



PLANNING STATEMENT

Park House Farm Repowering

Applicant: Paul Hilyer

Version 1.0

EXPERTISE | KNOWLEDGE | SUPPORT

Document Version Control

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Contents

1.	Introduction	8
1.1.	Planning Application	8
1.2.	Applicant Information	8
1.3.	Justification for Development	8
2.	Project Description	10
2.1.	Site Description	10
2.2.	Repowering	10
2.3.	Repowering Specifications	11
2.4.	Phases of Development	11
2.5.	Public Consultation	12
3.	Relevant Planning Policy	13
3.1.	Introduction	13
3.2.	National (UK) Legislation and Policy	13
3.3.	National Planning Policy Framework (NPPF)	13
3.4.	Hinckley & Bosworth Council Local Development Plan	14
3.5.	Supplementary Planning Guidance (SPG)	17
3.6.	Climate Emergency Declaration	17
4.	Landscape and Visual Impact Assessment	18
4.1.	Introduction	18
4.2.	Legislation, Policy, and Guidance	18
4.3.	Methodology	19
4.4.	Baseline Identification	27
4.5.	Landscape Assessment	28
4.6.	Visual Assessment	33
4.7.	Cumulative Assessment	37
4.8.	Summary and Conclusion	38
5.	Ecology	40
5.1.	Introduction	40
5.2.	Policy and Guidance	40
5.3.	Statement of Authority	40
5.4.	Methodology	41
5.5.	Limitations to Survey	45
5.6.	Results	45

5.7.	Impact Assessment.....	51
5.8.	Mitigation.....	52
5.9.	Recommendations for Biodiversity Net Gain (BNG)	52
5.10.	Conclusion	52
6.	Noise Impact Assessment	53
6.1.	Introduction	53
6.2.	Guidance	53
6.3.	Wind Turbine Noise Characteristics.....	53
6.4.	Propagation Model	54
6.5.	Conclusion	56
7.	Shadow Flicker	57
7.1.	Introduction	57
7.2.	Policy and Guidance.....	57
7.3.	Methodology	58
7.4.	Results.....	59
8.	Traffic Management Plan.....	61
8.1.	Introduction	61
8.2.	Site Access	61
8.3.	Vehicle Routing	62
8.4.	Vehicle Specifications.....	63
8.5.	Development Timescales	66
8.6.	Proposed Improvements	67
8.7.	Mitigation Measures	67
8.8.	Conclusion	67
9.	Heritage Assessment	69
10.	Planning Considerations	71

Document Abbreviations

Abbreviation	
NPPF	National Planning Policy Framework
HBBC	Hinckley and Bosworth Borough Council
AHDB	Agriculture and Horticulture Development Board
DPD	Development Plan Document
LDP	Local Development Plan
LPA	Local Planning Authority
PEA	Preliminary Ecological Appraisal
SPG	Supplementary Planning Guidance
SPD	Supplementary Planning Document
EclA	Ecological Impact Assessment
NIA	Noise Impact Assessment
dB	Decibel
SSSI	Site of Special Scientific Interest
UK	United Kingdom
LVIA	Landscape and Visual Impact Assessment
NCA	National Character Area
LCA	Landscape Character Area
LCT	Landscape Character Type
ZTV	Zone of Theoretical Visibility
GLVIA3	Guidelines for Landscape and Visual Impact Assessment (3rd Edition)
NCN	National Cycle Network
AONB	Area of Outstanding Natural Beauty
VP	Viewpoint
PRoW	Public Rights of Way
EIA	Environmental Impact Assessment
AOD	Above Ordnance Datum
BNG	Biodiversity Net Gain
CIEEM	Chartered Institute of Ecology and Environmental Management
ZoI	Zone of Influence
LRERC	Leicestershire and Rutland Environmental Records Centre
MAGIC	Multi-Agency Geographic Information for the Countryside
SAC	Special Area of Conservation
SPA	Special Protection Area
NNR	National Nature Reserve
LNR	Local Nature Reserve
SINC	Site of Importance for Nature Conservation
AW	Ancient Woodland
LWS	Local Wildlife Site
JNCC	Joint Nature Conservation Committee
DAFOR	Dominant, Abundant, Frequent, Occasional, Rare (plant abundance scale)

Abbreviation	
INNS	Invasive Non-Native Species
PRF	Potential Roost Feature
HSI	Habitat Suitability Index
BoCC	Birds of Conservation Concern
NERC Act 2006	Natural Environment and Rural Communities Act 2006
NSR	Noise Sensitive Receptor
FI	Financially Involved
SPA	Swept Path Analysis
HGV	Heavy Goods Vehicle
GRP	Glass Reinforced Plastic
TMP	Traffic Management Plan
STGO	Special Types General Order
AILV	Abnormal Indivisible Load Vehicle
DECC	Department of Energy and Climate Change

Document Attachments

Document Title	Description
Appendix 2.1	Location Plan
Appendix 2.2	Existing Site Plan
Appendix 2.3	Site Plan
Appendix 2.4	Turbine Elevations
Appendix 2.5	GRP Unit
Appendix 4.1	Bare Earth ZTV with Excluded ZTV overlay
Appendix 4.2	Extended ZTV
Appendix 4.3	Landscape Designations and Viewpoint Locations
Appendix 4.4	VP1 Park House Farm Public Path Baseline
Appendix 4.5	VP1 Park House Farm Public Path Photomontage
Appendix 4.6	VP2 A47 Public Footpath Baseline
Appendix 4.7	VP2 A47 Public Footpath Photomontage
Appendix 4.8	VP3 Desford Lane Baseline
Appendix 4.9	VP3 Desford Lane Photomontage
Appendix 4.10	VP4 Desford Village Baseline
Appendix 4.11	VP4 Desford Village Photomontage
Appendix 4.12	VP5 Leicestershire Yeomanry War Memorial Baseline
Appendix 4.13	VP5 Leicestershire Yeomanry War Memorial Photomontage
Appendix 4.14	VP6 Sacheverell Way Baseline
Appendix 4.15	VP6 Sacheverell Way Photomontage
Appendix 4.16	VP7 Merrylees Road Baseline
Appendix 4.17	VP7 Merrylees Road Photomontage
Appendix 5.1	Ecological Designations Map
Appendix 5.2	CONFIDENTIAL - Summary of Protected and Notable Species Records
Appendix 5.3	Phase 1 Habitat Map
Appendix 5.4	ER-8706-01 BNG Assessment
Appendix 6.1	Vestas V52 Technical Report
Appendix 8.1	Proposed Traffic Access Route
Appendix 8.2	Swept Path Analysis Part A
Appendix 8.3	Swept Path Analysis Part B

1. INTRODUCTION

1.1. Planning Application

This Planning Statement is being submitted as part of the Planning Application to Hinckley and Bosworth Borough Council (HBBC) for the repowering of two wind turbines at Park House Farm, Leicester Lane, Desford, Leicester, LE9 9JJ. Development seeks to replace the two existing Vergnet GEV MP 275kW turbines with two Vestas V52 turbines.

This application for planning permission is made under the Town and Country Planning Act 1990 (as amended) and in accordance with the Town and Country Planning (Development Management Procedure) (England) Order 2015. This Planning Statement thoroughly examines the potential impacts of the proposal on various aspects of the environment, including an appraisal against planning policy and guidance, and is accompanied by detailed plans and supporting documents illustrating the proposed development.

1.2. Applicant Information

Cogeo Planning and Environmental Services Ltd. has prepared this Planning Statement on behalf of Paul Hilyer. Paul Hilyer owns a long-established family-run agricultural business, founded in 1986. The farm specialises in pig breeding and arable crop production and is a valued contributor to the rural economy of Leicestershire as a local employer and a provider of food.

To support its operational energy needs and reduce its environmental impact, Paul has already invested in renewable energy in the form of two Vergnet turbines in 2011. This reflects the farm's commitment to sustainable farming and emission reduction.

1.3. Justification for Development

The proposed repowering is a response to the farm's growing energy demands and the economic pressures facing the agricultural sector. The agricultural industry has seen a significant increase in costs in recent years. Geopolitical events have led to rising and volatile costs of energy, fertilisers and animal feed. According to the Agriculture and Horticulture Development Board (AHDB)¹, costs for pig farmers have risen by approximately 54% since 2019 and 43% for mixed farmers. Pig farmers have seen the largest increase in costs per sector. Electricity, fertiliser, feed and fuel costs increased by 38-50%.

Due to rising costs and unpredictable market prices of agricultural products, farms are increasingly depending on diversification for financial security. The proposed development will contribute significantly towards the farm's energy requirements, reducing costs. Any excess energy will be exported to the grid as part of the Feed-In Tariff (FIT) agreement in place for the existing turbines. This will allow the farm to diversify its income streams and increase financial security.

Renewable technology has drastically improved since the existing turbines were installed. Newer, more efficient models exist which are better suited to the farms' needs. The repowering of the older turbines will lessen the maintenance costs

¹ Agriculture and Horticulture Development Board: <https://ahdb.org.uk/news/farm-input-costs-have-risen-sharply-over-past-five-years?utm>

and loss of income due to downtime (when the turbines are not operational), which are expected to increase over time as the turbines approach the end of their life expectancy and parts become more difficult to replace.

The repowering will significantly improve on-site renewable energy generation, enabling the farm to better match its production with its consumption needs. The two Vestas V52 turbines will be curtailed to meet the requirements for the current feed-in tariff agreement and output will be increased after the current agreement has ended. Under the current FIT curtailment arrangements, the two existing Vergnet turbines produce approximately 823 MWh per year. By contrast, the proposed two Vestas V52 turbines, despite only a modest increase in tip height, are expected to generate around 2.0GWh² per year under the same curtailment conditions, with potential for higher output once the agreement concludes. This increase will reduce reliance on the national grid, enhance energy resilience, and help mitigate long-term rising costs.

² This is an approximate figure after curtailment, calculated using a local average wind speed of 6.5 m/s, which corresponds to a mean turbine output of 171.4 kW for the Vestas V52.

2. PROJECT DESCRIPTION

2.1. Site Description

The repowered turbines are proposed on land north-east of Park House Farm, Leicester Lane, Desford, Leicester, LE9 9JJ. The proposed turbine locations are shown in Table 2.1 and are approximately 60 - 100m from the existing turbines approved in 2011 (planning reference: 11/00329/FUL). Appendix 2.1 illustrates the location of the development site. Appendix 2.2 details the existing site layout and the location of the operational turbines. Appendix 2.3 displays the proposed repowered turbines and associated infrastructure.

Table 2.1 Development Details

Address	Proposed Turbine Coordinates	
Park House Farm, Leicester Lane, Desford, Leicester, LE9 9JJ	T1: E: 450060	N: 303856
	T2: E: 449896	N: 303936

2.2. Repowering

As explained within NatureScot Guidance³:

"Proposals to replace all or part of an existing wind farm scheme are typically referred to as 'repowering'. These may involve turbines of a different size or design, and in a different layout".

Brodies LLP explains that repowering *"is the process of replacing the original turbines with new ones and reconfiguring the layout. It may mean fewer, but larger or more efficient turbines"*⁴.

Advances in technology offer an opportunity to maximise the efficiency of sites, with increased energy generation contributing to businesses, landowners, and Council targets for renewable figures.

At Park House Farm, the baseline landscape already accommodates two operational turbines. The proposed design utilises the existing access to the operational turbines. However, as each turbine manufacturer specifies the foundation design required to support the structure erected, it is not possible to reuse the existing foundation. The new turbine positions have been selected with regard to appropriate separation from nearby dwellings, hedgerows, overhead lines, Public Rights of Way (PRoW), and separation distance between themselves.

As such, the layout of the new turbines proposed is slightly adjusted, with a small extension to the existing access track required.

³ SNH, Assessing the impact of repowered wind farms on nature, Consultation Draft June 2018

⁴ Brodies LLP, Repowering Onshore Wind Sites

2.3. Repowering Specifications

Table 2.2 shows the specifications of the existing Vergnet turbines compared to the proposed Vestas V52 turbines.

Table 2.2 Specifications of Existing and Proposed Turbines

Specification	Existing Vergnet GEV MP 275	Proposed Vestas V52
Hub Height	55m	60m
Rotor Diameter	32m	52m
Tip Height	71m	86m
Grid Connection	Via existing farm infrastructure.	Via existing farm infrastructure.
Access	Via existing farm infrastructure and access track to the turbine.	Via existing farm infrastructure, with a slight extension to the access track to new locations.
Foundation Size	10m diameter	15m diameter
Energy Output	275kW (curtailed to 250kW)	850kW (curtailed to 250kW until the end of FIT)
No. of Blades	2	3

2.4. Phases of Development

Phase	Detail	Timescales*
Construction Phase	Site preparation works, curing of concrete, delivery of components and the installation of equipment. The existing access tracks are to be utilised with only an extension required for use during the construction and operation of the turbine, minimising construction timings. Electrical connection and subsequent commissioning subject to timescales dictated by electrical engineers at the DNO and contractor	8 Weeks
Operational Phase	Turbines will be remotely monitored to ensure safe and efficient operation of the equipment. Regular and scheduled maintenance checks will be undertaken	35-year lifespan
Decommissioning of Existing Turbines	Reversal of the construction phase. Cables will be cut and removed. To ensure minimal damage to the existing turbine structures, the turbines will be removed methodically and parts will be recycled or sold.	8 weeks
Decommissioning of the Proposed Turbines	The site will be restored to its original state within 6 months of the expiration of planning, unless further extension to the operational phase is sought from HBBC. If no extension is sought, all above-ground equipment is to be removed from site to ensure no lasting impacts. Required works include removal of the turbine heads, dismantling of the towers, unbolting the tower bases from the base plates, cut back and removal of steel and bolting to ground level and the removal of cabling through the opening and subsequent backfill of cable trenches. Site reseeded where necessary to reinstate groundcover.	8-10 weeks

**Construction timescales are subject to weather conditions and influences outwith the control of the Applicant/Contractor*

2.5. Public Consultation

As part of this application, public consultation was carried out as required by the Town and Country Planning (Development Management Procedure) (England) Order 2015. An online consultation page was created and made live, providing key information about the site and the scope of the repowering proposal. The website includes detailed project descriptions, mapping and a feedback form designed to gather public comments and concerns.

In addition to digital engagement, a letter drop was conducted on the 2nd September, with informational materials distributed to the closest residential properties in the surrounding area, ensuring that local residents were made aware of the proposal and had the opportunity to participate.

At the time of submitting the planning application, no feedback has been received through the consultation channels.

3. RELEVANT PLANNING POLICY

3.1. Introduction

The proposal has been assessed against relevant national and local policies to illustrate compliance with current guidance and frameworks which ensure considered and appropriate development. The following chapter outlines and analyses the relevant documents and policies.

3.2. National (UK) Legislation and Policy

Documentation published by the UK Government stresses its belief that climate change is one of the gravest threats faced, with urgent action needed both at home and abroad. Renewable energy must play a significant part in efforts to address climate change and reduce greenhouse gases.

The UK Government has made commitments under the United Nations Framework Convention on Climate Change and the 2015 Paris Agreement.

In March 2023, the UK Government Department for Energy Security and Net Zero published "*Powering up Britain*"⁵ following the High Court's ruling that the Government's plans were insufficient to achieve net zero by 2050. The Energy Security Plan⁶ within demonstrates that the government is striving towards doubling Britain's electricity generation by the late 2030s to help achieve the goal of decarbonising the energy sector by 2035, subject to security of supply. The Net Zero Growth Plan⁷ within the document outlines the Government's objective to reach net zero and unlock the financial benefits this can bring. The plan also focuses on the expansion and installation of technologies such as that proposed for decarbonising homes, power, industry, and transport.

3.3. National Planning Policy Framework (NPPF)

National Planning Policy Framework⁸ (December 2024, updated 7th February 2025) sets out the Government's planning policies for England and how they should be applied at a local level. The updated framework for England focuses on encouraging, promoting and facilitating all forms of low-carbon technologies where they are suitably designed, and resultant impacts are appropriately mitigated. NPPF policies are analysed in Table 3.1, whilst not all subsections or criteria of each policy are relevant to this development, those of importance are discussed.

