parish Councils (Northern Area) |
| Archer, John | NFU SE Region |
| Armitage, Cllr B H | Wantage Town Council |
| Bailey, Cllr Roy | Great Shefford Parish Council |
| Ball, Jason | Sheepdrove Organic Farm |
| Barber, Jeannine | CPRE, Newbury & Hungerford |
| Barton, Harry | Wiltshire Wildlife Trust |
| Bell, Cllr Peter | Inkpen Parish Council |
| Bibby, David | Test Valley Borough Council *(Cllr Jackson or David Bibby)* |
| Boreham, Chris | Dreweatt Neate |
| Brailey, Caroline | Kennet District Council |
| Briscoe, Ian | Forestry Commission |
| Broadhead, Richard | Wiltshire County Council |
| Bryant, Geoff | Swindon Borough Council |
| Bryant, Graham | Countryside Agency |
| Bulmer, Cllr Mrs A | Streatley Parish Council |

| | |
|---|---|
| Bush, Cllr Sarah | Wroughton Parish Council |
| Buxton, Dr Robin | Chair, Northmoor Trust |
| Carman, David | Hampshire County Council |
| Cashman, Patrick | English Nature |
| Clark, Cllr Robert | Bishopstone Parish Council |
| Clarke, Richard | Director, North Wessex Downs AONB |
| Coe, Duncan | West Berkshire Council |
| Colclough, Cllr Jill | Test Valley Borough Council |
| Conway, Melissa | West Berkshire Council |
| Crawford, Cllr A | Wantage Town Council |
| Crosbee, Joan | Ramblers Association, Wiltshire |
| Cunningham, Alistair | Wiltshire County Council |
| Davies, Cllr Joan | Savernake Parish Council |
| Davies, Andrea | CPRE |
| Davies, Karen | Pang & Kennet Countryside Project (FWAG) |
| Davis, Andrew | Chair, Executive Committee, North Wessex Downs AONB |
| de Rhé-Philipe, Cllr Fleur | Wiltshire County Council |
| Devey, Cllr A | Aldbourne Parish Council |
| Dowling, Cllr Mrs M | Streatley Parish Council |
| Drewett, Cllr Lesley | Bishopstone Parish Council |
| Edwards, Robin | Hampshire County Council |

| | |
|---|---|
| Evans, Cllr David | North Wiltshire District Council |
| Evans, Julian | Basingstoke & Deane Borough Council |
| Farrell, Cllr Richard | Vale of White Horse District Council |
| Findlay, Dr Geoffrey | Action for River Kennet |
| Furnell, Jill | North Wessex Downs AONB (Secretary) |
| Golton, Edward | CPRE,  Bradfield/Berks |
| Gower, Dennis | Pang Valley Conservation Volunteers |
| Greenaway, Dick | Friends of the Pang |
| Hall-Craggs, John | Community Council for Berkshire |
| Handover, Cllr Mrs V | Fyfield & West Overton Parish Council |
| Hayes, Cllr Michael | Pangbourne Parish Council |
| Hayward, Roger | Cyclists Touring Club |
| Heath, Beverley | Wiltshire & Swindon Biological Records Office |
| Heather, David | CPRE (Kennet District) |
| Henshaw, Anne | CPRE |
| Herring, Andrew | Hampshire County Council |
| Herriott, P | |
| Hill, Dr Christina | CPRE Berkshire |
| Hill, Geoff | Berkshire Association of Local Councils |
| Hinder, Cllr Mike | Wroughton Parish Council |
| Jackson, Cllr Anthony | Test Valley Borough Council *(Cllr Jackson or David Bibby)* |

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|---|---|
| Jackson, Matt | Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust |
| Kaneen, Caroline | North Wessex Downs AONB |
| Kemp, Terry | British Waterways |
| Kendall-Carpenter, Nick | The National Trust |
| Kiely, Jane | West Berkshire Ramblers |
| Lalley, Cllr Christine | Beenham Parish Council |
| Lamb, Dominic | South Oxfordshire District Council |
| Langer, Cllr Brian | Hants Association of Parish & Town Councils / Overton Parish Council |
| Lay, Cllr David | Wiltshire County Council |
| Lewis, Caroline | Wiltshire & Swindon Economic Partnership |
| Lillywhite, Melvyn | Marlborough Area Development Trust |
| Maclay, Mark | Committee for Rural Hampshire |
| McBeth, Heather | Government Office South West |
| Meadows, Kirsty | RSPB |
| Moley, Cllr Jim | Oxfordshire County Council |
| Molland, Cllr Anthony | Kennet District Council |
| Moser, Hannah | Wiltshire Wildlife Trust |
| Murfett, Lucy | South Oxfordshire District Council |
| Nath, Anton | Oxfordshire Rural Community Council |
| Newman, Cllr Richard | Chirton Parish Council |
| Nunneley, Sir Charles | Chair, Council of Partners, North Wessex Downs AONB |

