

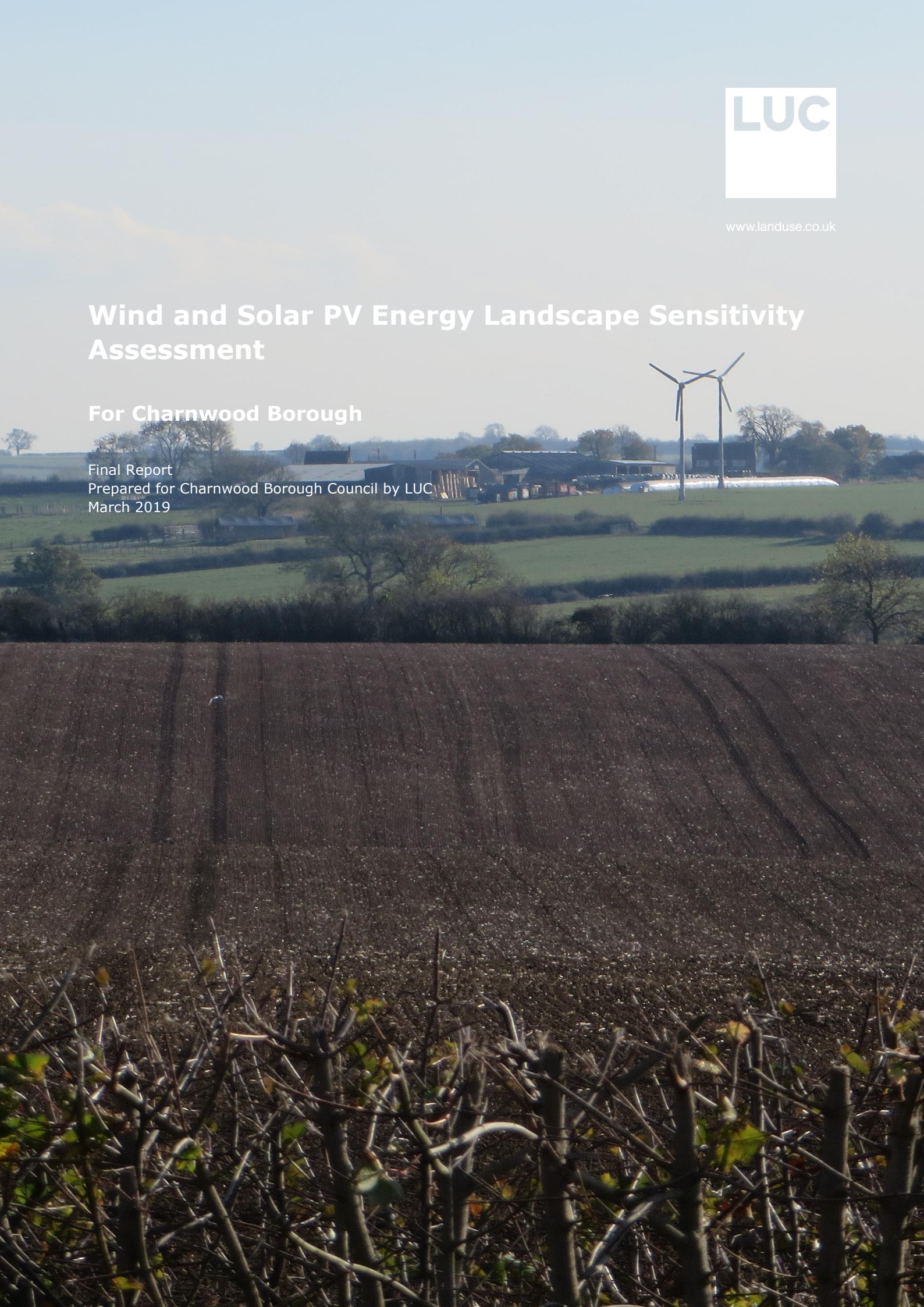


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# Wind and Solar PV Energy Landscape Sensitivity Assessment

## For Charnwood Borough

Final Report  
Prepared for Charnwood Borough Council by LUC  
March 2019



**Project Title:** Wind and Solar PV Energy Landscape Sensitivity Assessment

**Client:** Charnwood Borough Council

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# 1 Introduction and context

## Background

- 1.1 LUC was commissioned by Charnwood Borough Council in August 2018 to provide landscape capacity and sensitivity evidence to inform the preparation of its new Local Plan to 2036.
- 1.2 Charnwood has a population of over 166,000 and sits centrally between the major cities of Derby, Nottingham and Leicester. It extends from the main town of Loughborough in the north to the edge of Leicester to the south. Just over a third of the population lives in the university town of Loughborough which is an important centre for business, commerce and retailing. A string of larger settlements extend along the valleys of the two largest rivers in the Borough, the River Soar and the River Wreake while the more rural areas are on the higher rolling landscapes of the Charnwood Forest to the west and the Leicestershire Wolds to the east.
- 1.3 The Charnwood Core Strategy was adopted in November 2015 and provides a development strategy to 2028 setting out where, and how, new development should take place in the Borough. Whilst the Council is working with its partners to deliver that plan, work has also commenced on a new local plan to cover the longer period to 2036. This new Local Plan will respond to the Leicester and Leicestershire Strategic Growth Plan and new evidence of the need for homes and jobs.
- 1.4 The Local Plan will also include policies addressing climate change in the Borough, and will draw on the findings of the 2018 Charnwood Renewable and Low Carbon Energy Study. The latter identified areas with technical potential for wind energy and solar PV development. Landscape sensitivity information is needed to inform policy decisions about the potential for suitable areas for renewable and low carbon energy sources, as referred to in the NPPF at paragraph 151.
- 1.5 The analysis of landscape sensitivity to housing development, wind turbines and solar PV installations drew on information contained within the Charnwood Landscape Character Assessment (2012). It used a criteria based process to ensure consistent and transparent analysis of sensitivity, drawing on additional spatial analysis and field based survey.

## Project objectives

- 1.6 The objectives of the assessment were:
  - To provide Charnwood Borough Council with a clear and robust evidence to inform decision making on site allocation options and the associated Sustainability Appraisal process; and,
  - To provide broad guidelines for the development of potential site options which may have the potential to impact on landscape.

## Limitations of this assessment

- 1.7 This assessment focuses on the potential landscape issues associated with onshore wind energy and solar PV developments. It does not provide guidance on the wide range of other planning issues that may need to be considered as part of the preparation and determination of planning applications. These potential issues include:
  - Ecology and ornithology
  - Historic environment
  - Hydrology
  - Traffic and transport

- Noise and vibration
- Socio-economic activities (e.g. tourism)
- Agricultural land use / productivity

1.8 The results of the Landscape Sensitivity Assessment (see Chapter 5 and Appendices 1 and 2) provides an initial indication of the relative landscape sensitivities of different areas within Charnwood to wind and solar PV energy developments and guidance for accommodating such developments in the borough's landscape. **It should not however be interpreted as a definitive statement on the suitability of a certain location for a particular development. All developments will need to be assessed on their individual merits.** It is also important to note that the sensitivity assessment is not influenced by the presence of existing renewable energy developments in the landscape which pre-date the study.

## Report structure

1.9 The rest of this report is structured as follows:

- **Chapter 2** summarises the policy context surrounding renewable energy development;
- **Chapter 3** presents the landscape character baseline for Charnwood;
- **Chapter 4** sets out the method used for assessing sensitivity to wind energy and solar PV development within Charnwood;
- **Chapter 5** summarises the overall results of the landscape sensitivity assessment undertaken for the Charnwood Borough and strategic patterns of sensitivity.
- **Appendix 1** presents the detailed LCA sensitivity assessments for wind energy development.
- **Appendix 2** presents the detailed LCA sensitivity assessments for solar PV development.
- **Appendix 3** is a short User Guide with prompts to help applicants and decision-makers use this report to inform wind energy development proposals.
- **Appendix 4** provides a guide on how to consider landscape in planning applications for solar PV developments

## 2 Policy context

### Introduction

- 2.1 The chapter provides a review of the general context, policy framework and background documentation of relevance to the study in relation to renewable and low carbon energy issues. This includes a summary of the relevant international, national and local planning policies and strategies.

### International and European Legislation and Policy

#### Landscape

- 2.2 The European Landscape Convention (ELC) came into force in the UK in March 2007. It establishes the need to recognise landscape in law; to develop landscape policies dedicated to the protection, management and planning of landscapes; and to establish procedures for the participation of the general public and other stakeholders in the creation and implementation of landscape policies.
- 2.3 The ELC definition of 'landscape' recognises that all landscapes matter, be they ordinary, degraded or outstanding:
- "Landscape means an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors."
- 2.4 Signing up to the ELC means that the UK is committed on the one hand to protect, manage and develop our landscapes and on the other to raise landscape awareness, involvement and enjoyment amongst local and visiting communities. Landscape character is defined by the ELC as "a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse".

#### Renewable energy

- 2.5 At the Kyoto conference of the United Nations Framework Convention on Climate Change in December 1997, most industrialised countries agreed to reduce emissions of the six principal man-made greenhouse gases to 5.2% below 1990 levels over the period 2008-2012. The UK agreed to a reduction target of 12.5%. The **Kyoto Protocol** became a legally binding treaty on 16th February 2005. The Doha Climate Change Conference in Dec 2012 led to the adoption of an amendment to the Kyoto Protocol establishing a second round of binding greenhouse gas emission targets for Europe, Australia and a handful of other developed countries.
- 2.6 The Paris Agreement was adopted through the twenty first session of the Conference of Parties (COP21) in December 2015. On 5 October 2016, the threshold for entry into force of the Paris Agreement was achieved, with at least 55 countries, which account for at least 55% of the world's greenhouse gas emissions, ratifying the Agreement. The **Paris Agreement** entered into force on 4<sup>th</sup> November 2016 and the UK ratified the Agreement on 18<sup>th</sup> November 2016. Article 2 of the Paris Agreement sets out the ambition of holding the increase of global average temperature to "well below 2°C" and to pursue efforts to limit temperature increase to 1.5 °C. It was acknowledged that to achieve these ambitions, there is a requirement to ensure Parties reach global peaking of greenhouse gas emissions as soon as possible and do so by employing means that allow pathways toward "low greenhouse gas emissions and climate-resilient development".
- 2.7 In April 2009, the European Union adopted the **Directive on Renewable Energy** (2009/28/EC), which set targets for all Member States such that the EU will reach a 20% share of energy from renewable sources by 2020. The UK's binding target is to meet 15% of its energy generation from renewable sources by 2020 (this includes electricity, transport and heat). Article 22 of the



Directive requires Member States to submit a report every two years to the European Commission (EC) on progress in the promotion and use of energy from renewable sources. The UK's first progress report on the Promotion and Use of Energy from Renewable Sources for the UK (2011) was delivered in December 2011 and showed that renewable energy accounted for 54TWh (3.3%) of the UK's total energy consumption in 2010 – an increase of 27% over a two year period. Subsequent reports delivered in 2014 and 2016 saw significant increases in the proportion of the UK's energy production coming from renewable resources – 4.2% of the UK's total energy consumption in 2012 and 6.3% in 2014.

## National Legislation

- 2.8 The **Planning and Compulsory Purchase Act** (2004) sets out the structure of the local planning framework for England, including the duty on plan-making to mitigate and adapt to climate change. In other words, local planning authorities must make positive and proactive policies and decisions which contribute to the mitigation of, and adaptation to, climate change – policies and decisions that make measureable, ongoing reductions in carbon emissions reported in Council's annual monitoring reports. This legislation is supported by national planning policy and guidance set out below.
- 2.9 The **Climate Change Act** (2008) was passed, restating the UK Government's commitment to renewables in the move towards a low carbon economy. The Act commits the UK government to reduce UK carbon emissions by at least 80% by 2050 (from 1990 levels). As part of the Act, the Committee on Climate Change is required to report annually to Parliament on the progress made in reducing carbon emissions in line with the **UK Climate Change Programme** (2006) which includes a range of measures to be implemented at both the international and national levels including annual progress reports to be presented to Parliament on emissions reductions and domestic climate change adaptation. The Committee on Climate Change 2017 progress report on meeting carbon budgets showed that overall progress has been good. Economy-wide emissions fell by 6% in 2016 and UK greenhouse gas emissions are about 42% lower than in 1990. However, the report notes that progress is stalling. Since 2012, emissions reductions have been largely confined to the power sector, whilst emissions from transport and building stock are rising. The report recognises that there is now an urgent need for effective new strategies and policies to ensure emissions continue to fall in line with the commitments agreed by Parliament.
- 2.10 The **Planning Act** (2008) introduced a new planning regime for nationally significant infrastructure projects (NSIPs), including energy generation plants of capacity greater than 50 megawatts (50 MW). In 2011 six **National Policy Statements** (NPSs) for Energy were published. The energy NPSs are designed to ensure that major energy planning decisions are transparent and are taken against a clear policy framework, by setting out national policy against which proposals for major energy projects will be determined by the National Infrastructure Directorate (NID) (formerly the Infrastructure Planning Commission or IPC). The Overarching National Policy Statement for Energy (EN-1) sets out national policy for energy infrastructure and describes the need for new national significant energy infrastructure projects. EN-3 (NPS for Renewable Energy Infrastructure) then provides the primary basis for decisions by the NID on applications it receives for nationally significant renewable energy infrastructure, providing guidance on various technologies and their potential for significant effects. In 2016 onshore wind installations above 50MW were removed from the NSIP regime, and such applications are now dealt with by local planning authorities, based on the NPPF and associated Ministerial statements.
- 2.11 The **Planning and Energy Act** (2008) enables local planning authorities to set requirements for energy use and energy efficiency in local plans, including a proportion of energy used in development to be generated from renewable and low carbon sources in the locality of the development. Such requirements can relate to specific types and scales of development but also broad areas within a local planning authority's area of influence, such as areas with optimal conditions for decentralised heat networks. The Act also enabled local authorities to require standards for energy efficiency in new buildings beyond those in the Building Regulations. However, in 2015 the energy efficiency requirements were proposed to be repealed, to effectively make the Building Regulations the sole authority regarding energy efficiency standards for residential development, and leaving local authorities no longer able to set their own energy

efficiency standards. However, while the power was removed in principle, the government has not yet produced a commencement date for repealing these powers, which therefore remain in place. More detail on the ability of local authorities to set higher building energy performance standards is provided in **Chapter 5**.

- 2.12 The **Neighbourhood Planning Act** (2017) strengthens the powers of neighbourhood plans, but also creates a new legal duty on local planning authorities to set out their strategic priorities and express them in a strategic plan. Details on how this principle has been articulated in national planning policy are set out in further detail below.

## National Planning Policy

### National Planning Policy Framework (NPPF)

- 2.13 The Government published an updated and revised NPPF in July 2018, which sets out the environmental, social and economic planning policies for England. The July 2018 NPPF replaced the original version published in March 2012. Central to the NPPF policies is a presumption in favour of sustainable development, that development should be planned for positively and individual proposals should be approved wherever possible.
- 2.14 One of the overarching objectives that underpins the NPPF is set out in Paragraph 8: *“an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including ...mitigating and adapting to climate change, including moving to a low carbon economy.”*
- 2.15 The NPPF supports the contents of the Neighbourhood Planning Act (2017) by making explicit reference to the need for local planning authorities to work with duty to cooperate partners on strategic priorities (paragraph 24) and defined strategic policies that make sufficient provision for climate change mitigation and adaptation and landscape and green infrastructure(paragraph 20).

#### Landscape

- 2.16 The NPPF is explicit in its requirement for development plan policies to protect and where appropriate, enhance the landscape. Paragraph 170 states that *“planning policies and decisions should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes”* and *“recognising the intrinsic character and beauty of the countryside”*.
- 2.17 At paragraph 127(c), it states that *“Planning policies and decisions should ensure that developments ... are sympathetic to local character and history, including the surrounding environment and landscape setting”*.
- 2.18 Paragraph 149 of the NPPF states that *“Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for ... landscapes...”*.

#### Renewable energy

- 2.19 The NPPF provides a clear policy framework for local planning authorities to work collaboratively with partners and neighbours to tackle climate change mitigation and adaptation at a strategic scale and over the longer term.
- 2.20 Paragraph 149 of the NPPF states *“Plans should take a proactive approach to mitigating and adapting to climate change...in line with the objectives and provisions of the Climate Change Act 2008”*. Paragraph 151 states that *“To help increase the use and supply of renewable and low carbon energy and heat, plans should:*
- a) provide a positive strategy for energy from these sources, that maximises the potential for suitable development, while ensuring that adverse impacts are addressed satisfactorily (including cumulative landscape and visual impacts);*
  - b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and*
  - c) identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for co-locating potential heat customers and suppliers.”*

- 2.21 Paragraph 152 states that local planning authorities should “*support community-led initiatives for renewable and low carbon energy, including developments outside areas identified in local plans or other strategic policies that are being taken forward through neighbourhood planning.*”
- 2.22 In addition, when determining planning applications, local planning authorities should view sustainable developments favourably. Paragraph 154 states that “*...planning applications for renewable and low carbon development...should not be required to demonstrate the overall need for renewable or low carbon energy...and approve the application if its impacts are (or can be made) acceptable.*”

### Planning Practice Guidance (PPG)

- 2.23 The Government published national **Planning Practice Guidance** (PPG) to support the delivery of the NPPF in 2014, and regularly updates guidance in light of changes in relevant international and national policy and legislation. The key elements of the PPG of relevance to this Study are set out below.

#### Landscape

- 2.24 PPG confirms that “*planning should recognise the intrinsic character and beauty of the countryside*” and that “*Local plans should include strategic policies for the conservation and enhancement of the natural environment, including landscape*” and the wider countryside. It highlights the role of landscape character assessment as “*a tool to help understand the character and local distinctiveness of the landscape and identify the features that give it a sense of place. It can help to inform, plan and manage change and may be undertaken at a scale appropriate to local ... making*”.

#### Renewable energy

- 2.25 Paragraph 001 states that “*planning has an important role in the delivery of new renewable and low carbon energy infrastructure in locations where the local environmental impact is acceptable.*”
- 2.26 Paragraph 003 states that “*all communities have a responsibility to help increase the use and supply of green energy, but this does not mean that the need for renewable energy automatically overrides environmental protections and the planning concerns of local communities. As with other types of development, it is important that the planning concerns of local communities are properly heard in matters that directly affect them.*”

*Local and neighbourhood plans are the key to delivering development that has the backing of local communities. When drawing up a Local Plan local planning authorities should first consider what the local potential is for renewable and low carbon energy generation. In considering that potential, the matters local planning authorities should think about include:*

- *the range of technologies that could be accommodated and the policies needed to encourage their development in the right places;*
  - *the costs of many renewable energy technologies are falling, potentially increasing their attractiveness and the number of proposals;*
  - *different technologies have different impacts and the impacts can vary by place;*
  - *the UK has legal commitments to cut greenhouse gases and meet increased energy demand from renewable sources. Whilst local authorities should design their policies to maximise renewable and low carbon energy development, there is no quota which the Local Plan has to deliver.*”
- 2.27 The role community led renewable energy initiatives have is outlined in paragraph 004, which states that they “*are likely to play an increasingly important role and should be encouraged as a way of providing positive local benefit from renewable energy development...Local planning authorities may wish to establish policies which give positive weight to renewable and low carbon energy initiatives which have clear evidence of local community involvement and leadership.*”
- 2.28 Paragraph 033 states that “*when considering applications for wind energy development, local planning authorities should (subject to the transitional arrangement) only grant planning permission if:*

- the development site is in an area identified as suitable for wind energy development in a Local or Neighbourhood Plan; and
- following consultation, it can be demonstrated that the planning impacts identified by affected local communities have been fully addressed and therefore the proposal has their backing.

- 2.29 *Whether the proposal has the backing of the affected local community is a planning judgement for the local planning authority."*
- 2.30 In terms of identifying suitable areas for wind energy development, Planning Practice Guidance, paragraph 005 states that *"There are no hard and fast rules about how suitable areas for renewable energy should be identified, but in considering locations, local planning authorities will need to ensure they take into account the requirements of the technology and, critically, the potential impacts on the local environment, including from cumulative impacts. There is a methodology available from the Department of Energy and Climate Change's website on assessing the capacity for renewable energy development which can be used and there may be existing local assessments. However, the impact of some types of technologies may have changed since assessments were drawn up (e.g. the size of wind turbines has been increasing). In considering impacts, assessments can use tools to identify where impacts are likely to be acceptable, for example, landscape character areas could form the basis for considering which technologies at which scale may be appropriate in different types of location."*
- 2.31 Paragraph 008 also explains that *"local planning authorities should not rule out otherwise acceptable renewable energy developments through inflexible rules on buffer zones or separation distances. Other than when dealing with set back distances for safety, distance of itself does not necessarily determine whether the impact of a proposal is unacceptable."*

## National Strategies and Guidance

### *Landscape*

- 2.32 The Government's **25 Year Environment Plan** (2018) recognises the importance of conserving and enhancing our landscape resource. Whilst placing an emphasis on national landscape designations, including National Parks and Areas of Outstanding Natural Beauty, the strategy also outlines a commitment to: *"Identifying opportunities for environmental enhancement in all of England's 159 National Character Areas and monitoring indicators of our landscape's character and quality to improve landscapes for people, places and nature"*. National Character Areas, defined and mapped by Natural England, identify key characteristics, outline opportunities for conservation, restoration and enhancement and describe the changes that have affected each character area in turn.

### *Heritage*

- 2.33 Historic England's publication **The Setting of Heritage Assets** (2017) identifies that views can be valued for reasons other than their contribution to heritage significance. They may, for example, be related to the appreciation of the wider landscape, where there may be little or no association with heritage assets. Landscape character and visual amenity are also related planning considerations. The assessment and management of views in the planning process may therefore be partly or wholly separate from any consideration of the significance of heritage assets.

### *Renewable energy*

- 2.34 The **UK Renewable Energy Strategy** (2009) sets out how the UK will achieve its legally-binding target of generating 15% of its energy needs from renewable sources by 2020 in line with the EU **Directive on Renewable Energy** (2009/28/EC). Whereas the Government had been working towards a UK 2020 target of 20% of electricity coming from renewable sources, the lead scenario in the Renewable Energy Strategy is that this figure has to be raised dramatically, in light of the less mature markets in renewable heat and transport fuel. The strategy suggests that the UK may need more than 30% of electricity and 12% of heat to be generated by renewable sources in order to meet the overall energy target.

- 2.35 The UK Renewable Energy Strategy (2009) was subsequently supported by the **UK Renewable Energy Action Plan** in 2010 and the **UK Renewable Energy Roadmap** in 2011. The Action Plan outlines the electricity, heating, cooling and transport technologies that are expected to deliver the 15% renewable energy target by 2020. The Roadmap outlines the deployment of renewable energy throughout the UK, and focuses on the eight technologies that are considered to have the greatest potential, one of which is onshore wind energy.
- 2.36 The key actions in this area that are set out in the Roadmap include increasing overall grid capacity and upgrading transmission capacity, and co-funding the development of technical solutions to issues that can affect the viability of onshore wind farms, such as interference with aviation radar.
- 2.37 The **Clean Growth Strategy** was published in 2017 setting out a range of policies and proposals to increase the rate of reduction in carbon emissions. This includes investment in 'Green Finance', improve business and industry energy efficiency, improve housing energy efficiency, rolling out low carbon heating, accelerating the shift to low-carbon transport and further investment in electricity storage and transportation, nuclear power and renewable power.
- 2.38 The Government's **25 Year Environment Plan** highlights the need to generate cleaner, more sustainable sources of energy.

## Development Plan for Charnwood

- 2.39 The Development Plan for Charnwood comprises two adopted documents. The Charnwood Local Plan Core Strategy (2011 to 2028) was adopted in 2015 and represents the Borough's principle planning document. The adopted Core Strategy is further supplemented by saved policies from the Borough of Charnwood Local Plan adopted in 2004.
- 2.40 The emerging Charnwood Local Plan will replace the saved policies from the Local Plan adopted in 2004 and the newer Core Strategy (2015).

### Borough of Charnwood Local Plan (2004) saved policies

- 2.41 The Borough of Charnwood Local Plan was adopted in January 2004. However, many of the policies within the Plan have become out of date and have been superseded by policies within the adopted Core Strategy (2015).

#### *Landscape*

- 2.42 Policies CT/1 General Principles for Areas of Countryside, Green Wedge and Local Separation CT/2 Development in the Countryside CT/3 Development in Green Wedges and CT/4 Development in Areas of Local Separation are designed to protect the character and quality of the landscape, and the role of countryside in avoiding settlement coalescence and the loss of physical separation.

#### *Renewable energy*

- 2.43 There are considered to be no saved policies of direct relevance to the strategic direction, allocation or development management of renewable and low carbon technologies in the saved policies of the Local Plan adopted in 2004.

### Charnwood Local Plan 2011 to 2028 Core Strategy (2015)

- 2.44 The Core Strategy was adopted in November 2015 and will be replaced by the emerging Charnwood Local Plan.

#### *Landscape*

- 2.45 The Vision recognises the importance of the borough's landscape in achieving the aim of making Charnwood one of the most desirable places to live, work and visit in the East Midlands, by 2028. **Strategic Objective SO11** highlights the need "to protect the special and distinctive qualities of all landscapes". Policy CS11, set out in **Box 2.1**, outlines in detail how planning policies and decisions will support and protect the character of Charnwood's landscape:

### **Box 2.1: Policy CS 11 Landscape and Countryside**

We will support and protect the character of our landscape and countryside by:

- requiring new developments to protect landscape character and to reinforce sense of place and local distinctiveness by taking account of relevant local Landscape Character Assessments;
- requiring new development to take into account and mitigate its impact on tranquillity;
- requiring new development to maintain the separate identities of our towns and villages;
- supporting rural economic development, or residential development which has a strong relationship with the operational requirements of agriculture, horticulture, forestry and other land based industries and contributes to a low carbon economy, in accordance with Policy CS10;
- supporting the provision of community services and facilities that meet proven local needs as identified by a Neighbourhood Plan or other community-led plan; and
- supporting rural communities by allowing housing development for local needs in accordance with Policy CS3.

We will protect the predominantly open and undeveloped character of Areas of Local Separation unless new development clearly maintains the separation between the built-up areas of these settlements.

### *Renewable energy*

- 2.46 The Charnwood Local Plan 2011 to 2028 Core Strategy policy of relevance to the generation of renewable and low carbon energy is **Policy CS16 Sustainable Construction and Energy** which sets out that the adaptation and mitigation against effects of climate change is encouraged through sustainable design and construction and the provision of renewable energy, where it does not make development unviable. Those sections of Policy CS16 relevant to energy considerations are set out in **Box 2.2**:

### **Box 2.2: Policy CS 16 - Sustainable Construction and Energy**

We will adapt to and mitigate against the effects of climate change by encouraging sustainable design and construction and the provision of renewable energy, where it does not make development unviable.

We will do this by:

- encouraging developments to, where viable, exceed Building Regulations for carbon emissions by prioritising measures that reduce the need for energy and secure residual need for energy through low carbon or renewable sources;
- requiring the Design and Access Statements for major developments to demonstrate how the need to reduce emissions has influenced the design, layout and energy source used;
- supporting commercial, community and domestic scale renewable energy or low carbon energy developments where they contribute towards our target of at least 27.5MWe, having regard to the impact upon the wider landscape, biodiversity, the historic environment, public safety, noise, odour and other amenity considerations;
- in the case of proposals for wind energy development involving one or more wind turbines, planning permission will only be granted if:
  - the development site is in an area identified as suitable for wind energy in the Site Allocations and Development Management Development Plan Document or a Neighbourhood Plan; and
  - following consultation, it can be demonstrated that the planning impacts identified by affected local communities have been fully addressed and therefore the proposal has their backing.

2.47 The Core Strategy also states that there are opportunities to go beyond the Building Regulations in the case of the strategic developments outlined in Policies CS19 (North East of Leicester Sustainable Urban Extension) , CS20 (North of Birstall Direction for Growth), CS21 (Watermead Regeneration Corridor), CS22 (West of Loughborough Sustainable Urban Extension) and CS23 (Loughborough University Science and Enterprise Park). The Plan states that the Council have an aspiration that the schemes will result in a 10% reduction in CO<sub>2</sub> emissions when compared to the Building Regulations prevailing at the time that the detailed schemes are proposed.

## 3 Understanding the baseline landscape

### An overview of the Charnwood landscape

- 3.1 The borough of Charnwood has a varied and complex landscape. Topography ranges from the higher ground of the Wolds, Charnwood Forest and High Leicestershire to the broad river valleys of the River Soar and River Wreake and their smaller tributary valleys. Away from larger towns, much of the borough continues to be dominated by arable farming, with some area made up of very large, post war fields. Charnwood Forest is sometimes described as England's unexpected uplands, with a mosaic of rocky outcrops, heathland, ancient woodland and farmland. Thick hedges and mature hedgerow trees add to the Forest's wooded character.
- 3.2 Many rural areas retain their historic character and often features such as church spires are prominent on the skyline, particularly in the Wreake Valley and High Leicestershire. Villages are often small, with vernacular use of red brick. The borough includes a number of estate parklands including Bradgate Park and Swithland Woods, Watermead, Beacon Hill, Broombriggs Farm, Jubilee Wood and Sheet Hedges.
- 3.3 The borough of Charnwood also has a strong industrial heritage with evidence of past and gravel quarries and coal mining sites as and their associated rail and canal transport. The area is well-settled, with larger settlements such as Loughborough, Shepshed, Syston, and Birstall. Transport and other infrastructure tends to follow the river valleys.
- 3.4 While there are often long and extensive views from higher ground, in more wooded areas and river valleys tend to be more contained. There is also a strong between busy, densely settled areas and areas of countryside that retain a rural isolated and tranquil character. Even in these more remote areas, busier main roads can often still be heard.

### Borough of Charnwood Landscape Character Assessment (2012)

- 3.5 The '*Borough of Charnwood Landscape Character Assessment*' (2012) defined six landscape character areas (see **Figure 3.1**). These landscape character areas (LCAs) form the spatial framework for this Landscape Sensitivity Assessment. The Landscape Character Assessment identified the key characteristics of these LCAs as follows:

#### Charnwood Forest LCA - Key Characteristics

- Charnwood Forest is the most complex of the landscape character areas and five sub-areas were identified within the Borough in the 2008 Charnwood Forest Landscape and Settlement Character Assessment
- The highly distinctive upland character contrasts with the lower lying nature of the surrounding landscape character areas. It contains the highest land in the borough of Charnwood, rising to 248m (814ft) at Beacon Hill
- Landscape mosaic of pasture, frequent woodland and exposed hilltops of acidic grassland with rocky outcrops of ancient Precambrian volcanic and plutonic rocks with bracken and heathland
- Most densely wooded area of Charnwood Borough with coniferous and mixed deciduous woods
- Includes many wildlife areas and ancient semi-natural woodlands
- Field boundaries of stone walls and large free growing hedges
- Strongly rectilinear pattern of parliamentary enclosure fields and straight roads
- Historic quarrying of granite and slates and still active quarrying of granite



- Historic houses and ruins - Bradgate Country Park (Grade II Historic Park and Garden), Ulverscroft Priory and Beaumanor Hall
- Scattered settlements often of local stone with steeply angled slate roofs
- Settlements are Woodhouse, Woodhouse Eaves, Swithland, Cropston, Thurstaston, Anstey, Newtown Linford, western edges of Rothley and Mountsorrel, and the fringes of west Loughborough and south Shepshed
- M1 motorway passes through this character area
- Much of the area is in the National Forest.

### **High Leicestershire LCA - Key Characteristics**

- Undulating ridge and valley landscape with open and extensive views
- Remote tranquil character
- Urbanising influences of Thurmaston and Leicester City are affecting the western and southern areas
- Productively farmed with pasture mainly in valleys and arable on ridges
- Large regular shaped fields with hedgerows
- Isolated farmhouses and scattered small settlements of Barkby, Barkby Thorpe, Beeby and South Croxton.

### **Soar Valley LCA - Key Characteristics**

- Flat wide river floodplain which experiences regular flooding
- Navigable River Soar and Grand Union Canal
- Major engineering features are the raised landscaped embankments of A6 and mainline railway and electricity pylons
- Visible built development on well-defined rising valley slopes
- Restored gravel worked landscapes for recreation, farmland and wildlife benefit
- Settlements are Hathern, Loughborough, Quorn, Birstall, Barrow upon Soar, Sileby, Cossington and much of Mountsorrel and Rothley, Syston and Thurmaston.

### **Wreake Valley LCA - Key Characteristics**

- River Wreake meanders in a flat bottomed river valley with gently sloping sides. The valley experiences flooding
- Rural character to east of Broome Lane, East Goscote
- Leicester City and Syston have an urbanising influences in the west
- Limited valley crossings, with the A46 and A607 roads on engineered embankments
- Area of mixed arable and pasture farming
- Some neglected and lost hedgerows and hedgerow trees
- Restored mineral workings
- Settlements are on the valley slopes, with churches marking villages
- Main settlements are Ratcliffe on the Wreake, Thrussington, Rearsby, East Goscote, Queniborough and Syston.