⁵ Powering Up Britain: <https://www.gov.uk/government/publications/powering-up-britain>

⁶ Powering Up Britain Energy Security Plan 2023:
<https://assets.publishing.service.gov.uk/media/642708eafbe620000f17daa2/powering-up-britain-energy-security-plan.pdf>

⁷ Powering Up Britain The Net Zero Growth Plan 2023:
<https://assets.publishing.service.gov.uk/media/642556c560a35e000c0cb167/powering-up-britain-net-zero-growth-plan.pdf>

⁸ National Planning Policy Framework:
https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf

Table 3.1 NPPF Policies

Section	Assessment
Chapter 2: Achieving Sustainable Development	Paragraph 8c notes the importance of protecting and enhancing natural and built environments, including moving to a low carbon economy whilst paragraphs 7 and 10 detail the strong presumption in favour of sustainable development within the NPPF. The proposal is in accordance with Chapter 2 by contributing to the decarbonisation of electricity generation, thereby supporting the transition to a low-carbon economy. As a renewable energy project, the repowering of the turbines at Park House Farm will help meet national objectives for reducing carbon emissions by replacing older, less reliable machines with newer, more efficient technology with greater generation capacity.
Chapter 6: Building a strong, competitive economy	As stated in Paragraph 85, <i>“Significant weight should be placed on the need to support economic growth and productivity, taking into account both local business needs and wider opportunities for development”</i> . As a local rural business, Park House Farm seeks to maximise its renewable energy generation by replacing two onsite turbines with newer models offering greater generation potential. The replacement turbines will provide more reliable and consistent energy generation, reducing operational risks and supporting the long-term economic viability of the business. The proposal therefore aligns with Chapter 6 of the NPPF by supporting local economic growth and enhancing the productivity of a rural business.
Chapter 11: Making Effective Use of Land	Chapter 11 promotes making effective use of land by encouraging the re-use of land and optimisation of land that is already in use. The proposal involves the replacement of two existing turbines with a modern equivalent, located within the same agricultural field, approx. 65m and 93m from the existing turbines. The development will not result in an overall increased land take as the existing turbines will be decommissioned with land restored to its previous condition. Given the nature of the repowering proposal, the development aligns with Chapter 11 by utilising an already developed field.
Chapter 14: Meeting the challenge of climate change, flooding and coastal change	Chapter 14 recognises the role of the planning system in reducing greenhouse gas emissions, supporting the transition to a low-carbon future and promoting renewable and low-carbon energy and associated infrastructure. Paragraph 168 states that, in the case of repowering existing renewable sites, significant weight should be given to the benefits of utilising an established site. The proposed development aligns with these objectives by increasing the efficiency and reliability of onsite generation whilst utilising an existing site. The proposed repowering therefore contributes to both local and national efforts to reduce greenhouse gas emissions and address climate change, in line with Chapter 14.
Chapter 15: Conserving and enhancing the natural environment	The protection and enhancement of the natural and local environment has been considered from the earliest stages of the proposed repowering. Chapter 5 of this Statement details the ecological surveys and enhancement measures that will be implemented at the site. Given that no significant adverse impacts are anticipated, the development is in accordance with Chapter 15.

3.4. Hinckley & Bosworth Council Local Development Plan

Whilst the adoption of renewable energy is supported at the highest level of government, it is the responsibility of Local Authorities to support the deployment of suitable development opportunities that contribute to meeting ambitious energy

targets. Each Local Planning Authority (LPA) is responsible for promoting well-sited and carefully considered projects within its jurisdiction.

3.4.1. Core Strategy 2006-2026⁹

On a local level, the Hinckley & Bosworth Local Development Framework: Core Strategy 2006-2026 (adopted in December 2009) sets out the Council's overarching strategy and core policies to guide future development of the borough up to 2026. It should be noted that the document is now dated and subsequent updates to the NPPF postdate its adoption in 2009.

Renewable energy development is not a prominent theme within the document and is only mentioned under Spatial Objective 12: Climate Change and Resource Efficiency. Spatial Objectives have been set to ensure the vision of the strategy is monitored and achieved. The repowering of the two existing turbines at Park House Farm aligns with the objective and will aid the borough in minimising fossil fuelled energy sources and in turn, minimising the impacts of climate change. The proposed development will not only help the business gain greater control of their finances by replacing the older machines with newer and more reliable technology, but it will also help the Borough achieve their target of reducing greenhouse gas emissions.

With no further mention of renewable energy development policies within the Core Strategy, only limited weight can be afforded to it in the decision-making process. Accordingly, the NPPF should be considered the primary policy framework for assessing this proposal.

3.4.2. Site Allocations and Development Management Policies DPD¹⁰

Adopted in 2016, the Site Allocations and Development Management Policies DPD should be read alongside the NPPF and the Core Strategy document. The document is used to guide decision-making on planning applications and ensure the vision and objectives are achieved. DPD Policies of relevance to this development are discussed in detail in Table 3.2. Whilst not all subsections or criteria of each policy are applicable, those of note are appraised.

Table 3.2 Relevant DPD Policies and Analysis

Policy	Analysis
Policy DM1: Presumption in Favour of Sustainable Development	There are no Core Strategy policies that specifically restrict the proposed development at Park House Farm. In line with Policy DM1, the proposal supports sustainable development and the objectives of the NPPF, with no adverse impacts identified that would significantly and demonstrably outweigh its benefits. The development, therefore, accords with the presumption in favour of sustainable development set out in Policy DM1.

⁹ Hinckley & Bosworth Borough Council Core Strategy: https://www.hinckley-bosworth.gov.uk/download/downloads/id/487/core_strategy_adopted_document.pdf

¹⁰ Hinckley & Bosworth Borough Council Site Allocations and Development Management Policies DPD: https://www.hinckley-bosworth.gov.uk/download/downloads/id/5295/site_allocations_and_development_management_policies_dpd_-_adopted_july_2016.pdf

Policy	Analysis
Policy DM2: Delivering Renewable Energy and Low Carbon Development	As a repowering proposal, there are already turbines located at the farm which will be replaced with newer and more efficient models. The replacement turbines have been carefully sited in close proximity to the farm and the existing turbines, to maintain visual association with the agricultural setting. The baseline landscape will largely remain the same to receptors with only a small increase in tip height, location and change in typology e.g. changing from two bladed turbines to three. Potential impacts relating to landscape and visual effects, heritage, shadow flicker, transport and noise have been assessed thoroughly in subsequent chapters with no significant effects identified. Furthermore, the proposal accords with all relevant policies in the plan. It is noted that paragraph 12.8 states that Policy DM2 is not applicable to Wind Energy developments as no sites have been allocated in the LDP and therefore proposals of this nature should be assessed against the NPPF. As stated above, the proposal complies with the NPPF and as the project is a repowering, no additional wind turbines are being sought, only the replacement of two existing. As a renewable energy project, the proposal will directly reduce greenhouse gas emissions achieving the needs of Policy DM2.
Policy DM4: Safeguarding the Countryside and Settlement Separation	Renewable developments are supported under Policy DM4 where they align with Policy DM2 and do not cause significant adverse impact on the character of the landscape. As assessed in Chapter 4 of this planning statement, the repowering of the turbines at Park House Farm will not result in a significant impact on the landscape's value, beauty or character, given operational turbines are already onsite and the proposal would not add to this but rather replace with newer and more efficient technology. Whilst there will be a 15m height increase, this has been assessed as non-significant. Similarly, due to the nature of the proposal, it will not exacerbate ribbon development. The proposal therefore accords with Policy DM4.
Policy DM6: Enhancement of Biodiversity and Geological Interest	The siting of the turbines has been chosen to have as minimal an impact as possible on the local and wider biodiversity. The Proposed Development is not located within or adjacent to any statutory designated environmental sites. Although there are two Site of Special Scientific Interests (SSSIs) within 5km of the repowering and further notable and protected species within 2km, the lack of potential ecological connectivity (direct impact) with the application site, means that the proposal complies with Policy DM6. A full Preliminary Ecological Appraisal (PEA) is provided in Chapter 5.
Policy DM7: Preventing Pollution and Flooding	The proposed repowering has been designed to minimise potential impacts on the surrounding water environment. The proposal is not located within an area of potential flood risk and therefore will not exacerbate flooding onsite or elsewhere. Furthermore, the proposal will not result in land contamination, air quality impacts or land instability, and noise impacts have been assessed and is not predicted to result in adverse impacts. The proposal is therefore in adherence with Policy DM7.

Policy	Analysis
Policy DM11: Protecting and Enhancing the Historic Environment, Policy DM12: Heritage Assets & DM13 Preserving the Borough's Archaeology	Within 2km of the proposed development there are eight Grade II Listed Buildings, a Scheduled Monument and a Conservation Area. Given the nature of the proposal, which involves the replacement of two turbines with newer technology, no significant impacts are anticipated. As the development is located on agricultural land which has been developed for both farming practices and turbine foundations previously, the potential for unknown archaeology to exist onsite is considered low. The proposal therefore meets the requirements of Policy DM11, DM12 & DM13.
Policy DM17: Highways Design	A Transport Statement has been prepared and presented in Chapter 8 which details the likely vehicle movements associated with the construction of the two proposed Vestas V52s. The assessment confirms that the surrounding road network is suitable for the repowering development. Operational traffic will be minimal with negligible impact on the wider road network, and the proposal would not compromise highway safety. Accordingly, the development adheres with Policy DM17.

3.5. Supplementary Planning Guidance (SPG)

3.5.1. The Good Design Guide Supplementary Planning Document^{11,12}

Adopted in 2020, the Good Design Guide is used to encourage high-quality design in the Borough of Hinckley & Bosworth. Written mainly for residential/commercial developments, the SPG document does not specifically cover turbines but does discuss the provision of '*opportunities for renewable and low carbon energy technologies*'. Whilst the document is not directly related to the proposed repowering, site design for the proposed repowering has been considered from the earliest stage to ensure minimal impacts on the surrounding environment. The newer, more modern turbine typology and increased tip height will be noticeable in the wider area, but are not assessed to cause a significant impact, with reporting submitted as part of this application assessing the likely effects of the proposed development.

3.6. Climate Emergency Declaration

In line with the UK Government, HBBC declared a Climate Emergency in July 2019¹³, with the aim to be a carbon neutral Borough by 2030 (i.e. direct council emissions) and net zero by 2050. The proposal to offset Park House Farm's energy generation with newer and more efficient turbines onsite, will contribute towards both local and national targets in terms of vital Climate Change planning. It is therefore strongly argued that this development contributes to the urgent need reflected in National and Local Policies for reducing carbon emissions to limit the damaging impacts of climate change and to meet the ambitious targets of becoming net zero by 2050.

¹¹ Hinckley & Bosworth Council, The Good Design Guide (SPD) 2020 Part 1: https://www.hinckley-bosworth.gov.uk/download/downloads/id/6933/the_good_design_guide_spd_2020_part_1.pdf

¹² Hinckley & Bosworth Council, The Good Design Guide (SPD) 2020 Part 2: https://www.hinckley-bosworth.gov.uk/download/downloads/id/6934/the_good_design_guide_spd_2020_part_2.pdf

¹³ Hinckley & Bosworth Council, Climate Change and Biodiversity Strategy 2024 - 2028: <https://www.hinckley-bosworth.gov.uk/climatechange>

4. LANDSCAPE AND VISUAL IMPACT ASSESSMENT

4.1. Introduction

This chapter sets out the Landscape and Visual Impact Assessment (LVIA) for the repowering of two wind turbines at Park House Farm. The purpose of this assessment is to determine the potential landscape and visual effects of the repowering. Landscape and visual impacts are considered separately as resources within this assessment in accordance with published guidance, although the procedures for each are closely related. The distinctions between these resources are defined as:

- Landscape impacts – relate to the effects of the proposal on the fabric, character, and quality of the landscape.
- Visual impacts – correspond to the effects on the character of views and the visual amenity experienced by receptors, such as residents, footpath users, tourists, and users of recreational facilities.

The LVIA is an iterative process, providing an appropriate level of study for the development whilst allowing for identification of the most significant impacts of the proposed development and presentation of suitable mitigation through design.

4.2. Legislation, Policy, and Guidance

The design and assessment of the proposed development have been informed by a range of policy and guidance documents relevant to renewable energy and the protection of landscape character. These are summarised in Table 4.1. A fuller review of planning policy and legislation is presented in Chapter 2 of this report.

Table 4.1 Landscape Policy and Guidance of Relevance

Guideline	Document
National Guidance	National Planning Policy Framework (NPPF) - Paragraphs 187-191 (landscape, scenic beauty, and National Landscapes) ¹⁴
Local Policy, Design and Assessment Guidelines	Hinckley and Bosworth Local Plan 2006 - 2026: Core Strategy (adopted 2009) ¹⁵
	Site Allocations and Development Management Policies DPD (July 2016): DM 2 - Delivering Renewable Energy and Low Carbon Development, DM 4 - Safeguarding the Countryside and Settlement Separation, DM 6 - Enhancement of Biodiversity and Geological Interest, DM 10 - Development and Design ¹⁶
	The Good Design Guide supplementary planning document (SPD) ¹⁷

¹⁴ National Planning Policy Framework:

https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf

¹⁵ HBBC Local Plan 2006 to 2026 : https://www.hinckley-bosworth.gov.uk/downloads/download/211/core_strategy

¹⁶ Site Allocations and Development Management Policies DPD (July 2016): https://www.hinckley-bosworth.gov.uk/info/856/local_development_framework/426/site_allocations_and_generic_development_control_policies-development_plan_document

¹⁷ The Good Design Guide: https://www.hinckley-bosworth.gov.uk/downloads/download/1703/the_good_design_guide_supplementary_planning_document_2019

Guideline	Document
	HBBC Landscape Character Assessment - 2017: LCA D - Newbold and Desford Rolling Farmland ¹⁸
	Blaby Landscape and Settlement Character Assessment (2020): Thurlaston Rolling Farmland ¹⁹
	HBBC Landscape Sensitivity Assessment (LUC, 2017) ²⁰
	HBBC Renewable Energy Capacity Study ²¹
Assessment and Visualisation Guidelines	Landscape Institute & Institute of Environmental Management & Assessment (LI-HEMA; 2013) 'Guidelines for Landscape and Visual Impact Assessment. 3rd Edition' (GLVIA3) ²²
	Technical Guidance Note 06/19 Visual Representation of Development Proposals (Landscape Institute, September 2019) ²³

4.3. Methodology

The methodology adopted for this assessment is proportionate and follows established best practice. In identifying receptors and assessing the landscape and visual impacts, assessment has been undertaken in a systematic and comprehensive manner in accordance with best practice guidance. The LVIA assesses the impacts of the proposed repowering development on the landscape character and visual receptors within a defined study area.

This assessment has been carried out using a Cogeo established approach which accords with the Landscape Institute (LI) publication GLVIA3, in addition to Technical Guidance Note 06/19 in relation to visual representation, and draws upon various industry accepted guidance, including NatureScot (formerly SNH). Whilst broadly based on GLVIA3, the process has evolved from professional experience on an extensive range of development assessments, with professional judgement used throughout to ensure appropriate and robust study.

The broad structure of assessment is as follows:

- **Step 1:** Establishing the baseline nature of the environment, including landscape and visual sensitivities.
- **Step 2:** Assessment and definition of anticipated effects, including whether adverse or beneficial.
- **Step 3:** Evaluation of the significance of effects.
- **Step 4:** Mitigation, where appropriate.

¹⁸ Landscape Character Assessment (2017): https://www.hinckley-bosworth.gov.uk/downloads/download/308/landscape_character_assessment

¹⁹ Blaby Landscape and Settlement Character Assessment: <https://www.blaby.gov.uk/media/3804/blaby-landscape-and-settlement-character-assessment-accessible-version-lr.pdf>

²⁰ HBBC Landscape Sensitivity Assessment : https://www.hinckley-bosworth.gov.uk/downloads/download/1418/landscape_sensitivity_study

²¹ HBBC Renewable Energy Capacity Study: https://www.hinckley-bosworth.gov.uk/downloads/file/4482/renewable_energy_capacity_study_-_december_2014

²² Landscape Institute & Institute of Environmental Management & Assessment (LI-HEMA; 2013) Guidelines for Landscape and Visual Impact Assessment. 3rd Edition'

²³ Landscape Institute, Tech Note 06/19: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2019/09/LI_TGN-06-19_Visual_Representation.pdf

4.3.1. Step 1: Establishing Baseline Conditions

The first step of an LVIA is to determine the baseline nature of the environment, with the level of detail required to “*be appropriate and proportionate to the scale and type of development and the type and significance of the landscape and visual effects likely to occur*”²⁴. It is essential that the area of focus allows an understanding of the landscape that may be affected as well as establish the visual impacts that may be resultant from the development. Study areas are therefore selected utilising background information including any landscape designations, National Character Area (NCA) as well as through consultee engagement and generating Zones of Theoretical Visibility (ZTVs) in order to best anticipate the likely perceived presence of a development within its environment. The NCA profiles were updated and republished by Natural England between 2012 and 2014, providing a consistent framework for describing recognisable landscape character across England²⁵.