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|---|---|
| Palmer, Cllr E B | Ashampstead Parish Council |
| Payne, Stephanie | DEFRA |
| Perrin, Rob | English Heritage |
| Pocklington, Jo | North Hampshire Tourism |
| Pryce-Jones, David | Government Office for South East |
| Randell, Cllr David | West Challow Parish Council |
| Reeves, Ms Dee | Letcombe Regis Parish Council |
| Reid, Penny | British Horse Society |
| Rhodes, Alec | Forestry Commission |
| Richards, Dr Keith | TV Energy |
| Sandell, Jeremy | Community Action, West Berkshire |
| Scholey, Graham | Environment Agency |
| Sclater, Edward | Axis Farming |
| Scott, Cllr David | Mildenhall Parish Council |
| Scott, Cllr Sir James | Hampshire County Council |
| Shurmer, Mike | RSPB |
| Smart, Simon | FWAG |
| Smyth, Stephen | West Berkshire Council |
| Spence, Mike | CPRE Berkshire |
| Stanford, Ed | Swindon Borough Council |
| Stevens, Dr Valda | Overton Society & Overton Biodiversity Society |

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|---|---|
| Still, Elizabeth | Green Lanes Environmental Action Movement |
| Tartaglia-Kershaw, Linda | Hampshire County Council |
| Taylor, Mr V | Lambourn Sustainability Forum |
| Thompson, Sir Nigel | Action for River Kennet, CPRE and Mildenhall Parish Council |
| Tobitt, Wendy | Media Consultant to North Wessex Downs AONB |
| Tubb, Robin | Town & Manor of Hungerford |
| Twigger, Cllr Brian | Kennet District Council |
| Walwyn, Peter | Lambourn Trainers Association |
| Wilkins, Corin | FWAG |
| Wilson, C Nevil | CPRE Hampshire |
| Wilson, Henry | NFU |
| Woodman, Cllr Peter | Kingsclere Parish Council |
| Wright, Ms Elizabeth | Ogbourne St Andrew Parish Council |
| York, Jill | Council for British Archaeology, Wessex |

# APPENDIX 2:

# TYPES OF WIND TURBINE

# APPENDIX 2: TYPES OF WIND TURBINE

The following tables provide a summary of the different models of turbine currently available within each height class category. Please note that the tables only provide a sample of the turbines available on the market.

**Height Class 1 (25m – 40m)**

| Turbine Name/ Model | Power Rating (Installed capacity) | Tower Height | Blade Diameter | Total Height to Blade Tip |
|---|---|---|---|---|
| Enercon E-12 | 12kW | 24 -32m | 12m | 30m-38m |
| Proven WT1500 | 15kW | 15m or 25m | 9.4m | 20m-30m |
| Atlantic Orient 15/50 | 50kW | 25 | 15 | 32.5m |

**Height Class 2 (40m – 80m)**

| Turbine Name/ Model | Power Rating (Installed capacity) | Tower Height | Blade Diameter | Total Height to Blade Tip |
|---|---|---|---|---|
| Enercon E-30 | 200kW | 36-50m | 30m | 51m-65m |
| Vernet MP | 250kW | 18m | 10m | 71m |
| Enercon E40 | 500kW | 44-65m | 40m | 64m-85m |
| Vesta V47 | 660kW | 40-55m | 47m | 63.5m-78.5m |
| Nordex 600 | 600kW | 45m | 42m | 66m |
| Nordex N50 | 770kW | 46m | 50m | 71m |