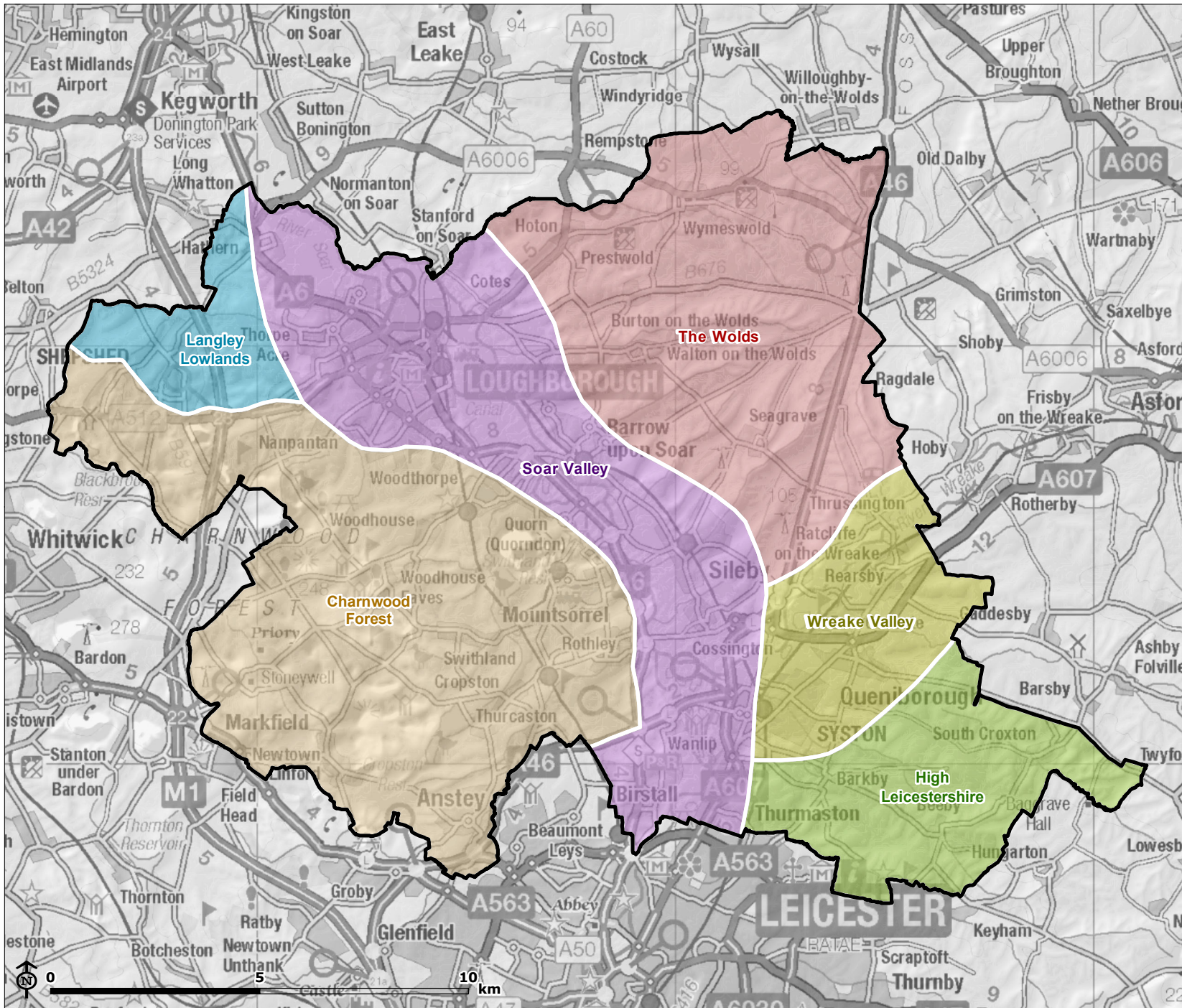
### **The Wolds LCA - Key Characteristics**

- Large scale rolling landscape with exposed ridges
- Open countryside with mixed farming

- Sheltered valleys
- Extensive views from ridgeline roads
- Tranquil remote atmosphere of the eastern area
- New housing at the east of Barrow upon Soar and Sileby is extending the influence of these Soar Valley villages into the Wolds.
- Low woodland cover
- Wide grass verges to minor roads
- Prestwold Hall: Grade II Historic Park and Garden
- Villages largely contained within the landscape setting (Wymeswold, Hoton, Burton on the Wolds, Walton on the Wolds, Seagrave).








### **Langley Lowlands LCA - Key Characteristics**

- Rolling landform with gentle slopes
- Large arable fields
- Low hedges with few hedgerow trees
- Open views from ridgeline roads, (Oakley Road/Tickow Lane, Hathern/Shepshed Road) and the M1 Motorway
- Wooded fringes to streams in broad valleys
- Garendon Park: Grade II Historic Park and Garden
- M1 motorway divides the area
- Settlements are the western areas of Loughborough and northern Shepshed.



**Charnwood Landscape Sensitivity**

**Figure 3.1: Landscape Character Areas**

-  Charnwood Borough Boundary
- Landscape Character Area**
-  Charnwood Forest
-  High Leicestershire
-  Langley Lowlands
-  Soar Valley
-  The Wolds
-  Wreake Valley

Source: OS, CBC

Map Scale @ A4: 1:130,000



## 4 Method for undertaking the Landscape Sensitivity Assessment

### Introduction

- 4.1 This chapter summarises the method that was used to undertake the landscape sensitivity assessment including the key sources of evidence used, the scales of development considered and the assessment criteria and process followed.

### Spatial and descriptive framework

- 4.2 Charnwood's Landscape Character Areas (LCAs) form the spatial framework and primary evidence base for the Landscape Sensitivity Assessment, as previously discussed and illustrated in **Figure 3.1**. A thorough desk-based study drawing on other sources of spatial and descriptive information about the landscape was supplemented by field survey work by a team of landscape professionals to verify and use professional judgement to produce the landscape sensitivity assessments.
- 4.3 Other key sources of information used to inform the assessment include:
- The Leicestershire, Leicester and Rutland Historic Landscape Characterisation (HLC);
  - Ordnance survey base maps (1:250K, 1:50K and 1:25K);
  - Biodiversity designations (local and national);
  - Historic England designations;
  - Relevant Local Authority data for Conservation Areas; and
  - Aerial photography (Google Earth).

### Type and scale of developments considered

#### Wind energy

- 4.4 This Landscape Sensitivity Assessment applies to all forms of turbines, although it has been based on the most common horizontal axis three-bladed turbine. The following development scenarios are considered in this study:

**Table 4.1 Wind turbine development sizes/scales used for this assessment**

Turbine height (to blade tip)	Number of turbines
<40 metres	Single turbines
40 – 80 metres	Three turbines
80 – 120 metres	Three turbines
120– 160 metres	Three turbines

## Solar PV energy

- 4.5 The assessment will be based on field scale developments. It will consider the suitability of different scales of solar PV development based on bandings that reflect those that are most likely to be put forward by developers (now and in the future). These are set out in **Table 4.2** below:

**Table 4.2: Solar development sizes/scales used for this assessment**

Solar PV scale bandings	Size (hectares)
Very small	<1ha
Small	>1-5ha
Medium	>5-10ha
Large	>10-15ha
Very large	>15 - 20ha

- 4.6 These scenario definitions are compatible with those used in the 2018 Charnwood Renewable and Low Carbon Energy Study.

## Evaluating landscape sensitivity

- 4.7 There is currently no published method for evaluating the sensitivity of different types of landscape to renewable energy developments. However, the approach taken in this study builds on current guidance published by the Countryside Agency and Scottish Natural Heritage including the Landscape Character Assessment Guidance<sup>1</sup> and Topic Paper 6<sup>2</sup> that accompanies the Guidance, as well as the county-wide approach set out in the DLPG Advice Note 2.
- 4.8 Paragraph 4.2 of Topic Paper 6 states that:

*'Judging landscape character sensitivity requires professional judgement about the degree to which the landscape in question is robust, in that it is able to accommodate change without adverse impacts on character. This involves making decisions about whether or not significant characteristic elements of the landscape will be liable to loss... and whether important aesthetic aspects of character will be liable to change'*

- 4.9 In this study the following definition of sensitivity has been used, which is based on the principles set out in Topic Paper 6. It is also compliant with the third edition of the Guidelines for Landscape and Visual Impact Assessment (GLVIA 3, 2013) as well as definitions used in other landscape sensitivity studies of this type:

***Landscape sensitivity is the extent to which the character and quality of the landscape is susceptible to change as a result of wind or solar PV developments.***

## Assessment criteria – wind energy

- 4.10 In line with the recommendations in Topic Paper 6, this landscape sensitivity assessment was based on an assessment of landscape character using carefully defined criteria. The criteria used for determining landscape sensitivity to wind energy development in Charnwood are based on the attributes of the landscape most likely to be affected by wind energy development.

<sup>1</sup> The Countryside Agency and Scottish Natural Heritage (2002) Landscape Character Assessment: Guidance for England and Scotland CAX 84

<sup>2</sup> The Countryside Agency and Scottish Natural Heritage (2004) Landscape Character Assessment Guidance for England and Scotland Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity.

4.11 **Table 4.3** sets out the criteria that have been used for the assessment of landscape sensitivity to the principle of wind energy development (of any size). It includes guidance and examples for applying the criteria in Charnwood which were then verified through professional judgement and field verification for each Landscape Character Area.

**Table 4.3: Criteria and guidance for assessing landscape sensitivity to wind energy developments**

<b>Landform and scale</b>				
<p>A smooth gently sloping or flat landform is likely to be less sensitive to wind energy development than a landscape with a dramatic rugged landform, distinct landform features (including prominent headlands and cliffs) or pronounced undulations. Larger scale landforms are likely to be less sensitive than smaller scale landforms - because turbines may appear out of scale, detract from visually important landforms or appear visually confusing (due to turbines being at varying heights) in the latter types of landscapes.</p> <p>Landscapes with frequent human scale features that are traditional of the landscape, such as stone farmsteads and small farm woodlands<sup>3</sup> may be particularly sensitive to larger turbines. This is because large features such as wind turbines may dominate smaller scale traditional features within the landscape.</p>				
<b>LOW</b>	<b>LOW-MODERATE</b>	<b>MODERATE</b>	<b>MODERATE-HIGH</b>	<b>HIGH</b>
e.g. an extensive lowland flat landscape or elevated plateau, often a larger scale landform	e.g. a simple gently rolling landscape, likely to be a medium-large scale landform	e.g. an undulating landscape, perhaps also incised by valleys, likely to be a medium scale landform	e.g. a landscape with distinct landform features, and/or irregular in topographic appearance (which may be large in scale), or a smaller scale landform	e.g. a landscape with a rugged landform or dramatic landform features (which may be large in scale), or a small scale or intimate landform
<b>Land cover pattern and complexity</b>				
<p>Simple, regular landscapes with extensive areas of consistent ground cover are likely to be less sensitive to wind energy development than landscapes with more complex or irregular land cover patterns or smaller and / or irregular field sizes.</p>				
<b>LOW</b>	<b>LOW-MODERATE</b>	<b>MODERATE</b>	<b>MODERATE-HIGH</b>	<b>HIGH</b>
e.g. a very large-scale landscape with uniform groundcover and lacking in human scale features	e.g. a landscape with large-scale fields, little variety in land cover and occasional human scale features such as trees and domestic buildings	e.g. a landscape with medium sized fields, some variations in land cover and presence of human scale features such as trees, domestic buildings	e.g. a landscape with irregular small-scale fields, variety in land cover and presence of human scale features such as trees, domestic buildings	e.g. a landscape with a strong variety in land cover and small-scale / irregular in appearance containing numerous human scale features
<b>Skylines</b>				
<p>Prominent and distinctive and/or undeveloped skylines, or skylines with important landmark features, are likely to be more sensitive to wind energy development because turbines may detract from these skylines as features in the landscape, or draw attention away from existing landform or landmark features on skylines. Important landmark features on the skyline might include historic features or monuments.</p>				

<sup>3</sup> Human scale features are aspects of land cover such as stone walls, hedges, buildings which give a 'human scale' to the landscape

LOW	LOW-MODERATE	MODERATE	MODERATE-HIGH	HIGH
e.g. a large-scale flat or plateau landscape where skylines are not prominent and/or there are no important landmark features on the skyline	e.g. a large-scale landscape where skylines are not prominent and/or there are very few landmark features on the skyline – other skylines in adjacent LCAs are more prominent	e.g. a landscape with some prominent skylines, but these are not particularly distinctive. There may be some landmark features on the skyline.	e.g. a landscape with prominent skylines that may form an important backdrop to views from settlements or important viewpoints, and/or with important landmark features	e.g. a landscape comprising prominent or distinctive undeveloped skylines or skylines with particularly important landmark features

### Visibility and views

Landscapes that are visually contained by topography, buildings, trees or woodlands and hence have limited inward and outward views may be less sensitive than areas with extensive inward and outward views. Such features may give screening for the lower parts of turbines and for associated access and infrastructure. However trees and woodlands should be a long term feature if their screening effects are to be relied upon. Extensive close or middle range views from scenic routes, well-known vistas or tourist viewpoints may increase a landscape's sensitivity to wind energy development, as may close proximity to settlement.

LOW	LOW-MODERATE	MODERATE	MODERATE-HIGH	HIGH
e.g. a landscape with no important or valued views to other landscapes or that does not form a backdrop to views from settlements.	e.g. a landscape with a few valued views to/from the area but the majority is self-contained.	e.g. some parts of the landscape form a rural backdrop to views from settlements and a few locations afford valued views to other landscapes.	e.g. large parts of the landscape form a valued rural backdrop to views from settlements or it is valued for its scenic views to other landscapes.	e.g. a landscape with prominent key landmarks, key vistas or important and valued views, appreciated for their unspoilt or scenic character.

### Natural and cultural heritage aspects

The presence of valued natural and cultural heritage features such as semi-natural habitats, wildlife, geological, archaeological, historical or built environment features that enhance the landscape experience may increase sensitivity to wind turbines, particularly where these features may be directly affected by construction works and/or access tracks; or where enjoyment of these features may be diminished.

LOW	LOW-MODERATE	MODERATE	MODERATE-HIGH	HIGH
e.g. the landscape has little or no nature or cultural heritage conservation value.	e.g. the landscape has some valued natural and cultural heritage aspects but these are not likely to be affected by wind energy development.	e.g. the landscape has several valued natural and cultural heritage aspects which could be affected by wind energy development.	e.g. there are numerous locally valued and nationally important natural and cultural heritage features present.	e.g. there are numerous locally valued and internationally important natural and cultural heritage features present.

<b>Amenity and recreation</b>				
<p>Areas offering access to high quality landscapes, memorable places, and special experiences and to a range of opportunities for open-air recreation may be more sensitive to wind energy development due to potential effects on accessibility and/or on the quality of the recreational experience that will be obtained. Sensitivity may be raised by proximity to important recreational features such as National Trails and other long distance routes.</p>				
<b>LOW</b>	<b>LOW-MODERATE</b>	<b>MODERATE</b>	<b>MODERATE-HIGH</b>	<b>HIGH</b>
e.g. a landscape that is mainly inaccessible and does not contain any specific recreational or visitor attractions	e.g. a landscape with a limited rights of way network or a small amount of land open to public access/amenity	e.g. a landscape with a moderate rights of way network and some amenity/recreational land	e.g. a landscape with a strong rights of way network, promoted long distance routes, and a number of recreational spaces	e.g. a landscape that is widely recognised for its multiple recreational opportunities and rights of way network (including long distance paths)
<b>Scenic and special qualities</b>				
<p>Landscapes that have a high scenic quality will be more sensitive than landscapes of low scenic quality. This is particularly the case where their special qualities (as recorded in the Landscape Character Assessment or designation documents) are likely to be affected by wind energy development. Scenic and special qualities may relate to landscapes that are not designated as well as landscape designated for their natural beauty.</p>				
<b>LOW</b>	<b>LOW-MODERATE</b>	<b>MODERATE</b>	<b>MODERATE-HIGH</b>	<b>HIGH</b>
e.g. landscape has low scenic quality such as an industrial area or despoiled land – special qualities will not be affected by wind energy development	e.g. landscape has low-medium scenic quality, or special qualities are unlikely to be affected by wind energy development	e.g. landscape has a medium scenic quality and some of the special qualities may be affected by wind energy development	e.g. landscape has a medium-high scenic quality – most of the special qualities are likely to be affected by wind energy development	e.g. area has a high scenic quality (likely to be recognised as National Park/AONB) and the scenic qualities will be affected by wind energy development
<b>Perceptual qualities</b>				
<p>Landscapes that are relatively remote or tranquil (due to freedom from human activity and disturbance and having a perceived naturalness or a strong feel of traditional rurality with few modern human influences) tend to increase levels of sensitivity to wind energy development compared to landscapes that contain signs of modern development (as the development will introduce new and uncharacteristic features which may detract from a sense of tranquillity and or remoteness/ naturalness).</p>				
<b>LOW</b>	<b>LOW-MODERATE</b>	<b>MODERATE</b>	<b>MODERATE-HIGH</b>	<b>HIGH</b>
e.g. a landscape with much human activity and development such as industrial areas	e.g. a rural landscape with much human activity and dispersed modern development	e.g. a rural landscape with some modern development and human activity	e.g. a more naturalistic landscape and / or one with little modern human influence and development	e.g. a remote or 'wild' landscape with little or no signs of current human activity and development



## Assessment criteria – solar PV

- 4.12 In line with the recommendations in Topic Paper 6<sup>4</sup>, this landscape sensitivity assessment was based on an assessment of landscape character using carefully defined criteria. The criteria used for determining landscape sensitivity to solar PV development in Charnwood are based on the attributes of the landscape most likely to be affected by solar PV developments.
- 4.13 **Table 4.4** sets out the criteria that have been used for the assessment of landscape sensitivity to the principle of solar PV development (of any size). It includes guidance and examples for applying the criteria in Charnwood, which were then verified through professional judgement and field verification for each Landscape Character Area.

**Table 4.4: Criteria and guidance for assessing landscape sensitivity to solar PV developments**

<b>Landform</b>				
A flat or gently undulating lowland landscape or extensive plateau is likely to be less sensitive to solar PV development than a landscape with prominent landforms and visible slopes, including coastal headlands. This is because arrays of solar PV panels will be less easily perceived in a flat landscape than on a slope, especially higher slopes.				
<b>LOW</b>	<b>LOW-MODERATE</b>	<b>MODERATE</b>	<b>MODERATE-HIGH</b>	<b>HIGH</b>
e.g. a lowland flat landscape or extensive plateau	e.g. a gently undulating lowland landscape or plateau	e.g. an undulating landscape with hidden areas as well as some visible slopes	e.g. a landscape with many prominent, visible slopes or an upland landscape	e.g. very steep landform and exposed, visible slopes
<b>Sense of openness / enclosure</b>				
A landscape with a strong sense of enclosure (e.g. provided by land cover such as woodland or high hedgebanks) is likely to be less sensitive to solar PV development than an open and unenclosed landscape because the development will be less easily perceived, especially at a distance, in an enclosed landscape.				
<b>LOW</b>	<b>LOW-MODERATE</b>	<b>MODERATE</b>	<b>MODERATE-HIGH</b>	<b>HIGH</b>
e.g. a very well enclosed landscaped – perhaps provided by thick, high hedgebanks and hedgerows, tree belts and woodland	e.g. relatively high levels of enclosure provided by hedgebanks and thick hedgerows with frequent hedgerow trees	e.g. a landscape with some open and some more enclosed areas – likely to be a rural landscape with some hedgebanks and hedgerows and tree belts	e.g. an open landscape with little sense of enclosure (low, few or no hedgebanks or hedgerows, few trees)	e.g. an extremely open landscape such as an unenclosed plateau with no field boundaries or trees
<b>Field pattern and scale</b>				
Landscapes with small-scale, more irregular field patterns are likely to be more sensitive to the introduction of solar PV development than landscapes with large, regular scale field patterns because of the risk of diluting or masking the characteristic landscape patterns. This would be particularly apparent if development takes place across a number of adjacent fields where the field pattern is small and intricate (bearing in mind that the height of panels could exceed that of a hedge/ hedgebank).				
<b>LOW</b>	<b>LOW-MODERATE</b>	<b>MODERATE</b>	<b>MODERATE-HIGH</b>	<b>HIGH</b>

<sup>4</sup> The Countryside Agency and Scottish Natural Heritage (2004) Landscape Character Assessment Guidance for England and Scotland Topic Paper 6: Techniques and Criteria for Judging Capacity and Sensitivity.

e.g. a landscape with large-scale, regular fields of mainly modern origin	e.g. a landscape which is mainly defined by large, modern fields	e.g. a landscape with a mixture of large-scale, modern fields and some smaller, more historic enclosure	e.g. a landscape dominated by ancient, small-scale field patterns with a few isolated areas of modern enclosure	e.g. a landscape characterised by small-scale, ancient field patterns
<b>Landcover</b>				
Since PV panels introduce a new land cover (of built structures), landscapes containing existing hard surfacing or built elements (e.g. urban areas, brownfield sites or large-scale horticulture) are likely to be less sensitive to field-scale solar PV development than highly rural or naturalistic landscapes.				
<b>LOW</b>	<b>LOW-MODERATE</b>	<b>MODERATE</b>	<b>MODERATE-HIGH</b>	<b>HIGH</b>
e.g. an urban or 'brownfield' landscape	e.g. an area of large scale horticulture	e.g. a rural landscape, perhaps with some brownfield sites or urban influences	e.g. a rural landscape , perhaps with some areas of semi-natural land cover	e.g. a landscape dominated by semi-natural land cover
<b>Perceptual qualities</b>				
Landscapes that are relatively remote or tranquil (due to freedom from human activity and disturbance and having a perceived naturalness or a strong feel of traditional rurality with few modern human influences) tend to increase levels of sensitivity to solar PV development compared to landscapes that contain signs of modern development (as the development will introduce new and uncharacteristic features which may detract from a sense of tranquillity and or remoteness/ naturalness).				
<b>LOW</b>	<b>LOW-MODERATE</b>	<b>MODERATE</b>	<b>MODERATE-HIGH</b>	<b>HIGH</b>
e.g. a landscape with much human activity and development such as industrial areas or a port	e.g. a rural landscape with much human activity and dispersed modern development	e.g. a rural landscape with some modern development and human activity	e.g. a more naturalistic landscape and / or one with little modern human influence and development	e.g. a remote or 'wild' landscape with little or no signs of current human activity and development
<b>Historic Landscape Character</b>				
Due to intrinsic historic landscape character significance, or potential for preserved archaeological evidence, historic landscape types such as rough ground with earlier remains, prehistoric fields, watermeadows, and fields with a medieval historic character type such as strip fields, enclosures (strips) and enclosures – medieval have a higher sensitivity to solar development. Lower sensitivity landscapes include industrial landscapes, coniferous plantations, airfields, and post medieval/modern enclosures.				
<b>LOW</b>	<b>LOW-MODERATE</b>	<b>MODERATE</b>	<b>MODERATE-HIGH</b>	<b>HIGH</b>
e.g. majority of the landscape covered by least sensitive historic landscape character types	e.g. majority of the landscape covered by lower sensitivity historic landscape character types, but may include some small areas of higher sensitivity	e.g. majority of the landscape covered by medium sensitivity historic landscape character types or a mixture of higher and lower sensitivity historic landscape character types	e.g. majority of the landscape covered by higher sensitivity historic landscape character types, but may include some small areas of lower sensitivity	e.g. the majority of the landscape covered by higher sensitivity historic landscape character types

Scenic and special qualities				
LOW	LOW-MODERATE	MODERATE	MODERATE-HIGH	HIGH
landscape has low scenic quality such as an industrial area or despoiled land – special qualities will not be affected by solar PV development	landscape has low-medium scenic quality, or special qualities are unlikely to be affected by solar PV development	landscape has a medium scenic quality and some of the special qualities may be affected by solar PV development	landscape has a medium-high scenic quality – most of the special qualities are likely to be affected by solar PV development. Area may be designated locally for its scenic qualities.	area has a high scenic quality (likely to be recognised as National Park/ AONB/ Heritage Coast) and the scenic qualities will be affected by solar PV development

## The discussion on landscape sensitivity

- 4.14 Once the criteria are assessed individually, the results are drawn together into an overall score for landscape sensitivity for that LCA. Any areas with variations in landscape sensitivity are identified and described in the profiles. These are shown in the individual assessments compiled at **Appendix 1** (wind energy) and **Appendix 2** (solar PV).
- 4.15 **As with all assessments based upon data and information which is to a greater or lesser extent subjective, some caution is required in its interpretation.** This is particularly to avoid the suggestion that certain landscape features or qualities can automatically be associated with certain sensitivities – the reality is that an assessment of landscape sensitivity is the result of a complex interplay of often unequally weighted variables (or ‘criteria’).
- 4.16 There may be one criterion has a particularly strong influence on landscape sensitivity which increases the overall sensitivity score (an example might be a landscape with a prominent/ highly visible skyline, or particularly high levels of tranquillity or remoteness). There may also be criteria that produce conflicting scores. For example, a settled landscape, while containing greater human influence (indicating a lower sensitivity), will also include more human scale features that could be affected by large-scale wind turbines (indicating a higher sensitivity). Conversely, a more remote landscape will lack the human scale features but is likely to present a higher sensitivity from a perceptual point of view. In these situations, a professional judgement is made on overall sensitivity, taking all criteria into account in the context of their importance to landscape character and quality overall.

## Judging landscape sensitivity to different sizes of development

- 4.17 The next stage of the assessment results in making an overall judgement on landscape sensitivity to different sizes (turbine heights) of wind energy development and different scales of solar PV development.
- 4.18 Sensitivity is judged on a five-point scale as shown in **Table 4.5** below. These sensitivity ratings can apply to any landscape in England – they are not specific to Charnwood.

**Table 4.5: Sensitivity levels and definitions**

Sensitivity Level	Definition
<b>High (H)</b>	The key characteristics and qualities of the landscape are highly sensitive to change from wind energy development.
<b>Moderate-High (M-H)</b>	The key characteristics and qualities of the landscape are sensitive to change from wind energy development.
<b>Moderate (M)</b>	Some of the key characteristics and qualities of the landscape are sensitive to change from wind energy development.
<b>Low-Moderate (L-M)</b>	Few of the key characteristics and qualities of the landscape are sensitive to change from wind energy development.
<b>Low (L)</b>	Key characteristics and qualities of the landscape are robust and are less likely to be adversely affected by wind energy development.

## Presentation of results

- 4.19 The full landscape sensitivity assessments for each of the landscape character types (LCAs) found in Charnwood are presented in tabular format in **Appendix 1** (wind energy) and **Appendix 2** (solar PV energy). The tables provide:
- A summary description of the LCA against each of the assessment criteria, giving a landscape sensitivity assessment 'score' for each (on the coloured five-point scale as set out in **Table 4.4** above).
  - Sensitivity ratings for different scales of development (height categories of wind turbines).
  - A list of key sensitive features/characteristics within the LCA.
  - Guidance for accommodating wind energy developments in the landscape.
- 4.20 A summary of the results of the landscape sensitivity assessment is presented and mapped in the next chapter (**Chapter 5**).

## 5 Strategic patterns of landscape sensitivity across Charnwood

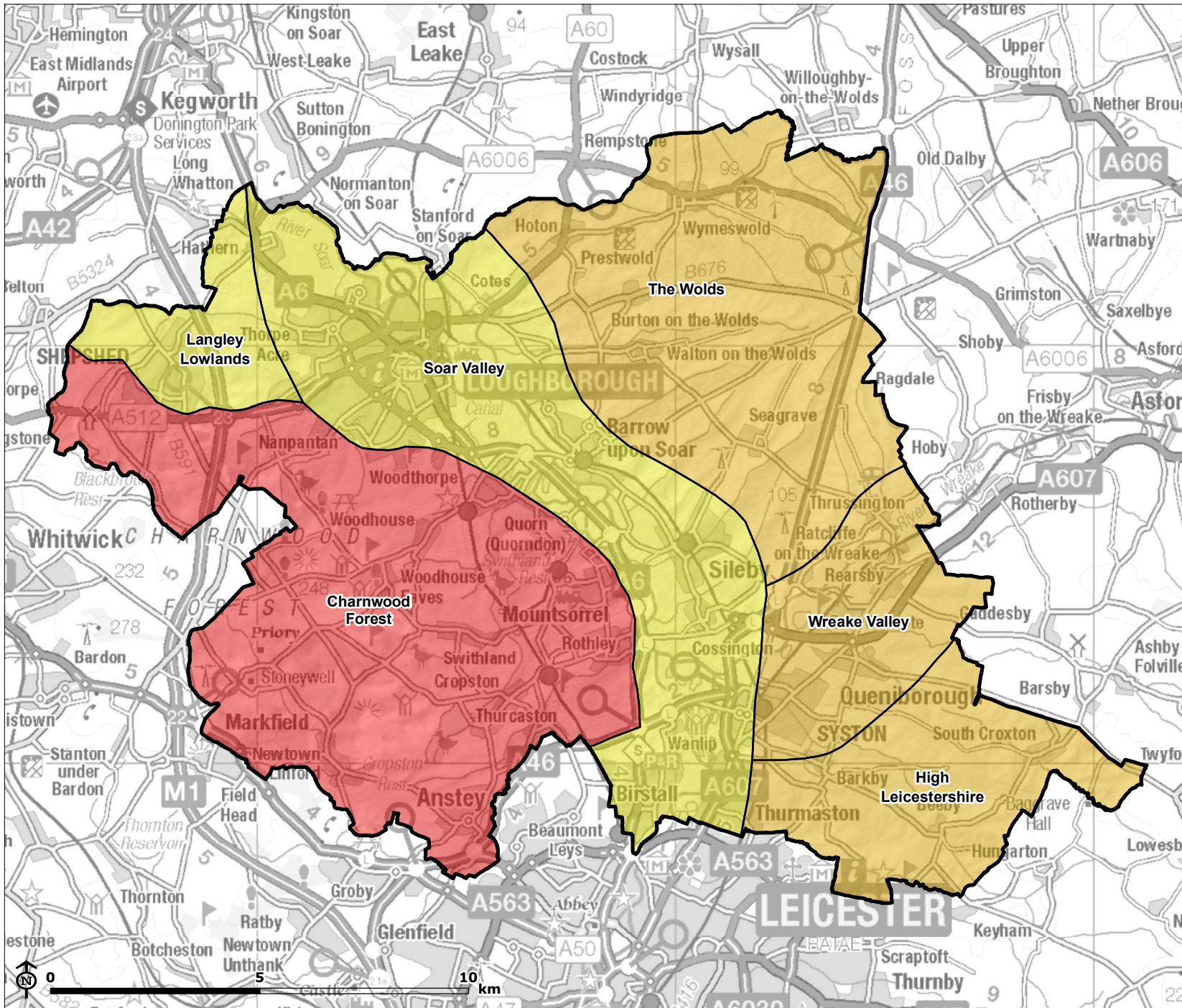
### Summary of landscape sensitivity across Charnwood

- 5.1 The results of the landscape sensitivity assessment are set out in **Tables 5.1** and **5.2**. These overall results are also mapped in **Figures 5.1** to **5.4** (for wind energy) and **Figures 5.5** to **5.9** (for solar PV) at the end of this Chapter. The aim of the maps is to show visually the results of the landscape sensitivity assessment at the LCA level; they are not intended to illustrate the visual impacts of individual wind energy developments on the surrounding landscape. That would need to be undertaken for individual schemes, aided by the use of computer generated maps of 'Zones of Theoretical Visibility' (ZTVs).
- 5.2 The LCAs in Charnwood often contain areas of higher and lower sensitivity within them that vary from the overall sensitivity 'score'. **It is therefore very important to take note of the content of the individual LCA sensitivity assessments and guidance in Appendices 1 and 2.**

**Table 5.1: Overall Landscape Sensitivity Assessment results for different turbine height categories, by LCA**







Landscape Character Area	Landscape sensitivity to different height categories of wind turbines	
<b>Charnwood Forest</b>	Small-scale turbines (<40 metres)	<b>M-H</b>
	Medium-scale turbines (40-80 metres)	<b>H</b>
	Large-scale turbines (80-120 metres)	<b>H</b>
	Very-large scale turbines (120-160 metres)	<b>H</b>
<b>High Leicestershire</b>	Small-scale turbines (<40 metres)	<b>M</b>
	Medium-scale turbines (40-80 metres)	<b>M</b>
	Large-scale turbines (80-120 metres)	<b>M-H</b>
	Very-large scale turbines (120-160 metres)	<b>H</b>
<b>Langley Lowlands</b>	Small-scale turbines (<40 metres)	<b>L-M</b>
	Medium-scale turbines (40-80 metres)	<b>M</b>
	Large-scale turbines (80-120 metres)	<b>M-H</b>
	Very-large scale turbines (120-160 metres)	<b>H</b>

Landscape Character Area	Landscape sensitivity to different height categories of wind turbines	
<b>Soar Valley</b>	Small-scale turbines (<40 metres)	<b>L-M</b>
	Medium-scale turbines (40-80 metres)	<b>L-M</b>
	Large-scale turbines (80-120 metres)	<b>M-H</b>
	Very-large scale turbines (120-160 metres)	<b>H</b>
<b>The Wolds</b>	Small-scale turbines (<40 metres)	<b>M</b>
	Medium-scale turbines (40-80 metres)	<b>M</b>
	Large-scale turbines (80-120 metres)	<b>M-H</b>
	Very-large scale turbines (120-160 metres)	<b>H</b>
<b>Wreake Valley</b>	Small-scale turbines (<40 metres)	<b>M</b>
	Medium-scale turbines (40-80 metres)	<b>M</b>
	Large-scale turbines (80-120 metres)	<b>M-H</b>
	Very-large scale turbines (120-160 metres)	<b>H</b>



**Charnwood Landscape Sensitivity**

**Figure 5.1: Overall landscape sensitivity to Small-scale turbine development (<40m)**

-  Charnwood Borough Boundary
- Landscape Sensitivity**
-  Low
-  Low-Moderate
-  Moderate
-  Moderate-High
-  High

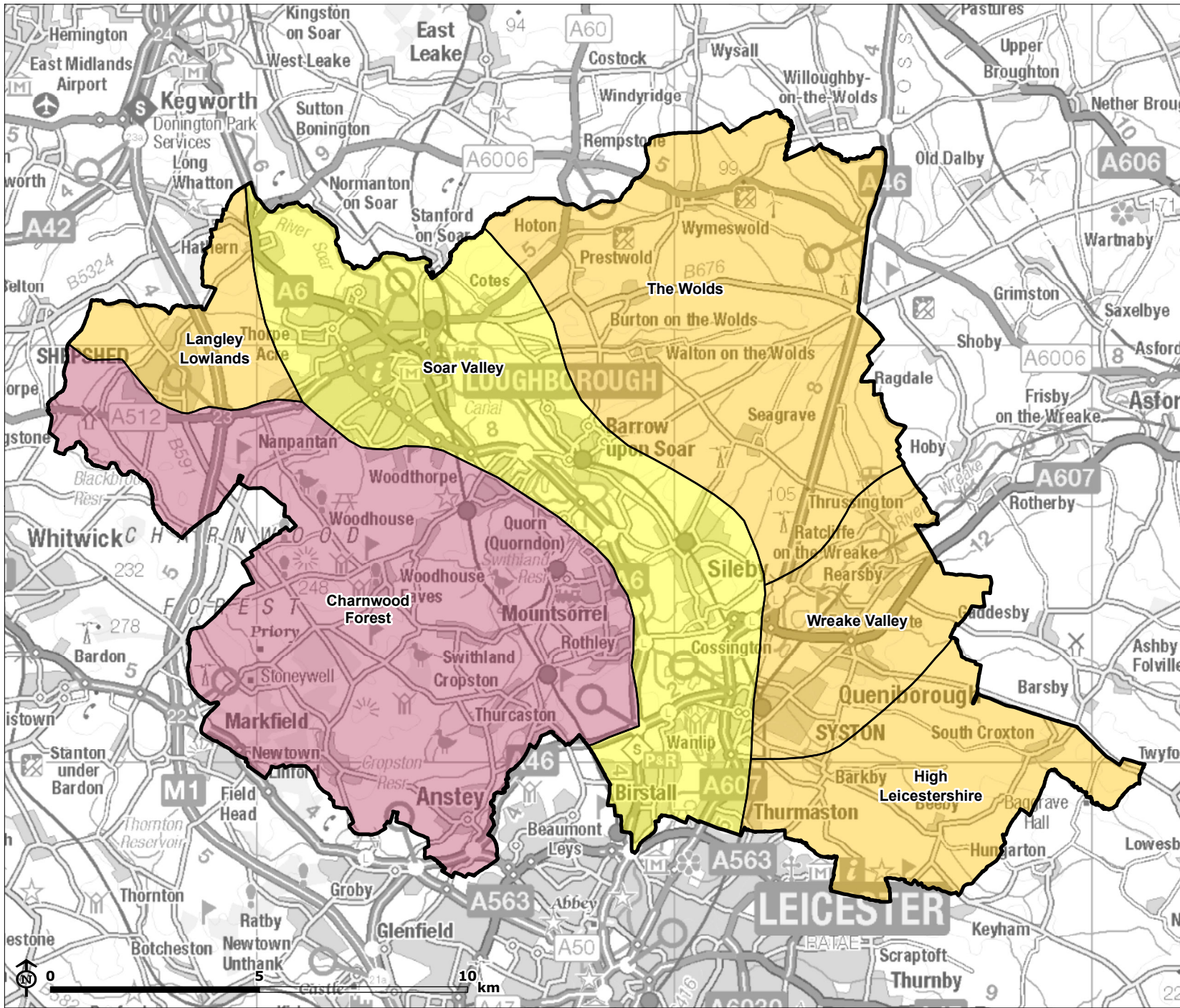
**NOTE ON INTERPRETATION:**  
 This map shows the overall sensitivity of the different Charnwood Landscape Character Areas.