4.3.1.1. Zone of Theoretical Visibility (ZTV)

Bare Earth: ‘Bare earth’ ZTV calculations are completed to present a worst-case scenario of visual impact. This is prepared based on a Digital Terrain Model derived from Ordnance Survey Landform Panorama data (10m height contours at a scale of 1:50,000), using Resoft™ Windfarm software. Information is limited by the detail of the digital terrain model data available for use. Generated for receptors at a height of 1.7m, as recommended in GLVIA3, visibility is calculated to the maximum development height. Areas with suggested visibility may consist of woodland or contain hedgerows or built form with views significantly reduced as a result.

Excluded: An excluded ZTV is equally required, prepared as above. This ZTV is produced to account for both woodland and built structures within the local area to provide a more accurate representation of the likely impact and visibility of the proposed development. The barriers, as considered by the software, are opaque and cannot account for variance in density of vegetation or the filtering of views. No individual trees, shrubs or other vegetation are accounted for within the modelling, nor man-made features of rail or road embankments.

In addition to this ZTV, an extended excluded ZTV may also be generated to illustrate the potential for new visibility arising from a change in turbine dimensions. This assists in identifying receptors that may experience new or increased visibility within the core study area, particularly where repowering or taller structures are proposed.

ZTV maps do not consider orientation of viewers and may indicate a theoretical view that is outside of the actual angle of view afforded. Calculations also do not allow for the deterioration of visibility over distance, light, or weather. As such, ZTVs tend to overestimate the extent of the influence of a development on the surrounding landscape and visibility. ZTVs are therefore considered a tool to assist in assessment, rather than a measure of visual impact.

Generated to demonstrate the potential visibility of a development, a ZTV assists in the development design and assessment process. A ZTV is equally used as a means of identifying potential receptors (areas of land used by the public and individual/groups of buildings) so that impact assessments from identified receptor locations can be undertaken. It also assists in the assessment of impact on different landscape character types and designated sites as it indicates whether a view of the proposed development may be possible from these areas.

²⁴ GLVIA3, paragraph 3.16

²⁵ Natural England NCA: <https://nationalcharacterareas.co.uk/>

4.3.1.2. Visualisations

Viewpoint locations are identified within the local landscape, utilising the ZTV, with appropriate fieldwork then undertaken. These viewpoints are selected following comprehensive analysis and chosen according to criteria, as detailed in Table 4.2.

Table 4.2 Viewpoint Selection Criteria

Viewpoint Selection Criteria
Being publicly accessible;
Having a high potential number of viewers or being of particular significance to the viewer(s) affected;
Providing a representative range of viewing distances (i.e. short, medium and long-distance views) and elevations;
Representing a range of viewing experiences (i.e. static views, for example from settlements, designated viewpoints or car parks and points along sequential views, for example from public highways and walking and cycling routes);
Ensuring that the assessment includes areas with features such as pylons, or other 'intrusive' features to enable assessment of impacts of the proposal in the context of such features;
Representing a range of views (i.e. panoramas, vistas, glimpses);
Representing views with different extents of the development visible (the full turbine or just a partial glimpse).

Industry-standard photography is consequently conducted from suitable positions to facilitate the production of Photomontage imagery.

Photography and visualisations are conducted following the Technical Guidance Note 06/19 Visual Representation of Development Proposals (Landscape Institute, September 2019).

Photography

- Camera – Sony a7 digital camera with fixed 50mm lens.
- Camera/viewer height – 1.5m
- Field of View (Included Angle) – 39.6° for single frame images.

Photomontages

- Resoft Windfarm™
- Trimble Sketchup™
- Chaos V-Ray™
- Adobe Photoshop™

Photomontages are photorealistic prepared images of development created to industry standards to illustrate the visual impact of a development within the landscape. These images are created using wireframe overlays on photographs to ensure accuracy. Photomontages provide a useful tool for assessing potential changes to baseline conditions. During the compilation phase, software allows for screening effects of buildings and vegetation to be considered.

Where the production of a photomontage confirms that there would be no view of the development proposed, further assessment will be deemed unnecessary.

4.3.2. Step 2: Identification of Impacts

Anticipated impacts on the landscape and visual resource can be grouped into four categories:

Type	
Physical impact	Direct impacts on the fabric of the development site and its associated access/infrastructure, such as the removal of agricultural land or addition of trees and alteration to ground cover.
Impact on landscape character	The introduction of features that physically alter the pattern of elements making up landscape character, or through visibility of proposed development, which may alter the way the pattern of elements is perceived.
Impact on views	An assessment of how development will impact views throughout the study area. The assessment of the impact on views is conducted in two ways: • An assessment of the impact that development will have on views from identified visual receptors, being notable settlements/individual residences, routes and attractions located within the study area; and • An assessment of the overall impact of development on visual amenity across the study area.
Cumulative impacts	Defined as ' <i>the additional changes caused by a proposed development in conjunction with other similar developments or as the combined effect of a set of developments taken together</i> ' ²⁶ .

4.3.2.1. Landscape Receptors

The assessment of potential landscape impacts includes the consideration of physical and perceptual changes in the character that may result from development. The assessment of the level of impact considers both the sensitivity of the landscape character (nature of receptor) and the nature of effect (magnitude of change).

Sensitivity is the receptivity of an NCA to the loss or change of key features or land cover and its susceptibility to such change. GLVIA3 notes that the impact of development on landscape receptors needs to be assessed in terms of size or scale, its duration, and its reversibility. Value, integrity and capacity are all relevant considerations when assessing the nature of receptor (sensitivity). Value corresponds to the scenic or aesthetic qualities, and presence of national, local or regional designations; integrity denotes the degree to which value is retained, whilst capacity relates to the ability of the landscape to accommodate change whilst retaining its defining character. Figure 4.1 details the assessment criteria used to define the nature of landscape receptors within this report.

²⁶ GLVIA3, paragraph 7.3

Negligible	Low	Medium	High
Significantly degraded landscape. No landscape elements remain intact and in good repair. High number of obvious detracting or incongruous elements. Landscape areas already heavily developed and industrialised, unchanged by the introduction of additional development – insusceptible to change.	Low value landscape with no level of designation. Landscape is in poor condition with degraded character. Few landscape elements remain intact and in good repair. Identified in local Landscape Character / Capacity Studies as being able to accommodate change without significant adverse impacts on baseline character.	Landscape where the existing sense of scale may be affected by development of an inappropriate scale or location. Locally recognised landscape, though undesignated (valued at a community level). Some landscape elements remain intact and in good repair. Identified in local Landscape Character / Capacity Studies as having some sensitive key landscape characteristics, however able to accommodate development in some situations – moderate susceptibility to change.	Internationally, Nationally, and Locally designated/ valued landscape. Rare landscapes of high value with a distinct character identified through assessment of baseline qualities. Susceptible to change. Tranquil or remote landscapes noted to be vulnerable to change within Landscape Character Assessment.

Figure 4.1 Nature of Landscape Receptors (Sensitivity)

4.3.2.2. Visual Receptors

Visual Receptors are identified as *"the people who will be affected by changes in views or visual amenity at different places"*²⁷. Each visual receptor, meaning the person or group of people likely to be affected at a specific viewpoint, have been identified and assessed in terms of both their susceptibility to change in views and visual amenity as well as the value attached to particular views²⁸.

Susceptibility of receptors to changes in views is mainly a function of the current occupation and viewing opportunity of the people at identified locations and the extent to which their attention or interest is focused on views and visual amenity. Figure 4.2 details the criteria used to determine the sensitivity of visual receptors within assessment, with criteria used as a guide rather than a strict rule. Receptor sensitivity is assessed on a case-by-case basis.

²⁷ GLVIA3, paragraph 3.21

²⁸ GLVIA3, paragraph 6.31

Negligible	Low	Medium	High
Restricted or contained views within towns, conurbations, and heavily industrialised or degraded areas.	Those engaged in outdoor sports or recreation, other than for viewing (e.g., fishing, water sports, golf). Those using major roads or motorways in the region. Those engaged in commercial activity and transport or in education, whose attention is focused on their work or activity rather than the wider landscape.	Residential properties with secondary views or indirect views of development. Walkers on secondary network of footpaths and tracks. Transport users of local roads, train lines, rivers, and canals.	People who are engaged in outdoor recreation, focused on the landscape and on views (e.g., strategic footpaths, cycle routes or rights of way, picnic areas, public viewing areas). Residential properties with principal views from main living rooms and gardens. Important landscape features with physical, cultural, or historic attributes.

Figure 4.2 Nature of Visual Receptors (Sensitivity)

4.3.2.3. Nature of Effect (Magnitude of Change)

Guidance on the nature of effects (magnitude of change) is provided in GLVIA3, which states: “*effects can be positive (beneficial) or negative (adverse) in their consequences for landscape or for views and visual amenity*”²⁹. Paragraph 5.37 adds:

“One of the more challenging issues is deciding whether the landscape effects should be categorised as positive or negative. It is also possible for effects to be neutral in their consequences for the landscape. An informed professional judgement should be made about this and the criteria used in making the judgement should be clearly stated. They might include, but are not restricted to:

- *The degree to which the proposal fits the existing character;*
- *The contribution to the landscape that the development may make in its own right, usually by virtue of good design, even if it is contrast to existing character”.*

²⁹ GLVIA3, paragraph 3.22

Criteria	Negligible	Low	Medium	High
Landscape Effects	The proposal would cause no discernible deterioration or improvement to the landscape or how it is perceived.	Where the proposal would cause a barely perceptible change. Existing built form reduces presence of development proposed.	Where the proposal would cause a noticeable change. Partial loss of or alteration to the key characteristics of the landscape. Out of scale or at odds with the local landform or pattern of landscape.	Where the proposal would cause a significant change affecting the character of the landscape or key characteristics. Size of development would be wholly out of scale with existing features.
Visual Effects	No view, or the character of the view is unaltered by the development. At such a distance where it is imperceptible or may go unnoticed.	Visible but not prominent, with a barely perceptible change. Does not affect overall quality or character of the view.	Appears prominent. Does not define the view but does present a key element. A noticeable change in the quality and character of the view.	Dominant visual change. Results in a defining influence on the view.

Figure 4.3 Nature of Effect (Magnitude of Change)

The nature of effect (magnitude of change) affecting landscape or visual receptors, depends on the nature, scale and duration of the change within the landscape, location, and the overall effect on a particular view. Figure 4.3 is used as a guide during judgment, equally utilising professional experience and reasoned opinion as informed by best practice guidelines. In landscape terms, the magnitude of change will depend on the loss of, or change in important features, key characteristics, backdrops or outlook from landscape. The duration of view, contrast with the existing view, angle of view, its openness or degree of obstruction by trees and buildings and the distance of the viewer from the proposed change, all influence the nature of effect. General visibility, openness, topography, and degree of obstruction from hedges, trees or buildings also impact this effect.

4.3.2.4. Cumulative Impact Methodology

The purpose of cumulative assessment is to analyse the predicted combined impact on landscape and visual amenity caused by the proposal, collectively with similar development. Although originally produced for Scotland, the 2012 SNH (now NatureScot) guidance remains a widely used reference for interpreting cumulative landscape and visual effects. GLVIA3 draws on this work and reiterates the following definitions³⁰:

³⁰ GLVIA3, paragraph 7.3

- **Cumulative effects** are “the additional changes caused by a proposed development in conjunction with other similar developments or as the combined effect of a set of developments, taken together”
- **Cumulative landscape effects** consist of “effects that can impact on either the physical fabric or character of the landscape, or any special values attached to it”
- **Cumulative visual effects** relate to “effects that can be caused by combined visibility...and/or sequential effects”.

Cumulative visual effects mentioned fall under two types of cumulative impacts, which are detailed further as:

- **Combined Visibility** occurs where two or more developments can be viewed by a receptor from a single viewpoint. These views can be experienced in combination, when several developments are within the receptors field of view at the same time, and/or in succession, where a receptor must turn to see several developments from a single location.
- **Sequential effects** result where an observer has to travel through a landscape, to another viewpoint, to see different developments.

Key factors that affect the perception of cumulative change include, but are not confined to:

- The attributed ‘value’ attached to the receptor.
- The distance over which effects are visible.
- The overall character of the landscape and its sensitivity to development.
- The siting and design of development (particularly size and arrangement).
- The way in which the landscape is experienced.

4.3.3. Step 3: Evaluation of Effects

Assessing both the sensitivities of landscape and visual receptors against the nature of effect, it is possible to conclude anticipated effects on the landscape and visual baseline, known as the significance of effect (Figure 4.4). For the purposes of robust assessment, based upon EIA Regulations and guidance, landscape and visual impact effects are assessed to be either significant or not significant.

Significance of Effect

In the LVIA/TVIA, those effects considered Major or Major/Moderate will be described as significant as required by the EIA Regulations. These are the effects that the reviewing authority considers to be material in the decision-making process.

Significance of Effect ratings, determined through establishment of receptor sensitivity/value/importance and considered evaluation of Nature of Effect (Magnitude of Change), are determined through the experienced professional judgement of the qualified assessor.

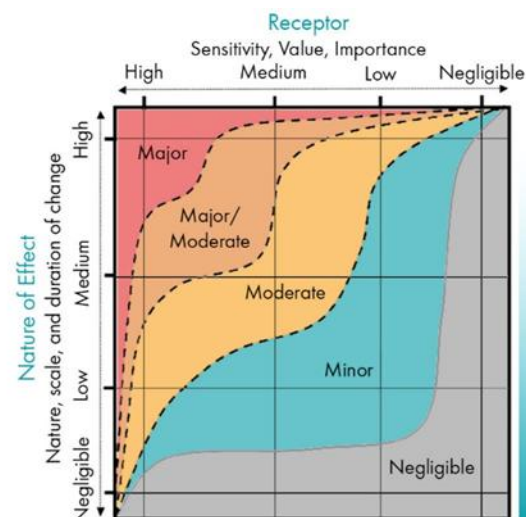


Figure 4.4 Significance of Effect

4.3.4. Step 4: Mitigation

Where significant adverse landscape and/or visual effects are found through this assessment, mitigation will be proposed. These measures fall under three categories, known as the '*mitigation hierarchy*³¹:

- Primary: developed through the lifetime of the project and rooted in the initial design.
- Standard: general practices used to avoid and reduce environmental effects as part of typical construction and operational management techniques.
- Secondary: measures to address effects that remain after primary and standard practices have been implemented.

A proactive approach is considered the best method, avoiding the need for mitigation through sensitive early design influence. However, mitigation will be proposed where necessary, in addition to possible enhancement measures, with examples detailed in Table 4.3.

Table 4.3 Mitigation and Enhancement

	Potential measures
Mitigation	Prevention/avoidance through careful planning, siting and design from early stages. Reduction of significant adverse effects, through changes in design, such as: - Modification of site levels; - Ensuring form, design, materials and finishes are all of a standard that allows incorporation into the surroundings; and - Formation of bunds or mounds in conjunction with proportionate planting. Offsetting adverse effects e.g. through replacing like for like in combination with assessment of the existing landscape resource to ensure similar values.
Enhancement	Improving visual attractiveness, land management and/or restoration of historical landscapes, habitats, etc. Positively influencing the character and individuality of the landscape/townscape/seascape. Creation of new areas which help to address certain needs, including opportunities in relation to ecology and cultural heritage.

4.4. Baseline Identification

4.4.1. Study Area

The core study area for this assessment comprises a 10km radius from the proposed turbine locations. This is considered proportionate to the scale of the development and reflects established practice for assessing wind energy proposals of this height. Beyond this study area, it is determined that any view of the proposed repowering development will not be significant, posing negligible impact on existing views.

³¹ GLVIA3, paragraph 4.21

Accordingly, the assessment focuses on receptors within the 10km study area, supported by an extended excluded ZTV to account for potential visibility changes related to the repowering. The development represents an evolution of the existing situation rather than the introduction of new turbine features into an otherwise undeveloped landscape.

Both bare earth and excluded ZTVs have been generated in accordance with the methodology outlined in Section 4.3.1 of this chapter. These are presented as follows: Appendix 4.1 shows the bare earth ZTV overlaid with the excluded ZTV for the 10km study area; and Appendix 4.2 shows the extended excluded ZTV to identify any potential new visibility arising from the repowering.