**Height Class 3 (80m +)**

| Turbine Name/ Model | Power Rating (Installed capacity) | Tower Height | Blade Diameter | Total Height to Blade Tip |
|---|---|---|---|---|
| Vesta V52 | 850kW | 40m-65m | 52m | 66m-91m |
| Enercon E-58 | 850kW | 70m | 58m | 99m |
| Bonus 1.3 | 1.3MW | 60m | 62m | 91m |
| Enercon E-66 | 1.5MW | 85m | 70m | 120m |
| Vesta V660 | 1.75MW | 60m-78m | 60m | 90m-108m |
| Vesta V80 | 2MW | 60m-78m | 80m | 100m-118m |
| Vesta V90 | 1.8MW, 2.0MW & 3.0MW | 80m-105m | 90m | 125m-150m |

**Using the information set out in the tables above, it is possible to broadly define the general characteristics of each type of development.**

| **Feature** | Height Class 1 | Height Class 2 | **Height Class 3** |
|---|---|---|---|
| Power Rating (e.g.) | 10kW – 50kW | 50kW – 800kW | 800kW – 3MW |
| Grid Connection | Battery/ or may potentially be connected to the grid | Grid connected | Grid connected |
| Typical Tower Height | 10m – 40m | 40m – 65m | 65m – 105m |
| No. blades | 2-3 | 2-3 | 2-3 (usually 3) |
| Blade Diameter | 7m – 15m | 30m – 50m | 50m – 90m |
| Tower Construction | Tapering, cylindrical, lattice | Tapering, cylindrical, lattice (Usually tapering) | Usually tapering |
| No. Turbines | Single | Single or small group (2 – 4) | Single or small group (2 – 4) |
| Form/layout | Single | Single | Single, linear, group |
| Infrastructure | Battery unit or may require small building to house inverter and controller if connected to grid | Access tracks, control building/substation, anemometer | Access tracks, powerlines, fencing, control building/ sub-station(s), borrow pit(s), anemometer(s) |

The following organisations were contacted to help determine realistic turbine typologies.

- Genasys Power Systems – Specialists in small scale renewable energy developments
- Green Dragon Energy - Specialists in small scale renewable energy developments
- TV Energy
- Severn Wye Energy Agency
- Dulas – Renewable Energy Experts
- IT Power – Renewable Energy Technology Experts
- Community Renewable Initiative at CA headquarters

# APPENDIX 3:

# REMOTENESS AND TRANQUILLITY MAPPING

# APPENDIX 3: REMOTENESS AND TRANQUILLITY MAPPING

**Defining Remote and Tranquil Areas**

1. The sense of remoteness and tranquillity associated with the North Wessex Downs is fundamental to the character of the AONB and are vital to the enjoyment and appreciation of the landscape. As outlined under Theme 3 of the AONB Management Plan these special perceptual qualities are a fragile resource and under threat from a combination of factors, including major development, such as wind turbines, intruding into the open downland. Understanding and mapping areas associated with a strong sense of remoteness and/or tranquillity can help highlight key constraints to wind turbine developments.

2. The process for identifying levels of remoteness and tranquility is set out in this Appendix. It should be noted that thius was not an in-depth study in its own right and is simply intended to help give greater weight to judgements on these special preceptual characteristics.

**Desk Study**

3. The first task was to understand the distribution of remote and tranquil areas across the AONB as identified in the existing landscape character assessment. This provides a very broad sieve and allocates each of the landscape types to one of three categories (**Figure 1**):

   (i) landscapes considered to be highly remote;

   (ii) landscapes with some remote or tranquil qualities;

   (iii) landscapes where remoteness and tranquillity is not a defining feature.