It must be interpreted alongside the supporting information contained in the detailed LCA profiles at Appendix 1, which may indicate areas or features of higher or lower sensitivity within each LCA.

Source: OS, CBC

**Map Scale @ A4: 1:130,000**





**Charnwood Landscape Sensitivity**

**Figure 5.2: Overall landscape sensitivity to Medium-scale turbine development (40-80m)**

- Charnwood Borough Boundary
- Landscape Sensitivity**
- Low
- Low-Moderate
- Moderate
- Moderate-High
- High

**NOTE ON INTERPRETATION:**  
 This map shows the overall sensitivity of the different Charnwood Landscape Character Areas.

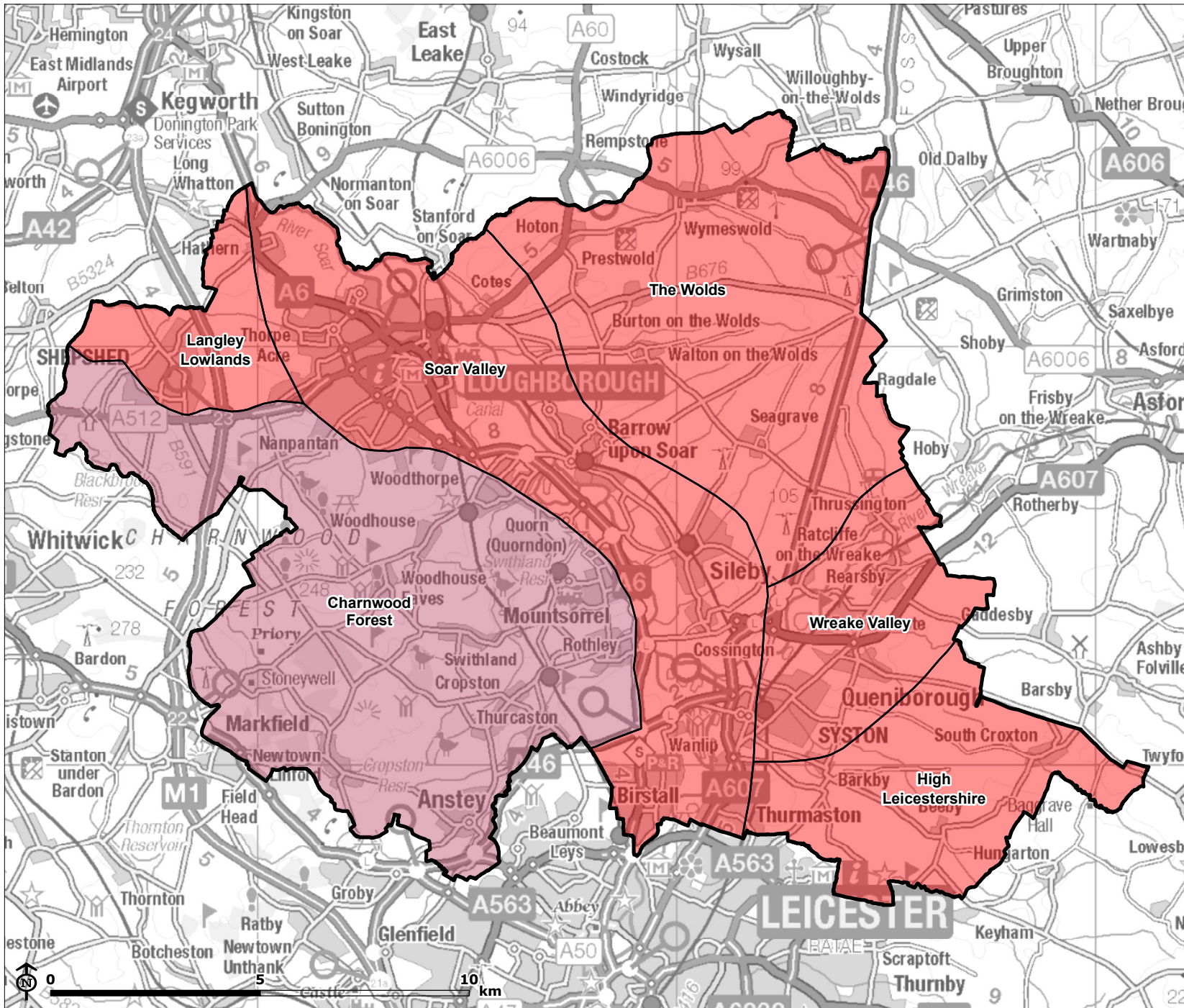
It must be interpreted alongside the supporting information contained in the detailed LCA profiles at Appendix 1, which may indicate areas or features of higher or lower sensitivity within each LCA.

Source: OS, CBC

**Map Scale @ A4: 1:130,000**







**Charnwood Landscape Sensitivity**

**Figure 5.3: Overall landscape sensitivity to Large-scale turbine development (80-120m)**

- Charnwood Borough Boundary
- Landscape Sensitivity
  - Low
  - Low-Moderate
  - Moderate
  - Moderate-High
  - High

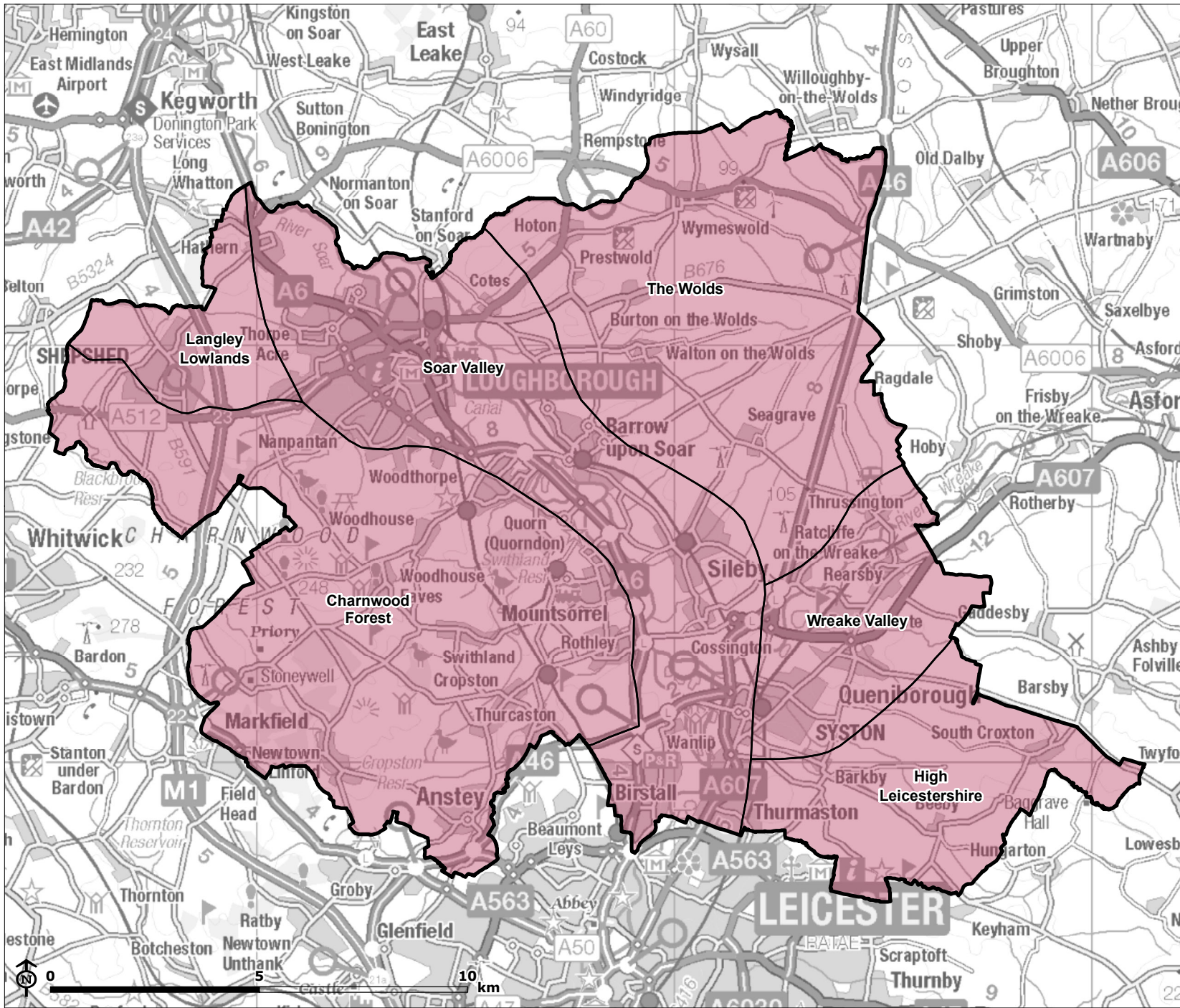
**NOTE ON INTERPRETATION:**  
 This map shows the overall sensitivity of the different Charnwood Landscape Character Areas.

It must be interpreted alongside the supporting information contained in the detailed LCA profiles at Appendix 1, which may indicate areas or features of higher or lower sensitivity within each LCA.

Source: OS, CBC







Map Scale @ A4: 1:130,000





**Charnwood Landscape Sensitivity**

**Figure 5.4: Overall landscape sensitivity to Very large-scale turbine development (120-160m)**

-  Charnwood Borough Boundary
- Landscape Sensitivity**
-  Low
-  Low-Moderate
-  Moderate
-  Moderate-High
-  High

**NOTE ON INTERPRETATION:**  
 This map shows the overall sensitivity of the different Charnwood Landscape Character Areas.

It must be interpreted alongside the supporting information contained in the detailed LCA profiles at Appendix 1, which may indicate areas or features of higher or lower sensitivity within each LCA.

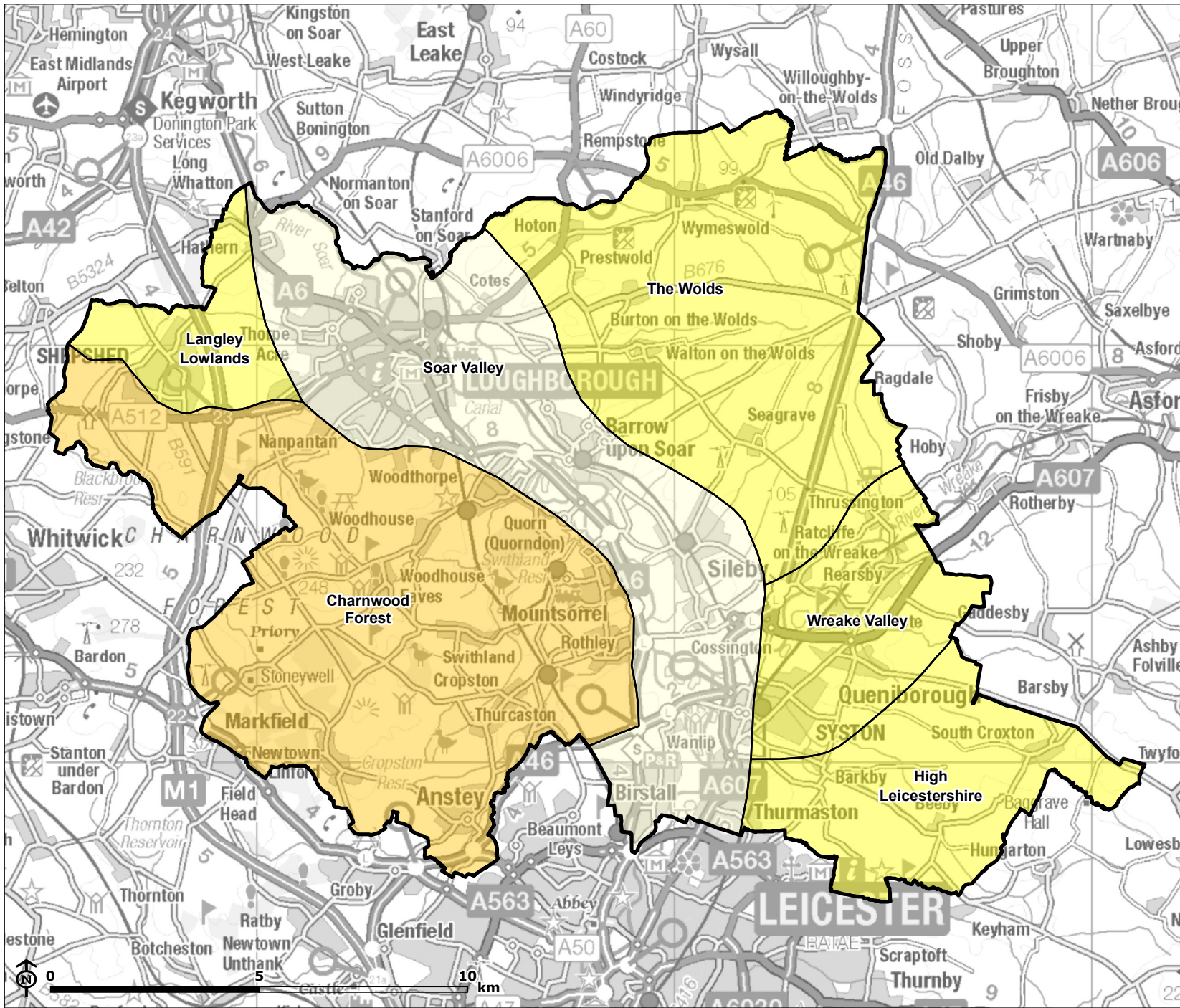
Source: OS, CBC

**Map Scale @ A4: 1:130,000**



**Table 5.2: Overall Landscape Sensitivity Assessment results for different scales of solar PV, by LCA**

Landscape Character Area	Landscape sensitivity to different scales of solar PV	
<b>Charnwood Forest</b>	Very small (<1 ha)	<b>M</b>
	Small (>1-5ha)	<b>M-H</b>
	Medium (>5-10ha)	<b>M-H</b>
	Large (>10-15ha)	<b>H</b>
	Very Large (>15-20ha)	<b>H</b>
<b>High Leicestershire</b>	Very small (<1 ha)	<b>L-M</b>
	Small (>1-5ha)	<b>M</b>
	Medium (>5-10ha)	<b>M</b>
	Large (>10-15ha)	<b>M-H</b>
	Very Large (>15-20ha)	<b>H</b>
<b>Langley Lowlands</b>	Very small (<1 ha)	<b>L-M</b>
	Small (>1-5ha)	<b>M</b>
	Medium (>5-10ha)	<b>M</b>
	Large (>10-15ha)	<b>M-H</b>
	Very Large (>15-20ha)	<b>M-H</b>
<b>Soar Valley</b>	Very small (<1 ha)	<b>L</b>
	Small (>1-5ha)	<b>L-M</b>
	Medium (>5-10ha)	<b>M</b>
	Large (>10-15ha)	<b>M</b>
	Very Large (>15-20ha)	<b>M-H</b>
<b>The Wolds</b>	Very small (<1 ha)	<b>L-M</b>
	Small (>1-5ha)	<b>M</b>
	Medium (>5-10ha)	<b>M-H</b>
	Large (>10-15ha)	<b>M-H</b>
	Very Large (>15-20ha)	<b>H</b>
<b>Wreake Valley</b>	Very small (<1 ha)	<b>L-M</b>
	Small (>1-5ha)	<b>M</b>
	Medium (>5-10ha)	<b>M</b>
	Large (>10-15ha)	<b>M-H</b>
	Very Large (>15-20ha)	<b>H</b>



**Charnwood Landscape Sensitivity**

**Figure 5.5: Overall landscape sensitivity to Very small scale solar development (<1ha)**

- Charnwood Borough Boundary
- Landscape Sensitivity**
- Low
- Low-Moderate
- Moderate
- Moderate-High
- High

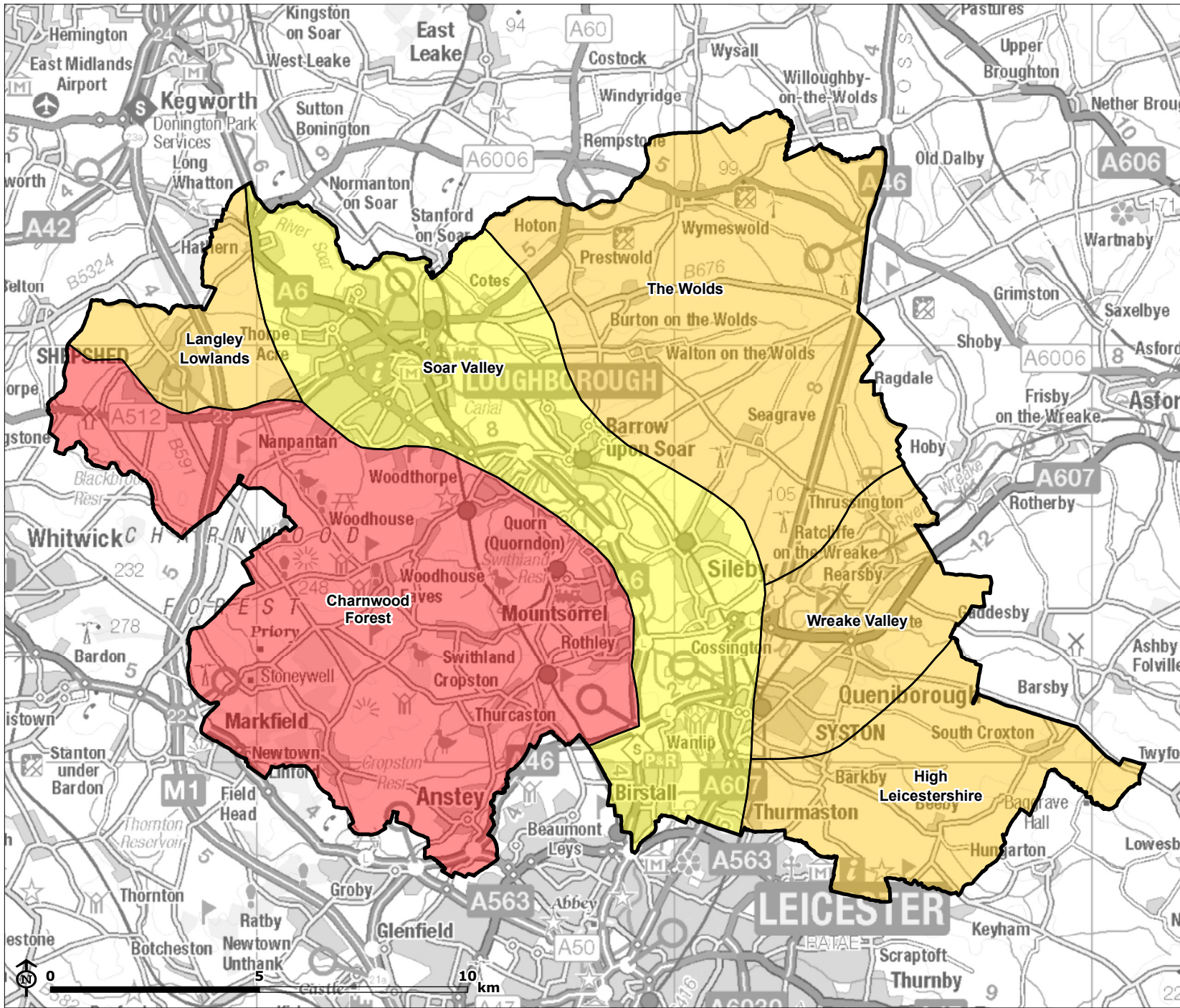
**NOTE ON INTERPRETATION:**  
 This map shows the overall sensitivity of the different Charnwood Landscape Character Areas.

It must be interpreted alongside the supporting information contained in the detailed LCA profiles at Appendix 2, which may indicate areas or features of higher or lower sensitivity within each LCA.

Source: OS, CBC

**Map Scale @ A4: 1:130,000**





**Charnwood Landscape Sensitivity**

**Figure 5.6: Overall landscape sensitivity to Small scale solar development (<1-5ha)**

- Charnwood Borough Boundary
- Landscape Sensitivity**
- Low
- Low-Moderate
- Moderate
- Moderate-High
- High

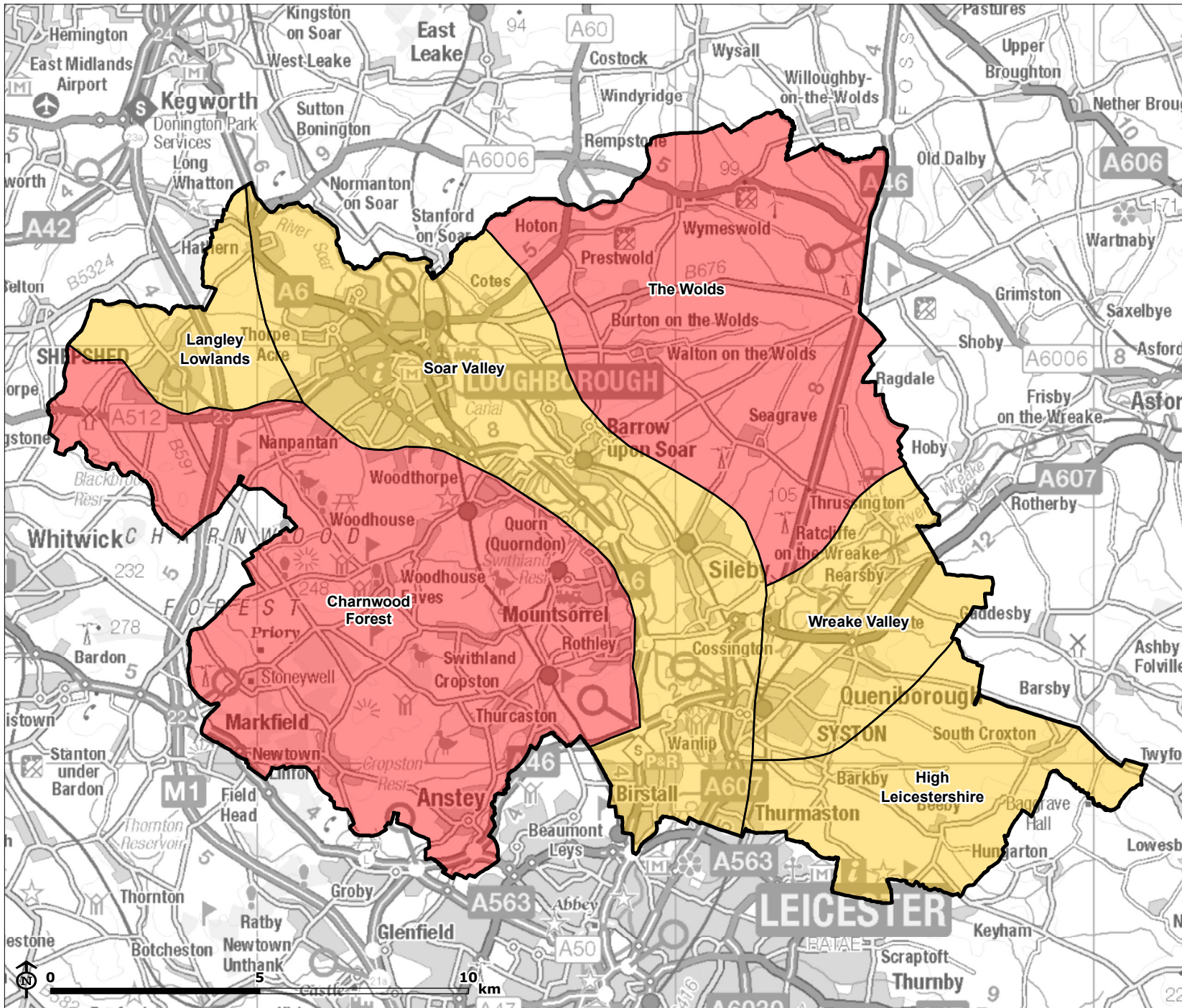
**NOTE ON INTERPRETATION:**  
 This map shows the overall sensitivity of the different Charnwood Landscape Character Areas.

It must be interpreted alongside the supporting information contained in the detailed LCA profiles at Appendix 2, which may indicate areas or features of higher or lower sensitivity within each LCA.

Source: OS, CBC







**Map Scale @ A4: 1:130,000**





**Charnwood Landscape Sensitivity**

**Figure 5.7: Overall landscape sensitivity to Medium scale solar development (<5-10ha)**

-  Charnwood Borough Boundary
- Landscape Sensitivity**
-  Low
-  Low-Moderate
-  Moderate
-  Moderate-High
-  High

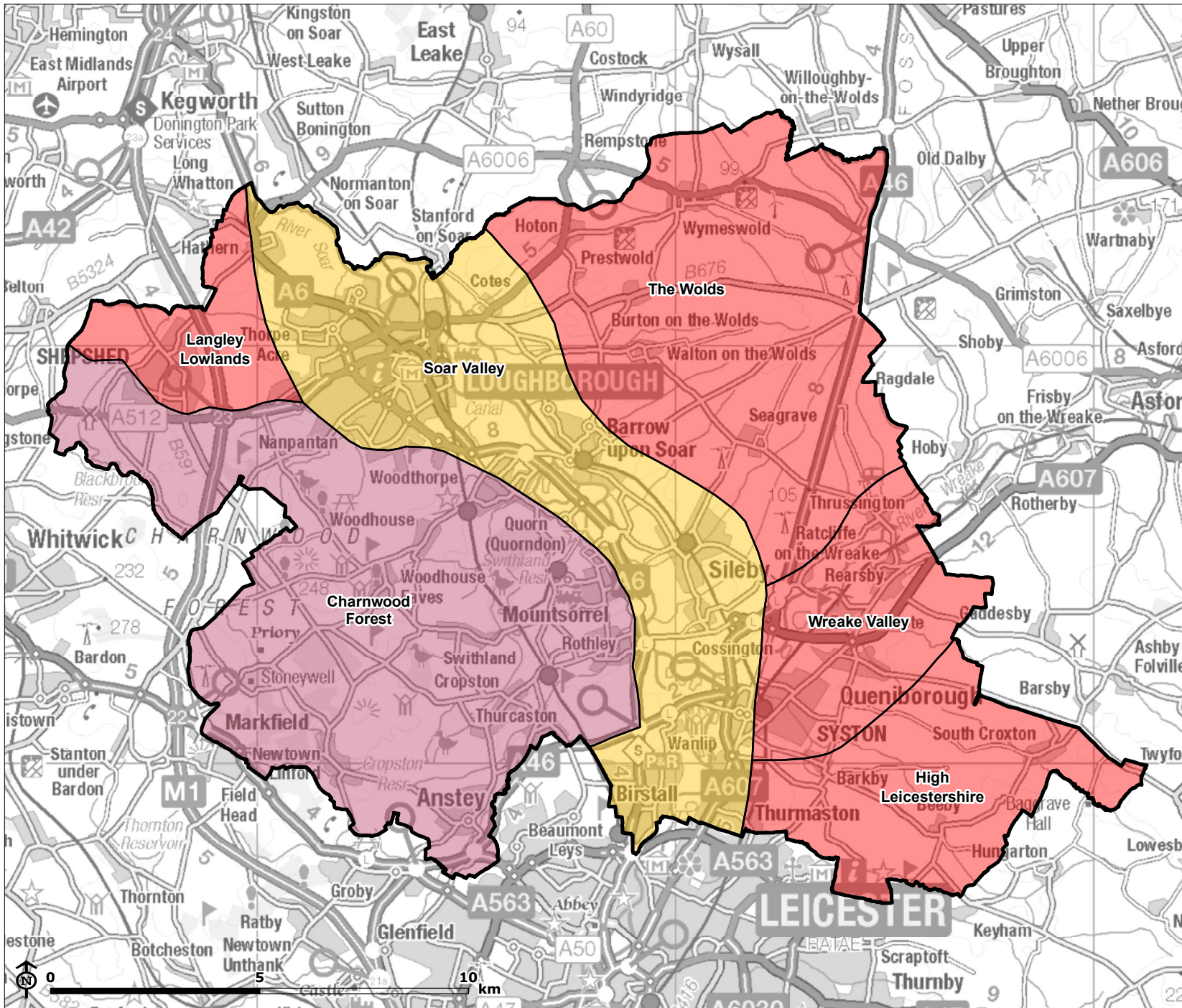
**NOTE ON INTERPRETATION:**  
 This map shows the overall sensitivity of the different Charnwood Landscape Character Areas.

It must be interpreted alongside the supporting information contained in the detailed LCA profiles at Appendix 2, which may indicate areas or features of higher or lower sensitivity within each LCA.