These ZTVs have informed the identification of viewpoint locations and support the subsequent assessment of landscape and visual effects.

4.5. Landscape Assessment

4.5.1. Landscape Character Assessment

The baseline landscape has been established through a combination of desk-based study and fieldwork. This enables a clear understanding of the existing character of the landscape and informs the assessment of likely impacts arising from the proposed development. The assessment considers physical elements and features, as well as perceptual and aesthetic factors that contribute to overall landscape character.

This section draws on information from published national and local sources. At the national scale, the site lies within NCA 94: Leicestershire Vales³². At the local level, it falls within LCA D: Newbold and Desford Rolling Farmland³³, with Thurlaston Rolling Farmland³⁴ adjoining to the east. Key characteristics and sensitivities of these areas are set out in Table 4.4 - Table 4.6, with the NCA boundaries illustrated in Figure 4.5. Their relationship to the proposed development is considered in Table 4.7. Potential effects on adjoining NCAs are not assessed in detail as separation distance and landform limit intervisibility, and any effects would be negligible.

³² National Character Area: <https://nationalcharacterareas.co.uk/Leicestershire-Vales/>

³³ HBBC Landscape Character Assessment (2017): https://www.hinckley-bosworth.gov.uk/downloads/download/308/landscape_character_assessment

³⁴ Blaby Landscape and Settlement Character Assessment: <https://www.blaby.gov.uk/media/3804/blaby-landscape-and-settlement-character-assessment-accessible-version-lr.pdf>

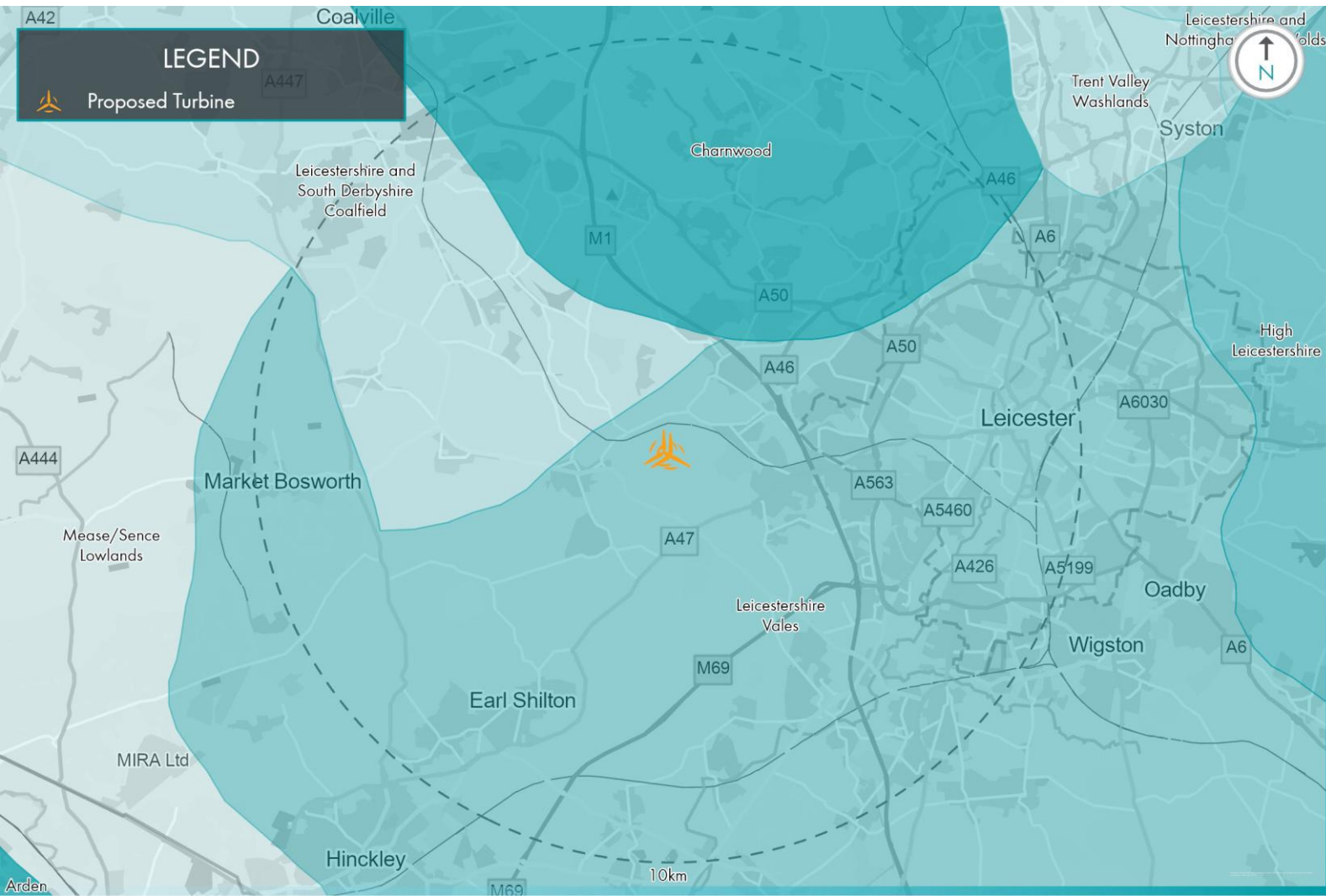


Figure 4.5 National Character Areas

Table 4.4 National Character Area 94: Leicestershire Vales

Landscape Elements	
Landform	The Leicestershire Vales comprise a broad, low-lying landscape of clay vales and reiver valleys, underlain by Mercia Mudstone in the west and Lias Group mudstones in the east. The landform is gently undulating, punctuated by river corridors such as the Soar, Sence, Swift and Welland, with occasional ridges created by ironstone outcrops. Expansive views are available from surrounding higher ground, while the M1 and M69 corridors form dominant linear features across the area.
Land Cover	Mixed farming character, with arable on flatter river terraces and pasture on valley slopes and undulating land. Fields are generally medium to large in scale and enclosed by hedgerows, though many are gappy, degraded or replaced by fencing, giving parts of the area a more open character. Woodland cover is limited to small tree groups, narrow shelterbelts and parkland trees, with some pockets of ancient woodland. Riverside meadows, restored gravel pits and wetland habitats provide localised ecological interest.

Landscape Elements	
Settlement	The NCA contains a mix of large urban centres (Leicester, Hinckley, Market Harborough, Lutterworth), smaller towns, and nucleated villages with strong historic cores. Traditional buildings are often of red brick or local stone, with prominent churches serving as visual landmarks. Modern industrial estates, retail parks and transport corridors, particularly along the M1 and M69, exert a noticeable influence. Scattered farmsteads and estate landscapes, such as Bosworth Hall, contribute to the rural character in less developed parts of the area.
Aesthetic & Perceptual Factors	
Rural/Urban	A transitional landscape with marked contrasts: urbanised and busy in the north around Leicester and main transport routes, but more tranquil and rural to the south. Historic and cultural features, including ridge and furrow, medieval open field patterns, moated sites and the nationally significant Bosworth Battlefield, contribute a strong sense of time-depth. Panoramic views, church spires, and occasional vertical elements such as pylons and wind turbines punctuate the skyline. Pressures from housing growth, infrastructure and wind energy developments are affecting rural qualities in some areas, though dark skies and relative tranquillity remain in the less developed southern vales.

Table 4.5 LCA D: Newbold and Desford Rolling Farmland

Landscape Elements	
Landform	The LCA comprises gently undulating farmland rising northwards from the River Soar floodplain. The landform flattens towards the south, where tributary valleys intersect the area. Soils are predominantly reddish loamy clays derived from Triassic Mercia Mudstone and are prone to seasonal waterlogging.
Land Cover	The landscape is mainly arable farmland with some pasture. Fields are generally medium to large and regularly shaped, enclosed by hawthorn hedgerows, though some have been removed, creating a more open character. Tree cover is limited, consisting of scattered trees, small groups of trees, and narrow woodland strips. Industrial and recreational uses occur around settlement edges, including quarries, the Caterpillar works, and Mallory Park.
Settlement	The area has a mix of compact villages, including Desford, Newbold Verdon, Peckleton and Kirkby Mallory, alongside scattered farmsteads. Desford and Newbold Verdon are the largest villages, with historic brick and slate cottages mixed with modern infill. Farmsteads and modern agricultural buildings are scattered across the farmland. The Caterpillar works is a large industrial site but is largely screened by surrounding trees.
Aesthetic & Perceptual Factors	
Rural	The landscape has a simple, open character with panoramic views from higher ground in the north. Vertical elements such as pylons, turbines and quarry infrastructure introduce urbanising influences into otherwise rural views. Localised tranquillity and dark skies remain in the north between Desford and Newbold Verdon, although major roads (A47, A447) and industrial land uses reduce rural qualities in places. Historic features such as ridge and furrow, moated sites, and estate landscapes add time depth and cultural value.

Table 4.6 Adjacent LCA: Thurlaston Rolling Farmland

Landscape Elements	
Landform	A gently rolling landform with flatter ground around Kirby Muxloe and along the M69 corridor, with localised steeper slopes near Hoefields Farm. Elevation ranges between 80 - 118 m AOD. Several small watercourses cross the area, creating shallow valleys.
Land Cover	Land use is dominated by arable agriculture, with pasture around villages and farmsteads. Fields vary in size, with larger fields on higher ground and smaller enclosures near settlements. Boundaries are mainly low-cut hedgerows, some replaced by fencing. Ponds and riparian vegetation are frequent features. Tree cover is sparse, limited to hedgerow trees (oak and ash), pockets of deciduous woodland and planting around Kirby Muxloe Golf Course.
Settlement	Settlement is sparse within the LCA but lies adjacent to larger settlements including Kirby Muxloe, Leicester Forest East, Narborough, Enderby and Huncote. Villages such as Thurlaston are compact and well-integrated by mature vegetation. Farm buildings are typically rendered in white/cream, with large-scale modern farm buildings of metal construction also present. The A47, B582 and M69 provide road access, alongside a network of minor roads, footpaths and bridleways.
Aesthetic & Perceptual Factors	
Rural	The area retains a predominantly rural agricultural character, but tranquillity is reduced by major transport corridors (M69, A47) and the presence of pylons, overhead lines and two medium-scale wind turbines at Huncote Grange. Open views and expansive skylines give a sense of scale, punctuated by local landmarks such as Thurlaston church spire. Areas away from roads provide pockets of relative tranquillity, valued for informal recreation by nearby communities.

Table 4.7 Overall Landscape Character of Proposed Development Site (LCA D)

Receptor	LCA D: Newbold and Desford Rolling Farmland	Sensitivity of Receptor	Medium
Baseline: The HBBC Landscape Character Assessment identifies this character area as an open, gently rolling farmed landscape of medium to large-scale fields, predominantly arable with scattered pasture. Villages such as Desford, Newbold Verdon, Peckleton and Kirkby Mallory are compact and nucleated, with scattered farmsteads in the wider countryside. Hedgerows and small groups of trees provide some enclosure, although the removal of hedgerows in places has created more open views and a larger-scale character. Vertical features, such as electricity pylons and existing wind turbines, are visible in parts of the area. Away from settlements and roads, the landscape retains a rural character and relative tranquillity, with dark skies recorded between Desford and Newbold Verdon. Historic features, including ridge and furrow, moated sites, and estate landscapes such as Mallory Park, contribute to the depth of time.			
Analysis: The proposed development involves a modest repowering, with tip height increasing from 71m to 86m and a change from two to three blades. This reflects the established typology of turbines within the area, as most operational turbines nearby are already three-bladed. Although there is an increase in scale, the proposed development would not introduce an out-of-place feature into a landscape already influenced by pylons, turbines, and quarrying. The turbine remains farm-associated and located close to existing infrastructure rather than isolated or dominant. While the change will be perceptible in parts of the LCA, it occurs in a landscape accustomed to vertical structures and agricultural diversification.			
Nature of Effect (Magnitude of Change)	Medium	Significance of Effect	Moderate

4.5.2. Landscape Designations and Public Rights of Way

The proposed development site does not lie within any nationally designated landscape such as an Area of Outstanding Natural Beauty (AONB) or National Parks. There are no designated Local Green Wedges within the site boundary. The location of designations and public access routes is illustrated in Appendix 4.2 Landscape Designations and Viewpoint Locations.

The 10 km study area contains a number of landscape and recreational designations. The nearest nationally recognised landscape designation within the 10 km study area is Bradgate Park, designated as a Country Park and valued for its high scenic quality, historic parkland, and extensive public access. As a prominent and elevated landscape, Bradgate Park offers panoramic views across Leicestershire. Owing to its elevation, there is potential for intervisibility with the proposed turbines, which has been assessed through the ZTV and viewpoint analysis. The assessment indicates that the turbines generally blend with the surrounding landscape and are only noticeable when specifically looked for. Overall, the effect on the landscape character and visual experience of Bradgate Park is likely to be low to moderate. Bradgate Park remains a high sensitivity receptor, but the magnitude of landscape and visual impact from the proposed development is limited.

In addition, several locally designated Country Parks and community woodlands fall within the study area, including Bosworth Battlefield Country Park, Bagworth Heath Woods, Market Bosworth Park, Sheet Hedges, Burbage Common and Woods, Broombriggs Farm, and Switchland Woods. These sites provide valued recreational landscapes and public access, though they carry less statutory weight than Bradgate Park and Bosworth Battlefield. However, owing to the separation distance from the site, together with intervening landform and vegetation, the potential for visibility of the proposed turbines from the battlefield is limited.

A dense network of public footpaths and bridleways extends across the 10km study area, providing access to the surrounding countryside. The most relevant local routes in proximity to the site are summarised in Table 4.8. These routes provide potential viewpoints towards the proposed turbines and have been incorporated viewpoint selection and assessment.

Table 4.8 PRoW and Recreational Routes within the Study Area

Route Type	Reference / Name	Approx. Distance from Site	Notes on Potential Visibility
Footpath	S2/1	110m south	Closest receptor; open views; construction activities will be managed to avoid obstruction of paths and to minimise disruption.
Bridleway	R49/1	750m north	Potential intermittent views, partly filtered by vegetation.
Bridleway	V81/4	830m south-east	Likely localised visibility across farmland.
National Cycle Route	NCN Route 63	2.4km north	Screening from landform/vegetation; effects limited.
National Cycle Route	NCN Route 6	8km east	Distance and intervening settlement/vegetation limit potential visibility.

4.6. Visual Assessment

As described in the methodology, the visual assessment comprises a desk-based assessment, extensive fieldwork and creation/study of the visualisations which have been produced from viewpoints within the study area. Viewpoint (VP) locations were identified within the local landscape and visited on 01/07/2025. Viewpoints outside the ZTV and the 10km study area have been excluded from this assessment on the grounds that the proposed development will not be visible or will be at a distance whereby significant impacts are unlikely. Viewpoints were selected following detailed analysis chosen according to criteria detailed in Table 4.2.

4.6.1. Assessment of Visualisations

Table 4.9 through to Table 4.15 set out the baseline visual receptors and assesses the visual effects of the proposal and cumulative impacts on each of the viewpoints selected. The viewpoint locations are shown on Appendix 4.3.

Table 4.9 Viewpoint 1 - Park House Farm Public Footpath

Grid Reference	E449611, N303500	Appendix	4.4, 4.5
Direction of View	NE	Distance to Development	520m
Receptor Type	Recreation, Residential	Sensitivity of Receptor	High

Baseline View: This viewpoint is located immediately beside the public footpath that runs along the field next to Park House Farm. The view is fore shortened by the agricultural complex at Park House Farm, though longer vistas are possible to the north. At this close range, both existing turbines are visible, though their bases are partially screened by the farm buildings. Despite this, they remain a key feature of the foreground view, breaking the skyline. The operational turbines are prominent and clearly perceptible in the view in relation to the surrounding farm buildings and infrastructure, and their movement draws the eye when in operation. The receptor is of high sensitivity due to the recreational nature of the footpath and the open, direct nature of the view.

Predicted View: The repowered turbines replace the existing typology within the same field enclosure, though repositioned approximately 60 - 90m to maintain safe separation from the public footpath, overhead lines, and each other. The turbines appear similar in prominence to the existing structures with a modest increase in tip height and rotor diameter. Whilst the change in scale is noticeable, the turbines remain slender vertical elements visually associated with Park House Farm and continue to break the skyline. Given the scale of the surrounding landform and the open, expansive context, their prominence in the view will not be substantially increased. Overall, the repowered turbines are perceived as an evolution of turbine typologies rather than a new or discordant feature.