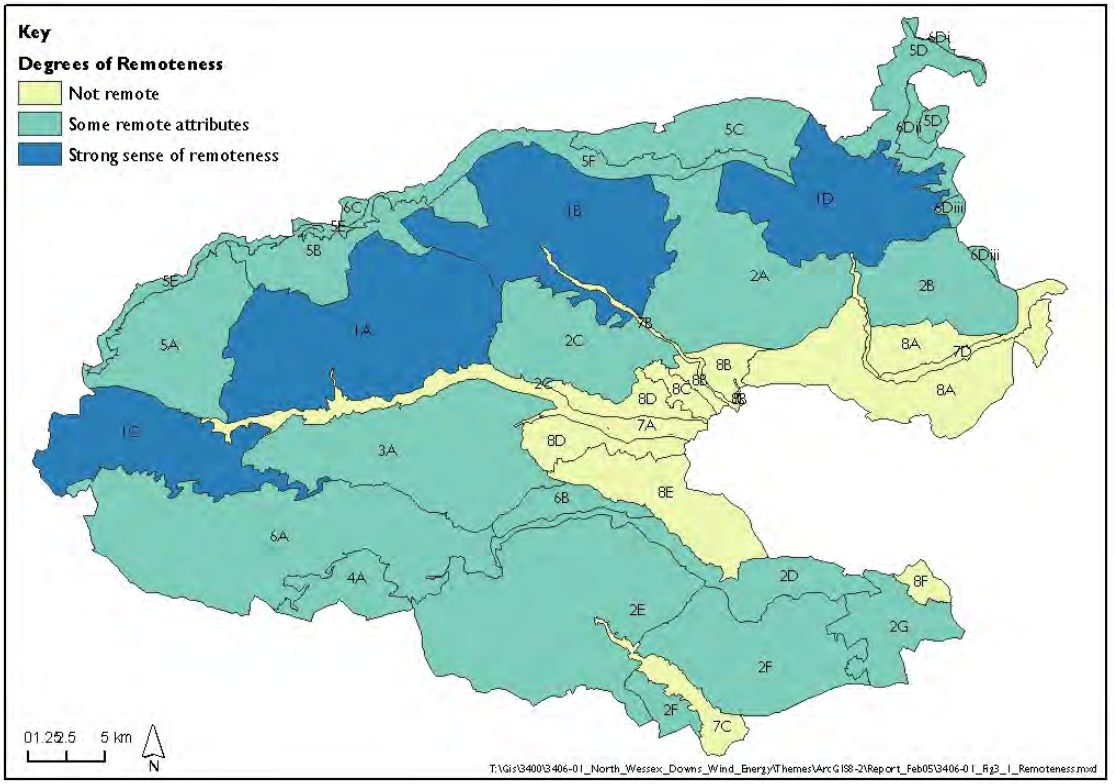


**Figure 1**

**GIS Mapping**

4. Understanding of remoteness and tranquillity was further enhanced by using CPRE approach for tranquillity mapping based on distance from major impacts such as roads, urban areas, major developments and refining these criteria as appropriate to the AONB level.

5. In order to identify the tranquil areas of the North Wessex Downs, a major impact buffer within the GIS was created, to show highly disrupted areas, and a lesser impact buffer in which the effects of disruptions to tranquillity are likely to exist but to a lesser degree.

**Major impact buffer**

| Item | Distance From | Data source | Additional notes |
|---|---|---|---|
| Primary Roads | 2km | OS Strategi | |
| Motorways | 2km | OS Strategi | |
| Railways | 1km | OS Strategi | |
| A Roads | 1km | OS Strategi | |
| Main urban areas | 2km | OS Strategi | Newbury, Andover, Reading, Swindon, Basingstoke |
| Airfields | 4km | OS Strategi | Benson Airfield |
| Power Stations | 4km | OS Strategi | Harwell Power Station |
| | | | |

**Lesser impact buffer**

| Item | Distance From | Data source | Additional notes |
|---|---|---|---|
| B Roads | 1km | OS Strategi | |
| Pylons | 1lm | MasterMap | |

6. Following the creation of the two buffers, the area of each remaining tranquil area was calculated, and any areas of less than 1km$^2$ were discounted, and moved to the lesser impact buffer. The remaining tranquil areas are therefore all greater than 1km$^2$ in area, and greater than the distances given above from the named disruptions.

The results indicate that the most (i.e. >45%) tranquil areas are as follows:

1A: Marlborough Downs

1B: Lambourn Downs

1C: Horton Downs

1D: Blewbury Downs

2E: Chute Forest/Faccombe Downs

4A: Salisbury Plain

5A: Avebury Plain

5E: Clyffe Pypard – Badbury Wooded Scarp

6B: Shalbourne Vale

8E: Highclere Lowlands and Heath

7. The results are a broad indication of the extent of areas considered to provide a sense of remoteness and tranquillity. They provide an objective assessment but should not be read as definitive maps. Clearly there may be considerable reservoirs of tranquillity within other character areas. Similarly results may be skewed within some of the very small character areas such as 6B and 5E. The results are used only as an aid to understanding those areas where remoteness and tranquillity is an important.