Source: OS, CBC

**Map Scale @ A4: 1:130,000**





**Charnwood Landscape Sensitivity**

**Figure 5.8: Overall landscape sensitivity to Large scale solar development (<10-15ha)**

- Charnwood Borough Boundary
- Landscape Sensitivity**
- Low
- Low-Moderate
- Moderate
- Moderate-High
- High

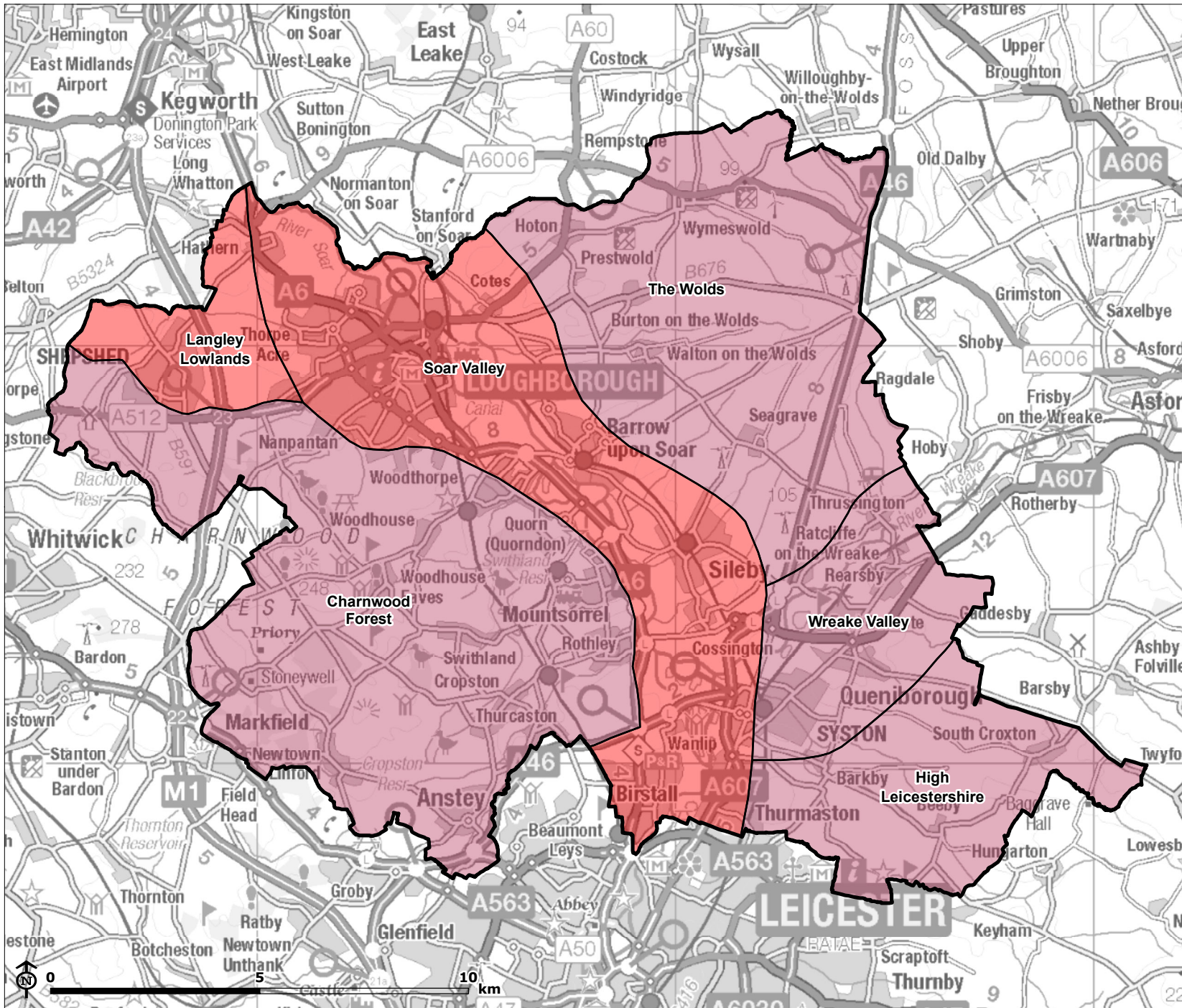
**NOTE ON INTERPRETATION:**  
 This map shows the overall sensitivity of the different Charnwood Landscape Character Areas.

It must be interpreted alongside the supporting information contained in the detailed LCA profiles at Appendix 2, which may indicate areas or features of higher or lower sensitivity within each LCA.

Source: OS, CBC

**Map Scale @ A4: 1:130,000**





## Charnwood Landscape Sensitivity

**Figure 5.9: Overall landscape sensitivity to Very large scale solar development (>15-20ha)**

- Charnwood Borough Boundary
  
- Landscape Sensitivity**

  - Low
  - Low-Moderate
  - Moderate
  - Moderate-High
  - High

**NOTE ON INTERPRETATION:**  
 This map shows the overall sensitivity of the different Charnwood Landscape Character Areas.

It must be interpreted alongside the supporting information contained in the detailed LCA profiles at Appendix 2, which may indicate areas or features of higher or lower sensitivity within each LCA.

Source: OS, CBC

**Map Scale @ A4: 1:130,000**





# Appendix 1

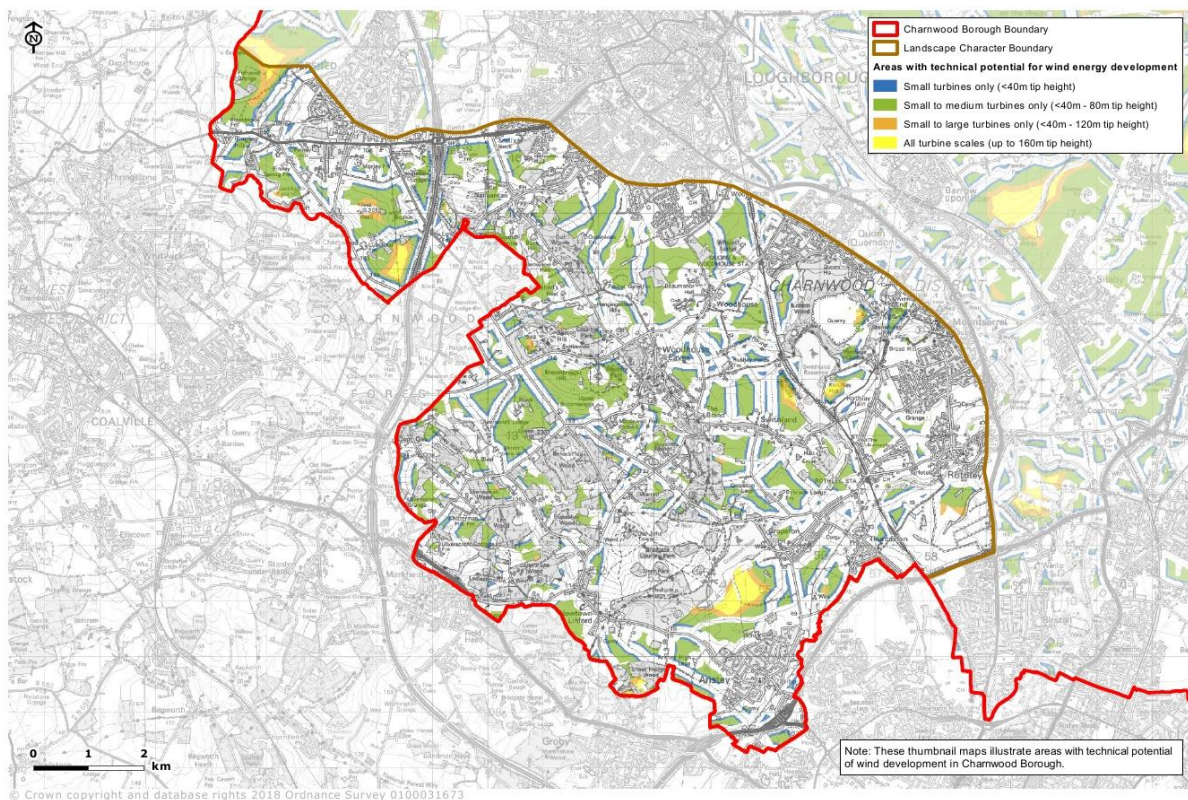
## Wind Energy Landscape Sensitivity Assessments

This Appendix contains the Landscape Sensitivity Assessments and Guidance tailored to each of the six Landscape Character Areas (LCAs) found within Charnwood Borough. Each document includes the following:

- A location map of the LCA within Charnwood Borough.
- A summary of the landscape character.
- Landscape sensitivity assessment results for wind energy development.
- Key sensitivities and guidance for the development of wind turbines in the landscape.

LCA	Page Number
Charnwood Forest	42
High Leicestershire	47
Langley Lowlands	51
Soar Valley	54
The Wolds	59
Wreake Valley	63

# Charnwood Forest



## Representative photographs



## Location and summary of landscape character

### Summary of landscape character

Charnwood Forest is a distinctive upland landscape punctuated by rocky outcrops and fast flowing streams. It is a well wooded landscape including large tracts of ancient woodland. Fields are mostly parliamentary enclosure, with some enlargement of fields that has occurred following the introduction of arable crops. Local stone vernacular is visible in buildings and walls. Charnwood Forest contains many sites of national and local ecological importance, including former quarries, woodland and heath grasslands. Historic estate parklands add time-depth to the landscape. Long, panoramic views are possible from numerous parts of the area.

## Landscape sensitivity assessment

Criteria	Description	Rating
<b>Landform and scale</b>	<ul style="list-style-type: none"> <li>Distinctive rugged upland landscape with rocky outcrops and carved by small streams within intricate valleys which create complexity in the landscape. Rivers drain eastwards towards the River Soar.</li> <li>Prominent hills are located throughout Charnwood Forest and include Beacon Hill, Broombriggs Hill and Warren Hill.</li> <li>Land is divided into a small to medium scale rectilinear field pattern of parliamentary enclosures which are enclosed by stone walls and hedgerows. The frequent trees and hedgerows also contribute to the small-scale of the landscape.</li> </ul>	<b>H</b>
<b>Land cover pattern and complexity</b>	<ul style="list-style-type: none"> <li>This is a farmed landscape, with a mix of arable, pasture and meadows. Charnwood Forest contains a high density of nationally and locally designated semi-natural habitats, including heathland, wetland habitats and woodland.</li> <li>Land is divided into a small to medium scale rectilinear field pattern of parliamentary enclosures which are enclosed by stone walls and hedgerows.</li> <li>Horsiculture is frequent around settlements and has resulted in the subdivision of fields into small paddocks.</li> </ul>	<b>M-H</b>
<b>Skylines</b>	<ul style="list-style-type: none"> <li>Rocky outcrops and mature woodlands are often visible on the skyline and have an influence on adjacent lower lying landscapes.</li> <li>Masts, farm scale turbines and pylons also form occasional features on the skyline.</li> <li>Old John Tower is located on a high point within Bradgate Park and is a prominent skyline feature, particularly in views from the south and east.</li> </ul>	<b>M-H</b>
<b>Visibility and views</b>	<ul style="list-style-type: none"> <li>Visual character is strongly influenced by the dramatic topography and dense woodland cover.</li> <li>Long distance panoramic views are enabled by the elevated landform, with notable viewpoints from hills including Beacon Hill and Old John Tower.</li> <li>There are views of large quarrying operations from localised areas, including from Kinchley Lane</li> <li>Large, modern farming buildings can be dominant in some local views.</li> </ul>	<b>M-H</b>
<b>Natural and cultural heritage aspects</b>	<ul style="list-style-type: none"> <li>The HLC indicates that many of the fields originate from Parliamentary era enclosures. Many of the rural villages have Conservation Areas at their core. A number of historic parks and gardens are located within Charnwood Forest, including Bradgate Country Park, Ulverscroft Priory and Beaumanor Hall.</li> <li>Industrial heritage is also important within the landscape, with the Great Central Railway now used as a heritage steam railway. Scheduled Monuments within the landscape include medieval fish ponds and hillforts.</li> <li>Charnwood Forest contains a high density of nationally and locally designated semi-natural habitats, including heathland, wetland habitats and woodland.</li> <li>Trees are frequent and the landscape is part of the National Forest, with large tracts of ancient woodland.</li> <li>Wetlands within disused quarries and at Cropston, Swithland and Blackbrook Reservoirs (all SSSIs) are particularly important for birdlife. Fields are divided by species-rich hedgerows which also contribute to natural character.</li> </ul>	<b>M-H</b>
<b>Amenity and recreation</b>	<ul style="list-style-type: none"> <li>The landscape is a popular destination for recreation.</li> <li>Several Country Parks are located in this area, including Bradgate Park, Beacon Hill and Broombriggs Farm.</li> <li>A number of golf courses are located within this character area.</li> <li>Charnwood Forest contains several reservoirs which are also popular destinations for recreation.</li> </ul>	<b>H</b>
<b>Scenic and special qualities</b>	<ul style="list-style-type: none"> <li>This landscape character area does not fall within a nationally designated landscape.</li> <li>The Charnwood Forest has a remote character and feels far removed from nearby urban areas. It is a popular destination for recreation, with good access routes and a number of Country Parks.</li> </ul>	<b>M-H</b>

	<ul style="list-style-type: none"> <li>• The strong semi-natural character is evident in many places throughout the landscape and draws people to the area.</li> <li>• Dark night skies are noted as a valued characteristic of this area.</li> </ul>	
<p><b>Perceptual qualities</b></p>	<ul style="list-style-type: none"> <li>• Charnwood Forest is an attractive, well treed, scenic landscape which forms a recreational destination for local people and tourists. Elevated parts of the landscape can have an exposed feel, which contrasts with the enclosure afforded by the densely wooded areas.</li> <li>• The M1 motorway crosses through the character area and introduces traffic noise and movement which detract from the rural qualities experienced throughout much of Charnwood Forest. Active quarries can also produce noise.</li> <li>• Adjacent to larger settlements including Shepshed, Loughborough, Groby and Anstey, there are some urban fringe influences which lower sensitivity locally.</li> <li>• This area is less intensively farmed than many other areas in the borough, with cattle and sheep grazing creating a pastoral character. Dark night skies are noted as a valued characteristic of this area.</li> </ul>	<p><b>M-H</b></p>

## Overall assessment of landscape sensitivity to development scenarios

Development scenario	Sensitivity				
Small-scale turbines (<40 metres)				M-H	
Medium-scale turbines (40-80 metres)					H
Large-scale turbines (80-120 metres)					H
Very-large scale turbines (120-160 metres)					H
Notes on any variations in landscape sensitivity					
Areas which are visually prominent from the promoted viewpoints within Charnwood Forest will be highly sensitive to all scales of wind energy development.					

### Areas with technical potential for large and very large scale wind energy development

- The area to the north of Anstey and east of Bradgate Park is characterised by a gently undulating landform overlain by large scale fields which are primarily used for arable farming. This area is located adjacent to the Grade II Registered Park and Garden of Bradgate Park. There are high levels of intervisibility between Bradgate Park (including the viewpoint at Old John Tower) and this area. Existing built features including settlement at Anstey, pylon lines and the existing wind turbine at Wanlip are visible on the skylines. The strong visual relationship between the area and Bradgate Park means that this area would be highly sensitive to large and very large scale turbines.
- There are a number of small areas identified as having potential for large and very large scale wind energy development located around Beacon Hill and near Lea Meadows/Ulverscroft Nature Reserves. These areas have an enclosed and intimate character due to the dense woodland cover. The Lea Meadows/Ulverscroft Nature Reserves areas are characterised by frequent semi-natural habitats. Beacon Hill is a popular recreation destination containing elevated hill summits with long views. These areas are highly sensitive to large and very large scale turbines.
- Several areas around Swithland Reservoir and the adjacent quarry are identified as having potential for large and very large scale wind energy development. These areas are characterised by medium-large scale arable fields and extensive mixed woodland which surrounds the reservoir and quarry. These areas are lower lying than the majority of Charnwood Forest and are less visually prominent, slightly reducing sensitivity to large scale turbines. The landscape is highly sensitive to very large scale turbines.
- Several areas to the south of Shepshed are identified as having potential for large and very large scale wind energy development. These areas are located either side of the M1, which has a large impact on the perceptual qualities of these locations. Pylon lines are visible on the skyline in this location. These areas are mostly elevated and visually prominent, resulting in high levels of sensitivity to large and very large wind turbines. The area adjacent to Charnwood Quarry is lower lying and therefore has reduced sensitivity to wind energy development.

### Key landscape sensitivities

**The following provides a summary of the special landscape qualities and key features/attributes that would be sensitive to change as a result of wind energy development:**

- The steep slopes of the hills which are located throughout the landscape character area.
- Strong rural character, with high levels of tranquillity and remoteness which make the Charnwood Forest a valued destination for recreation.
- A sense of exposure experienced on the higher ground, which is also highly visible within the landscape character area and from adjacent landscapes.

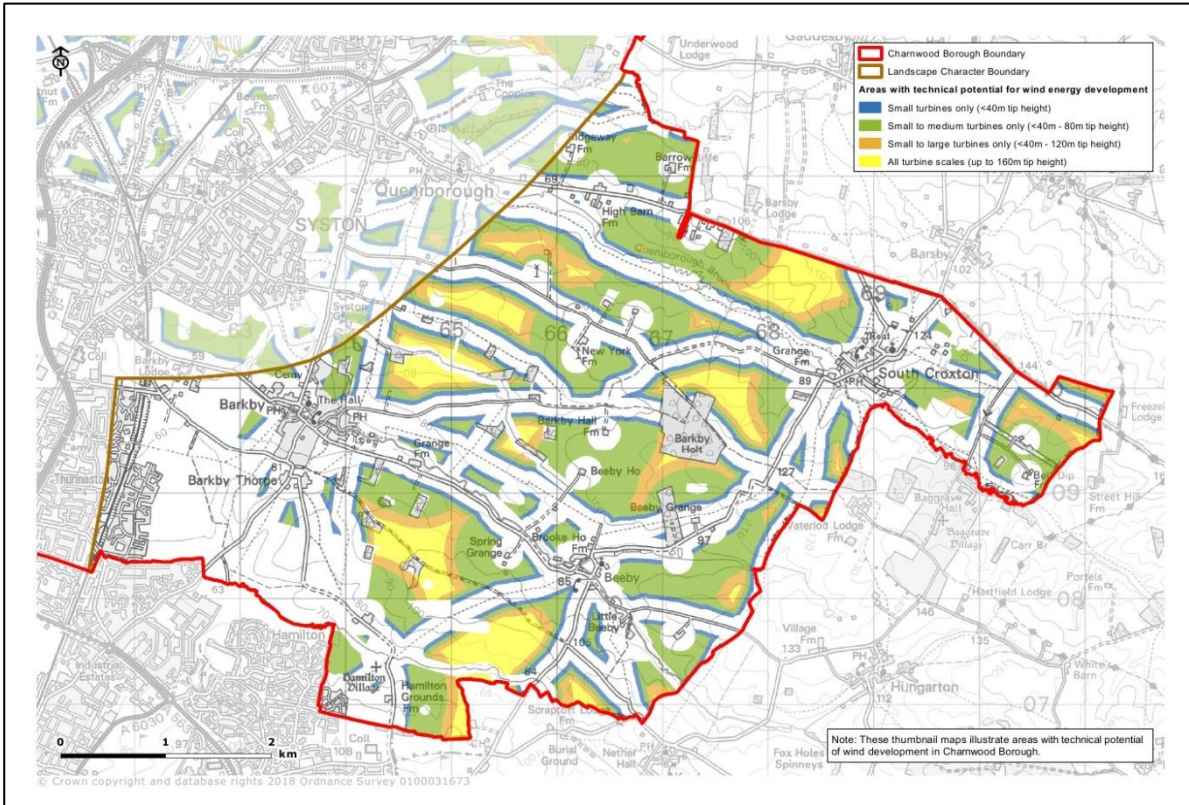
- Strong sense of time-depth with frequent heritage features including large areas of designed parkland and historic rural villages designated as Conservation Areas.
- Long views across the Charnwood Forest from elevated areas including promoted viewpoints. High levels of intervisibility with adjacent landscapes.
- Prominent and distinctive skylines which are mostly undeveloped and widely visible from across Charnwood Borough.
- Nationally and locally important, semi-natural habitats including woodland, wood pasture, wetlands and heathland. This includes large areas of ancient woodland.

### **Opportunities for mitigation or landscape enhancement**

#### **Guidance and opportunities to consider for any future development within area include:**

- Avoid constructing wind turbines in areas with complex or visually prominent landforms, including areas with rocky outcrops and hill summits.
- Avoid locations where turbines would interrupt or be prominent in views, particularly from viewpoint locations including Beacon Hill and Bradgate Park.
- Avoid siting wind energy development in locations characterised by extensive undeveloped skylines.
- Preserve the integrity and setting of heritage features including the historic parklands and Conservation Areas.
- Avoid locations with important semi-natural habitats including ancient woodland, wood pasture, wetlands and heathland.
- Preserve the perceptual and scenic qualities of the landscape which attract visitors to the area, including the strong rural and tranquil character with dark night skies.

# High Leicestershire



## Representative photographs



## Location and summary of landscape character

The High Leicestershire Landscape Character Area (LCA) consists of a hilly plateau dissected by radiating watercourses which flow to major rivers including the Soar. The predominantly rural landscape comprises undulating fields with a mix of pasture on the higher, sloping land and arable farming on the lower, flatter land. Fields are divided by well-established hedgerows, linking to copses of woodland. Extensive views from the higher ground reveal small attractive villages, hamlets and farm buildings set within an agricultural landscape with traditional churches acting as distinctive landmarks.

## Landscape sensitivity assessment

Criteria	Description	Rating
<b>Landform and scale</b>	<ul style="list-style-type: none"> <li>An undulating ridge and valley landscape which steadily rises from approximately 50 metres AOD close to the River Soar to over 150 metres east of South Croxton.</li> <li>Three small watercourses, the Queniborough, Barkby and Melton Brooks cross the landscape.</li> <li>Scattered farms, hedgerows and trees form human scale features which occur throughout the landscape.</li> <li>On the open ridgetops, the landscape has an expansive feel and has the perception of a larger scale landscape.</li> </ul>	<b>M</b>
<b>Land cover pattern and complexity</b>	<ul style="list-style-type: none"> <li>Land use is primarily agricultural, with large regular shaped fields with hedgerows. The field pattern is primarily of Parliamentary enclosures originating in the 18<sup>th</sup> and 19<sup>th</sup> century.</li> <li>Agriculture is mixed grassland and arable cropping. In places, intensification has resulted in the loss or degradation of hedgerows. Horse paddocks are commonplace close to villages.</li> <li>Settlement consists of small nucleated villages and occasional farms. Close to Thurmaston settlement is dense and urban in character.</li> <li>Pockets/coverts of woodland are commonplace within fields. Woodland is a mix of coniferous and deciduous species. Barkby Holt is a larger area of woodland the centre of the character area. Woodland is also located along streams.</li> </ul>	<b>M</b>
<b>Skylines</b>	<ul style="list-style-type: none"> <li>Skylines are generally broad and undeveloped.</li> <li>Frequent trees within the landscape create wooded skylines. In some localised areas, coniferous plantations on ridges are widely visible skyline features.</li> <li>The church spires of Barkby and South Croxton are locally prominent on the skylines.</li> </ul>	<b>M-H</b>
<b>Visibility and views</b>	<ul style="list-style-type: none"> <li>From higher ground, there are views across the undulating landscape. Where woodland allows these views are expansive.</li> <li>Coniferous plantations screen views in localised areas.</li> <li>Villages are often located on ridgetops and are visible from the surrounding countryside.</li> <li>Long views across the valley of the River Soar to the distinctive landform of the hills within Charnwood Forest LCA.</li> </ul>	<b>M-H</b>
<b>Natural and cultural heritage aspects</b>	<ul style="list-style-type: none"> <li>The landscape contains a number of small villages, including Barkby, Beeby and South Croxton which are contain Conservation Areas.</li> <li>The medieval village of Hamilton and Roman villa are Scheduled Monuments located in the south of the character area.</li> <li>Remnant parkland at Barkby Hall contributes to the sense of time-depth experienced in the landscape. Ridge and furrow within fields also provides evidence of past land-use.</li> <li>Key habitats are hedgerows, mature trees, field ponds and lowland mixed deciduous woodland. Local Wildlife Sites include Barkby Holt and Queniborough Brook Fields.</li> </ul>	<b>M</b>
<b>Amenity and recreation</b>	<ul style="list-style-type: none"> <li>A well-signed network of public rights of way crosses the landscape and provides access to the landscape.</li> <li>Formal recreational facilities are more limited, and include Beeby fishing lakes and Barkby cricket ground.</li> </ul>	<b>M</b>
<b>Scenic and special qualities</b>	<ul style="list-style-type: none"> <li>This landscape character area does not fall within a nationally designated landscape.</li> <li>Overall this is a traditional rural landscape, with few modern influences. Exceptions occur close the dense urban developments at Syston, Thurmaston and the northern edges of Leicester.</li> <li>The landscape feels far removed from the nearby urban areas, and provides valued outdoor recreation opportunities and access to the countryside.</li> </ul>	<b>M</b>
<b>Perceptual qualities</b>	<ul style="list-style-type: none"> <li>Overall, the landscape has a remote and tranquil character. Some areas are used for more intensive agriculture which has a negative impact on this perceptual quality.</li> <li>The dense development and urban/suburban land uses in the west</li> </ul>	<b>M-H</b>



	<p>contrast greatly with the highly rural and tranquil qualities of the remainder of the character area, with a sense of timelessness and few modernising influences.</p> <ul style="list-style-type: none"> <li>The enclosed character in the steam valleys as a result of the landform and woodland cover contrasts with the expansive and open character that is experienced on higher ground.</li> </ul>	
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### Overall assessment of landscape sensitivity to development scenarios

Development scenario	Sensitivity			
Small-scale turbines (<40 metres)			<b>M</b>	
Medium-scale turbines (40-80 metres)			<b>M</b>	
Large-scale turbines (80-120 metres)				<b>M-H</b>
Very-large scale turbines (120-160 metres)				<b>H</b>

#### Notes on any variations in landscape sensitivity

The broad and sweeping landform of the ridges has larger scale and fewer human scale features than the lower lying stream valleys, which reduces overall landscape sensitivity on the ridges.

### Areas with technical potential for large and very large wind energy development

The areas of High Leicestershire with potential for large and very large scale wind energy are primarily located on the elevated ridges. The ridges are characterised by broad, sweeping landforms which are overlain by large scale arable fields divided by low cut hedges. Skylines are expansive and undeveloped and there are long views across the adjacent countryside. Sensitivity to wind energy development is similar to the rest of the High Leicestershire Character Area.

### Key landscape sensitivities

**The following provides a summary of the special landscape qualities and key features/attributes that would be sensitive to change as a result of wind energy development:**

- Important semi-natural features including hedgerows, copses, field ponds and pockets of species rich grassland which add visual interest amongst the agricultural landscape.
- Undeveloped, elevated and expansive skylines which are sometimes marked by trees.
- The small rural villages which are often historic and designated as Conservation Areas with prominent church spires that form landmark skyline features.
- Heritage features including Barkby Hall, and the medieval village of Hamilton and Roman villa Scheduled Monuments.
- Long views from higher ground across the adjacent countryside which stretch to the Charnwood Forest.
- Strong rural and tranquil character experienced throughout much of the landscape, despite the proximity of large areas of urban development.

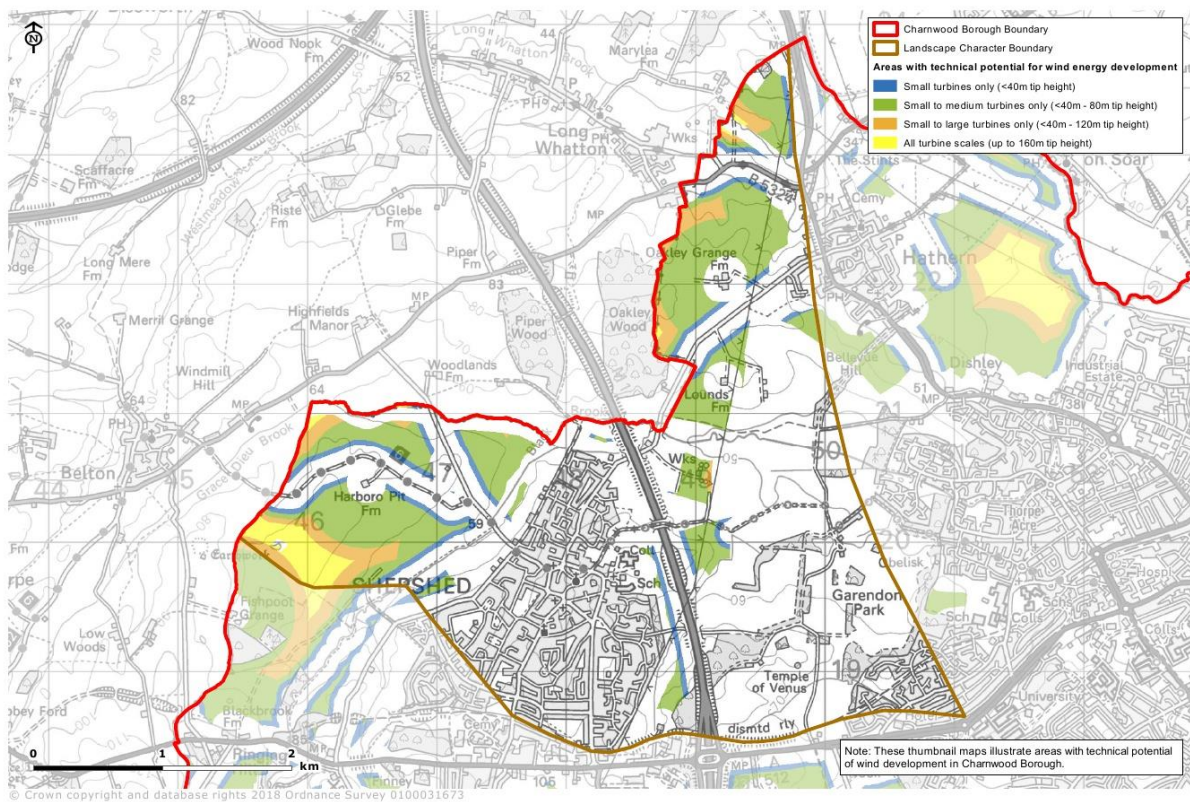
### Opportunities for mitigation or landscape enhancement

**Guidance and opportunities to consider for any future development within area include:**

- Avoid the most prominent and undeveloped skylines, including the elevated areas around South Croxton.
- Avoid locations where wind turbines would interrupt or be prominent within key views, including those which contain the spires and towers of historic churches.

- Ensure that wind energy development does not overwhelm the human scale of the landscape and its frequent landscape features, particularly around the villages.
- Avoid development which will have an adverse effect on semi-natural features including woodland copses, field ponds and species rich grassland, which contribute to the semi-natural character of the predominantly agricultural landscape.
- Respect the integrity and setting of important heritage features, including Barkby Hall, Conservation Areas and historic church spires.
- Preserve the strong rural and tranquil character of High Leicestershire and ensure that wind energy development does not become a dominating feature of the landscape.

## Langley Lowlands



### Representative photographs



### Location and summary of landscape character

#### Summary of landscape character

The Langley Lowlands comprise a gently rolling landform incised by small streams flowing towards the Trent and Soar valleys. There is a varied field pattern, with a contrast of large post-war arable fields and smaller piecemeal enclosure associated with the edge of villages. Woodland cover is limited although the landscape has a well-treed character from the frequent hedgerow trees. The historic parkland estate of Garendon Park is located between Shepshed and Loughborough. Settlement comprises the urban area of Shepshed, the edges of the village of Hatfield and several scattered farms. The road corridor of the M1 severs the character area.