Cumulative View: When viewed alongside the more distant Anstey Lane turbines, the repowered turbines remain the principal vertical elements. The Anstey Lane turbines appear as a fine, needle-like element on the horizon, contributing little to the overall composition due to distance. Equally, the proposed three-bladed turbines enhance the visual cohesion with the turbines at Anstey Lane, in comparison to the existing two-bladed models. As such, the repowered turbines read as a localised pair associated with Park House Farm, with cumulative effect judged to be positive, representing a more integrated and consistent expression of wind energy development without any notable intensification of presence beyond the existing baseline.

Nature of Effect (Magnitude of Change)	Medium	Significance of Effect	Moderate
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Table 4.10 Viewpoint 2 - A47 Public Footpath

Grid Reference	E451429, N302391	Appendix	4.6, 4.7
Direction of View	NW	Distance to Development	2.0km
Receptor Type	Recreation, Roadway	Sensitivity of Receptor	Medium

Baseline View: This view represents users of the roadway and the public footpath looking northwest across an open foreground field, taken from a field entrance immediately adjacent to the A47 and public footpath. Pylons and overhead lines are the defining influence and dominate the view; forming tall, repetitive vertical elements. Hedgerows and tree belts shorten longer views in the middle ground. Whilst obvious against the skyline and rising above vegetation, the operational turbines are softened by deterioration of view over distance and are read in a wider context within which they are not a dominant feature.

Predicted View: The repowered turbines are within a similar visual location, though the structures are slightly taller, and present a more conventional three-bladed form. The change in typology, including the increase in height and rotor diameter, is visible but does not alter the overall balance of farmland and infrastructure, and therefore quality and character of the view. The turbines remain closely associated with the established siting and other vertical features, including the pylons which remain the dominant feature.

Cumulative View: Other wind energy developments are visible in the view; however, their contribution at this distance is limited. They remain visually distinct from the repowered Park House Farm turbines and are absorbed within a setting already characterised by large scale electrical infrastructure. The repowered turbines continue to be understood as a localised pair associated with Park House Farm, with the adoption of a three-bladed form providing a modest beneficial effect through improved visual coherence with the wider turbine pattern.

Nature of Effect (Magnitude of Change)	Low	Significance of Effect	Minor
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Table 4.11 Viewpoint 3 - Desford Lane

Grid Reference	E405485, N304852	Appendix	4.8, 4.9
Direction of View	SE	Distance to Development	1.08km
Receptor Type	Roadway	Sensitivity of Receptor	Medium

Baseline View: Taken from the roadside representative of road users looking south-east, the view presents an oblique static view comprising grass verge and hedgerows over gently undulating farmland. The intervening fields are defined by hedgerows and small blocks of woodland that form a low, vegetated horizon, punctuated by vertical infrastructure including electricity pylons. The existing two-blade turbines are visible above the treeline, combining rural agricultural elements with infrastructural influences, and overall illustrating an evolving rural character.

Predicted View: The positioning of the repowered turbines maintains association with the host farm and nearby pylons allowing the structures to be read together as a pair. The increase in tower height and broader rotor diameter increases the prominence on the skyline, though does not define the view, instead remaining a key element and proportionate to the surrounding landscape context.

Cumulative View: No other turbines are visible in the immediate view, and as such, cumulative visual effects are negligible.

Nature of Effect (Magnitude of Change)	Medium	Significance of Effect	Minor
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Table 4.12 Viewpoint 4 - Desford Village

Grid Reference	E448555, N303613	Appendix	4.10, 4.11
Direction of View	W	Distance to Development	1.38km
Receptor Type	Residential	Sensitivity of Receptor	High

Baseline View: The view looks outward from a residential area across a sustainable drainage pond, with visibility shortened by intervening hedgerows and trees. The skyline contains a line of overhead transmission pylons that establish the presence of large-scale infrastructure in the area. The existing turbines are visible, partly filtered by vegetation, and read as vertical features in the view alongside the line of pylons.

Predicted View: The repowered turbines are modestly taller and broader in rotor diameter, giving a more perceptible vertical presence, though they are read as a cluster rather than individual structures which reduces visual impact. While more prominent in scale, they do not dominate or define the view; rather, they form a key component within it. The overall quality and character of the view remains broadly consistent with the baseline.

Cumulative View: There are no other operational or consented turbines visible in this view. Cumulative impact is therefore negligible.

Nature of Effect (Magnitude of Change)	Medium	Significance of Effect	Moderate/Minor
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Table 4.13 Viewpoint 5 - Leicestershire Yeomanry War Memorial

Grid Reference	E452438, N311081	Appendix	4.12, 4.13
Direction of View	SSW	Distance to Development	7.58km
Receptor Type	Recreation, Historic, Tourism	Sensitivity of Receptor	Medium

Baseline View: The viewpoint is located at Leicestershire Yeomanry War Memorial, a Grade II Listed Building within Bradgate Park, a popular recreational area. The view offers elevated panoramic views across the surrounding landscape, encompassing rolling farmland, woodland blocks, and edges of distant settlements. The existing turbines at Park House Farm are barely perceptible and do not break the skyline or form a prominent silhouette, instead blending into the low-lying farmland beyond.

Predicted View: From this elevated viewpoint, the repowered turbines remain a recessive feature. The modest increase in tip height and the transition to a three-bladed typology does not significantly increase visibility due to deterioration of view over distance, with the turbines barely perceptible in the broad panorama. The overall character of the view is unchanged, remaining defined by the expansive farmland, woodland and settlement pattern, with the turbines forming a very modest element in the distant scene.

Cumulative View: Other wind energy developments are present in the wider panorama however, like the Park House Farm turbines, are barely perceptible or indeed imperceptible at this range. The repowered turbines are visually separate from other schemes, with no sense of a consolidated windfarm presence. The cumulative effect is therefore negligible, with no visible representation of intensification of wind energy in the view.

Nature of Effect (Magnitude of Change)	Low	Significance of Effect	Negligible
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Table 4.14 Viewpoint 6 - Sacheverell Way

Grid Reference	E452840, N306537	Appendix	4.14, 4.15
Direction of View	SW	Distance to Development	3.86km
Receptor Type	Roadway	Sensitivity of Receptor	Low

Baseline View: This viewpoint is taken from a field entrance off Sacheverell Way, looking southwest. It has been selected due to the limited views available along the road corridor itself, where tall hedgerows and trees restrict visibility of the existing turbines for road users. As such, this location represents an oblique, static view across farmland, partially obscured by vegetation. The camera angle is raised slightly above the field gate to minimise visual obstruction. The existing turbines are visible in the distance above the intervening vegetation, although electricity infrastructure is the dominant feature in the view. The wider scene is characterised by enclosed agricultural land, hedgerows, and scattered woodland, with no other turbines visible.

Predicted View: From this viewpoint, the turbines are visible but not prominent features with a barely perceptible change in location and turbine typology. Further limited by intervening vegetation and distance, only partial glimpsed visibility through the hedgerows is experienced. Overall, the repowering and slight increase in scale reflects a minor increase in visibility but does not increase prominence or significantly change the character or quality of the view.

Cumulative View: There is no cumulative effect, with no increase in wind energy presence.

Nature of Effect (Magnitude of Change)	Low	Significance of Effect	Negligible
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Table 4.15 Viewpoint 7 - Merrylees Road

Grid Reference	E44756, N305176	Appendix	4.16, 4.17
Direction of View	W	Distance to Development	5.29km
Receptor Type	Roadway	Sensitivity of Receptor	Medium

Baseline View: This viewpoint is again located at a field entrance where visibility opens briefly between roadside vegetation and represents a stationary perception, thereby exaggerating the transient nature of views experienced by road users of Merrylees Road, who would only see the turbines briefly and at varying angles. The wider road corridor is generally enclosed by hedgerows and trees, restricting views for much of its length. The existing turbines at Park House Farm are barely visible in the distance for road users, whilst in contrast, the single turbine at Halifax Farm is obvious in the middle-ground, with its blades extending around tree cover, and thus even more perceptible when in motion. A further turbine at Lindridge Farm is equally evident in the far left of the panorama. The turbines at Halifax and Lindridge Farms are perceptible within the context of a wide, agricultural landscape of fields, hedgerows, and scattered farmsteads.

Predicted View: The proposed turbines remain in the background of the view, though slightly closer together due to repositioning, creating a clustered appearance and diminishing prominence. The differing typology results in marginally taller structures than the existing, which in turn increases visibility. Despite this, definition remains minimal, with the turbines recessive and visually contained within the expansive agricultural backdrop. Their presence does not introduce an unfamiliar or inconsistent form, with instead an increase in cohesion via the change in typology. From this view, the repowering is noticeable but not a defining feature. However, as the development is only perceived in glimpses along the roadway, such as from this entrance, overall visual impact is reduced.

Grid Reference	E44756, N305176	Appendix	4.16, 4.17
Cumulative View: The repowered turbines are visible alongside other operational individual turbines associated with Halifax and Lindridge Farms. The proposed three-bladed form aligns more consistently with these nearby turbines and are therefore read as a visually compatible feature within an established wind energy context. The character of the view absorbs the change in typology without undue dominance or deterioration of quality. While the cumulative effect results a modest intensification of wind energy presence, the overall pattern remains one of scattered individual and small clusters of turbines within a large-scale agricultural landscape.			
Nature of Effect (Magnitude of Change)	Medium	Significance of Effect	Moderate

4.7. Cumulative Assessment

Cumulative effects arise when more than one development of a similar scale or nature combine to create potential effects that differ from those of the proposed development alone. For this assessment, all operational and consented wind turbine developments within a 10 km radius of Park House Farm have been considered.

4.7.1. Cumulative Landscape Effects

As a repowering proposal, the development will not introduce a new type of feature into the landscape. It involves increasing the height of an existing installation, replacing structures already present within the landscape. The repowered turbines will be sited in slightly different positions within the same field, with the existing turbine foundations and any guyed areas returned to arable use. Consequently, only a small portion of additional land is affected, while the majority of the site remains unchanged.

Within the study area, operational and consented turbines are dispersed across the landscape. While some turbines may be visible from shared viewpoints, they do not form a concentrated cluster. The repowering will replace the existing 2-bladed turbines with 3-bladed turbines, aligning their appearance with the majority of turbines in the surrounding area and helping to integrate the development into the existing landscape pattern.

The cumulative landscape effects of the repowering are therefore assessed as:

- Moderate and localised in areas with intervisibility;
- Low or negligible at wider scales;
- Temporary and reversible, limited to the operational lifespan of the turbines;
- Adverse, but not significant in altering landscape character overall.

4.7.2. Cumulative Visual Effects

The repowered turbines will be slightly larger than the existing structures, increasing their tip height from 71m to 86m, and will replace the current 2-bladed design with 3-bladed turbines, consistent with the majority of turbines in the surrounding area. Cumulative visual effects are considered in terms of:

- Effects in Combination: From key viewpoints, the repowered turbines may be visible alongside existing turbines at Anstey Lane, Bagworth Road, Merrylees Road, Lindridge Farm, Huncote Grange Farm, William Bradford Community College, Chestnuts Desford Lane, and Halifax Farm. Together with nearby pylons, these collectively form vertical elements adding visual complexity. While the increased scale makes the repowered turbines more

prominent, their siting within the same field, the shift to a 3-bladed form, and the integration with existing infrastructure and natural backdrops help to moderate their impact.

- **Effects in Succession:** At certain viewpoints, observers see turbines sequentially by turning to view different developments within the 10km radius, such as Halifax Farm, Huncote Grange Farm, William Bradford Community College and Chestnuts Desford Lane. This creates a dispersed turbine presence without overwhelming individual views.
- **Effects in Sequence:** As people move through the area, turbines are experienced in separate views, reducing the risk of visual saturation and helping to preserve the rural landscape character by avoiding visual clutter.

Impact Characterisation:

- **Nature and Duration:** Visual effects are permanent and direct over the operational lifespan of the turbines. As this is a repowering, some effects are offset by the removal of older 2-bladed structures.
- **Significance:** Cumulative effects are assessed as medium with minor to moderate significance, mitigated by the presence of existing vertical structures, the 3-bladed design, and the repowering's alignment with established landscape character.

In summary, the repowering of the turbines at Park House Farm introduces slightly larger, 3-bladed structures into a landscape already accommodating vertical elements. Cumulative effects on landscape and visual receptors are moderate but manageable, and the proposal maintains the integrity of local landscape character.

4.8. Summary and Conclusion

The LVIA has assessed the likely landscape and visual effects arising from the proposed repowering of the two existing Vergnet turbines (55m hub height, 71m tip height) at Park House Farm with two Vestas V52 turbines (60m hub height, 86m tip height). The assessment has been undertaken in accordance with the principles of GLVIA3, supported by HBBC's Landscape Character Assessment, NatureScot guidance, and industry-standard ZTV and visualisation techniques.

The study focused on a 10km core area informed by local topography, turbine scale, and the anticipated extent of visual influence. It concluded:

- **Landscape Impact:** The development site lies within National Character Area (NCA) 94: Leicestershire Vales and LCA D (Newbold and Desford Rolling Farmland). These landscapes are medium-large scale farmed environments, already containing modern infrastructure such as pylons, quarries, and existing turbines. The proposed repowering introduces only a modest increase in turbine scale (tip height from 71m to 86m), alongside a change to a conventional three-bladed form. These changes are consistent with the evolving baseline of wind energy development in the Borough and do not materially alter the key characteristics of the host LCA. The magnitude of change is judged to be medium, with a moderate landscape effect.
- **Visual Impact:** The repowered turbines will be perceptible from local public rights of way, roads and occasional settlement edges. Representative viewpoints demonstrate that, while the turbines will be slightly taller and more prominent on the skyline, they remain closely associated with existing siting and infrastructure, and continue to be read as a coherent farm-based pair. The adoption of three-bladed models removes the sense of anomaly created by the former two-bladed design, improving visual consistency with the wider turbine pattern. Effects range from minor to moderate at most viewpoints. Overall, the impacts are localised and limited in extent.
- **Cumulative Effects:** Other operational turbines are present in the wider 10km landscape, and at the distances concerned, these do not cluster visually with the Park House Farm turbines and are absorbed into a baseline already

characterised by vertical infrastructure. The repowered turbines remain legible as a localised pair, with cumulative visual effects limited and in some cases slightly beneficial due to improved design coherence.

- Mitigation: Mitigation has been achieved primarily through sensitive siting and reuse of existing infrastructure. No further measures are deemed necessary.

In summary, the repowering introduces a perceptible but modest change to the site and its setting. It replaces existing vertical structures with slightly taller, whose three-bladed form is consistent with the established typology in the surrounding landscape. The effects on landscape character are moderate at most, while the visual effects are localised and contained. The adoption of a conventional three-bladed turbine design may improve visual alignment with other turbines in the area. Cumulative impacts are limited, and the proposal is consistent with national and local policy support for repowering renewable energy infrastructure. In landscape and visual terms, the proposed development is therefore considered acceptable and appropriate within its receiving context.

5. ECOLOGY

5.1. Introduction

This Preliminary Ecological Appraisal (PEA) provides an initial assessment of the baseline ecological conditions within and adjacent to the site. The survey has been carried out by Cogeo with the aim of identifying potential ecological constraints and determining whether further ecological survey effort is required to support the proposed development.

Biodiversity accounting metrics will be used to quantify the value of the Site in Biodiversity Units at a later stage. This assessment will build on the findings of the PEA to help determine the ecological impacts of the proposed development. The Biodiversity Net Gain metric is provided in Appendix 5.4.

The key objectives of a PEA are to:

- identify the likely ecological constraints associated with a project;
- identify any mitigation measures likely to be required;
- identify any additional surveys that may be required to inform an Ecological Impact Assessment (EclA);
- identify the opportunities offered by a project to deliver ecological enhancement and biodiversity net gain.

5.2. Policy and Guidance

Full analysis of relevant legislation and policy is detailed within Chapter 3 however the PEA refers mainly to the policy and guidance in Table 5.1.