## Landscape sensitivity assessment

Criteria	Description	Rating
<b>Landform and scale</b>	<ul style="list-style-type: none"> <li>Rolling landform with gentle slopes and broad valleys of small watercourses.</li> <li>Watercourses include Black Brook, Grace Dieu Brook (which forms the Borough boundary) and the Oxley Gutter. The valleys of these watercourses introduce complexity into the landform.</li> <li>Very large scale fields with low cut hedgerows increase the scale of the landscape and contrast with pockets of smaller scale piecemeal enclosure close to settlements. Trees, hedgerows and villages/farms are small-scale features which are frequent within the landscape.</li> </ul>	<b>M</b>
<b>Land cover pattern and complexity</b>	<ul style="list-style-type: none"> <li>The primary land use is intensive arable agriculture. Fields are large to very large in scale and enclosed by hedgerows. There are occasional pockets of small-scale pasture.</li> <li>Woodland cover in the landscape character area is limited, with the majority of the woodland being associated with Garendon Park. The woodlands are a mix of coniferous and deciduous species.</li> </ul>	<b>L-M</b>
<b>Skylines</b>	<ul style="list-style-type: none"> <li>Skylines are generally open and are occasionally marked by trees where they are present.</li> <li>Pylons and overhead lines crossing the landscape from north to south are prominent skyline features.</li> <li>Church spires from neighbouring villages of Belton and Long Whatton are visible on the skyline from the surrounding countryside.</li> </ul>	<b>M</b>
<b>Visibility and views</b>	<ul style="list-style-type: none"> <li>Long views across the rolling landscape where woodland and tree cover is more limited.</li> <li>From higher ground, there are views to the large cooling towers at Ratcliffe-on-Soar Power Station.</li> <li>Some localised areas are visually enclosed by woodland cover and thick hedgerows.</li> <li>There is intervisibility with the hill summits in Charnwood Forest to the south.</li> </ul>	<b>M</b>
<b>Natural and cultural heritage aspects</b>	<ul style="list-style-type: none"> <li>Among the primarily agricultural landscape are wooded stream valleys, a network of hedgerows and small woodlands and avenues of trees within Garendon Park.</li> <li>There are several small areas of lowland meadow and stream habitat, including a number of locally designated sites.</li> <li>The Grade II Registered Park and Garden at Garendon Park occupies the area between Shepshed and Loughborough. The remains of a Cistercian abbey and mansion are located within Garendon Park and are designated as Scheduled Monuments. Shepshed and Hathern contain Conservation Areas, with many listed buildings. Historic churches are a focal point within Conservation Areas.</li> </ul>	<b>M</b>
<b>Amenity and recreation</b>	<ul style="list-style-type: none"> <li>A network of footpaths and lanes offers opportunities for informal recreation. These include a lane between Shepshed and Loughborough which is also part of the National Cycle Network Route 6.</li> </ul>	<b>L-M</b>
<b>Scenic and special qualities</b>	<ul style="list-style-type: none"> <li>The landscape character area does not fall within a nationally designated landscape.</li> <li>The Langley Lowlands provide recreation opportunities for the large urban populations within nearby Shepshed and Loughborough.</li> <li>A strong sense of time-depth is experienced in localised parts of the landscape, notably around Garendon Park.</li> </ul>	<b>M</b>
<b>Perceptual qualities</b>	<ul style="list-style-type: none"> <li>Although this landscape retains many rural qualities, agricultural intensification and the influence of adjacent urban areas can detract from this. There is strong juxtaposition between the industrial areas/transport infrastructure and the historic parkland influences on the landscape, as these areas tend to have a more tranquil, naturalistic character. Some areas are intensively farmed, whilst others have a more tranquil, pastoral quality.</li> <li>The M1 motorway splits the area and introduces significant noise and disturbance to the landscape.</li> <li>Pylons and overhead lines form detracting features in the landscape.</li> </ul>	<b>M</b>

## Overall assessment of landscape sensitivity to development scenarios

Development scenario	Sensitivity				
Small-scale turbines (<40 metres)		L-M			
Medium-scale turbines (40-80 metres)			M		
Large-scale turbines (80-120 metres)				M-H	
Very-large scale turbines (120-160 metres)					H

### Notes on any variations in landscape sensitivity

Areas influenced by existing vertical skyline features such as pylons have reduced sensitivity to wind energy development.

### Areas with technical potential for large and very large scale wind energy development

Land to the west of Shepshed has been identified as having technical potential for large and very large scale wind energy development. This area is characterised by a broad, large-scale landform overlain by medium scale fields enclosed by low cut hedgerows. Skylines are undeveloped and marked by hedgerow trees. The characteristics of this area reflect those of the wider landscape character area and therefore have the same levels of sensitivity to wind energy development.

### Key landscape sensitivities

**The following provides a summary of the special landscape qualities and key features/attributes that would be sensitive to change as a result of wind energy development:**

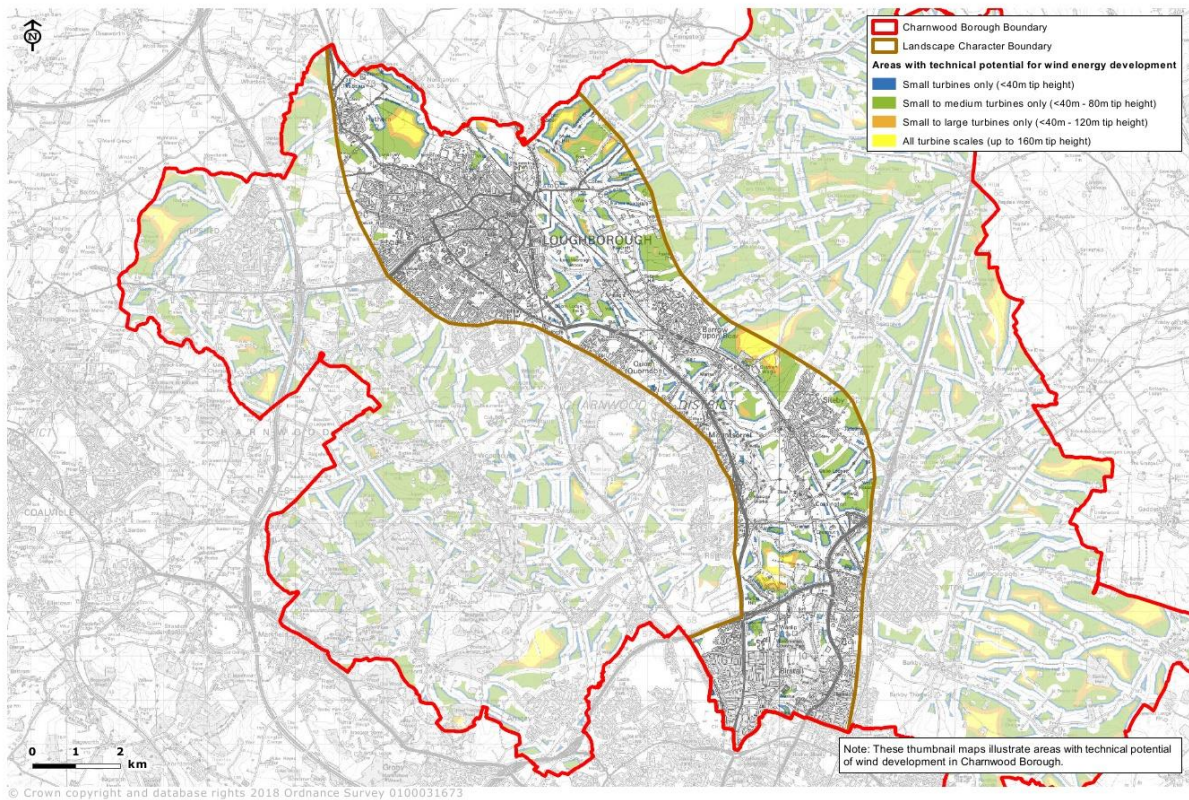
- Generally undeveloped skylines, particularly to the west of Shepshed.
- Locally complex landforms, which are often associated with the valleys of small watercourses including Black Brook, Grace Dieu Brook (which forms the Borough boundary) and the Oxley Gutter.
- Important areas of semi-natural habitat located amongst the primarily agricultural land cover, including areas of lowland meadow and stream habitats.
- The setting the landscape provides to heritage features in the landscape, including Garendon Park (Grade II Registered Park and Garden).
- Long views enabled by low cut hedgerows and from elevated parts of the landscape.
- The rural qualities of the landscape which remain despite the proximity of large urban areas and transport and electricity infrastructure.
- The network of public rights of way which provide access to the countryside from nearby urban areas.

### Opportunities for mitigation or landscape enhancement

**Guidance and opportunities to consider for any future development within area include:**

- Avoid locating wind energy development in visually prominent locations and areas with undeveloped skylines, in particular the elevated land to the west of Shepshed.
- Avoid siting wind energy development in areas with complex landform including the small scale stream valleys of Black Brook and Oxley Brook.
- Avoid important semi-natural habitats which contribute to landscape character, particularly lowland meadow and stream habitats.
- Protect the integrity and landscape setting of valued heritage features including the Grade II Registered Park and Garden of Garendon Park and Conservation Areas.
- Prevent development in areas with noteworthy rural landscape character, particularly in those which are not strongly influenced by existing settlement or infrastructure.

## Soar Valley



### Representative photographs



### Location and summary of landscape character

The area follows the River Soar along its broad and contained valley. There is a mix of different agricultural uses with pasture on the floodplain and arable fields on the gently sloping valley sides. The meadow habitat of the floodplain is particularly important for breeding birds. Woodland in the valley is sparse and mostly limited to willows along the watercourses. The valley is densely settled, containing parts of Loughborough as well as many other towns and villages. There is a good provision of recreational opportunities including Watermead County Park. Detractors within the landscape include significant industry and transport infrastructure including pylons, the A6 and mainline railway. Views are funnelled through the valley and framed by Charnwood Forest to the west and the Wolds to the east.

## Landscape sensitivity assessment

Criteria	Description	Rating
<b>Landform and scale</b>	<ul style="list-style-type: none"> <li>The landform is a low-lying linear flood plain following the River Soar. The valley floor has a broad, flat profile.</li> <li>Along the eastern edge of the valley there are some steeper slopes, where the valley rises to the higher land of the Wolds.</li> <li>To the west, the landform rises towards the higher ground within Charnwood Forest.</li> <li>The landscape varies in scale, with both medium-large and small scale, regularly shaped fields.</li> <li>Large scale features include warehouses, pylons and other industry. These contrast with human scale features such as village buildings and trees.</li> </ul>	<b>M</b>
<b>Land cover pattern and complexity</b>	<ul style="list-style-type: none"> <li>Much of the area is under agricultural use, most of which is hay meadow or grassland grazed by cattle or horses. There are also pockets of arable farming. Hedgerows are often tall, with many mature hedgerow trees. Poplars line the course of the river.</li> <li>Larger arable fields tend to be located on the valley slopes, whilst smaller grassland fields are located on the valley floor.</li> <li>There is a series of lakes in the southern section of the valley between Birstall and Thurmaston, which includes Watermead Country Park.</li> <li>The valley is highly urbanised and densely settled although there are few buildings on the flood plain. In addition, there are a number of large scale warehouses near Loughborough and Syston and large sewage treatment works north of Loughborough and at Wanlip, among other industrial uses.</li> <li>There are many large settlements which extend into this area as well as a number of large scale warehouses, sewage treatment works and other industrial uses.</li> </ul>	<b>M-H</b>
<b>Skylines</b>	<ul style="list-style-type: none"> <li>Skylines are predominantly wooded, especially on the valley floor due to the large number of mature hedgerow trees. Large-scale features such as pylons and warehouses are also prominent on skylines.</li> <li>The wind turbine at Wanlip (132m) is visible from locations throughout the Soar Valley and is a prominent feature on skylines, as well as from the surrounding more elevated character areas.</li> </ul>	<b>M</b>
<b>Visibility and views</b>	<ul style="list-style-type: none"> <li>The landscape generally not visually prominent within the wider landscape, although it is overlooked from higher ground within Charnwood Forest and The Wolds.</li> <li>There are some more long reaching views which are funnelled along the valley, although these can be limited on the valley floor by the presence of hedgerow trees and small woodland areas.</li> </ul>	<b>M</b>
<b>Natural and cultural heritage aspects</b>	<ul style="list-style-type: none"> <li>Natural heritage designations include the Barrow Gravel Pits SSSI near Barrow-upon-Soar, Cotes Grassland SSSI, and Loughborough Meadows SSSI. Locally designated sites include the length of the River Soar and many Local Wildlife Sites are located along the valley floor.</li> <li>Priority habitats are frequent, particularly along the flood plain, including grazing marsh, lowland fens, deciduous woodland, good-quality semi-improved grassland and lowland meadows.</li> <li>There is a deserted medieval village to the north of Cotes which is designated as a Scheduled Monument.</li> <li>Conservation Areas present within the valley include Birstall, Sileby, Rothley, Mountsorrel, Quorn, Hathern and the village core and canal side at Barrow upon Soar.</li> <li>Some historic medieval open field systems remain at Loughborough Meadow and Bishop Meadow.</li> <li>The Grand Union Canal indicates the past industrial use of the landscape and is now primarily used for recreation.</li> </ul>	<b>M-H</b>
<b>Amenity and recreation</b>	<ul style="list-style-type: none"> <li>There is a relatively dense network of public rights of way particularly near Sileby and Barrow upon Soar.</li> <li>Sustrans Route 6 cycle route runs along the eastern edge of this area, whilst the Sustrans Route 48 crosses the south of the area near Syston. There are also some bridleway routes.</li> <li>There is a good provision of green spaces with including Watermead Country Park and Loughborough Meadows.</li> <li>Features such as the Grand Union Canal are largely used for recreational activities.</li> </ul>	<b>M</b>

<b>Scenic and special qualities</b>	<ul style="list-style-type: none"> <li>• This landscape character area does not fall within a nationally designated landscape.</li> <li>• The valley slopes provide an important setting and sense of place to the valley settlements.</li> <li>• Pockets of semi-natural land cover with high relative levels of tranquillity form important recreation resource in the landscape.</li> </ul>	<b>M</b>
<b>Perceptual qualities</b>	<ul style="list-style-type: none"> <li>• There is a strong contrast between areas with significant semi-natural land cover and areas with significant urban and industrial influences.</li> <li>• Away from the developed areas, localised pockets of tranquillity can be experienced.</li> <li>• Former gravel works restored as wetland areas contribute to semi-natural character.</li> <li>• The area is disturbed by transport and energy infrastructure routes including the A6 and mainline railway following the valley corridor. This can produce significant noise and visual disturbance.</li> <li>• The valley slopes provide an important setting and sense of place to the valley settlements.</li> </ul>	<b>L-M</b>



## Overall assessment of landscape sensitivity to development scenarios

Development scenario	Sensitivity				
Small-scale turbines (<40 metres)		L-M			
Medium-scale turbines (40-80 metres)		L-M			
Large-scale turbines (80-120 metres)				M-H	
Very-large scale turbines (120-160 metres)					H
Notes on any variations in landscape sensitivity					
Sensitivity to wind development is reduced in areas where there is existing industrial use or large scale business parks, particularly where there are existing vertical structures such as pylons or the gypsum works chimney.					

### Areas with technical potential for large and very large scale wind energy development

- To the north east of Loughborough is a series of areas identified to have potential for large or very large turbines. This area of the Soar Valley has an open character with large post war fields, providing extensive views over the rest of the valley due to its elevated location on the eastern valley slopes. There are views of numerous warehouses and a line of pylons, although these views are sometimes screened by strips of woodland and tall hedgerow trees. This area has similar levels of landscape sensitivity to wind turbines as the rest of the Soar Valley.
- Between Barrow upon Soar and Sileby there are areas identified to have potential for large or very large wind development. This area is characterised by the elevated slopes of the Soar Valley which are used for agriculture and overlain by fields enclosed with low hedgerows. There are extensive views from the higher elevations which include the distinctive landform of Charnwood Forest to the west. The adjacent gypsum works and other associated infrastructure are widely visible from this area. This area has similar levels of landscape sensitivity to wind turbines as the rest of the Soar Valley.
- Between Rothley and Syston several areas are identified to have potential for large or very large wind turbines. The landform is flat and self-enclosed, with a series of large lakes. High hedges and hedgerow trees limit views, although there are glimpses of localised large built features including the sewage works and large turbine in Wanlip. The lakes and nature reserves contribute to the semi-natural character of the landscape and are valued for recreation although there is significant traffic noise and movement which can negatively detract from perceptual qualities. This area is not visually prominent or extensively overlooked, and therefore has reduced levels of landscape sensitivity to large or very large wind turbines, when compared to the other areas with technical potential for large/very large wind turbines and the LCA as a whole.

### Key landscape sensitivities

**The following provides a summary of the special landscape qualities and key features/attributes that would be sensitive to change as a result of wind energy development:**

- Occasional long reaching views funnelled along the valley and from the elevated valley sides (including the wooded horizons of Charnwood Forest to the west).
- Areas of localised steep landform, where the valley slopes up toward the Wolds in the east and Charnwood Forest to the west.
- Nationally and locally important semi-natural habitats, including floodplain marsh and lowland fens and meadows.
- Valued heritage features including the Scheduled medieval village at Cotes and non-designated medieval open field systems at Loughborough Meadow and Bishop Meadow.

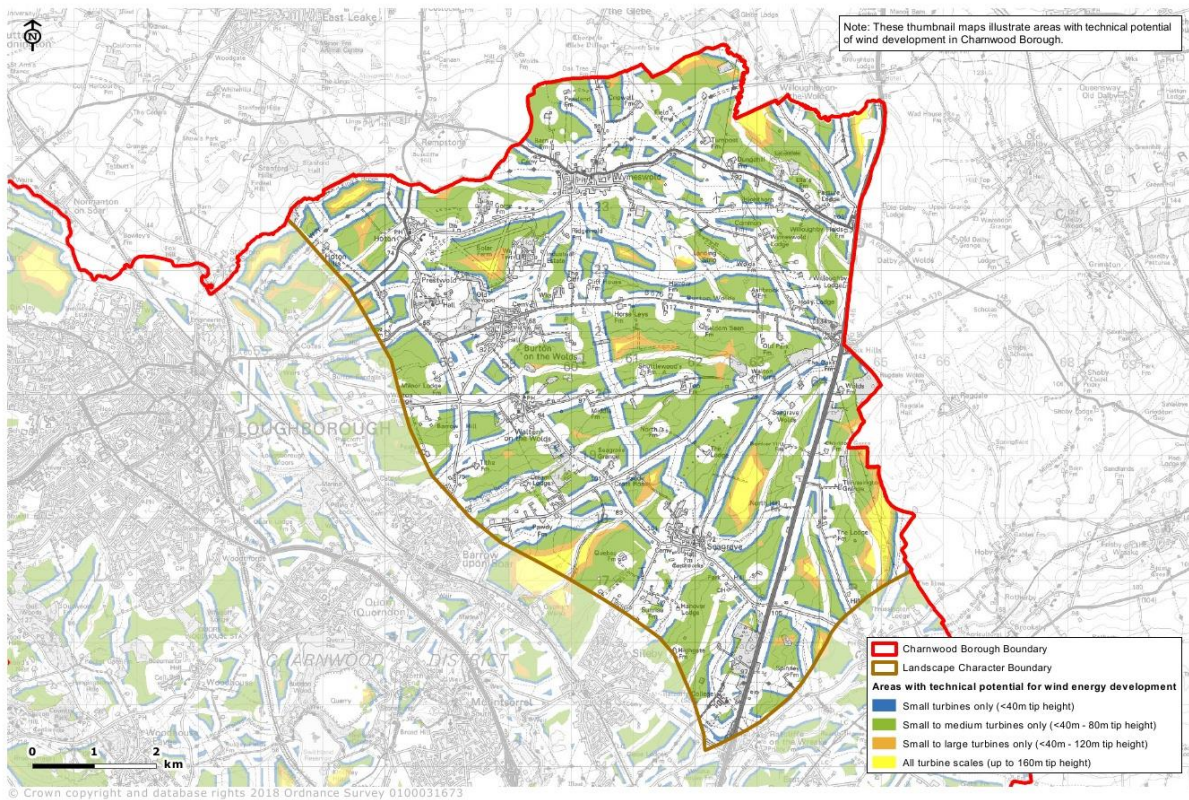
- Many of the villages are designated as Conservation Areas.
- Pockets of localised tranquillity and the provision of recreational opportunities within the context of a densely settled landscape.

### **Opportunities for mitigation or landscape enhancement**

#### **Guidance and opportunities to consider for any future development within area include:**

- Avoid siting wind energy development in locations characterised by widely visible or undeveloped skylines.
- Avoid siting wind energy development in locations with frequent small scale landscape features.
- Retain and conserve important semi-natural habitats, including Priority Habitats and nationally and locally designated sites. Avoiding siting wind turbines in locations with important semi-natural habitats.
- Protect the integrity and setting of valued heritage features including the Scheduled medieval village at Cotes and the Conservation Areas.
- Preserve the medieval open field systems at Loughborough Meadow and Bishop Meadow.
- Conserve areas with high relative levels tranquillity (e.g. away from transport infrastructure, industrial or commercial development and larger settlements) and areas with important outdoor recreation provision.

# The Wolds



## Representative photographs



The view looking west from Old Gate Road, in the most south-eastern corner of the character area within Charnwood.



The view from East Road between Wymeswold and Willoughby-on-the-Wolds, looking to the south east with Old Dalby Wind Park in the background.

## Location and summary of landscape character

### Summary of landscape character

A rural area with a rolling topography made up of exposed ridges as well as intricate small stream valleys which feed into the surrounding Soar and Wreake/Eye river valleys. Field pattern is mixed in origin and scale with larger fields characteristic of the open ridge tops and smaller pastures on steeper valley slopes. There is limited woodland cover, however there are many hedgerow trees. The majority of settlements in the area are small nucleated villages, often of historic origin. The area is deeply rural with remote and tranquil qualities.

## Landscape sensitivity assessment

Criteria	Description	Rating
<b>Landform and scale</b>	<ul style="list-style-type: none"> <li>A large scale, open and gently rolling plateau landscape with exposed ridges. Narrow stream valleys carve into the landscape and drain to the Wreake and Eye valleys in the south and the River Soar in the west.</li> <li>Valleys are intricate and have an enclosed, small-scale character in contrast to the more open higher ground.</li> </ul>	<b>M</b>
<b>Land cover pattern and complexity</b>	<ul style="list-style-type: none"> <li>The area is predominately under agricultural use and is mostly arable with some areas of pasture grazing.</li> <li>Field patterns are generally medium to large in scale, enclosed by low cut and sometimes gappy hedges.</li> <li>Small villages, hamlets and farms are scattered across the landscape.</li> <li>Wooded areas are few, limited to isolated copses, although mature hedgerow trees are common and give the Wolds a wooded character.</li> </ul>	<b>M-H</b>
<b>Skylines</b>	<ul style="list-style-type: none"> <li>Copses of trees and the undulating topography give the area a varied and complex, undeveloped skyline.</li> <li>Towers of the village churches in the Wolds from local landmarks.</li> <li>There are some built features present on skylines including pylons, some isolated turbines and the wind farm Old Dalby Wind Park (outside of Charnwood District).</li> </ul>	<b>M-H</b>
<b>Visibility and views</b>	<ul style="list-style-type: none"> <li>The area has long distance views, particularly from the straight ridgeline roads, which are enabled by the elevated landform and low-cut hedgerows.</li> <li>Views are varied throughout the character area, depending on topography and tree cover.</li> </ul>	<b>M-H</b>
<b>Natural and cultural heritage aspects</b>	<ul style="list-style-type: none"> <li>The area has a rich sense of time depth with many settlements designated as Conservation Areas, including Seagrave, Walton on the Wolds, Hoton and Wymeswold. The villages often contain clusters of listed buildings, with historic churches often located at the village core.</li> <li>The Grade II Registered Park and Garden at Prestwold Hall (centred on the Grade I listed Prestwold Hall) is a distinct heritage feature in the north west of the LCA. Non-designated parkland is associated with Ratcliffe College and Quorn Park.</li> <li>North-east of Seagrave a Monastic grange is designated as a Scheduled Monument. South of Seagrave and in fields near Wymeswold there are traces of non-designated earthworks.</li> <li>Designated semi-natural habitats include Twenty Acre Piece SSSI, the Leicestershire and Rutland Wildlife Trust Reserve at Wymeswold Meadows in addition to County/District Sites and Local Wildlife Sites.</li> <li>Priority habitats include deciduous woodlands, lowland meadows, good quality semi-improved grassland and wood pasture and parkland.</li> </ul>	<b>M</b>
<b>Amenity and recreation</b>	<ul style="list-style-type: none"> <li>There is a well-developed network of public rights of way, particularly in the north of the area surrounding Wymeswold.</li> <li>The Leicestershire Round trail crosses the south of the character area.</li> </ul>	<b>M</b>
<b>Scenic and special qualities</b>	<ul style="list-style-type: none"> <li>This landscape character area does not fall within a nationally designated landscape.</li> <li>The traditional large-scale, rolling agricultural landscape, with its picturesque historic villages and high levels of tranquillity, draws people to the area.</li> </ul>	<b>M</b>
<b>Perceptual qualities</b>	<ul style="list-style-type: none"> <li>The area has a rural and isolated character, with high levels of relative tranquillity. The elevated landform and low cut hedgerows creates a sense of openness and expansiveness.</li> <li>Detractors include busy main roads such as the A46, pylons and views of turbines (including Old Dalby Wind Park).</li> <li>The A46 introduces significant noise pollution, particularly in the eastern half of the character area.</li> </ul>	<b>M</b>

## Overall assessment of landscape sensitivity to development scenarios

Development scenario	Sensitivity				
Small-scale turbines (<40 metres)			M		
Medium-scale turbines (40-80 metres)			M		
Large-scale turbines (80-120 metres)				M-H	
Very-large scale turbines (120-160 metres)					H
Notes on any variations in landscape sensitivity					
The tops of broad plateau ridges have reduced sensitivity to wind energy developments, as they are not widely overlooked and have a larger scale, with fewer human scale features. Examples include the area around Six Hills and the former Wymeswold Airfield.					

### Areas with technical potential for large and very large scale wind energy development

- To the west of Hoton and north of Cotes are several areas with technical potential for large and very large wind energy development. These areas have a gently undulating/sloping landform, with large scale arable fields enclosed by hedgerows with trees. There are views across the adjacent Soar Valley to the higher ground of Charnwood Forest. The area is undeveloped with a rural and remote character, although traffic noise from the A60 can detract from these qualities. This area is typical of the wider Wolds character area and has similar landscape sensitivity to large and very large scale wind turbines.
- The former site of Wymeswold Airfield is a relatively flat expanse of land, characterised by the disused runways and industrial buildings. This area has an elevated and relatively flat landform. A large solar farm is currently sited in this location. This area is visually enclosed by woodland and not overlooked, with little in the way of public access. As this area is not visually prominent or extensively overlooked, and therefore has reduced levels of landscape sensitivity to large or very large wind turbines, when compared to the other areas with technical potential for large/very large wind turbines and the LCA as a whole.
- To the north of Wide Lane (in the north east of Charnwood Borough) is a series of areas that have been identified to have technical potential for large or very large wind energy. This area has a gently rolling landform, with an open and expansive character. The area has a rural and remote character although traffic noise from the surrounding A-roads is audible. There are also some built features already present on skylines including pylon routes and isolated farm scale turbines. Old Dalby Wind Park (seven turbines) is visible to the east (beyond the eastern boundary of the Charnwood Borough). These areas are typical of the wider Wolds character area and have similar landscape sensitivity to large and very large scale wind turbines.
- In the centre of the Wolds character area there are a series of areas with technical potential for large to very large wind energy development located either side of Melton Road (B676). This part of the Wolds is particularly elevated and open, with long reaching views. The majority of land use is arable agriculture with some pasture. Despite the large field size, there are frequent small scale features including shelterbelts and woodland copses as well as hedgerow trees. Other features that stand out on the skyline include large warehouses and infrastructure to the north, including the cooling towers of the power station at Ratcliffe on Soar. These areas are typical of the wider Wolds character area and have similar landscape sensitivity to large and very large scale wind turbines.
- In the south east of the Wolds, either side of the A46, are several areas identified as having technical potential for large and very large wind energy development. These areas have a large scale, gently rolling landform. Land cover is primarily large arable fields, although there are also smaller-scale elements such as hedgerow trees. Views are generally undeveloped and long reaching, with some church spires in the Wreake valley visible in the distance. The area is rural and remote, despite the negative impacts of traffic noise from the A46 and the line of large pylons that crosses the east of the area. This area is typical of the wider Wolds character area and has similar landscape sensitivity to large and very large scale wind turbines.

## Key landscape sensitivities

### **The following provides a summary of the special landscape qualities and key features/attributes that would be sensitive to change as a result of wind energy development:**

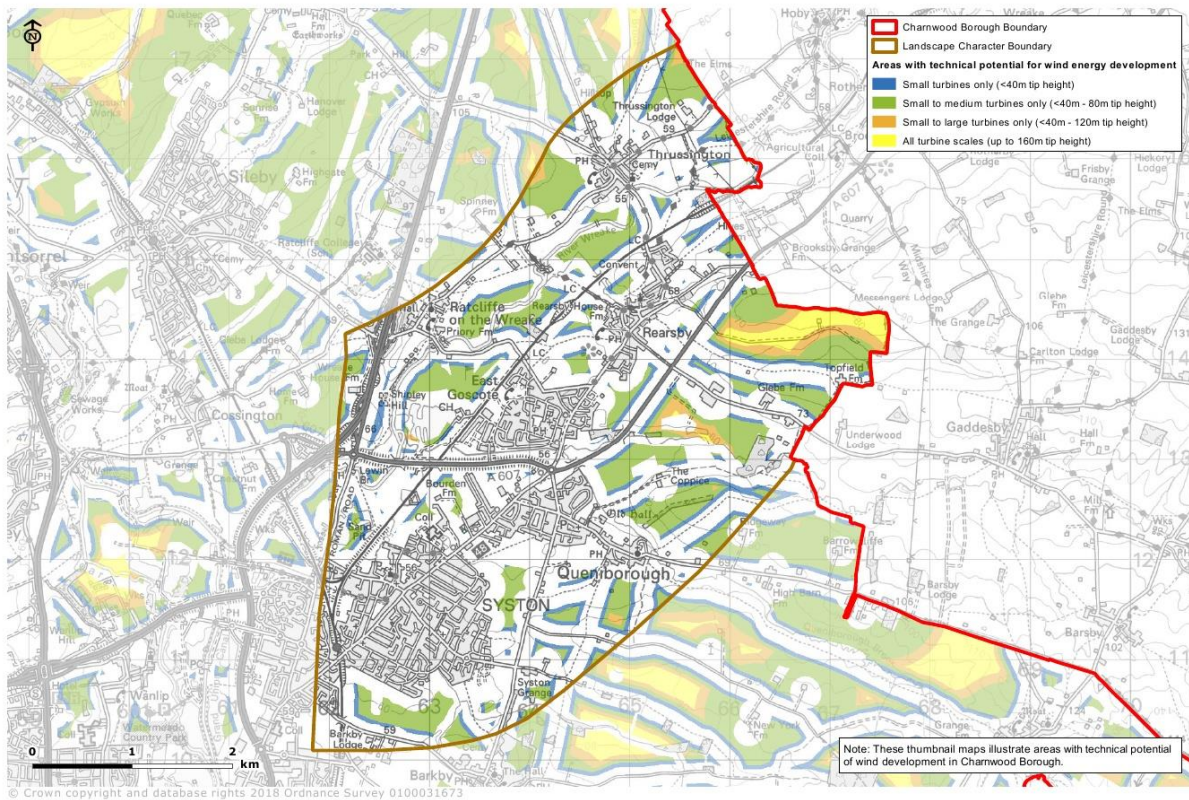
- Undeveloped, highly visible skylines, particularly along ridge top roads. Many of these ridge tops are also visible from nearby LCAs, including the Soar and Wreake valleys and Charnwood Forest.
- Long views enabled by the elevated, rolling topography and low cut hedgerows.
- Small scale landscape features including frequent hedgerow trees, village buildings and small woodlands.
- Areas of important semi-natural habitat located among the farmed landscape including nationally and locally designated sites.
- Valued heritage features within the landscape including numerous Conservation Areas, Prestwold Hall Registered Park and Garden and the Scheduled monastic grange at Seagrave.
- The area has a traditionally rural character with high levels of relative tranquillity, despite some localised intrusions including busy A-roads and pylons.
- The network of public access routes providing recreation opportunities within the Wolds.

## Opportunities for mitigation or landscape enhancement

### **Guidance and opportunities to consider for any future development within area include:**

- Avoid locating turbines in areas characterised by prominent and undeveloped skylines.
- Turbines should not be placed in areas where they will dwarf existing small scale features, including areas close to the rural villages.
- Protect and conserve important habitats which contribute to the semi-natural character of the landscape, including locally and nationally designated sites such as Twenty Acre Piece SSSI.
- Protect the integrity and setting of valued historic features including Conservation Areas, Prestwold Hall Registered Park and Garden and the Scheduled monastic grange at Seagrave.
- Retain the rural character and high levels of tranquillity, particularly in the less developed eastern parts of the landscape character area.

# Wreake Valley



## Representative photographs



Looking over the village of Queniborough from a footpath on an elevated field to the north-east of the village.



The view down the sloping fields on the north eastern outskirts of the village of Ratcliffe on the Wreake.

## Location and summary of landscape character

This flat-bottomed valley follows the course of the River Wreake in a north-east to south-west direction. The valley slopes are gentle and support a mixture of agricultural uses including large scale arable as well as smaller scale pastoral uses, with fields arranged in a variety of patterns. Woodland is limited, although there are many hedgerow trees and small copses. Historic features include listed buildings, including Grade I and Grade II\* listed churches with tall spires that form distinctive landmarks within this area. A series of small, rural villages are located along the valley sides. These contrast with larger settlements in the west which give an urban character to the landscape.

## Landscape sensitivity assessment

Criteria	Description	Rating
<b>Landform and scale</b>	<ul style="list-style-type: none"> <li>The character area is focused on the flat bottomed valley of the River Wreake, which flows from the north east to the south west.</li> <li>The valley slopes to the north and south have a gentle topography. The land rises to the higher land of the Wolds to the north and High Leicestershire to the south.</li> <li>Field size and pattern is mixed, with size ranging from small to medium. Fields along the valley floor are often larger, whilst there are a series of fields identified as very large post war fields east of East Goscote (as identified in the HLC).</li> <li>Human scale features include villages, hedgerows, hedgerow trees and in-field trees.</li> </ul>	<b>M</b>
<b>Land cover pattern and complexity</b>	<ul style="list-style-type: none"> <li>The western part of the valley contains several larger settlements including Syston, which have a more urban character. Settlement in the eastern part of the valley is limited to small rural villages.</li> <li>The eastern parts of the Wreake Valley are more rural and remote in nature, made up of a mix of agricultural uses including arable, pasture and land dedicated to equestrian use.</li> <li>Agricultural areas are made up of predominantly modern field patterns with large post-war fields and re-organised piecemeal enclosure fields, although there are also some smaller scale areas of planned enclosure remaining.</li> </ul>	<b>M-H</b>
<b>Skylines</b>	<ul style="list-style-type: none"> <li>Skylines are mostly undeveloped, marked by hedgerow and in-field trees.</li> <li>A pylon line runs along the eastern edge of the character area.</li> <li>The spires of historic churches form distinctive land mark features on skylines in this area.</li> </ul>	<b>M</b>
<b>Visibility and views</b>	<ul style="list-style-type: none"> <li>Views within the valley vary depending on topography and land cover. Views from within the valley are often funnelled by the valley sides. Expansive views are possible from the elevated land on the valley sides.</li> </ul>	<b>M</b>
<b>Natural and cultural heritage aspects</b>	<ul style="list-style-type: none"> <li>Many of the settlements here have historic conservation areas including; Syston, Quenibourough, Rearsby, Ratcliffe on the Wreake and Thrussington, which are frequently centred on historic churches.</li> <li>The packhorse bridge in Rearsby is a Scheduled Monument.</li> <li>Locally designated habitats include the River Wreake, Gaddesby Brook, Syston Marsh, Crane's Hole and Bleak Moor.</li> <li>Small areas of priority habitats including floodplain and grazing marsh, good quality semi-improved grassland, deciduous woodland and traditional orchards.</li> </ul>	<b>M</b>
<b>Amenity and recreation</b>	<ul style="list-style-type: none"> <li>A strong network of Public Rights of Way connects settlements and provides opportunities to access the countryside.</li> <li>Sustrans cycle route 48 runs the length of the valley.</li> <li>Many former industrial areas have been restored for recreational use including sailing lakes and golf courses.</li> </ul>	<b>M</b>
<b>Scenic and special qualities</b>	<ul style="list-style-type: none"> <li>The character area does not fall within a nationally designated landscape.</li> <li>Historic church spires and towers in villages are prominent on the skyline, rising above the trees and forming landmark features.</li> <li>Areas along the valley slopes are relatively rural and provide localised opportunities for escape and tranquillity.</li> </ul>	<b>M</b>
<b>Perceptual qualities</b>	<ul style="list-style-type: none"> <li>The westernmost part of the Wreake valley is well settled with some industrial areas. This contrasts with the eastern portion of the valley which has a more rural and isolated character, with small villages.</li> <li>The landscape has been largely influenced by the urban fringe of Syston in the west, but remains predominantly rural in the eastern extent.</li> <li>The route of the valley floor is also followed by the A607 and Derby to London mainline railway route adding further disruption.</li> <li>Large parts of the area remain relatively rural and possess localised tranquillity, however even in many of these rural areas, traffic noise from roads such as the A46 is audible.</li> </ul>	<b>M</b>



## Overall assessment of landscape sensitivity to development scenarios

Development scenario	Sensitivity			
Small-scale turbines (<40 metres)			M	
Medium-scale turbines (40-80 metres)			M	
Large-scale turbines (80-120 metres)				M-H
Very-large scale turbines (120-160 metres)				H

### Notes on any variations in landscape sensitivity

The landscape in the east of the character area has higher levels of sensitivity to wind energy development than the west of the valley. This is due to the stronger rural character, undeveloped skylines, high levels of relative tranquillity and frequent human scale features.

### Areas with technical potential for large and very large scale wind energy development

To the south-east of Rearsby are areas that have been identified to have potential for large or very large scale wind developments. Fields tend to be large scale, with a more open character compared to other parts of the Wreake Valley. Views are extensive with both the church spire in Queniborough and the large turbine in Wanlip visible from this area. Despite localised variations, the overall sensitivity of this area does not differ from that of the wider character area.

### Key landscape sensitivities

**The following provides a summary of the special landscape qualities and key features/attributes that would be sensitive to change as a result of wind energy development:**

- Long reaching views with mostly undeveloped skylines which are occasionally marked by church spires which form landmark features.
- The strong network of public rights of way, providing an opportunity to access the countryside from nearby urban areas.
- Important semi-natural habitats, including locally designated sites and priority habitat provide important contributions to the landscape character of the valley
- Strong rural perceptual qualities and high levels of relative tranquillity, particularly in the eastern part of the valley.
- Valued heritage features including Conservation Areas at Syston, Queniborough, Rearsby, Ratcliffe on the Wreake and Thrussington as well as the Scheduled Monument at Rearsby.

### Opportunities for mitigation or landscape enhancement

**Guidance and opportunities to consider for any future development within area include:**

- Avoid the most prominent and undeveloped skylines in the Wreake valley, particularly those from the north-eastern valley slope.
- Avoid locations where wind turbines would interrupt or be prominent within key views such as those that feature historic church spires.
- Ensure that wind energy development does not overwhelm the human scale of the landscape and its frequent landscape features.
- Preclude development in important semi-natural habitats such as those which are locally designated and identified to be priority habitats, to conserve their scenic contribution to landscapes.
- Protect the rural and tranquil qualities experienced in parts of the valley.
- Protect the setting and integrity of valued heritage features including the Conservation Areas and listed buildings.

## Appendix 2

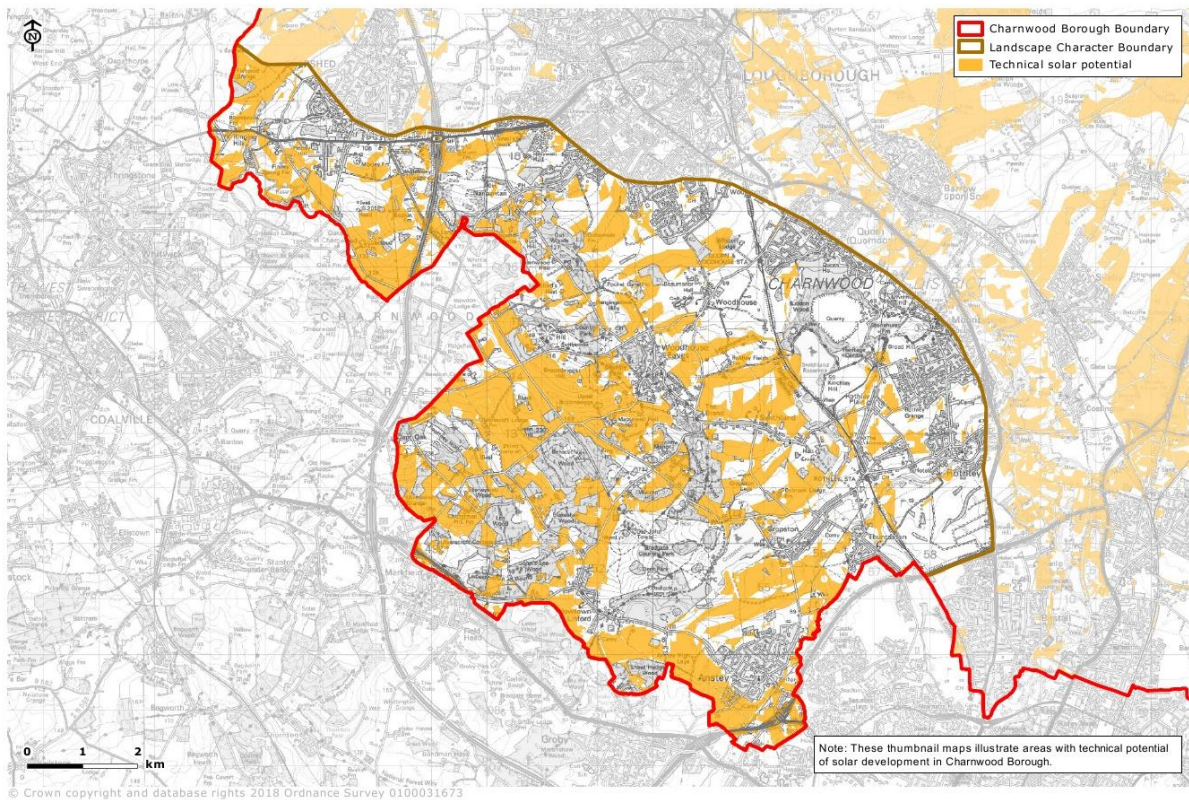
# Solar PV Landscape Sensitivity Assessments

This Appendix contains the Landscape Sensitivity Assessments and Guidance tailored to each of the six Landscape Character Areas (LCAs) found within Charnwood Borough. Each document includes the following:

- A location map of the LCA within Charnwood Borough.
- A summary of the landscape character.
- Landscape sensitivity assessment results for solar PV energy development.
- Key sensitivities and guidance for the development of solar PV in the landscape.

LCA	Page Number
Charnwood Forest	67
High Leicestershire	71
Langley Lowlands	74
Soar Valley	77
The Wolds	80
Wreake Valley	83

# Charnwood Forest



## Representative photographs



## Location and summary of landscape character

### Summary of landscape character

Charnwood Forest is a distinctive landscape punctuated by rocky outcrops and fast flowing streams. It is a well wooded landscape including large tracts of ancient woodland. Fields are mostly parliamentary enclosure, with some enlargement of fields following introduction of arable crops. Local stone vernacular is visible in buildings and walls. There are many sites of nationally and locally valued ecological importance, including former quarries, woodland and heath grasslands. Historic estate parklands add time-depth to the landscape. Long panoramic views are possible from numerous parts of the area.

## Landscape sensitivity assessment

Criteria	Description	Rating
<b>Landform</b>	<ul style="list-style-type: none"> <li>Distinctive, rugged upland landscape with rocky outcrops and carved by small streams within intricate valleys which create complexity in the landscape. Rivers drain eastwards towards the River Soar.</li> <li>Prominent hills are located throughout Charnwood Forest and include Beacon Hill, Broombriggs Hill and Warren Hill.</li> </ul>	<b>M-H</b>
<b>Sense of openness / enclosure</b>	<ul style="list-style-type: none"> <li>Elevated parts of the landscape have an exposed feel and strong sense of openness. These include areas such as Bradgate Park Beacon Hill and Broombriggs Hill.</li> <li>The elevated and open areas contrast with the sense of enclosure afforded by the densely wooded areas and from sunken rural lanes.</li> </ul>	<b>M-H</b>
<b>Field pattern and scale</b>	<ul style="list-style-type: none"> <li>Land is divided into a small to medium scale rectilinear field pattern of parliamentary enclosures which are enclosed by stone walls and hedgerows. The frequent trees and hedgerows also contribute to the small-scale of the landscape.</li> </ul>	<b>M</b>
<b>Landcover</b>	<ul style="list-style-type: none"> <li>Charnwood Forest is a farmed landscape, with a mixture of arable, pasture and meadows.</li> <li>There is a high level of woodland cover, including significant areas of ancient woodland. There are numerous areas of young woodland and recent planting as part of the National Forest project.</li> <li>There are a number of nationally designated SSSIs, which include woodland, wood pasture, reservoirs and heathland habitat. There are also a number of locally designated sites.</li> <li>Other land uses include active and disused quarries. Several disused quarries have been restored as wetlands which are popular visitor destinations.</li> </ul>	<b>M-H</b>
<b>Perceptual qualities</b>	<ul style="list-style-type: none"> <li>Charnwood Forest is an attractive, well treed and scenic landscape which forms a recreation destination for local people and tourists. Adjacent to larger settlements including Shepshed, Loughborough and Anstey, there are some urban fringe influences which lower sensitivity locally.</li> <li>The M1 motorway crosses through the area and can be audibly and visually detracting from the rural character experienced throughout Charnwood Forest. Active quarries also produce noise.</li> <li>In some areas, restoration and planting as part of the National Forest project results in a changing landscape. This area is less intensively farmed than many other areas in Leicestershire with cattle and sheep grazing creating a pastoral character.</li> </ul>	<b>M-H</b>
<b>Historic Landscape Character</b>	<ul style="list-style-type: none"> <li>The HLC indicates that many of the fields originate from Parliamentary era enclosures. Many of the rural villages have Conservation Areas at their core.</li> <li>A number of historic parks and gardens are located within Charnwood Forest, including Bradgate Country Park, Ulverscroft Priory and Beaumanor Hall.</li> <li>Industrial heritage is also important within the landscape, with the Great Central Railway now used as a heritage steam railway. Scheduled Monuments within the landscape include medieval fish ponds and hillforts.</li> </ul>	<b>M-H</b>

<b>Scenic and special qualities</b>	<ul style="list-style-type: none"><li>• This landscape character area does not fall within a nationally designated landscape.</li><li>• The Charnwood Forest has a remote character and feels far removed from nearby urban areas. It is a popular destination for recreation, with good access routes and a number of Country Parks.</li><li>• The strong semi-natural character is evident in many places throughout the landscape and draws people to the area.</li><li>• Dark night skies are noted as a valued characteristic of this area.</li></ul>	<b>M-H</b>
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## Overall assessment of landscape sensitivity to development scenarios

Development scenario	Sensitivity				
Very small solar installation (<1 hectare)			M		
Small solar installation (>1-5 hectares)				M-H	
Medium solar installation (>5-10 hectares)				M-H	
Large solar installation (>10-15 hectares)					H
Very large solar installation (>15-20 hectares)					H

### Notes on any variations in landscape sensitivity

Areas which are well screened by existing woodland and not overlooked from higher ground will have reduced levels of sensitivity to solar PV development.

### Key landscape sensitivities

#### The following provides a summary of the special landscape qualities and key features/attributes that would be sensitive to change as a result of solar installations:

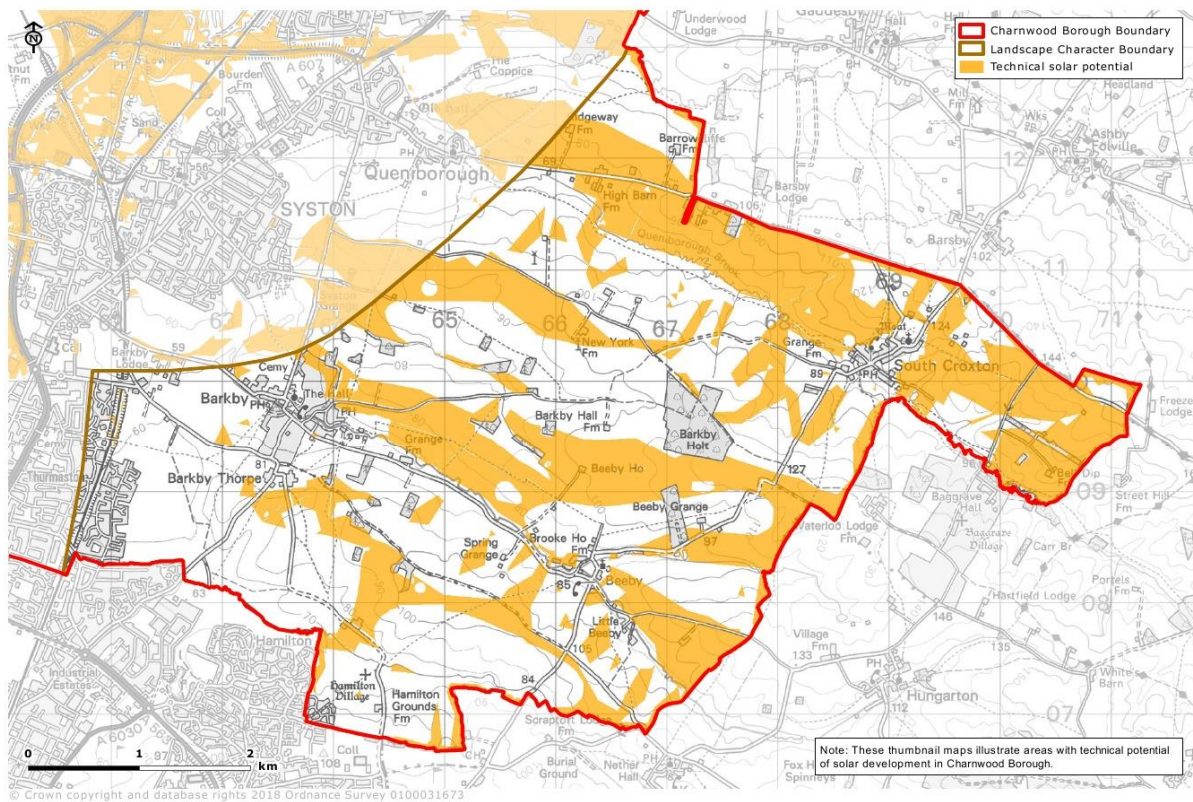
- The steep slopes of the hills which are located throughout the landscape character area.
- Strong rural character, with high levels of tranquillity and remoteness which make the Charnwood Forest a valued destination for recreation.
- A sense of exposure experienced on the higher ground, which is also highly visible within the landscape character area and from adjacent landscapes.
- Strong sense of time-depth with frequent heritage features including large areas of designed parkland and historic rural villages designated as Conservation Areas.
- Long views across the Charnwood Forest from elevated areas including promoted viewpoints. High levels of intervisibility with adjacent landscapes.
- Nationally and locally important semi-natural habitats including woodland, wood pasture, wetlands and heathland.

### Opportunities for mitigation or landscape enhancement

#### Guidance and opportunities to consider for any future development within area include:

- Avoid siting solar development on steep slopes and on hills, particularly areas which are visually prominent within the wider landscape.
- Avoid siting solar development in areas where it would be visible from notable viewpoints including Beacon Hill and Bradgate Park.
- Preserve the integrity and setting of heritage features including the historic parklands and Conservation Areas.
- Conserve and enhanced valued semi-natural habitats including woodland, wood pasture, wetlands and heathland.
- Preserve the valued perceptual and scenic qualities of the landscape which attract visitors to the area, including the strong rural and tranquil character with dark night skies.

## High Leicestershire



### Representative photographs



View north east from Syston Road towards South Croxton



View north from Hamilton Lane

### Location and summary of landscape character

#### Summary of landscape character

The High Leicestershire Landscape Character Area (LCA) consists of a hilly plateau dissected by radiating watercourses which flow to major rivers including the Soar. The predominantly rural landscape comprises undulating fields with a mix of pasture on the higher, sloping land and arable farming on the lower, flatter land. Fields are divided by well-established hedgerows, linking to copses of woodland. Extensive views from the higher ground reveal small attractive villages, hamlets and farm buildings set within an agricultural landscape with traditional churches acting as distinctive landmarks.

## Landscape sensitivity assessment

Criteria	Description	Rating
<b>Landform</b>	<ul style="list-style-type: none"> <li>An undulating ridge and valley landscape which steadily rises from approximately 50 metres AOD close to the River Soar to over 150 metres east of South Croxton.</li> <li>Three small watercourses, the Queniborough, Barkby and Melton Brooks, cross the landscape and introduce some complexity into the landform.</li> </ul>	<b>M</b>
<b>Sense of openness / enclosure</b>	<ul style="list-style-type: none"> <li>On the open ridgetops, the landscape has an expansive feel and has the perception of a larger scale landscape.</li> <li>In localised areas, woodland and the landform can restrict views and create a sense of enclosure.</li> </ul>	<b>M-H</b>
<b>Field pattern and scale</b>	<ul style="list-style-type: none"> <li>The field pattern is primarily of Parliamentary enclosures originating in the 18<sup>th</sup> and 19<sup>th</sup> century. The fields tend to be large to very large with a regular and geometric form.</li> <li>The landscape is often open and large scale, overlain by small thickets, copses and woodlands and a small to medium scale field pattern.</li> </ul>	<b>M</b>
<b>Landcover</b>	<ul style="list-style-type: none"> <li>Agriculture is mixed grassland and arable cropping. In areas where arable farming is dominant, intensification has resulting in the loss or degradation of hedgerows. Horse paddocks are commonplace close to villages.</li> <li>Settlement consists of small nucleated villages and occasional farms. Close to Thurmaston settlement is dense and urban in character.</li> <li>Small coverts of mixed woodland are common features in fields. Key habitats are hedgerows, mature trees, field ponds and lowland mixed deciduous woodland. Local Wildlife Sites include Barkby Holt and Queniborough Brook Fields.</li> </ul>	<b>M</b>
<b>Perceptual qualities</b>	<ul style="list-style-type: none"> <li>Overall, the landscape has a remote and tranquil character. Some areas are used for more intensive agriculture which has a negative impact on this perceptual quality.</li> <li>The dense development and urban/suburban land uses in the west contrast greatly with the highly rural and tranquil qualities of the remainder of the character area, with a sense of timelessness and few modernising influences.</li> </ul>	<b>M-H</b>
<b>Historic Landscape Character</b>	<ul style="list-style-type: none"> <li>Away from the influence of Leicester in the west, the majority of the landscape's villages retain their historic character and form, reflected in Conservation Area designations and concentrations of Listed Buildings. Conservation Areas include Barkby, Beeby and South Croxton.</li> <li>The medieval village of Hamilton and Roman villa are Scheduled Monuments located in the south of the character area.</li> <li>Remnant parkland at Barkby Hall contributes to the sense of time-depth experienced in the landscape. Ridge and furrow within fields also provides evidence of past land-use.</li> </ul>	<b>M</b>
<b>Scenic and special qualities</b>	<ul style="list-style-type: none"> <li>This landscape character area does not fall within a nationally designated landscape.</li> <li>Overall this is a traditional rural landscape, with few modern influences. Exceptions occur close the dense urban developments at Syston, Thurmaston and the northern edges of Leicester.</li> <li>The landscape feels far removed from the nearby urban areas, and provides valued outdoor recreation opportunities and access to the countryside.</li> </ul>	<b>M</b>



## Overall assessment of landscape sensitivity to development scenarios

Development scenario	Sensitivity				
Very small solar installation (<1 hectare)		L-M			
Small solar installation (>1-5 hectares)			M		
Medium solar installation (>5-10 hectares)			M		
Large solar installation (>10-15 hectares)				M-H	
Very large solar installation (>15-20 hectares)					H

### Notes on any variations in landscape sensitivity

Areas with a flatter landform and on lower elevations have reduced landscape sensitivity to very small, small and medium solar installations, e.g. the area adjacent to the east of Thurmaston.

### Key landscape sensitivities

#### The following provides a summary of the special landscape qualities and key features/attributes that would be sensitive to change as a result of solar installations:

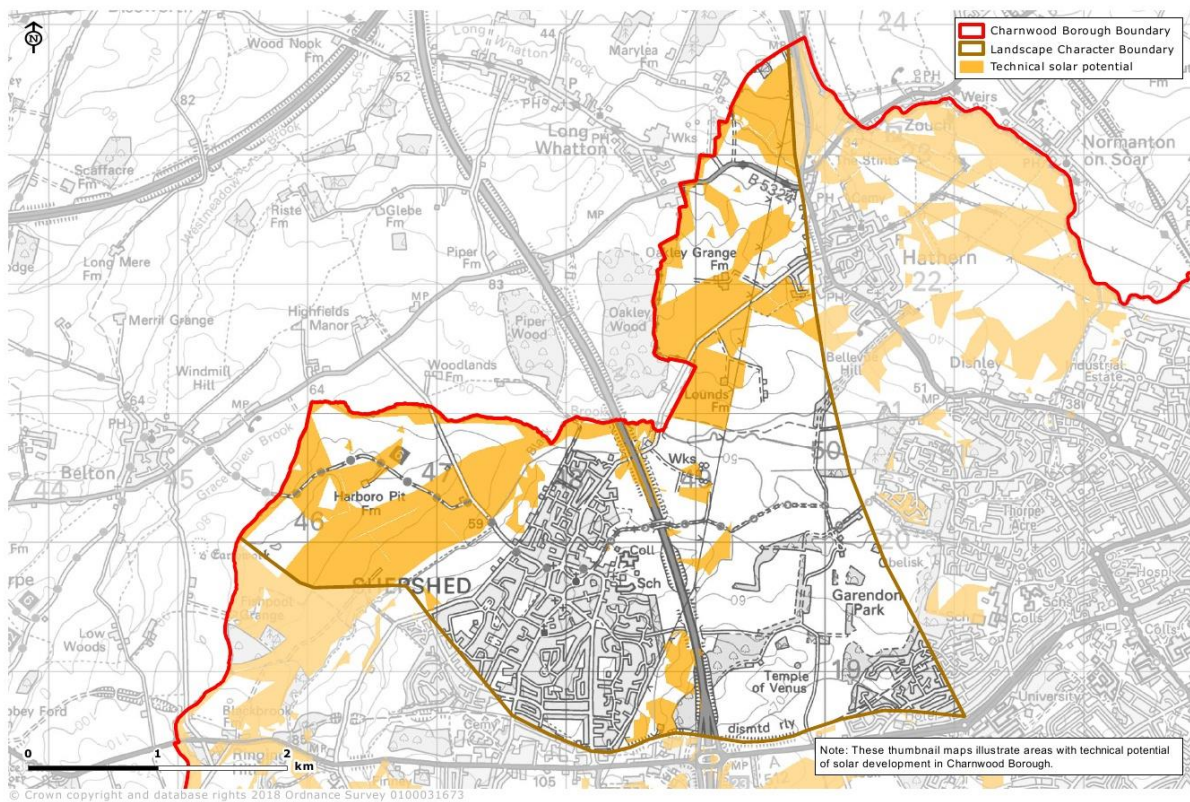
- Sloping landform as the character area rises from the Soar and Wreake Valleys up to High Leicestershire.
- Important semi-natural features including hedgerows, copses, field ponds and pockets of species rich grassland amongst the agricultural landscape.
- The small rural villages which are often historic and designated as Conservation Areas with prominent churches.
- Heritage features including Barkby Hall, and the medieval village of Hamilton and Roman villa Scheduled Monuments.
- Strong rural and tranquil character experienced throughout much of the landscape, despite the proximity of large areas of urban development.

### Opportunities for mitigation or landscape enhancement

#### Guidance and opportunities to consider for any future development within area include:

- Avoid siting solar PV development on more steeply sloping landforms where it would be visually prominent
- Utilise the landform and existing areas of woodland/hedgerows to screen solar, frame and integrate PV developments into the landscape. Where appropriate, reinstate hedgerows which have previously been lost.
- Conserve and enhance important semi-natural features including woodland copses, field ponds and species rich grassland.
- Respect the integrity and setting of important heritage features, including Barkby Hall, Conservation Areas and historic churches.
- Preserve the strong rural and tranquil character of High Leicestershire.

## Langley Lowlands



### Representative photographs



### Location and summary of landscape character

#### Summary of landscape character

The Langley Lowlands comprise a gently rolling landform incised by small streams flowing towards the Trent and Soar valleys. There is a varied field pattern, with a contrast of large post-war arable fields and smaller piecemeal enclosure associated with the edge of villages. Woodland cover is limited although the landscape has a well-treed character from the frequent hedgerow trees. The historic parkland estate of Garendon Park is located between Shepshed and Loughborough. Settlement comprises the urban area of Shepshed, the edges of the village of Hathern and several scattered farms. The road corridor of the M1 severs the character area.

## Landscape sensitivity assessment

Criteria	Description	Rating
<b>Landform</b>	<ul style="list-style-type: none"> <li>Rolling landform with gentle slopes and the broad valleys of small watercourses. There are some areas with a steeper landform including the river valley sides.</li> <li>Watercourses include Black Brook, Grace Dieu Brook (which forms the Borough boundary) and the Oxley Gutter. The valleys of these watercourses introduce complexity into the landform.</li> </ul>	<b>M</b>
<b>Sense of openness / enclosure</b>	<ul style="list-style-type: none"> <li>Fields are often bound by low hedgerows with few trees which creates a sense of expansiveness.</li> <li>There are long views across the rolling landscape where woodland and tree cover is more limited, creating a sense of openness.</li> <li>The presence of woodland can create a sense of enclosure in localised areas.</li> </ul>	<b>M</b>
<b>Field pattern and scale</b>	<ul style="list-style-type: none"> <li>The land is overlain by a varied field pattern, which is primarily large-scale arable cultivation with pockets of smaller scale piecemeal enclosure which tend to be located close to villages.</li> </ul>	<b>L-M</b>
<b>Landcover</b>	<ul style="list-style-type: none"> <li>This area is predominately farmed, with small areas of broadleaf and mixed woodland. The M1 motorway splits the area.</li> <li>There are several small areas of lowland meadow and stream habitat, including a number of locally designated sites.</li> <li>The historic parkland of Garendon Park with its woodland tree belts and prominent garden buildings are a particular feature on the approach to Loughborough.</li> </ul>	<b>M</b>
<b>Perceptual qualities</b>	<ul style="list-style-type: none"> <li>Although this landscape retains many rural qualities, agricultural intensification and the influence of adjacent urban areas can detract from this. There is strong juxtaposition between the industrial areas/transport infrastructure and the historic parkland influences on the landscape, as these areas tend to have a more tranquil, naturalistic character. Some areas are intensively farmed, whilst others have a more tranquil, pastoral quality.</li> <li>The M1 motorway splits the area and introduces significant noise and disturbance to the landscape.</li> <li>Pylons and overhead lines form detracting features in the landscape.</li> </ul>	<b>M</b>
<b>Historic Landscape Character</b>	<ul style="list-style-type: none"> <li>The HLC indicates that field are of mixed origin, with large-scale amalgamated post war fields, planned enclosure and historic strip fields which are associated with the edges of settlements. The historic estate parkland of Garendon Park (Grade II Registered Park and Garden) creates a sense of time-depth in the landscape.</li> <li>The remains of a Cistercian abbey and mansion are located within Garendon Park and are designated as Scheduled Monuments. Shepshed and Hathern contain Conservation Areas, with many listed buildings. Historic churches are a focal point within the Conservation Areas.</li> </ul>	<b>M</b>
<b>Scenic and special qualities</b>	<ul style="list-style-type: none"> <li>The landscape character area does not fall within a nationally designated landscape.</li> <li>The Langley Lowlands provide recreation opportunities for the large urban populations within nearby Shepshed and Loughborough.</li> <li>A strong sense of time-depth is experienced in localised parts of the landscape, notably around Garendon Park.</li> </ul>	<b>M</b>

## Overall assessment of landscape sensitivity to development scenarios

Development scenario	Sensitivity				
Very small solar installation (<1 hectare)		L-M			
Small solar installation (>1-5 hectares)			M		
Medium solar installation (>5-10 hectares)			M		
Large solar installation (>10-15 hectares)				M-H	
Very large solar installation (>15-20 hectares)				M-H	

### Notes on any variations in landscape sensitivity

Areas which contribute to the landscape setting of important heritage features (e.g. Garendon Park) will have **high** levels of sensitivity to all scales of solar development.

### Key landscape sensitivities

#### The following provides a summary of the special landscape qualities and key features/attributes that would be sensitive to change as a result of solar installations:

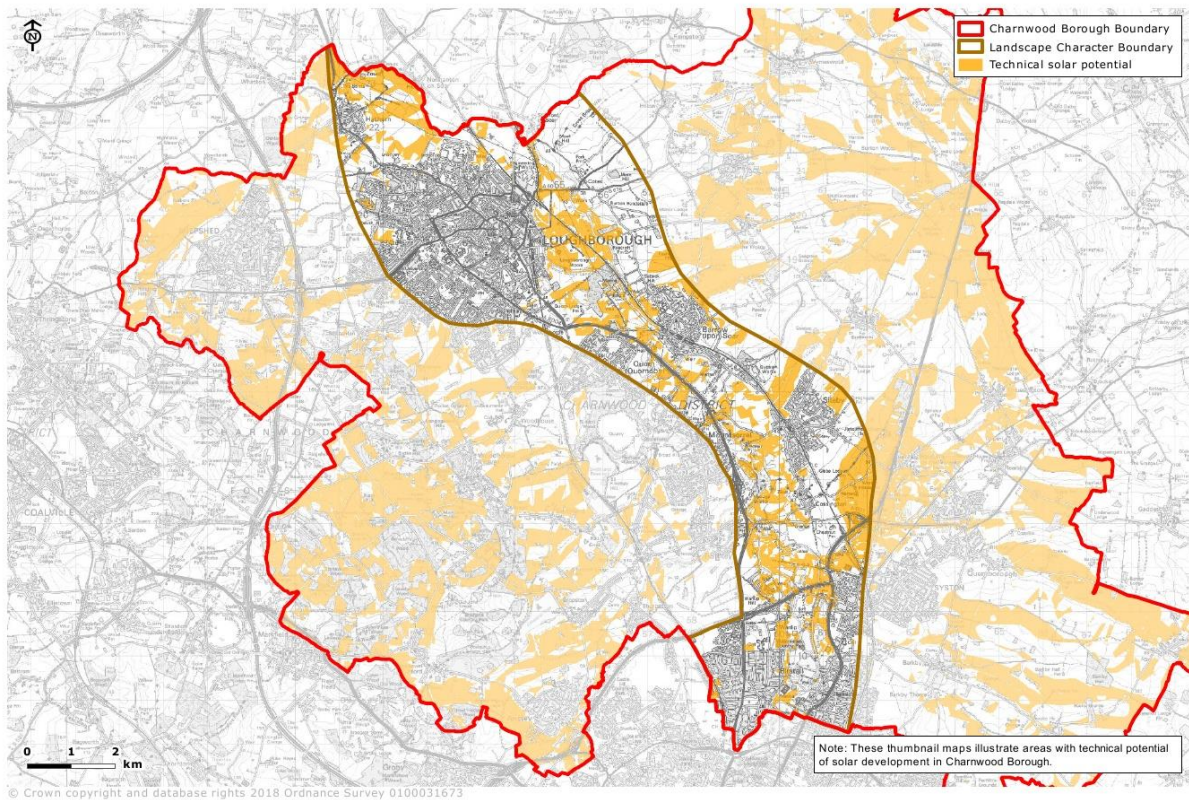
- Locally complex landforms, which are often associated with the valleys of small watercourses including Black Brook, Grace Dieu Brook (which forms the Borough boundary) and the Oxley Gutter.
- Important areas of semi-natural habitat located amongst the primarily agricultural land cover, including areas of lowland meadow and stream habitats.
- The setting the landscape provides to heritage features in the landscape, including Garendon Park (Grade II Registered Park and Garden).
- Long views enabled by low cut hedgerows and from elevated parts of the landscape.
- The rural qualities of the landscape which remain despite the proximity of large urban areas and transport and electricity infrastructure.