Table 5.1 PEA Policy and Guidance of Relevance

Guideline	Document
National Guidance	National Planning Policy Framework ³⁵ (NPPF)
Local Policy and Assessment Guidelines	Hinckley and Bosworth Local Plan ³⁶
Other Guidance	BS 42020:2013 Biodiversity ³⁷
	CIEEM Guidelines ³⁸

5.3. Statement of Authority

Evgenia Stancheva (MSc, BSc) is an ecological surveyor and Qualifying Member of CIEEM with practical fieldwork experience. Evgenia has produced a range of ecological reports, including PEAs, Preliminary Roost Assessments (PRA), protected species assessments, biodiversity recommendations and ecological management plans.

³⁵ NPPF: https://assets.publishing.service.gov.uk/media/67aaf8f3b41f783cca46251/NPPF_December_2024.pdf

³⁶ Hinckley and Bosworth Borough Council. Available at: https://www.hinckley-bosworth.gov.uk/downloads/download/492/local_plan_core_strategy

³⁷ BS 42020:2013 Biodiversity. Code of practice for planning and development

³⁸ Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). Guidelines for Preliminary Ecological Appraisal, Second Edition: <https://cieem.net/wp-content/uploads/2019/02/Guidelines-for-Preliminary-Ecological-Appraisal-Jan2018-1.pdf>

5.4. Methodology

This section outlines the approach taken to assess the ecological baseline of the site. The assessment comprised a desk-based study of existing ecological data and a targeted field survey.

5.4.1. Predicted Zone of Influence

The predicted Zone of Influence (Zol) includes the turbine footprint, existing access track and adjacent arable field margins. In line with Natural England's guidance, a minimum 50 m buffer is applied between the turbine's rotor-swept area and nearby linear features such as hedgerows and tree lines to minimise potential impacts on bat populations³⁹.

5.4.2. Desk Study

A desk-based assessment was undertaken to gather baseline ecological information for the proposed development site and its surrounding area. Data resources included in this project are detailed in Table 5.2.

Table 5.2 Desk study methodology

Resource	Description
Leicestershire and Rutland Environmental Records Centre (LRERC)	A local records search was commissioned from LRERC for notable and protected species within 2km of the site ⁴⁰ .
Multi-Agency Geographic Information for the Countryside (MAGIC)	Allows users to access interactive map showing data on: Internationally designated sites (15km radius of development boundary): • SAC – Special Areas of Conservation • SPA – Special Protection Area • Ramsar Convention on Wetlands Nationally designated sites (5km radius of development boundary): • SSSI – Site of Special Scientific Interest • NNR – National Nature Reserve • LNR – Local Nature Reserve • SINC – Site of Importance for Nature Conservation Nationally designated sites (2km radius of development boundary): • LWS – Local Wildlife Site • AW - Ancient Woodlands Notable habitats and species
National Biodiversity Network (NBN) Atlas	Records search for notable and protected species within 2km of the development boundary ⁴¹ .

³⁹ Bat Conservation Trust (n.d.) *Wind farms and wind turbines*: <https://www.bats.org.uk/about-bats/threats-to-bats/wind-farms-and-wind-turbines>

⁴⁰ LRERC (Leicester and Rutland Environmental Records Centre North East): www.leicestershire.gov.uk/environment-and-planning/planning/leicestershire-and-rutland-environmental-records-centre-lrerc

⁴¹ National Biodiversity Network. (NBN) Atlas: <https://nbnatlas.org/>

Resource	Description
Hinckley and Bosworth Borough Council online mapping tools and Local Plan evidence base	The council's online mapping resources and adopted planning policy documents were reviewed to identify relevant local designations. These included Local Wildlife Sites (LWS), Conservation Areas, and green infrastructure networks. The adopted Borough-wide Policies Map (2021) was also used to determine the site's local planning context and any ecological constraints or designations ⁴² .
Leicestershire County Council Landscape Interactive GIS Map	This comprehensive tool provides interactive maps covering: • Designated landscapes (e.g. Areas of High Landscape Value, Conservation Areas, SSSI) • Woodland strategy zones and native woodland types Habitat networks and biodiversity assets⁴³

5.4.3. Field Study

5.4.3.1. Phase 1 Habitats

The survey followed Joint Nature Conservation Committee (JNCC) Phase 1 Habitat Survey methodology to systematically identify, classify and map habitat types within the development site and its immediate surroundings, using standard habitat codes. All accessible areas were walked, and habitats were classified according to the Handbook for Phase 1 Habitat Survey Field Manual. See Table 5.3 for more details.

⁴² Hinckley & Bosworth Borough Council (2021). Borough-wide Policies Map - Site Allocations and Development Management Policies DPD: https://www.hinckley-bosworth.gov.uk/downloads/file/5295/site_allocations_and_development_management_policies_dpd_-_adopted_july_2016

⁴³ Leicestershire County Council (2025) Local Nature Recovery Strategy – Local Habitat Map. Available at: <https://llrlnrs.github.io/Local-Habitat-Map/#15/52.6169/-1.2419>

Table 5.3 Phase 1 Habitat Methodology

Resource	Description
Joint Nature Conservation Committee (JNCC)/ DAFOR scale	• A colour-coded habitat map showing the extent and distribution of habitats. • Target notes: Written descriptions of key features or species, with grid references. • Maps are digitised into GIS using matching colours and codes. • Key plant species were recorded with relative abundances using the DAFOR scale (Dominant, Abundant, Frequent, Occasional, Rare; with 'Local' as a possible prefix). • Dominant vegetation, habitat boundaries, and ecological features of interest (e.g. signs of faunal activity or potential for protected species) were noted. • Plant species were identified to a level sufficient for accurate habitat classification. • Data was recorded on field maps and supplemented with GPS as appropriate. • The original JNCC Handbook for Phase 1 Habitat Survey includes full guidance and colour codes⁴⁴.
Hedgerow Regulations 1997	• To identify, survey, and evaluate hedgerows for wildlife value, habitat quality, and potential protection under planning policies. • To check if hedgerows qualify as 'Important Hedgerows' under the Hedgerow Regulations 1997 or are significant for biodiversity. Due to the limited extent of the site and as hedgerows are outside the development footprint, a full assessment under the Wildlife and Landscape Criteria of the Hedgerow Regulations 1997⁴⁵ was not undertaken. Hedgerows estimated to be over 30 years old and likely to meet the criteria were noted for potential further assessment if future works indicate possible impacts.
Non-Native Species (INNS)	While the habitat survey was not designed to exhaustively detect all invasive species, any INNS observed during fieldwork, such as Japanese Knotweed (<i>Reynoutria japonica</i>), Giant Hogweed (<i>Heracleum mantegazzianum</i>) and Himalayan Balsam (<i>Impatiens glandulifera</i>) were recorded.

5.4.3.2. Faunal Assessments

The site was systematically assessed for its suitability to support protected and notable fauna. See Table 5.4 for details.

⁴⁴ JNCC (2016) Handbook for Phase 1 habitat survey: a technique for environmental audit (Revised reprint). Joint Nature Conservation Committee, Peterborough: <https://data.jncc.gov.uk/data/9578d07b-e018-4c66-9c1b-47110f14df2a/Handbook-Phase1-HabitatSurvey-Revised-2016.pdf>

⁴⁵ The Hedgerow Regulations 1997: <https://www.legislation.gov.uk/uksi/1997/1160/contents/made>

Table 5.4 Faunal assessment methodology

Species	Methodology
Invertebrates	Habitat features were evaluated for potential to support notable invertebrate assemblages; no targeted invertebrate surveys were undertaken ⁴⁶ .
Amphibians	Ponds within 500m radius of the site were identified (where accessible) and assessed for suitability to support breeding and terrestrial great crested newts (<i>Triturus cristatus</i>) and other amphibians ⁴⁷ .
Reptiles	Habitat features offering basking, hibernation and foraging opportunities were surveyed to assess suitability for common reptile species ⁴⁸ .
Water Voles and Otters	Suitable waterbodies and adjacent habitats within 200m of the development site should be checked for evidence of water vole (<i>Arvicola amphibius</i>) and otter (<i>Lutra lutra</i>) activity, if access is available ^{49, 50} .
Badgers	The site was surveyed for signs of badger (<i>Meles meles</i>) activity including setts, runs, and latrines ⁵¹ .
Birds	The site was assessed for habitat suitability to support breeding and non-breeding bird species of conservation concern (BoCC), with attention to nesting, and foraging habitats ⁵² .
Other notable species	Habitats were also assessed for potential to support species listed under the NERC Act 2006, such as hedgehogs (<i>Erinaceus europaeus</i>) and brown hares (<i>Lepus europaeus</i>) ^{53, 54} .
Bats	Habitats were evaluated for commuting and foraging potential following best practice guidance in Collins (2023). Ground-level tree surveys identified and categorised potential bat roost features according to accepted criteria ⁵⁵ .

As part of the PEA, trees were assessed from ground level for Potential Roost Features (PRFs) and classified according to standard bat roost suitability categories, as shown in

⁴⁶ Drake, C.M., Lott, D.A., Alexander, K.N.A. and Webb, J. (2007) Surveying terrestrial and freshwater invertebrates for conservation evaluation. Natural England Research Report NERR005. Natural England, Peterborough:

<https://cieem.net/resource/surveying-terrestrial-and-freshwater-invertebrates-for-conservation-evaluation/>

⁴⁷ Amphibian and Reptile Groups of the UK (ARG UK) (n.d.) ARG Advice Note 5: Great Crested Newt Habitat Suitability Index :

<https://www.arguk.org/get-involved/projects-surveys/great-crested-newt-habitat-suitability-index>

⁴⁸ Amphibian and Reptile Conservation (2013) Survey protocols for the British herpetofauna. Amphibian and Reptile Conservation, Bournemouth: <https://www.arc-trust.org/survey-protocols>

⁴⁹ Strachan R and Moorhouse T (2006) Water vole conservation handbook 2nd Edition. Wildlife Conservation Research Unit, Oxford1.

⁵⁰ Findlay, M. and White, P. (2025) The Otter Field Survey and Monitoring Handbook: A Practical Guide to Field and Camera-Trap Surveys. Exeter: Pelagic Publishing.

⁵¹ The Mammal Society (n.d.) Surveying Badgers. Available at: <https://cieem.net/resource/surveying-badgers-the-mammal-society/>

⁵² http://www.rspb.org.uk/wildlife/birdguide/status_explained.aspx

⁵³ British Hedgehog Preservation Society (n.d.) *Hedgehog Ecology and Land Management: A Practical Guide*. Available at: <https://www.britishhedgehogs.org.uk/leaflets/Landscaping.pdf>

⁵⁴ Game & Wildlife Conservation Trust (n.d.) *Code of Practice for Brown Hare Management and Welfare in England*. Available at: https://www.gwct.org.uk/media/208796/code_of_practice_for_brown_hare_management_in_england.pdf

⁵⁵ Collins, J. (ed.), 2023. *Bat surveys for professional ecologists: Good practice guidelines*. 4th ed. London: Bat Conservation Trust.

Suitability	Criteria
Negligible	No features suitable for roosting bats identified, or features present are highly unlikely to be used. No further survey effort required.
FAR	Further assessment is required to establish if PRFs are present within the tree.
PRF-I	One or more PRFs that could support occasional or individual bats only.
PRF-M	One or more PRFs with potential to support multiple bats on a regular basis, including possible use as a maternity roost. Further survey effort required.

. Each tree was assigned a roost suitability category based on the nature, number, and connectivity of features present.

Table 5.5 Categorisation of trees for roosting bats

Suitability	Criteria
Negligible	No features suitable for roosting bats identified, or features present are highly unlikely to be used. No further survey effort required.
FAR	Further assessment is required to establish if PRFs are present within the tree.
PRF-I	One or more PRFs that could support occasional or individual bats only.
PRF-M	One or more PRFs with potential to support multiple bats on a regular basis, including possible use as a maternity roost. Further survey effort required.

5.5. Limitations to Survey

A PEA provides a snapshot of site conditions and the potential for protected and notable species. Confirmation of presence or likely absence often requires targeted surveys undertaken at appropriate times of year and/or over multiple visits.

Due to access restrictions, ponds within 500m of the proposed development were not surveyed directly. This is not considered a significant constraint to the assessment, given the limited suitability of terrestrial habitat within the proposed development and the nearest desk study record of great crested newt being approximately 2km from the site.

The findings of this report are valid for 18 months from the date of issue. If works have not commenced within this period, an updated assessment may be required to confirm that ecological conditions remain unchanged⁵⁶.

5.6. Results

5.6.1. Desk Study - Designated Sites

A combination of data sources, including MAGIC Maps, the Hinckley and Bosworth Borough Council Policies Map (2021)⁵⁷, and ecological records obtained from the Leicestershire and Rutland Environmental Records Centre (LRERC), was used to identify statutory and non-statutory designated sites within the vicinity of the Proposed Development. Results are summarised in Table 5.6 and in Appendix 5.1.

⁵⁶ British Standards Institution (2013) BS 42020:2013 Biodiversity – Code of Practice for Planning and Development. London: BSI.

⁵⁷ HBBC Policies Map: https://www.hinckley-bosworth.gov.uk/downloads/file/5297/borough_wide_policies_map

Table 5.6 Designated Sites - Statutory sites within 5 km

Site name	Designation	Distance and orientation from development
Grobby Pool and Woods	SSSI	4.9 km NE
Botcheston Bog	SSSI	1.3 km NW
Kirby Frith	LNR	3.9km NE

5.6.2. Desk Study – Protected and Notable Species

The desk study identified records of protected and notable species within 2km of the proposed development. A summary of these records is provided in Appendix 5.2. Species records, such as badger sett locations, have been redacted or summarised to protect sensitive ecological data and attached as an appendix to ensure confidentiality.

5.6.3. Survey details

Survey details, including date, time, temperature and weather conditions, are summarised in Table 5.7.

Table 5.7 Survey timetable

Survey Date	Duration	Temperature	Weather conditions
04/06/2025	13:00 – 16:30	15°C	Occasional rain, mild, overcast with sunny spells

5.6.4. Phase 1 Habitat Survey

The results for the Phase 1 Habitat Survey are detailed in Table 5.8. The Phase 1 Habitat Map, with photographs are displayed in Appendix 5.3.

Table 5.8 Phase 1 Habitats within the site boundary

Habitat Type	Description
Arable crop/ field margins (J1.1)	The site comprises intensively managed arable land, accounting for approximately 75% of the area. This land is under a monoculture regime, primarily cultivating wheat (<i>Triticum aestivum</i>). The field is regularly ploughed and sown, resulting in a dense and uniform crop cover with limited botanical diversity within the sward. Occasional ephemeral and arable weed species, such as pineapple weed (<i>Matricaria discoidea</i>), black mustard (<i>Brassica nigra</i>), oxeye daisy (<i>Leucanthemum vulgare</i>) and smooth hawk's-beard (<i>Crepis capillaris</i>), were recorded along the field margins and access track leading to the existing turbine footprint. These observations are detailed in Target Note 3. The field perimeter supports marginal strips of grassland dominated by perennial ryegrass (<i>Lolium perenne</i>), Yorkshire fog (<i>Holcus lanatus</i>), common bent (<i>Agrostis capillaris</i>) and false oat-grass (<i>Arrhenatherum elatius</i>), characteristic of semi-improved neutral grassland. These grassland margins flank the hedgerows and form a transitional habitat between the intensively managed arable land and the boundary vegetation.
Semi-improved neutral grassland (B2.2)	Within the periphery of the turbine footprint, approximately 15% of the area comprises semi-improved neutral grassland. This habitat supports a variety of grass and forb species, including perennial ryegrass (<i>Lolium perenne</i>), Yorkshire fog (<i>Holcus lanatus</i>), crested dog's-tail (<i>Cynosurus cristatus</i>), red clover (<i>Trifolium pratense</i>), white clover (<i>Trifolium repens</i>), creeping buttercup (<i>Ranunculus repens</i>), dandelion (<i>Taraxacum officinale</i> agg.), common bird's-foot trefoil (<i>Lotus corniculatus</i>) and cut-leaved cranesbill (<i>Geranium dissectum</i>). These species are interspersed with a range of common grasses along the edges of the development footprint. The grassland is assessed to be in moderate condition, with scattered immature scrub including young birch (<i>Betula</i> spp.) and elder (<i>Sambucus nigra</i>), indicating a degree of structural diversity. Patches of developing scrub suggest early successional encroachment, contributing to the moderate ecological value.