### Opportunities for mitigation or landscape enhancement

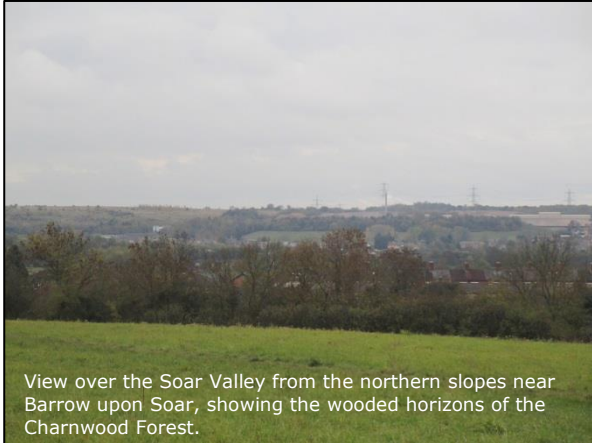
#### Guidance and opportunities to consider for any future solar PV development within area include:

- Locations with steep slopes and/or which are highly visible from the surrounding landscape should be avoided (e.g. slopes associated with the watercourses in the landscape)
- Opportunities to conserve and enhance hedgerows and broadleaved woodland should be considered to provide visual screening and improve habitat networks.
- Avoid siting solar PV development in areas with valued semi-natural landcover including lowland meadow and stream habitats.
- Protect the landscape setting of valued heritage features including the Grade II Registered Park and Garden of Garendon Park.
- Preserve the rural character of the landscape, particularly in areas which are not strongly influenced by existing built form or infrastructure.

## Soar Valley



### Representative photographs



### Location and summary of landscape character

The area follows the River Soar along its broad and contained valley. There is a mix of different agricultural uses with pasture on the floodplain and arable fields on the gently sloping valley sides. The meadow habitat of the floodplain is particularly important for breeding birds. Woodland in the valley is sparse and mostly limited to willows along the watercourses. The valley is densely settled, containing parts of Loughborough as well as many other towns and villages. There is a good provision of recreational opportunities including Watermead County Park. Detractors within the landscape include significant industry and transport infrastructure including pylons, the A6 and mainline railway. Views are funnelled through the valley and framed by Charnwood Forest to the west and the Wolds to the east.

## Landscape sensitivity assessment

Criteria	Description	Rating
<b>Landform</b>	<ul style="list-style-type: none"> <li>The landform is a low-lying linear flood plain following the River Soar. The valley floor has a broad, flat profile.</li> <li>Along the eastern edge of the valley there are some steeper slopes, where the valley rises to the higher land of the Wolds. To the west, the landform climbs towards the higher ground within Charnwood Forest.</li> <li>Several hills are located adjacent to the valley, including Moat Hill, Mere Hill and Shipley Hill.</li> </ul>	<b>L-M</b>
<b>Sense of openness / enclosure</b>	<ul style="list-style-type: none"> <li>Tall hedgerows and mature hedgerow trees provide a sense of enclosure in many areas, despite the large scale of some of the fields.</li> <li>Small woodland areas, particularly those planted as screening (such as those surrounding the sewage works at Wanlip and Mountsorrel and those surrounding the gypsum works) also provide visual enclosure.</li> <li>Fields on the valley slopes are larger and more open, which are often visible from the valley floor and can provide expansive views over the valley.</li> </ul>	<b>L-M</b>
<b>Field pattern and scale</b>	<ul style="list-style-type: none"> <li>There are both medium-large and small scale, regularly shaped fields. Smaller fields tend to be located on the valley floor whilst the larger arable fields are mostly located on the valley sides.</li> <li>Fields are considerably larger where arable production has replaced meadows and pastures such as near Cossington and parts of Quorn.</li> </ul>	<b>M</b>
<b>Landcover</b>	<ul style="list-style-type: none"> <li>Much of the area is under agricultural use, most of which is hay meadow or grassland grazed by cattle or horses. There are also pockets of arable farming. Hedgerows are often tall with many mature hedgerow trees. Poplars line the course of the river.</li> <li>There is a series of lakes in the southern section of the valley between Birstall and Thurmaston, which includes Watermead Country Park.</li> <li>Natural heritage designations include the Barrow Gravel Pits SSSI near Barrow-upon-Soar, Cotes Grassland SSSI, and Loughborough Meadows SSSI. County District/ites include the length of the River Soar and many Local Wildlife Sites are located along the valley floor.</li> <li>Priority habitats are frequent, particularly along the flood plain, including grazing marsh, lowland fens, deciduous woodland, good-quality semi-improved grassland and lowland meadows.</li> <li>The valley is highly urbanised and densely settled although there are few buildings on the flood plain. In addition, there are a number of large scale warehouses near Loughborough and Syston and large sewage treatment works north of Loughborough and at Wanlip, among other industrial uses.</li> </ul>	<b>M-H</b>
<b>Perceptual qualities</b>	<ul style="list-style-type: none"> <li>There is a strong contrast between areas with significant semi-natural land cover and areas with significant urban and industrial influences.</li> <li>Away from the developed areas, localised pockets of tranquillity can be experienced.</li> <li>Former gravel works restored as wetland areas contribute to semi-natural character.</li> <li>The area is disturbed by transport and energy infrastructure routes including the A6, mainline railway and pylon lines following the valley corridor. These can produce significant noise and visual disturbance.</li> </ul>	<b>L-M</b>
<b>Historic Landscape Character</b>	<ul style="list-style-type: none"> <li>Conservation Areas include Birstall, Sibley, Rothley, Mountsorrel, Quorn, Hathern and the village core and canal side at Barrow upon Soar.</li> <li>There is a deserted medieval village at Cotes, which is designated as a Scheduled Monument.</li> <li>Fields origins are primarily 18<sup>th</sup> and 19<sup>th</sup> century planned enclosure and areas where fields have been amalgamated into larger enclosures. There are some remaining areas of medieval open field systems at Loughborough Meadow and Bishop Meadow.</li> <li>The Grand Union Canal indicates the past industrial use of the landscape and is now primarily used for recreation.</li> </ul>	<b>M</b>
<b>Scenic and special qualities</b>	<ul style="list-style-type: none"> <li>This landscape character area does not fall within a nationally designated landscape.</li> <li>The valley slopes provide an important setting and sense of place to the valley settlements.</li> <li>Pockets of semi-natural land cover with high relative levels of tranquillity form important recreation resource in the landscape.</li> </ul>	<b>L-M</b>

## Overall assessment of landscape sensitivity to development scenarios

Development scenario	Sensitivity				
Very small solar installation (<1 hectare)	L				
Small solar installation (>1-5 hectares)		L-M			
Medium solar installation (>5-10 hectares)			M		
Large solar installation (>10-15 hectares)			M		
Very large solar installation (>15-20 hectares)				M-H	

### Notes on any variations in landscape sensitivity

Areas with extensive semi-natural habitat cover will have higher sensitivity because of the associated scenic and tranquil qualities. The areas such as valley slopes and hills, which are more visible, would be of increased sensitivity to solar PV development.

### Key landscape sensitivities

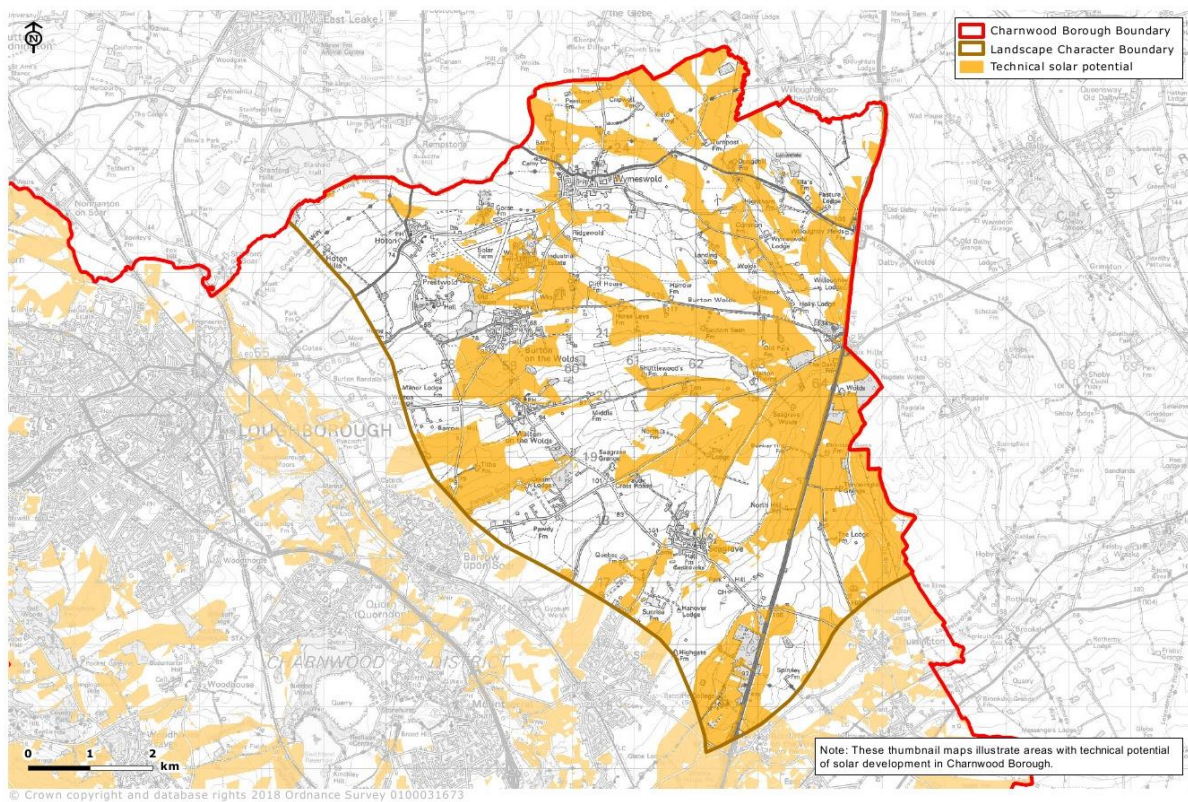
**The following provides a summary of the special landscape qualities and key features/attributes that would be sensitive to change as a result of solar installations:**

- Areas of localised steep landform, where the valley slopes up toward the Wolds in the east and Charnwood Forest to the west.
- Nationally and locally important semi-natural habitats, including floodplain marsh and lowland fens and meadows.
- Valued heritage features including the Scheduled medieval village at Cotes and non-designated medieval open field systems at Loughborough Meadow and Bishop Meadow.
- Many of the villages are designated as Conservation Areas.
- Pockets of localised tranquillity and the provision of recreational opportunities within the context of a densely settled landscape.

### Opportunities for mitigation or landscape enhancement

- Guidance and opportunities to consider for any future development within area include:
- Avoid siting solar PV development on the steeper valley slopes or hills where it would be visually prominent within the surrounding landscape.
- Retain and conserve important semi-natural habitats, including Priority Habitats and nationally and locally designated sites.
- Protect the integrity and setting of valued heritage features including the Scheduled medieval village at Cotes and the Conservation Areas.
- Preserve the medieval open field systems at Loughborough Meadow and Bishop Meadow.
- Retain existing woodland and hedgerows, utilising these features to screen and integrate solar PV development into the landscape.
- Conserve areas with high relative levels tranquillity and the provision of recreational opportunities.

## The Wolds



### Representative photographs



### Location and summary of landscape character

This is a rural area with a rolling topography made up of exposed ridges as well as intricate small stream valleys which feed into the surrounding Soar and Wreake/Eye river valleys. Field pattern is mixed in origin and scale with larger fields characteristic of the open ridge tops and smaller pastures on steeper valley slopes. There is limited woodland cover, however there are many hedgerow trees. The majority of settlements in the area are small nucleated villages, often of historic origin. The area is deeply rural with remote and tranquil qualities.



## Landscape sensitivity assessment

Criteria	Description	Rating
<b>Landform</b>	<ul style="list-style-type: none"> <li>The Wolds comprises a gently rolling plateau landscape with exposed ridges, cut into by intricate small stream valleys which connect to the Wreake and Eye Valleys in the south and the Soar Valley in the west.</li> </ul>	<b>M</b>
<b>Sense of openness / enclosure</b>	<ul style="list-style-type: none"> <li>This area is open and expansive with long views particularly from the straight ridgeline roads. Low cut hedgerows and limited woodland increase the sense of openness.</li> <li>Some areas have a more enclosed character due to small scale stream valleys. These contrast with the exposed ridges.</li> </ul>	<b>M-H</b>
<b>Field pattern and scale</b>	<ul style="list-style-type: none"> <li>Fields are medium to large scale and mostly regularly shaped. Larger fields are predominantly arable and most commonly located on ridge tops, while the smaller pasture fields occur on steeper slopes and in close proximity to villages.</li> </ul>	<b>L-M</b>
<b>Landcover</b>	<ul style="list-style-type: none"> <li>Landcover is primarily arable agriculture, with scattered small villages and farms. There are also occasional industrial and warehouse buildings and recreational facilities.</li> <li>Frequent hedgerow trees give the area a wooded character although larger woodland blocks being are less common. Woodlands include Ragdale Wood, Cradock's Ashes, Prestwold Park, Eller's Gorse and the natural burial site near Prestwold.</li> <li>Designated semi-natural habitats include Twenty Acre Piece SSSI, the Leicestershire and Rutland Wildlife Trust Reserve at Wymeswold Meadows in addition to County/District Sites and Local Wildlife Sites.</li> <li>Priority habitats include fragmented deciduous woodlands, lowland meadows, good quality semi-improved grassland and wood pasture and parkland.</li> </ul>	<b>M</b>
<b>Perceptual qualities</b>	<ul style="list-style-type: none"> <li>The area has a rural and isolated character, with high levels of relative tranquillity.</li> <li>Detractors include busy main roads such as the A46 which cause sound pollution, pylons, turbines (including Old Dalby wind park), and isolated industrial impacts such as the gypsum mine.</li> </ul>	<b>M</b>
<b>Historic Landscape Character</b>	<ul style="list-style-type: none"> <li>Numerous villages are designated as Conservation Areas including Seagrave, Walton on the Wolds, Hoton and Wymeswold. The villages often contain clusters of listed buildings, with historic churches often located at the village core.</li> <li>The Grade II Registered Park and Garden at Prestwold Hall (centred on the Grade I listed Prestwold Hall is a distinct heritage feature in the north west of the LCA. Non-designated parkland is associated with Ratcliffe College and Quorn Park.</li> <li>North-east of Seagrave a Monastic grange is designated as a Scheduled Monument. South of Seagrave and in fields near Wymeswold there are traces of non-designated earthworks.</li> <li>Most fields originate from planned enclosure, or re-organised piecemeal enclosures. Many have been amalgamated into large post-war fields due to agricultural intensification (e.g. around Hoton, Prestwold, Wymeswold and Seagrave). Where smaller field systems remain, they tend to be close to villages.</li> </ul>	<b>M</b>
<b>Scenic and special qualities</b>	<ul style="list-style-type: none"> <li>This landscape character area does not fall within a nationally designated landscape.</li> <li>The traditional large-scale, rolling agricultural landscape, with its picturesque historic villages and high levels of tranquillity, draws people to the area.</li> </ul>	<b>M</b>

## Overall assessment of landscape sensitivity to development scenarios

Development scenario	Sensitivity				
Very small solar installation (<1 hectare)		L-M			
Small solar installation (>1-5 hectares)			M		
Medium solar installation (>5-10 hectares)				M-H	
Large solar installation (>10-15 hectares)				M-H	
Very large solar installation (>15-20 hectares)					H

### Notes on any variations in landscape sensitivity

Areas of more complex landform such as the intricate stream valleys would be highly sensitive to solar development of any size. Examples include the valleys of Ox Brook, Fishpool Brook, Walton Brook and Kingston Brook. The tops of broad plateau ridges have reduced sensitivity to field scale solar developments, as they are not widely overlooked. Examples include the former Wymesworld Airfield, which is both a brownfield site and a broad, elevated landform which is not widely overlooked and the Six Hills area, which has a broad landform and is often visually enclosed by vegetation.

### Key landscape sensitivities

**The following provides a summary of the special landscape qualities and key features/attributes that would be sensitive to change as a result of solar installations:**

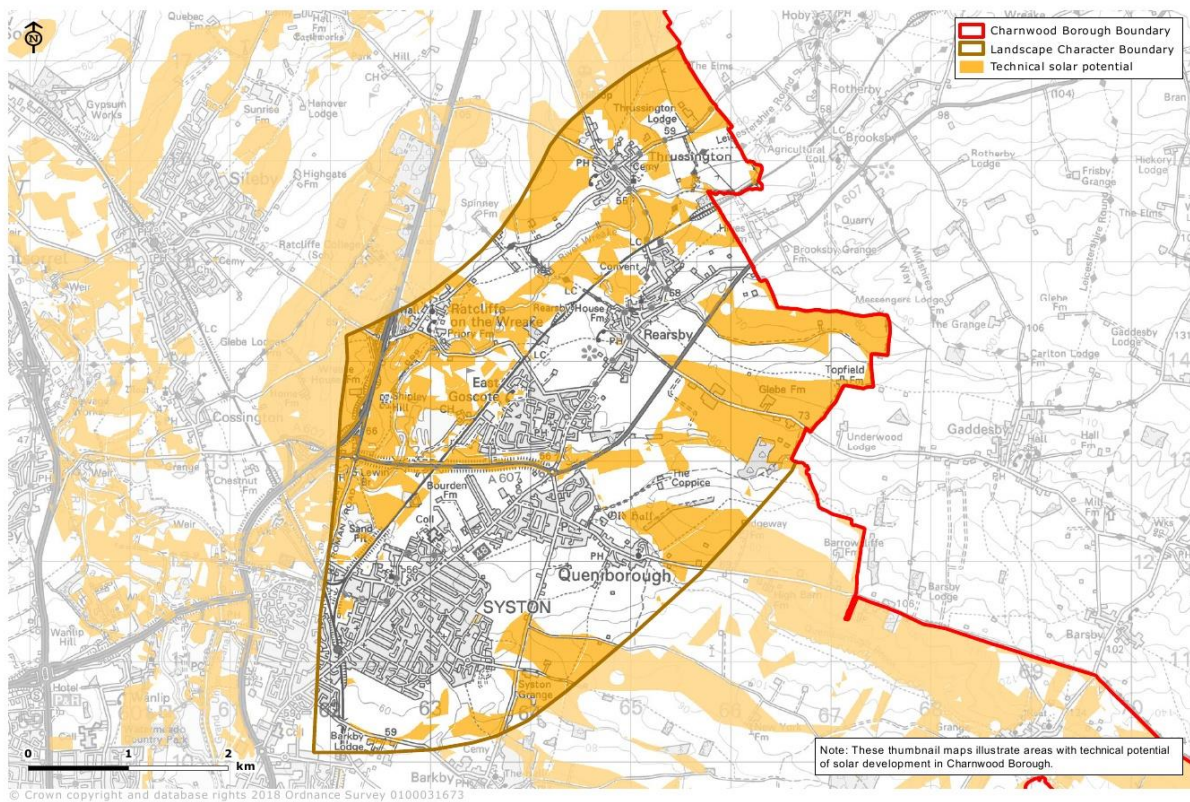
- The sloping land associated with the intricate stream valleys.
- Long views enabled by the elevated, rolling topography and low cut hedgerows.
- Areas of important semi-natural habitat located among the farmed landscape including nationally and locally designated sites.
- Valued heritage features within the landscape including numerous Conservation Areas, Prestwold Hall Registered Park and Garden and the Scheduled monastic grange at Seagrave.
- The area has a traditionally rural character with high levels of relative tranquillity.

### Opportunities for mitigation or landscape enhancement

**Guidance and opportunities to consider for any future development within area include:**

- Avoid locating solar PV development in locations with sloping/complex landforms or in locations which are visually prominent within the wider landscape.
- Retain existing woodland and hedgerows, utilising these features to screen and integrate solar PV development into the landscape.
- Protect and conserve important semi-natural habitats, including locally and nationally designated sites such as Twenty Acre Piece SSSI.
- Protect the integrity and setting of valued historic features including Conservation Areas, Prestwold Hall Registered Park and Garden and the Scheduled monastic grange at Seagrave.
- Retain the rural character and high levels of tranquillity, particularly in the less developed eastern parts of the landscape character area.

## Wreake Valley



### Representative photographs



### Location and summary of landscape character

This flat-bottomed valley follows the course of the River Wreake in a north-east to south-west direction. The valley slopes are gentle and support a mixture of agricultural uses including large scale arable as well as smaller scale pastoral uses, with fields arranged in a variety of patterns. Woodland is limited, although there are many hedgerow trees and small copses. Historic features include listed buildings, including Grade I and Grade II\* listed churches with tall spires that form distinctive landmarks within this area. A series of small, rural villages are located along the valley sides. These contrast with larger settlements in the west which give an urban character to the landscape.

## Landscape sensitivity assessment

Criteria	Description	Rating
<b>Landform</b>	<ul style="list-style-type: none"> <li>The character area is focused on the flat bottomed valley of the River Wreake, which flows from the north east to the south west.</li> <li>The valley slopes to the north and south have a gentle topography. The land rises to the higher ground of the Wolds, to the north, and High Leicestershire, to the south.</li> </ul>	<b>M</b>
<b>Sense of openness / enclosure</b>	<ul style="list-style-type: none"> <li>On higher ground, the limited woodland and low hedgerows create an open character and allow funnelled views along the valley.</li> <li>There are localised areas of enclosure where fields are not overlooked, for example to the north of Glede Farm and the more enclosed ridge top fields to the south east of Rearsby.</li> <li>The valley is not prominent within the wider landscape, although it is overlooked from the higher land of the Wolds to the north and High Leicestershire to the south.</li> </ul>	<b>M</b>
<b>Field pattern and scale</b>	<ul style="list-style-type: none"> <li>Field size and pattern is mixed, ranging from small to medium sized fields, with those along the valley floor often being larger. Additionally, there are a series of fields identified as very large post war fields east of East Goscote (as identified in the HLC).</li> <li>Some areas on the edge of settlements are under equestrian use.</li> </ul>	<b>M</b>
<b>Landcover</b>	<ul style="list-style-type: none"> <li>The valley is mainly under mixed agricultural use. Although, the western part of the valley contains several large settlements such as Syston. Settlement in east of the valley is limited to small villages.</li> <li>There are a number of sites that locally designated for wildlife conservation, including much of the River Wreake, Gaddesby Brook, Syston Marsh and Crane's Hole.</li> <li>Small areas of priority habitats including floodplain and grazing marsh, good quality semi-improved grassland, deciduous woodland and traditional orchards are present in the valley.</li> <li>Small woodlands are found along the course of the river and along some field boundaries.</li> <li>Historic gravel workings in the west of the valley have been restored to recreational uses including Beedles Lake Golf Course and the sailing club north of Syston.</li> <li>The mainline railway follows the course of the valley.</li> </ul>	<b>M</b>
<b>Perceptual qualities</b>	<ul style="list-style-type: none"> <li>The valley has contrasting perceptual qualities; the densely settled, urban character of the western part of the valley is juxtaposed by the rural and tranquil character of the eastern part of the valley.</li> <li>The A607 and Derby to London mainline railway follow the valley floor and introduce noise and movement to the landscape.</li> </ul>	<b>M</b>
<b>Historic Landscape Character</b>	<ul style="list-style-type: none"> <li>The packhorse bridge at Rearsby is a Scheduled Monument.</li> <li>There are several Conservation Areas including Syston, Queniborough, Rearsby, Ratcliffe on the Wreake and Thrusington. The Conservation Areas contain concentrations of listed buildings and are usually centred around historic churches.</li> <li>Most fields are modern in origin with the HLC indicating primarily large post-war fields, re-organised piecemeal enclosure and planned enclosure.</li> </ul>	<b>M</b>
<b>Scenic and special qualities</b>	<ul style="list-style-type: none"> <li>The landscape character area does not fall within a nationally designated landscape.</li> <li>Long views across the adjacent undeveloped countryside can be experienced from the upper valley slopes.</li> <li>Historic church spires and towers in villages are prominent on the skyline, rising above the trees and forming landmark features.</li> <li>The landscape is valued for recreation; Sustrans Route 48 and a well-connected network of public rights of way provide access to the countryside from nearby urban areas and villages.</li> </ul>	<b>M</b>

## Overall assessment of landscape sensitivity to development scenarios

Development scenario					
Very small solar installation (<1 hectare)		L-M			
Small solar installation (>1-5 hectares)			M		
Medium solar installation (>5-10 hectares)			M		
Large solar installation (>10-15 hectares)				M-H	
Very large solar installation (>15-20 hectares)					H

### Notes on any variations in landscape sensitivity

The landscape in the east of the character area has higher levels of sensitivity than the west of the valley, due to its considerably more rural and remote character.

### Key landscape sensitivities

#### The following provides a summary of the special landscape qualities and key features/attributes that would be sensitive to change as a result of solar installations:

- The open and expansive character of the landscape, with long views over the valley (particularly from the northern slopes).
- Important semi-natural habitats, including County Wildlife Sites, Local Nature Reserves and priority habitats.
- Small scale pastoral fields, some of which retain historic field boundaries.
- Strong rural perceptual qualities and high levels of relative tranquillity, particularly in the eastern part of the valley.
- Valued heritage features including Conservation Areas at Syston, Queniborough, Rearsby, Ratcliffe on the Wreake and Thrussington as well as the Scheduled Monument at Rearsby.

### Opportunities for mitigation or landscape enhancement

#### Guidance and opportunities to consider for any future development within area include:

- Avoid placement of solar PV development on sloping fields that are highly visible within the wider landscape.
- Where possible, enclosure from hedgerows should be utilised to screen, frame and integrate solar PV development into the landscape.
- Protect and conserve valued semi-natural habitats such as those designated as County Wildlife Sites and Local Nature Reserves and those identified to be priority habitats.
- Protect the valued rural and tranquil qualities experienced in parts of the valley.
- Protect the setting and integrity of valued heritage features including the Conservation Areas and listed buildings.

## Appendix 3

# General guidance on siting and designing wind energy developments in the landscape

This section provides some guidance on siting, layout and design of wind energy developments in Charnwood Borough, focusing on the minimisation of landscape and visual effects. It is recognised that siting, layout and design also need to take into account a range of other specific ecological, ornithological, archaeological, built heritage, recreational and other interests at application stage, each of which are material planning considerations during assessment.

Further information and guidance on siting, layout and design of wind energy development in the landscape can be found in the Scottish Natural Heritage document, *Siting and Designing Wind Farms in the Landscape* (May 2014)<sup>5</sup>.

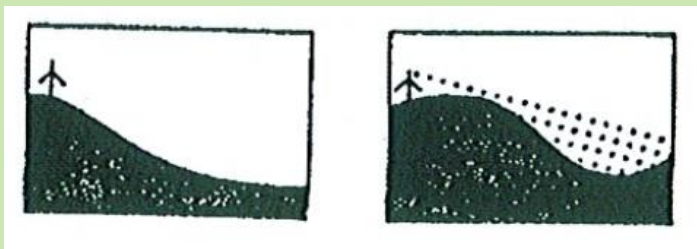
Good site selection and scheme development, that take careful account of landscape and visual issues from the outset, are the most effective ways of preventing and mitigating potential adverse landscape and visual effects and may improve a scheme's likelihood of gaining approval. Note that the NPPF<sup>6</sup> (para 66) expects applicants to work closely with those directly affected by their proposals and evolve designs that take account of the views of the community. More recently the Government introduced new regulations<sup>7</sup> which require applicants to conduct pre-application consultation with affected communities in the case of any 2+ turbine proposal, or any single turbine of 15m+ hub height: the application must explain what account was taken of any community representations subsequently received.

### Guidance on landscape siting

The following guidance should be followed when siting any wind energy development in Charnwood Borough, whether it comprises a single small scale turbine or multiple larger turbines:

#### **GUIDANCE ON SITING**

- Ensure the size and grouping of turbines responds to landscape character, reinforcing the difference between distinct types of and scales of landscape.
- Seek to keep a turbine group within one type of landscape (particularly as perceived in sensitive views) so that turbines do not span across marked changes in character on the ground, such as changes in topography.
- Prominent and highly visible skylines should be avoided.
- The visibility of turbines from valleys and lower ground may be reduced if they are located on high plateau with concave or steep wooded slopes.



Source: Devon County Council, 2013

- Where turbines are to be sited on a hill ridge, they may be set back from the edge and placed such that the slopes preclude visibility from below.
- Significant effects on views from important viewpoints (including views which are integral to

<sup>5</sup> [http://www.snh.org.uk/pdfs/strategy/renewables/Guidance\\_Siting\\_Designing\\_wind\\_farms.pdf](http://www.snh.org.uk/pdfs/strategy/renewables/Guidance_Siting_Designing_wind_farms.pdf)

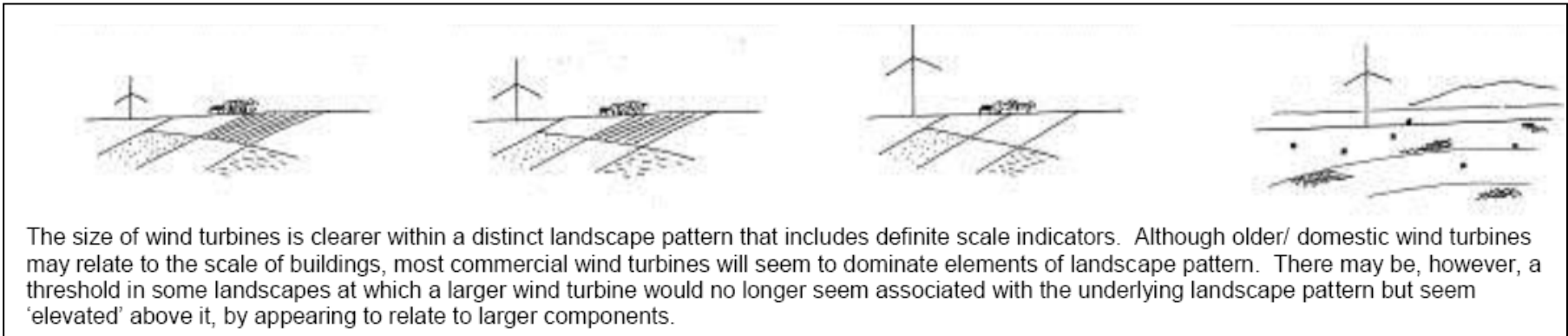
<sup>6</sup> Department for Communities and Local Government (March 2012) *National Planning Policy Framework*.

<sup>7</sup> The Town and Country Planning (Development Management Procedure and Section 62A Applications) (England) (Amendment) Order 2013

the character of Conservation Areas and recognised /iconic views), popular tourist and scenic routes, and settlements should be avoided or minimised through careful siting.

- It is preferable to site turbines where they do not diminish the understanding and appreciation of historic landmarks and features such as hilltop monuments or church spires.
- It is generally less distracting to see a substantial part of a turbine rather than blade tips only – this may be a particular consideration for views from sensitive viewpoints or those frequented by a larger number of potential viewers.
- Consider locations of lesser natural/scenic/perceptual/historic sensitivity such as those in/around man-made landscapes such as business parks and industrial or reclaimed sites, and where other landscape sensitivities may not be compromised.
- Screening afforded by existing woodland can sometimes be used to good effect through careful placement of turbines and adjustment of turbine base heights. However, the presence of trees for screening purposes should not be relied upon if felling is likely during the lifespan of the project (note that trees may be felled by third parties without the need for planning permission).
- Adequate separation from walking, riding and other recreational routes is important to prevent adverse impacts on the landscape experience, amenity and safety of recreational landscape users.
- Siting should identify and where possible avoid impacts on areas of tranquil or remote character, and on features of natural, cultural or recreational heritage interest that contribute to landscape character and landscape value.
- When siting developments with turbines over 50m tip height, select sites in simple, regular landscapes with extensive areas of consistent ground cover over landscapes with more complex or irregular land cover patterns, smaller field sizes and landscapes with frequent human scale features (subject to satisfying other sensitivities). See the illustration at **Figure 1**.
- When selecting or assessing sites, consider the potential effects of transporting turbines to site, and the possible limitations presented by winding narrow lanes bounded by hedgerows.
- Consider siting single turbines so they are perceived as part of other built development /in association with a building group where effects on amenity (e.g. in relation to noise or disturbance) allow. For example, there may be some opportunity to site small, single turbines in relation to farm buildings, or medium scale turbines sited in relation to larger industrial-scale buildings/structures. The acceptability of this, however, will need to be considered against factors such as historic buildings and heritage assets.
- In support of the above point – development should be commensurate with (or reflect) the scale of the associated buildings.
- Where turbines are proposed to be sited near to trunk roads, safety issues such as sufficient 'topple distance' and views from the road will also require consideration in accordance with Highways Agency advice.
- Consider the landscape effects and wider appropriateness of transmission infrastructure when considering the siting of proposals; sites that will minimise the need for above ground transmission infrastructure are preferable. Undergrounding cabling may mitigate effects in sensitive locations.

**Figure 1: Considering underlying landscape pattern and scale when siting wind turbines**



Source: SNH (2014)



## Guidance on layout

The next stage in preparing a wind energy scheme is to plan the layout of turbines in the landscape. The following guidance will help developers take account of landscape character.

### GUIDANCE ON LAYOUT

- Ensure that turbines read as a coherent group in all the main views – aim for a composition that is visually balanced, simple and consistent in image as it is viewed from various directions, minimising views of blade tips only in views (which can be distracting).
- Careful layout and arrangement of turbines can help to ensure that turbines read as a coherent group in all the main views.
- Turbines should be located on the most level part of the site or following contours to avoid discordant variation in perceived turbine heights.
- Significant turbine overlaps or 'stacking' of turbines when seen from one direction may catch the eye and should be avoided as far as possible.
- Layouts that reflect existing landscape patterns, such as regular field patterns or linear transport corridors, may allow the positive sculptural qualities of turbines to be seen to good effect.
- Ensure the size of turbine groups is in proportion with the scale of the landscape, including landform features and landscape elements such as woodlands and fields.
- Ensure wind turbines respect the hierarchy of elements in the landscape and do not compete with, or create clutter when seen together with, other man-made landscape elements such as pylons.



Visual clutter created by turbines located alongside pylons and masts (LUC, 2014)

- In urban fringe or industrial contexts, developments should respond to the scale of the built form and sit comfortably alongside existing buildings or structures.
- Alternative site layouts should be investigated from an early stage to find the optimum response to character as seen from key viewpoints.
- Where appropriate, wind energy development can act as the stimulus for restoration and/or improvement of land use within or around the site.
- It may be helpful for developers to prepare a design statement summarising the way in which scheme design has evolved and the reasons why particular decisions on site layout have been taken. All planning applications normally require the submission of a design and access statement.

## Guidance on design

Important design considerations in relation to the turbines themselves are set out in the box below.

### **GUIDANCE ON DESIGN**

- A good design will respect the hierarchy of elements in the landscape and will not compete with, or create clutter when seen together with, other man-made landscape elements such as pylons.
- In urban or industrial contexts, developments should respond to the scale of the built form and sit comfortably alongside large buildings or structures, providing a balanced composition.
- Any existing focal points (such as historic church spires and towers) should be respected and visual conflict avoided.
- In more modern industrial or commercial areas it may sometimes be appropriate to create a new visual focus.
- It is important to ensure that the proportion of rotor diameter to tower height is balanced – short blades on a tall tower or long blades on a short tower may look unbalanced.



*Examples of different rotor diameter to tower height proportions (SNH, 2014)*

- Tubular steel towers tend to look simpler and less 'industrial' than lattice towers, a consideration which is especially important in rural areas. In turn, the more industrial-looking, lattice towers might be suited to industrial locations.



*Two-bladed turbines with industrial-style lattice towers in a rural context (Source: LUC)*

- It should be borne in mind that two bladed turbines can appear less balanced when turning (impacting on the smoothness of movement, when compared to three bladed models).
- Smaller turbine blades also appear to turn faster than larger ones. It is therefore important to ensure any multiple turbine developments, or turbines in the same view, are of a consistent height and design to avoid visual confusion caused by variations in blade speeds/movements.

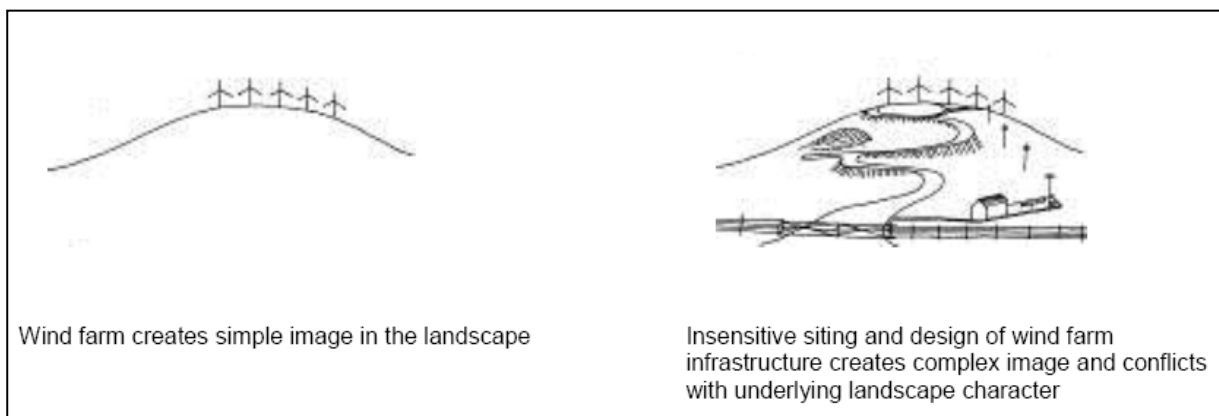
## Guidance on the siting of ancillary infrastructure

The ancillary features associated with wind energy developments (such as buildings, access tracks, perimeter fencing and underground cabling) also need to be handled with great care. The following guidance ensures that landscape sensitivities are taken into account. These points are summarised in the illustration at **Figure 2**.

### **GUIDANCE ON THE SITING OF ANCILLARY INFRASTRUCTURE**

- Use of existing farm or forestry tracks (provided these are not historic features in their own right) may help reduce the impacts of on-site access tracks.
- The length of new on-site access track should be minimised through efficient track layout, and tracks should be surfaced in a way that blends in with the surroundings. Where possible tracks should be re-vegetated (in full or in part) following construction.
- Access tracks on very steep slopes (where they may require zig-zag routes, cut and fill and drainage channels) or on wet marshy ground (where they may require extensive foundations) should be avoided wherever possible.
- Access tracks should, wherever possible, avoid crossing or running along long distance paths or other public rights of way.
- Measures should be put in place to minimise use of access tracks by recreational motor vehicles, which can cause erosion and loss of tranquillity.
- Use of highly engineered highway solutions should be minimised as it may scar the landscape, and tracks should follow the contours (provided this does not entail excessive length).
- Schemes should minimise direct effects on existing landscape features such as stone bridges, walls, gateposts, hedges and trees that may be associated with the creation of site entrances and access tracks.
- Where such impacts cannot be avoided, ensure that there is appropriate mitigation, such as boundary reinstatement and replacement planting. Measures that would urbanise the character of rural lanes e.g. kerbing and fencing should be avoided.
- Opportunities should be taken to improve the management and condition of semi-natural habitats, but any fencing (especially on commons or other open access land) should be minimal and temporary, to maintain open character and recreational access.
- Consider sites where areas of existing vegetation and woodland/tree cover could screen ground-level features of wind energy developments (such as fencing, tracks and transformers), subject to schemes being acceptable on arboricultural/ecological grounds.
- Where possible, transformers should be housed within the turbine tower to reduce their visual impacts, and on-site cables should be buried underground.
- Substation and control buildings should be carefully sited and should generally avoid high, exposed locations where they may be incongruous and provide a scale comparison with turbines.
- Use of local building materials and styles will help integrate such structures into the landscape. Hard surfacing, fencing and lighting around substations should be minimised.
- Grid connections should be sited underground wherever possible.

**Figure 2: Illustration showing how insensitive infrastructure design/siting can conflict with underlying landscape character (SNH, 2014).**



### Guidance for multiple wind energy developments

Where multiple wind energy developments exist in a given area, siting, layout and design of further wind energy development requires particular care:

- When designing a wind energy development it is important to consider how the scheme fits with other operational, consented and proposed schemes (including any within neighbouring planning authorities) and to minimise cumulative effects.
- If wind energy development already exists (and is appropriate) in a particular type of landscape, further wind energy development should be similar in design, siting, layout and relationship to key landscape characteristics (e.g. single small scale turbines associated with buildings).
- Turbines of similar height and design (including type of tower, number of blades, and proportion of rotor diameter to height) should be used where two or more wind energy developments are clearly visible in the same view and in the same type of landscape (unless the existing design is considered inappropriate) – the closer they are to each other the more important this is.
- Multiple wind energy developments should not obscure distinctive landform features and should be in scale with ridges and hills.
- The extent to which the development influences the overall experience of the landscape should be carefully considered (see **Figure 3**), with developments that are judged as having a defining influence generally avoided.
- As multiple wind energy developments are built they may 'compete' with the landscape's valued focal points – it is important to maintain a hierarchy of focal points so that the original foci can still be appreciated in the landscape. Examples might include historic church spires or landmark tree groups.
- Consider views from settlements when designing multiple wind energy developments – and in particular avoid 'surrounding' a settlement with wind turbines.
- Individual wind energy developments should generally appear visually separate from each other unless specifically designed to create the appearance of a single combined wind farm.

More detailed guidance on landscape and visual issues associated with multiple wind energy developments can be found on pp 27-31 of the Scottish Natural Heritage document, *Siting and Designing Wind Farms in the Landscape*.

**Figure 3: Considering how the presence of wind energy development affects overall landscape character (Source LUC, 2013)**

A '**landscape without wind energy development**' – a landscape within which no wind energy developments are located. There may, however, be distant views of wind energy developments located in clearly different types of landscape, which may be perceptible under conditions of good visibility.



A '**landscape with very occasional wind energy**' – a landscape in which there are very occasional very small-scale turbines, usually associated with farm buildings. There may be views of larger scale wind developments located in clearly different types of landscape, which may be perceptible under conditions of good visibility.



A '**landscape with occasional wind energy**' – a landscape within which one or more wind energy developments are located. In this landscape, the wind energy developments are usually clearly separated and whilst each wind energy development influences the perception of the landscape at close proximity, they do not have a defining influence on the overall experience of the landscape (developments would not result in a significant cumulative impact on the landscape character type or area as a whole or overall change of landscape character type). The landscape would not be dominated by wind turbines.



A '**landscape with wind energy development**' – a landscape within which several wind energy developments are located, and where the landscape may be perceived as having wind energy developments visible in more than one direction, and where they are a defining characteristic of the landscape character type or area. It will still be possible to appreciate the character of the landscape without wind farms dominating every view within that landscape.



A '**wind farm landscape**' – a landscape where turbines are the overwhelming influence on the landscape character of the area. All other landscape features are seen in the context of extensive wind energy development.



## Appendix 4

# How to consider landscape in planning applications for solar PV developments

### Introduction

This chapter provides a brief summary of the planning and Environmental Impact Assessment (EIA) process in relation to solar PV developments. It then provides detailed guidance on how to undertake landscape and visual impact assessments (LVIAs) and cumulative landscape and visual impact assessment (cLVIAs). The chapter concludes with a suggested list of further reading, providing additional guidance on the consideration of landscape and visual issues in the context of renewable energy developments, such as solar PV.

### Consenting process

As outlined in **Chapter 1**, energy developments with an electrical output capacity of **more than 50MW are** currently determined by the Secretary of State for Energy and Climate Change following a recommendation by the National Infrastructure Directorate of the Planning Inspectorate. The Council will be a statutory consultee in these cases. Proposals of this scale require a type of consent known as 'development consent' under procedures governed by the Planning Act 2008 (and amended by the Localism Act 2011).

**Solar PV developments of less than 50MW capacity** will need to apply for planning permission to Charnwood Borough Council under the Town and Country Planning Act 1990. **Roof top mounted solar thermal or solar PV panels** which are sited on both domestic and non-domestic buildings, or within their curtilage can be installed under Permitted Development Rights (i.e. they do not require planning permission), as long as specified limits and conditions are met. For non-domestic buildings up to 1MW can be installed under Permitted Development Rights. Full details on are contained in the detailed legislation Part 14 of Statutory Instrument 2015 No. 596, The Town and Country Planning (General Permitted Development) (England) Order 2015<sup>8</sup>.

### Environmental Impact Assessment (EIA)

Certain solar PV developments require Environmental Impact Assessment (EIA) under EIA Regulations which implement the EU's Environmental Impact Assessment Directive 85/337/EEC as amended by 97/11/EC and 2003/35/EC.

Solar PV developments are not expressly listed in the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011. However, Schedule 2 of the Regulations specifies that any industrial energy installation producing electricity, steam and hot water, which exceeds 0.5 hectares could potentially be EIA development. Additionally, with solar PV developments likely to be sited in rural areas, and typically on previously uncultivated land, then development listed in EIA Circular 02/99, Annex A, section A2 (such as greenhouses, farm buildings etc.) of more than five hectares may also possibly require EIA.

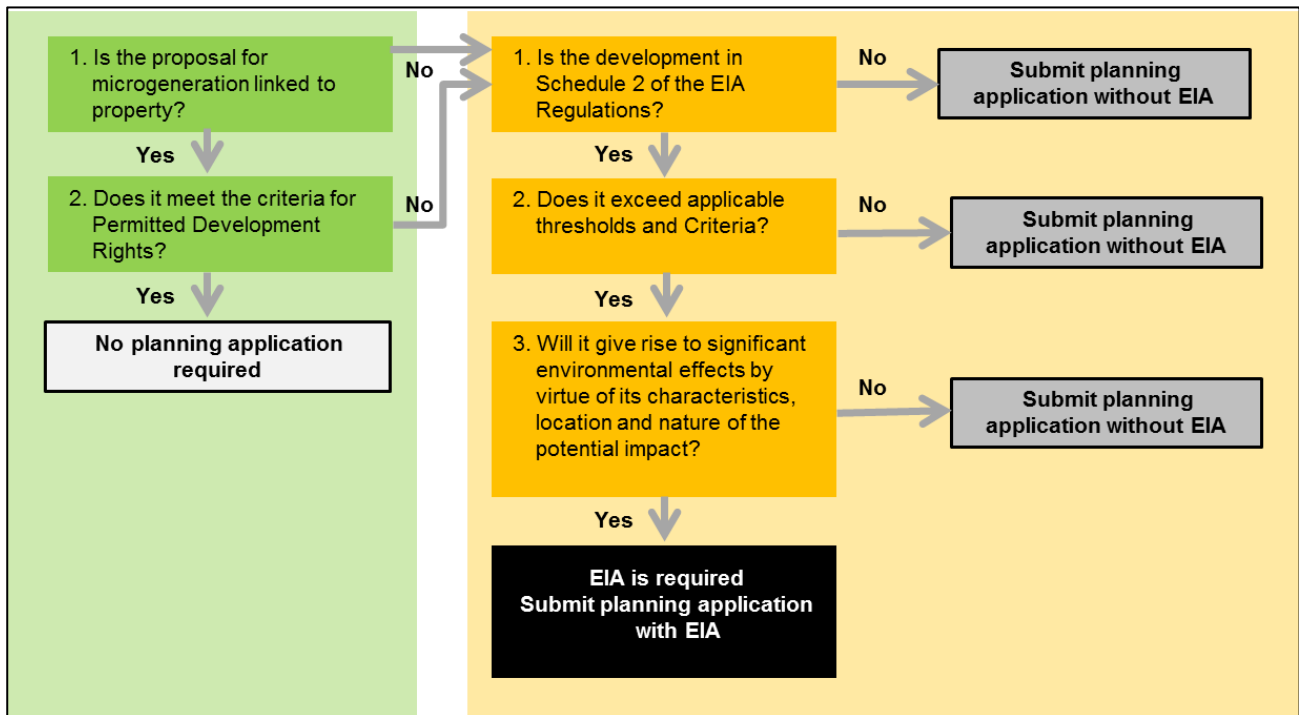
It is clear that a number of small-scale solar PV schemes will fall below the criteria for an EIA. Consultation should be undertaken with the Charnwood Borough Council at the earliest opportunity to clarify if EIA is required or not. Even if an EIA is not required, in all cases some form of environmental assessment will be necessary to assess whether there are any issues and a landscape appraisal of the potential landscape and visual impacts of the proposal is likely to be required.

A summary of the consenting mechanisms for solar PV developments is provided in **Figure 1** below.

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<sup>8</sup> The Town and Country Planning (General Permitted Development) (England) Order 2015.  
<http://www.legislation.gov.uk/uksi/2015/596/contents/made>

**Figure 1: Consenting mechanisms applicable to solar PV planning applications**



A District Network Operator (DNO) is responsible for establishing the connection between the substation and the grid and this forms part of a separate consenting process. The works required to connect a solar PV development to the local electricity distribution network can either form permitted development, require the submission of a separate planning application for permission, or an application for consent to the Secretary of State for Energy and Climate Change under Section 37 of the Electricity Act 1989. Developers should however provide information on the proposed route and method for the grid connection to the proposed solar PV development with their planning application (even if they do not require permission for the grid connection from Charnwood Borough Council) and as part of any EIA. It is also recommended that the EIA (if required) should undertake a scoping assessment of the potential impacts of the proposed grid connection route to identify if it is likely to have any significant environmental effects.

## Guidance on undertaking Landscape & Visual Impact Assessment

### Overall need/purpose

A landscape and visual impact assessment (LVIA) is a key part of assessing the effect of proposed solar PV developments, including as part of the EIA process. As explained above, an EIA may not be required for all solar PV developments. Nevertheless, it is likely that a landscape and visual impact assessment or appraisal (LVIA) will be required to accompany the planning application. The level of detail required will be dependent upon the sensitivity of the site and the nature of the proposal and its potential effects. Pre-application discussions with Charnwood Borough Council are strongly recommended for all solar PV applications. This will provide an opportunity to agree the scope, level of detail and presentation of the LVIA, and ensure that it is based on accurate and up to date information. The LVIA should address the key landscape issues raised by the proposals, providing information that is relevant, necessary and material to the decisions to be made.

General guidance on LVIA is provided in the Landscape Institute and Institute of Environmental Management and Assessment's 'Guidelines for Landscape and Visual Impact Assessment'<sup>9</sup>. However, the following guidance sets out the type of information that could be expected to be submitted as part of a

<sup>9</sup> Landscape Institute and Institute for Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, Routledge.

LVIA for a solar PV development in Charnwood. In addition, LVIA for EIA developments should comply with the scoping opinion given by the planning authority where this has been sought.

The following section sets out the required components of an LVIA, in terms of information required to submit along with a planning application.

### **Project description**

The planning application should include a description of the project at each phase in its life cycle in sufficient detail to allow the assessment of landscape and visual effects including:

- the location, layout, orientation and dimensions or extent of all plant and structures (including plans, elevations and sections) including area of array with proposed separation buffers from hedgerows;
- a description of the scale and duration of project activities during construction, operation, and decommissioning (including method of construction and traffic generation);
- information on site access including routes for transport of panels, including any need for removal of landscape features;
- location and size of temporary lay down areas, construction compounds, materials storage, temporary fencing, foundations and site cable runs;
- excavation/levelling details and soil removal estimates (if applicable);
- plans for site reinstatement;
- number and type of PV panels (including form, frame height, materials, colour, base size and mounting type);
- details of any tracking or moving mechanisms;
- location, specification and design of any structures, roads, hardstanding or storage buildings, temporary and permanent;
- location and appearance of any signage, security features, lighting, fencing and onsite grid connection point (substation/ switchgear cabinet);
- plans for landscape mitigation measures and/or landscape enhancement; and
- plans for decommissioning (removal of panels and ancillary structures, proposals for restoration and future land management).

The LVIA should highlight those aspects of the development that are the key sources of landscape and visual change.

### **Baseline studies**

The baseline studies should set out the existing conditions within the study area. The study area should be agreed with the planning authority. Information on land use, landscape features and landscape character should be provided, drawing on the Charnwood Landscape Character Assessment. A field survey should be undertaken to supplement desk based information. A description of relevant policies and plans should also be included and the relevant Parish Plan consulted, where available, to understand local landscape values.

The landscape baseline should be evaluated in accordance with the 'Guidelines for Landscape and Visual Impact Assessment' (3<sup>rd</sup> Edition) – known as "GLVIA 3"<sup>10</sup>.

A zone of theoretical visibility (ZTV) should be prepared to indicate the area over which the renewable energy development may be seen. ZTVs should be used, alongside fieldwork, to identify representative assessment viewpoints. These viewpoints should be discussed and agreed with the planning authority and other stakeholders. The number of viewpoints required will vary depending on the size of the development and sensitivity of the location. Priority should be given to views from distances of less than 3km for solar PV development and from sensitive locations (e.g. residential areas, areas popular with

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<sup>10</sup> Guidelines for Landscape and Visual Impact Assessment, 3rd edition (2013) Landscape Institute and Institute of Environmental Management and Assessment.



visitors or for outdoor recreation where views may be focussed on the landscape and recognised/iconic views). The purpose for selection should be recorded within the LVIA.

### **Mitigation**

As a consequence of the assessment process there are likely to be modifications to the scheme design to minimise landscape and visual effects, particularly for larger schemes. In addition, there may be measures to prevent, reduce or offset significant adverse effects. These should be described in terms of relationship to/conservation of valued landscape features, relationship to landscape character (particularly topography, scale, landform and landscape pattern), and appearance from sensitive viewpoints. All mitigation measures should be described and an indication of how they will be implemented provided. A description of the main reasons for site selection and any alternatives in site design or layout would also be helpful. Please refer to the recently published GLVIA 3 for further guidance on mitigation.

### **Enhancement**

Enhancement aims to improve the character and quality of the landscape. It may take many forms, including improved land management or creation of new landscapes or features. The NPPF (para 64) acknowledges that "*Permission should be refused for development of poor design that fails to take the opportunities available for improving the character and quality of an area and the way it functions*". Landscape enhancement, as part of a proposal, will be looked upon favourably.

### **Description of effects**

This section should systematically identify and describe the likely effects of the proposal, identifying magnitude of change as a deviation from baseline conditions. Methods should be clearly set out. The assessment should cover effects at construction, operational and decommissioning phases and should consider direct, indirect, secondary, short, medium and long term effects. Effects on landscape features/fabric, landscape character, landscape values and visual amenity should be assessed.

- Effects on landscape features/fabric should consider loss of elements (e.g. hedges, trees).
- Effects on landscape character should describe the direct changes that will occur to the character of the landscape in which the proposal is located and the indirect changes to character of landscapes from where solar panels will be visible – this should include how the renewable energy development will affect perceptions of character and how widespread and prominent the changes will be.
- Effects on visual amenity should describe and illustrate the extent of visibility and record changes in views from the representative assessment viewpoints with reference to photographs and visualisations, taking into account changes in reflectivity and potential glare under different atmospheric conditions for solar PV developments.
- Effects on settlements and individual properties should also be considered where relevant.

### **Assessment of significance**

The significance of effects should be assessed by reference to GLVIA 3. The assessment should identify which effects are considered to be significant in the context of the EIA Regulations (for EIA development), as well as which are adverse or beneficial. Methods should be clearly set out and any assumptions clearly stated.

### **Presentation of the LVIA**

The document should be clear and logical in its layout and presentation. It should be a balanced document providing an unbiased account of the landscape and visual effects, with reasoned and justifiable arguments. A glossary of technical terms and reference list would also be helpful. For EIA development, a non-technical summary should be provided to enable a non-specialist to understand the landscape and visual effects of the proposal – this should include a summary description of the development, the aspects of landscape character and visual amenity likely to be significantly affected, and the mitigation measures to be implemented.

## Maps and illustrations to accompany an LVIA

The number of maps and illustrations may vary according to the sensitivity of the site and type of proposal. However, as a guide, the following illustrations will typically be required as part of an LVIA for EIA development (see next section for maps and figures required as part of a cumulative assessment):

- A site layout plan showing position of arrays, access arrangements, location of any compounds, and all ancillary elements for solar PV development in the context of the physical landscape fabric (this may already form part of the planning application in which case it can be cross-referenced);
- National character areas within the study area;
- Relevant Charnwood Landscape Character Areas (distance dependent upon scale of development);
- Open access land within the study area;
- Mapping of Registered Parks and Gardens, Conservation Areas, Scheduled Monuments and Listed Buildings may also be relevant to the LVIA (this information may also be recorded in the cultural heritage assessment)<sup>11</sup>;
- Zone of Theoretical Visibility (ZTV) within the study area or an indication of extent of visibility (including the proportion of the site which will be theoretically visible if possible, and clearly indicating distance radii from the site);
- A map showing viewpoint locations, overlaid onto the ZTV (may be combined with above maps if relevant);
- ZTV overlaid onto character areas and designations (likely to be more than one map);
- Photographs and photomontages/visualisations for viewpoints to illustrate the location and extent of development in the landscape, provided and reproduced at a minimum viewing distance of 30-50cm<sup>12</sup>.

## Cumulative Landscape and Visual Impact Assessment (CLVIA)

### Overall need/purpose

Cumulative assessment as part of Environmental Impact Assessment (EIA) is required under the EU Directive on EIA (Directive 97/11/EC amending Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment), which was implemented from 1999. It refers to *'an additional cumulative effect that is additional to the impact to be expected from the developments taken individually'* (The Council of the European Union, 1997).

The Landscape Institute defines cumulative landscape and visual effects as *'additional changes to landscape and visual amenity caused by the proposed development in conjunction with other developments (associated with or separate to it) or actions that have occurred in the past, present or are likely to occur in the foreseeable future'*<sup>13</sup>. Cumulative effects can trigger the EIA process. Even if EIA is not required, it is likely that a cumulative landscape and visual impact assessment or appraisal (CLVIA) will be required to accompany the planning application. This is particularly likely in future given the potential for multiple solar PV developments to result in cumulative effects on the Charnwood landscape.

### Differences between LVIA and CLVIA

Although both cumulative and non-cumulative landscape and visual impact assessment (CLVIA and LVIA respectively) consider the effects of a renewable energy development on views and on the landscape

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<sup>11</sup> The applicant should speak to the LPA to determine which features will need to be mapped and the Council can provide information on designations to the applicant.

<sup>12</sup> 30cm is the minimum requirement set out in Scottish Natural Heritage (2006) Visual Representation of Windfarms and Landscape Institute Advice Note 01/11 – which is also applicable to solar. SNH's preferred requirement is 40-50cm.

<sup>13</sup> Landscape Institute and Institute for Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, Routledge

character of the surrounding area, there are differences in the baseline against which the assessments are carried out.

For LVIA, the baseline is the existing landscape, which includes any existing solar PV developments. This is a known baseline that can be clearly defined. For CLVIA, the baseline is to some extent uncertain, and is partially speculative. This is because renewable energy developments considered as part of the baseline should include not only those already present in the landscape, but also those which are consented but not yet built and also those in the process of being determined by the relevant planning authority. The baseline may therefore include (in addition to existing solar PV developments):

- Solar PV developments currently under construction;
- Solar PV developments which have been granted planning permission but are not yet constructed; and
- Solar PV developments that are the subject of a valid planning application that has not yet been determined.

Schemes that are at the pre-planning or scoping stage are not generally considered in the assessment. They should only be *included* "if absolutely necessary to make a realistic assessment of potential cumulative effects"<sup>14</sup>. In accordance with GLVIA 3 it may also be necessary to separately consider the total and additional cumulative effects of developments. The list of schemes to include and assessment scenarios should be agreed with the Council who will need to decide what is reasonable and proportionate to request for specific applications.

## Information required to be submitted as part of a CLVIA

The level of detail required will be dependent upon the sensitivity of the site, the nature of the proposal and other existing and proposed schemes, and the potential for cumulative effects. A pre-planning application meeting with the relevant LPA may provide an opportunity to discuss scope. The following presents some guidance on undertaking CLVIA of solar PV developments in Charnwood.

### Study Area and sites to be included

It is suggested that the CLVIA focuses on potentially significant cumulative effects and that a study area is selected to enable these significant effects to be reported. Study areas will depend on the size and location of other existing and proposed schemes within the landscape and will vary with type of landscape, but initial areas of search may be up to 10km from the proposal. All existing and proposed solar PV developments should be mapped within that area. The assessment may then focus in on 'hotspot' areas to identify likely significant effects - these 'sub-areas' might be less than 10km from the development. This will help keep the assessment proportional to the scale of the project and the nature of its likely effects.

### Cumulative Zone of Theoretical Visibility (CZTV) Analysis

Creating ZTVs for each development, and overlaying these to create a CZTV, could help indicate areas where the proposed development is predicted to be visible (either on its own, or in conjunction with other solar PV developments), and areas where other solar PV developments will be visible but the proposed development will not. This can help focus the assessment.

Applicants should assess the cumulative landscape and visual effects of different scenarios, if applicable<sup>15</sup>. This may include, for example, a scenario that considers the proposed development in the context of other existing, under construction and consented solar PV developments (a fairly certain scenario) as well as a scenario that considers the proposed development in the context of other existing, under construction and consented solar PV developments as well as undetermined applications (a less certain scenario).

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<sup>14</sup> Para 7.14 of the 3rd Edition Guidelines for Landscape and Visual Impact Assessment.

<sup>15</sup> This may be applicable if there are schemes at different stages of the planning process that may result in significant cumulative effects in conjunction with the proposed development.

## Choice of viewpoints

A number of viewpoints should be selected to illustrate cumulative visual effects arising from the renewable energy development being assessed, in combination with other existing and proposed renewable energy developments. These selected viewpoints may be the same as, or a subset, of the main LVIA viewpoints, or they may be different. In any case they should be selected specifically to illustrate cumulative effects, including representing the worst-case. These should be agreed with the relevant LPA prior to submission of planning application and preferably at the scoping stage.

## Baseline evaluation for the CLVIA

The sensitivity of the landscape and visual resource will be the same as that recorded in the LVIA. However, Scottish Natural Heritage guidance on CLVIA (2012) recommends that key routes should also form part of the cumulative assessment. If routes are included in the assessment their sensitivity will also need evaluating. Key routes should be selected with reference to the SNH guidance, and should include well used or important routes (e.g. National and Regional Trails and well used tourist routes) that may be affected by cumulative effects.

## Preparing cumulative visualisations

Cumulative visualisation set beneath photographs, and/or photomontages should be prepared from viewpoints to illustrate the nature and degree of cumulative change to the landscape and views. This is particularly important in cases where significant cumulative effects are predicted.

## Describing and Assessing Effects

### *Magnitude of Cumulative Change to Landscape*

The magnitude of cumulative change to landscape character is the influence the additional solar PV development will have on the character of the area which is informed by:

- The distance over which the development will have an influence on landscape character in combination with other solar PV developments.
- The siting or location of the solar PV development being assessed in relation to other existing and proposed solar PV developments (and their relationship to Landscape Character Areas).
- The design of the renewable energy development being assessed in relation to other existing and proposed renewable energy developments (including scale and layout of the development).
- Whether key characteristics of the surrounding landscape are affected by the cumulative impact.

It will also be important to consider the combined effect of fencing, tracks, buildings and other ancillary features of the renewable energy developments on the landscape.

### *Magnitude of Cumulative Change to Views*

The magnitude of cumulative change to views should be described taking into account the following considerations:

- The arrangement of developments in the view, e.g. developments seen in one direction or part of the view, or seen in many directions.
- The visibility/prominence of the proposed development compared to the other existing and proposed schemes.
- The apparent distances, from the viewer, and between developments.
- The relationship between the various sizes and layouts of the developments.
- In the case of magnitude of change to routes (sequential effects), the relative duration of views of solar PV developments from routes.
- It will also be important to consider the combined effect of tracks on views.
- The CLVIA may also consider cumulative effect on views from settlements through use of CZTVs and visits to the settlements.

## Significance

The assessment should identify which effects are considered to be significant in the context of the EIA Regulations (for EIA development), as well as which are adverse or beneficial.

## Figures

The number of maps and illustrations may vary according to the sensitivity of the site, the nature of the proposal and other existing and proposed schemes, and the potential for cumulative effects. However, as a guide the following illustrations will typically be required as part of a CLVIA for EIA development:

- Location map for all operational, consented and application sites within the study area, presented on a 1:50,000 or 1:25,000 OS base with concentric distance bands.
- CZTV for existing and proposed renewable energy developments in combination with the proposed development (CZTVs may be particularly useful for larger schemes - more than one CZTV may be useful to show different scenarios, as set out in the guidance above).
- CZTVs overlaid onto Landscape Character Areas and cumulative assessment viewpoints as relevant.
- Photographs or visualisations (comprising photomontages) of up to 360 degrees to show the proposed development in the context of other developments - annotated with site name, status (operational, permitted, application), and distance to each development, and clearly labelled to indicate how the images should be held and viewed.

## References and further reading

5.3 A suggested list of further reading to provide additional guidance on considering landscape and visual issues in the context of renewable energy developments (including solar PV) is included below.

- British Research Establishment (2013) Planning guidance for the development of large scale ground mounted solar PV systems.
- Landscape Institute and Institute for Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition, Routledge.
- Landscape Institute (2011) Photography and photomontage in landscape and visual impact assessment: Landscape Institute Advice Note 01/11.
- Natural England (2011) Technical Information Note TIN101 Solar parks: maximising environmental benefits [<http://publications.naturalengland.org.uk/file/102004>]
- Natural England (2014) An Approach to Landscape Character Assessment
- Scottish Natural Heritage (2014) Visual Representation of Windfarms: Good Practice Guidance.
- Scottish Natural Heritage (2014) Siting and Designing Windfarms in the Landscape, Version 2.
- Scottish Natural Heritage (2012) Guidance: Assessing the Cumulative Impact on Onshore Wind Energy Developments.