Habitat Type	Description
Bare Ground (J4)	Within the footprint of the operational turbines, approximately 10% of the site comprises bare ground, extending toward an unsealed access track located in the south-west corner of the site boundary. The track consists of compacted soil and is regularly used for agricultural access. Vegetation is sparse, with ephemeral species such as pineapple weed (<i>Matricaria discoidea</i>) and chamomile (<i>Chamaemelum nobile</i>) recorded along the margins, reflecting frequent disturbance and limited botanical diversity.
Semi-natural mixed woodland (A1.3.1)	To the south of the site, a small pocket of woodland was recorded, comprising tree species such as Scots pine (<i>Pinus sylvestris</i>), ash (<i>Fraxinus excelsior</i>), oak (<i>Quercus</i> spp.), and birch (<i>Betula</i> spp.). This woodland is assessed to be in moderate condition, attributed to the presence of diverse native species and a degree of structural maturity, although its limited extent reduces its overall ecological value.
Broadleaved trees (A2)	Several ash trees (<i>Fraxinus excelsior</i>) were recorded along the western, northern and southern field margins, interspersed within the boundary hedgerows. To the east of the site, a semi-mature ash tree exhibiting potential roost features (PRFs) for bats was identified; this is detailed in Target Note 2.
Defunct species poor hedge with trees (J2.2.2)	A hedgerow runs along the western boundary of the field, comprising of hawthorn (<i>Crataegus monogyna</i>), with occasional blackthorn (<i>Prunus spinosa</i>) and elder (<i>Sambucus nigra</i>). The ground layer is dominated by ivy (<i>Hedera helix</i>) and bramble (<i>Rubus fruticosus</i> agg.) Hogweed is also present along this field margin and the condition of this was assessed as poor due to the limited diversity of plant assemblage. In accordance with the assessment criteria outlined in the Hedgerow Regulations 1997 and Biodiversity Metric 4.0 ⁵⁸ , the hedgerow is assessed as being in poor condition.
Intact hedge (J2.1.2)	Along the eastern boundary of the site lies an intact hedgerow dominated by hawthorn (<i>Crataegus monogyna</i>), with occasional holly (<i>Ilex aquifolium</i>), elder (<i>Sambucus nigra</i>), and interspersed bramble (<i>Rubus fruticosus</i> agg.). The hedgerow reaches approximately 3m in height. Despite being structurally intact, it is assessed to be in poor condition due to its limited woody species diversity.

5.6.5. Target Notes

Target notes are presented within the Phase 1 habitat map in Appendix 4.2, and a description of each habitat target note in Table 5.9.

Table 5.9 Phase 1 Habitat Target Notes

Target Note	Description
1	Areas of scrub and immature ash trees.
2	The ash tree contains a PRF-I, comprising three cavities located at approximately 4m height on the south-facing side of the trunk. The feature was inspected, and no evidence of bat presence was recorded.

⁵⁸ Natural England. (2023). The Biodiversity Metric 4.0. Natural England Joint Publication JP039: <https://publications.naturalengland.org.uk/file/4624190108598272>

Target Note	Description
3	Access track with areas of ephemeral vegetation.

5.6.6. Plant List (DAFOR)

To evaluate the botanical composition and ecological characteristics of the survey area, a comprehensive plant species list was compiled. This assessment employed the DAFOR scale which is a semi-quantitative method used widely in habitat surveys to estimate the relative abundance of species. By categorising each species as *Dominant*, *Abundant*, *Frequent*, *Occasional*, or *Rare*, the DAFOR scale provides a useful snapshot of vegetation structure and species distribution across the site. The list of plant species can be found in Table 5.10.

Table 5.10 Plant Species List with DAFOR Scale

Species Name	Scientific Name	DAFOR Scale
Ash	<i>Fraxinus excelsior</i>	O
Blackberry	<i>Rubus fruticosus agg.</i>	O
Black Mustard	<i>Brassica nigra</i>	F
Blackthorn	<i>Prunus spinosa</i>	A
Bramble	<i>Rubus fruticosus agg.</i>	A
Chamomile (scentless)	<i>Tripleurospermum inodorum</i>	F
Cleavers	<i>Galium aparine</i>	F
Cock's-foot	<i>Dactylis glomerata</i>	A
Common Bent	<i>Agrostis capillaris</i>	A
Common Hogweed	<i>Heracleum sphondylium</i>	O
Creeping Buttercup	<i>Ranunculus repens</i>	O
Crested Dog's-tail	<i>Cynosurus cristatus</i>	A
Cut-leaved Crane's-bill	<i>Geranium dissectum</i>	O
Dandelion	<i>Taraxacum officinale agg.</i>	F
Elder	<i>Sambucus nigra</i>	O
False Oat-grass	<i>Arrhenatherum elatius</i>	F
Field Thistle	<i>Cirsium arvense</i>	O
Hawthorn	<i>Crataegus monogyna</i>	O
Hawksbeard	<i>Crepis capillaris</i>	F
Holly	<i>Ilex aquifolium</i>	O
Oak	<i>Quercus robur / Q. petraea</i>	O
Oxeye Daisy	<i>Leucanthemum vulgare</i>	F
Perennial Ryegrass	<i>Lolium perenne</i>	A
Pineapple Weed	<i>Matricaria discoidea</i>	F
Red Clover	<i>Trifolium pratense</i>	F
Trefoil (Bird's-foot)	<i>Lotus corniculatus</i>	F
Vetch (Common)	<i>Vicia sativa</i>	O
White Clover	<i>Trifolium repens</i>	O
Willow sp.	<i>Salix sp.</i>	O
Wheat	<i>Triticum aestivum</i>	A
Wood Avens	<i>Geum urbanum</i>	F

Species Name	Scientific Name	DAFOR Scale
Yarrow	<i>Achillea millefolium</i>	O
Yorkshire Fog	<i>Holcus lanatus</i>	A

5.6.7. Probable presence of Protected/Priority Species

A list of protected/priority species along with their probable presence is provided, in line with industry best practice, in Table 5.11.

Table 5.11 Protected and notable species observed during the survey

Taxa	Description	Probable Presence
Amphibians	No protected/priority individuals or their field signs were noted during the site inspection. No suitable breeding habitat within the boundary of the proposed development. Although ponds are present within 500m of the site, the area is predominantly arable land, which does not provide suitable habitat for great crested newts or any other amphibians. As a result, the site offers no viable foraging or commuting opportunities within the proposed development. Four ponds were identified within 500m of the site boundary. However, these ponds were not subject to Habitat Suitability Index (HSI) assessment or direct survey due to access restrictions. The site itself comprises predominantly foraging habitat of limited suitability for Great Crested Newts, with restricted connectivity to the surrounding ponds due to physical barriers and suboptimal terrestrial habitat. The nearest known record of Great Crested Newt is approximately 2km from the site, further reducing the likelihood of GCN presence within the site.	Unlikely
Birds	A range of common bird species was recorded on site and were observed foraging and taking refuge within the hedgerow. These species include. • Skylark (<i>Alauda arvensis</i>) • Woodpigeon (<i>Columba palumbus</i>) • Blackbird (<i>Turdus merula</i>) • Robin (<i>Erithacus rubecula</i>) • Chaffinch (<i>Fringilla coelebs</i>) • Blue tit (<i>Cyanistes caeruleus</i>) • House sparrow (<i>Passer domesticus</i>) • Collared dove (<i>Streptopelia decaocto</i>) • Carrion crow (<i>Corvus corone</i>) • Pheasant (<i>Phasianus colchicus</i>) • Magpie (<i>Pica pica</i>) These hedgerows function as linear corridors connecting to the wider landscape with pockets of mixed woodlands and watercourses to the north of the site. The site provides moderate foraging potential for insectivorous, frugivorous and predatory birds.	Highly Likely

Taxa	Description	Probable Presence
Invertebrates	No protected or priority species, or their field signs, were recorded during the site inspection. The grassland margins to the east support a relatively diverse sward, offering good foraging potential for invertebrates.	Likely
Badger	No evidence of badger activity was recorded during the site visit, likely due to the lack of suitable sett-building features within the site. However, woodland areas to the northwest may provide potential foraging and commuting habitat beyond the site boundary.	Absent
Bats	Bats are known to be within 2km of the proposed development. It is deemed likely that there are bat roosts within the neighbouring woodlands and riparian habitat to the north of the site. An ash tree with suitable roost features was observed during the survey which can be seen in Target note 2. Whilst no habitat would typically support a bat roost within the proposed development, it is thought to be likely that bats utilise the proposed development as a foraging resource.	Likely (foraging)
Otter and Water vole	Although no direct evidence of otter/water vole was recorded during the site visit, Rothley Brook to the north, hedgerows and adjacent woodland may provide suitable habitat for foraging and commuting. Otters and water voles may occasionally traverse arable land when moving between watercourses; however, such areas are generally suboptimal due to limited cover and prey availability and are therefore unlikely to form part of regular commuting routes.	Absent
Brown hare	A single brown hare was recorded, indicating suitable seasonal foraging habitat and connectivity across the site.	Likely
Plants	No protected/priority individuals or their field signs were noted during the site inspection.	Unlikely
Reptiles	No protected/priority individuals or their field signs were noted during the site inspection. Suitable refuge habitat limited to the small areas of hedgerow along the field margins.	Unlikely
Invasive Non-Native Species (INNS)	No INNS were noted within the boundary of the proposed development.	Absent

5.7. Impact Assessment

- The proposed wind turbines will be located within an arable field, causing no disruption to adjacent hedgerows and trees.
- An extension to the hardstanding access track will be constructed to reach the turbine site, resulting in the removal of areas of semi-improved grassland and arable crop habitat.
- No direct impact is anticipated on protected species or priority habitats, as the affected zones are classified as non-priority.
- Rothley Brook, approximately 300m north of the site, serves as a valuable linear habitat for commuting and foraging bats and birds. Although indirect impacts could theoretically arise during operation, disturbance to

commuting bats is considered unlikely due to the distance from nearby PRF-I trees and the continued presence of linear habitat features that support navigational routes.

5.8. Mitigation

No species-specific mitigation is required, and no further surveys are recommended due to the absence of protected species recorded during the survey. Precautionary measures will be implemented, including:

- Safeguarding existing hedgerows throughout construction.
- Keeping noise and dust to a minimum during operation through best practice construction methods.

5.9. Recommendations for Biodiversity Net Gain (BNG)

BNG Assessment has been prepared separately by Brooks Ecological Ltd, informed by this PEA. The BNG report quantifies the site's baseline habitat value and calculates the post-development value using the Statutory Biodiversity Metric.

The assessment confirms that the proposed development is capable of achieving a net gain of 16.55% in Habitat Units, in line with the requirements of the NPPF and Natural England guidance.

The full BNG assessment is provided in Appendix 5.4 and should be read alongside this PEA.

5.10. Conclusion

- No protected species were recorded; therefore, no species-specific mitigation is required.
- A mature tree with bat roost potential (Target Note 2) lies outside the turbine buffer zone and will remain undisturbed, requiring no further survey.

The proposed development therefore avoids direct impacts on protected species, delivers ecological enhancements, and secures measurable BNG in line with national and local policy requirements.

6. NOISE IMPACT ASSESSMENT

6.1. Introduction

This chapter presents the Noise Impact Assessment (NIA) for the proposed repowering of the two existing Vergnet wind turbines at Park House Farm with two Vestas V52 turbines. The assessment was undertaken using a desk-based noise propagation model.

The purpose of the assessment is to consider the potential noise impacts associated with the operation of the repowered turbines, with reference to relevant standards and guidance, including ETSU-R-97.

Thirteen potential Noise Sensitive Receptors (NSRs) have been identified in the surrounding area, primarily residential properties. The assessment considers the predicted operational noise levels from the proposed turbines and their potential effect on these receptors.

The chapter is structured to present the methodology, assessment criteria, receptor details, results, and conclusions, providing a comprehensive evaluation of noise impacts arising from the development.

6.2. Guidance

Available guidance on noise assessments is outlined in Table 6.1.

Table 6.1 Guidance on Noise Assessment

Guidance
ETSU-R-97: The Assessment and Rating of Noise from Wind Farms (1997)
Institute of Acoustics "Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise" (2013)
Specific Advice Sheet - Onshore Wind Turbines (published 2011, updated 2013)

6.3. Wind Turbine Noise Characteristics

Sound levels are typically expressed in decibels (dB). Noise in the environment is measured using the dB(A) weighting correction, which allows the adjustment of sound pressure levels to reflect the sensitivity of the human ear for different frequencies. The "Noise Policy Statement for England"⁵⁹ provides a policy framework for managing environmental noise. While it does not prescribe fixed numerical limits, it introduces three key concepts for assessing the significance of noise effects:

- *No Observed Effect Level*
- *Lowest Observed Adverse Effect Level*
- *Significant Observed Adverse Effect Level*

⁵⁹ Noise Policy Statement for England <https://www.gov.uk/government/publications/noise-policy-statement-for-england>

The principal sources of turbine noise⁶⁰ are: the rotating blades (aerodynamic noise) and the generator (mechanical noise).

6.4. Propagation Model

The sound propagation assessment has been carried out with ReSoft™ WindFarm Software (WindFarm). The software is based on the ISO 96136 sound propagation procedure to predict the sound pressure levels at specified distances by taking the sound power level in octave frequency bands and subtracting or adding several factors according to the various losses and gains, including atmospheric attenuation, ground absorption or reflection effects, and meteorological conditions.

According to ISO 9613-2, "The attenuation of sound propagation outdoors between a fixed source and receiver fluctuates due to variations in the meteorological conditions along the propagation path."

Propagation Directivity

Predictions made using the ISO 9613-2 standard relate to "worst-case" conditions i.e, downward propagation from source to receiver and/or downward refraction under temperature inversions.

Assumed input factors for the noise propagation calculation model

- 10m/s downwind propagation,
- G=0.5 ground absorption,
- Air absorption factor based on a temperature of 10°C and 70% relative humidity.
- Receptor is set at 4m above ground level

Appendix 6.1 details the wind turbine technical data for the proposed Vestas V52 wind turbine. The noise levels used in the NIA are taken from this technical report and are presented in Table 6.2.

Table 6.2 Vestas V52 standardised sound power levels L_{WP} (dBA) 10m/sec wind speed

L_{WD}	1/1 octave centre frequency (Hz)							
(dBA)	63	125	250	500	1k	2k	4k	8k
104.5	84.7	91.1	96.8	98.9	98.8	97.1	91.6	77.9

Note: the technical wind turbine report confirms that no tonal characteristics were measured during the survey, therefore, no tonal penalty has been applied to the predicted noise immission.

The predicted noise immission at the identified NSRs are extracted from the model shown in Figure 6.1 and listed in Table 6.3. The calculated immission are corrected to L_{A90} , i.e. $L_{Aeq} -2dB$.

⁶⁰ Noise is defined as unwanted sound

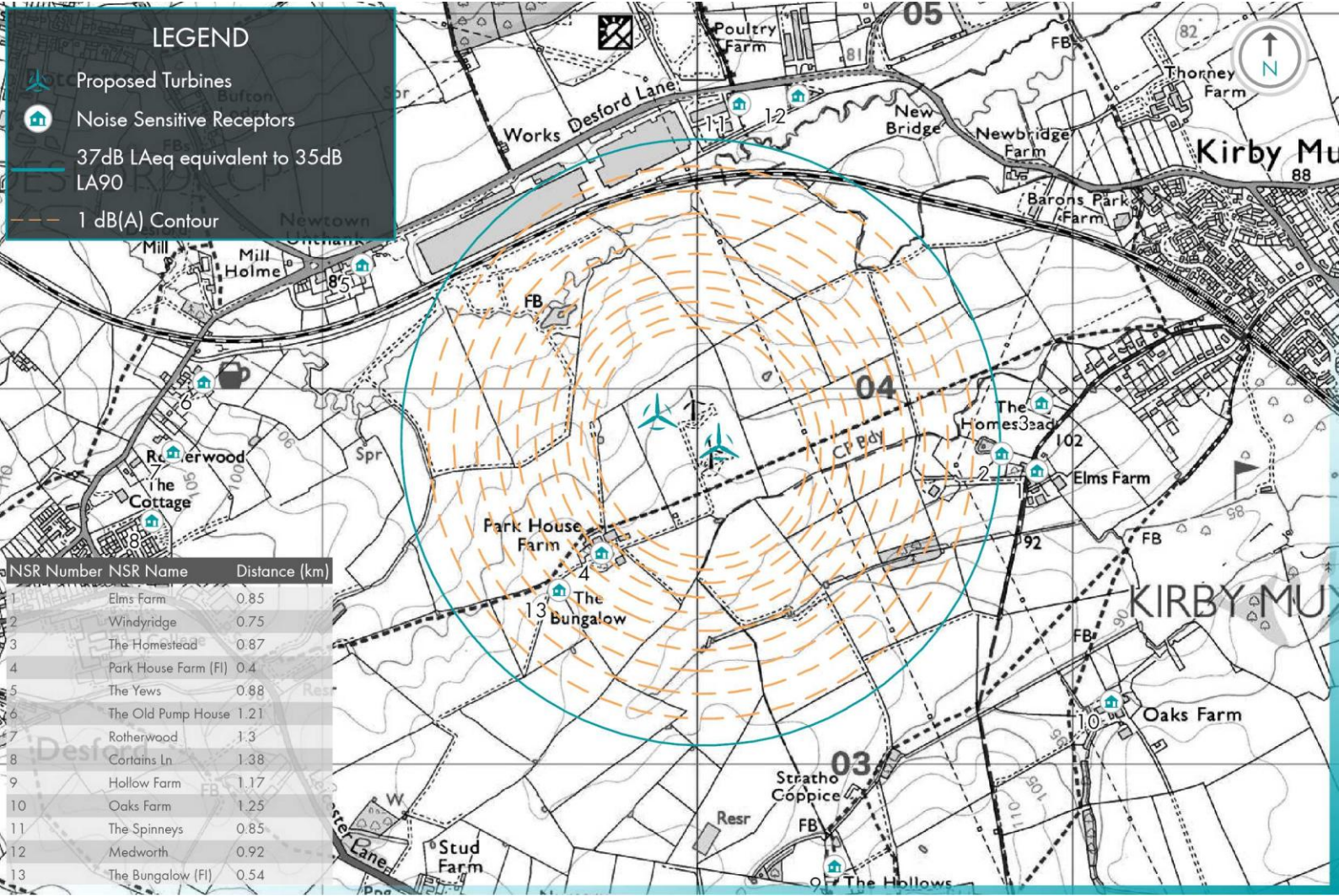


Figure 6.1 Noise Propagation Model

Table 6.3 Summary of NIA

NSR Label	NSR Name	Easting	Northing	Calculated LA90 (dB)	ETSU-R-97 Criteria LA90 (dB)	Compliance with ETSU-R-97
NSR 1	Elms Farm	450907	303781	33.5	35	Yes
NSR 2	Windytridge	450813	303827	34.7	35	Yes
NSR 3	The Homestead	450919	303962	33.4	35	Yes
NSR 4	Park House Farm	449746	303562	41.9	45 (FI)	Yes
NSR 5	The Yews	449108	304329	33.0	35	Yes
NSR 6	The Old Pump House	448686	304017	29.8	35	Yes
NSR 7	Rotherwood	448604	303831	29.1	35	Yes
NSR 8	Cortanis Ln	448547	303648	28.4	35	Yes
NSR 9	Hollow Farm	450367	302727	30.4	35	Yes
NSR 10	Oaks Farm	451105	303166	29.5	35	Yes
NSR 11	The Spinney	450113	304759	33.9	35	Yes
NSR 12	Medworth	450270	304780	33.2	35	Yes
NSR 13	The Bungalow	449633	303463	38.9	45 (FI)	Yes
Note: FI = Financially Involved receptor. In accordance with ETSU-R-97, a fixed limit of 45 dB LA90,T is applicable to financially involved properties, while a limit of 35 dB LA90,T applies to all other receptors.						

The list of identified NSRs is not exhaustive, but it is representative of the noise levels at the receptors closest to the proposed development, or at those that could potentially be affected by it.

Following the modelling, Receptors 1, 2, 3, and 5–12 were found to be below the 35 dB LA90 threshold. Receptors 4 and 13 are financially involved (FI) with the development and are therefore subject to a higher fixed limit of 45 dB LA90, in line with ETSU-R-97 guidance.

6.5. Conclusion

The assessment predicts that the proposed repowering with the Vestas V52 wind turbine will operate within the relevant ETSU-R-97 simplified fixed noise limits at all identified NSRs. Accordingly, noise is not predicted to generate an adverse effect and no further assessment is required.

7. SHADOW FLICKER

7.1. Introduction

This chapter examines whether there is a risk of shadow flicker on any neighbouring property from the operation of the proposed turbines at Park House Farm. Shadow flicker is the term used to describe the effect on residential amenity produced by the intermittent casting of shadow upon a particular location by the rotating blades of a wind turbine.

The assessment considers the geographical area within which shadow flicker could theoretically occur, in line with recognised guidance (typically up to 10 rotor diameters from the turbine). The analysis is undertaken against industry benchmarks, which define significant effects as exceeding 30 hours per year or 30 minutes on any given day at a dwelling window.

The purpose of the assessment is to establish whether any residential properties are at risk of shadow flicker and, if necessary, to identify appropriate mitigation measures.

7.2. Policy and Guidance

7.2.1. Background

The UK Government's guidance on Renewable and Low Carbon Energy, describes shadow flicker as follows:

*"Under certain combinations of geographical position, time of day and time of year, the sun may pass behind the rotor and cast a shadow over neighbouring properties. When the blades rotate, the shadow flicks on and off; the effect is known as 'shadow flicker'. Shadow flicker occurs only within buildings where the flicker appears through a narrow window opening. The seasonal duration of this effect can be calculated from the geometry of the machine and the latitude of the potential site."*⁶¹

Both UK Government Planning Practice Guidance and a detailed study conducted on behalf of the Department of Energy and Climate Change (DECC)⁶² describes the conditions in the UK under which shadow flicker may occur:

- Only properties within 130 degrees either side of north of the proposed development can be affected at UK latitudes;
- Shadow flicker has been proven to occur only within ten times the rotor diameter of a given development's location; there is unlikely to be a significant effect at distances greater than 10 rotor diameters; and
- It is considered that the frequency of the flickering caused by the rotation of turbine blades is such that it is unlikely to cause any health effects or nuisance.

Furthermore, the Renewable and Low Carbon Energy guidance continues:

⁶¹ Online renewable advice note, Onshore Wind Turbines, <http://www.scotland.gov.uk/Resource/0040/00405870.pdf>

⁶² Parsons Brinckerhoff (2011) 'Update of UK Shadow Flicker Evidence: DECC': https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48052/1416-update-uk-shadow-flicker-evidence-base.pdf

"Where this could be a problem, developers should provide calculations to quantify the effect... there is scope to vary layout/reduce the height of turbines in extreme cases."

This assessment of the Park House Farm proposal has therefore been carried out in line with the above national guidance.

7.2.2. Health Effects and Nuisance

The March 2011 report commissioned by DECC entitled 'Update of UK Shadow Flicker Evidence Base'⁶³ states the following in regards to health effects and nuisance from shadow flicker:

"On health effects and nuisance of the shadow flicker effect, it is considered that the frequency of the flickering caused by the wind turbine rotation is such that it should not cause a significant risk to health. Mitigation measures which have been employed to operational wind farms such as turbine shut down strategies, have proved very successful, to the extent that shadow flicker cannot be considered to be a major issue in the UK."

7.3. Methodology

7.3.1. Baseline Information

Initially, it must be established whether any properties near the proposed development fall within the simplified study area for shadow flicker (10 rotor diameters or less) to establish whether computer modelling is required to determine the effects of the development.

With a rotor diameter of 52 m, the study area extends 520 m from the turbine locations. A review of OS digital mapping, supported by a site visit, identified Park House Farm as the only property within this area.

7.3.2. Computer Modelling

The computer modelling for shadow flicker takes into account the dimensions of the development and the movement of the sun throughout the year. For this assessment, this modelling was carried out using Resoft™ WindFarm software, and the following parameters were considered:

- The location and dimensions of the proposed development;
- The location of properties within the vicinity of the development; and
- The estimated dimensions and orientations of windows facing the proposed development.

The modelling was designed to calculate the 'worst case scenario' for the effects of shadow flicker, which can be defined as:

- Continuous sunshine throughout daylight hours with no cloud cover;
- Continually rotating turbine blades;
- No vegetation or other obstacles which screen the receptor; and
- The wind turbine rotor plane always being perpendicular to the receptor and sun.

⁶³ Parsons Brinckerhoff (2011) 'Update of UK Shadow Flicker Evidence: DECC':
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48052/1416-update-uk-shadow-flicker-evidence-base.pdf

7.3.3. Identifying Limits

Although planning guidance in the UK requires developers to investigate the impact of shadow flicker upon dwellings situated within the simplified study area, it does not specify limits.

Currently within the UK, only Northern Ireland⁶⁴ prescribes legislative requirements for the minimisation of shadow flicker. On this basis, in order to define the significance of effects, these guidelines have been adopted as the reference for this project. They state that under the worst case scenario shadow flicker should not exceed:

- 30 hours per year, or
- 30 minutes per day.

Any predicted shadow flicker effect that is less than these daily or yearly limits is deemed to be of *negligible* magnitude and therefore not significant.

7.4. Results

As demonstrated in Figure 7.1, there is a single property within the area of maximum extent of potential shadow flicker, Park House Farm. Although daily shadow flicker is not shown on the map, the assessment confirms that Park House Farm does not experience any shadow flicker from the proposed turbines. As such, no further assessment is required.

⁶⁴ Best Practice Guidance to Planning Policy Statement 18 'Renewable Energy'
http://www.planningni.gov.uk/index/policy/policy_publications/planning_statements/planning_policy_statement_18_renewable_energy_best_practice_guidance.pdf

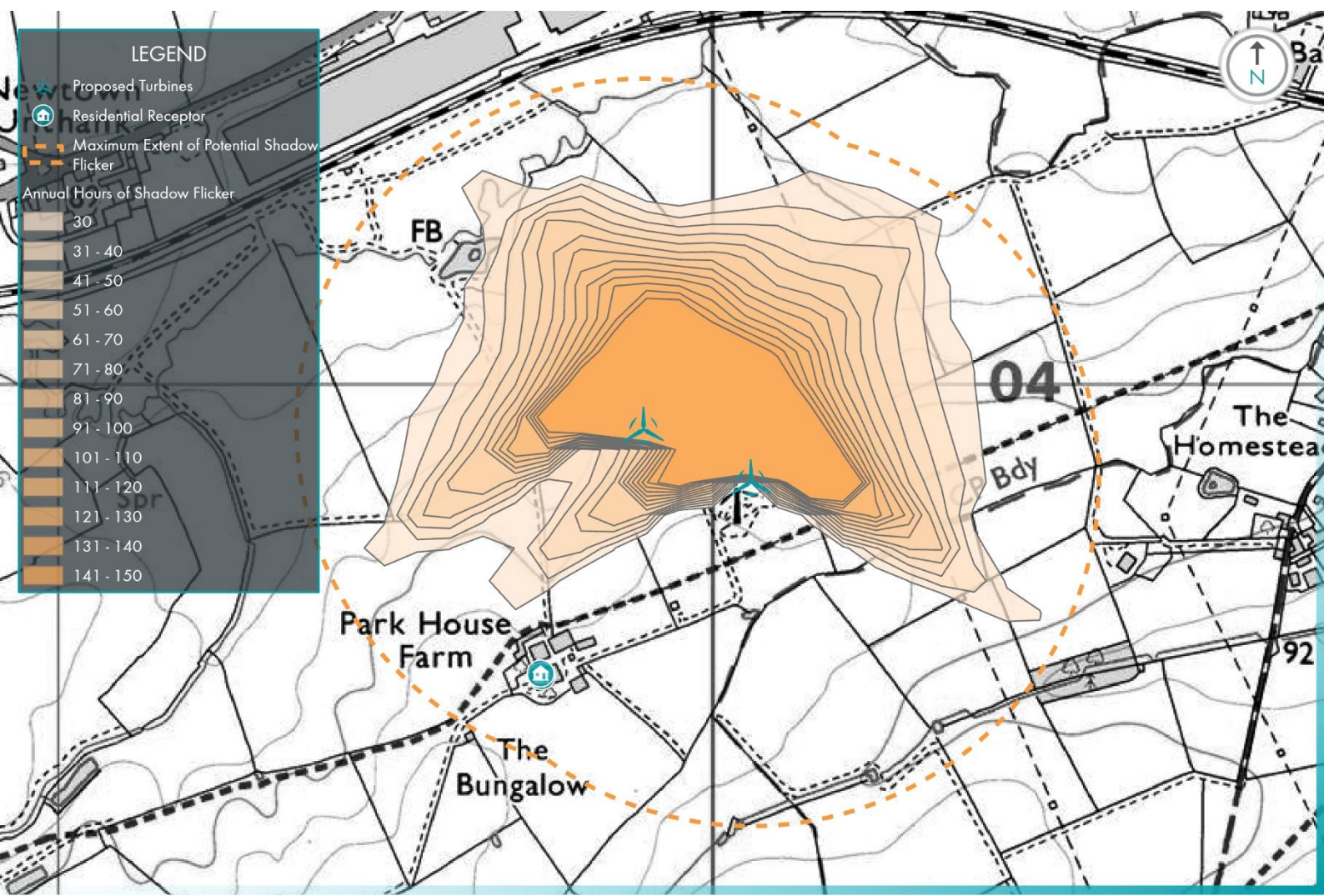


Figure 7.1 Annual Hours of Shadow Flicker

8. TRAFFIC MANAGEMENT PLAN

8.1. Introduction

This Traffic Management Plan (TMP) is presented to HBBC and addresses the access arrangements and logistical aspects of the turbine repowering project at Park House Farm.

The purpose of this TMP is to inform the Planning Authority of the necessary plant machinery and vehicle movements to/from the development site during the decommissioning, construction and operational phase of the project. This TMP presents detail on the following:

- The intended turbine transportation route, timings and methodology;
- Swept Path Analysis (SPA) detailing overrun areas for specialist loads, clarifications of land agreements where improvements are required to third-party land to facilitate road infrastructure, including the details of local improvements in the public road geometry and strengthening to provide the required transport corridor of these loads;
- All temporary work, including relocation of signs, advanced warning sign details, guardrails, bollards, street furniture, and any temporary measures;
- Any alterations to the public road network;
- Any necessary mitigation measures.

The turbine repowering project will require several vehicular deliveries to the site during both the construction and decommissioning phases. The details of the proposed development, including decommissioning, turbine installation and associated infrastructure, are set out in Chapter 2.

8.2. Site Access

As highlighted in Appendix 2.1 Location Plan, the development will make use of the existing access point from Leicester Lane (B582). The existing access track crosses a public right of way (PRoW); however, all construction and delivery activities will be planned to remain clear of the PRoW, ensuring uninterrupted access for the public throughout the works. This access will serve all construction, support and delivery vehicles required for both the decommissioning of the existing turbines and the installation of the two proposed turbines. The site is well connected to the wider road network, with the A47 to the southeast and the M1, operated and maintained by National Highways. The existing access will provide adequate vehicular movements to and from the site.

8.2.1. Notable Access Constraints

As stated, the existing access has been used for the previous turbines; however, the proposed V52 turbines will have blades that are 10m longer than those now operational. Certain sections of the road may need modification to accommodate the larger blades, and correspondingly, longer or larger vehicles will be required to transport these components.

8.3. Vehicle Routing

8.3.1. Primary Route

All vehicles associated with the delivery of proposed development will utilise the established public road network encompassing the site. The exact turbine component dispatch points are not yet confirmed; however, the primary route is likely to follow the route outlined below.

- Take the M1 northbound to Junction 21.
- Follow the A5460 eastbound toward Leicester.
- Continue on the A5460 to the junction with the A563 Ring Road (Lubbesthorpe Road).
- Follow the A563 northbound (Lubbesthorpe Way/Braunstone Way) to the Hinckley Road Roundabout.
- Take the A47 westbound (Hinckley Road) to its junction with the B582 (Leicester Lane)
- Proceed northeast along the B582 (Leicester Lane) to the site access at Park House Farm.

The access was utilised for the delivery of the existing turbines at Park House Farm, confirming the suitability of the surrounding road network for abnormal load deliveries associated with wind energy development.

8.3.2. Constraints

SPA has been completed for the largest vehicle required during the construction of the turbine. In this instance, a 27m indicative trailer has been chosen to represent the delivery of the turbine blades, the longest rigid load required onsite. The results are displayed in Appendix 8.2 and 8.3.

The results indicate that to maintain a safe and accessible route, some bollards may need to be removed and temporary tracking installed at identified pinch points.

As detailed, traffic entering and exiting the site will be required to negotiate roundabouts, junctions, and corners on the road. With the presence of banksmen onsite during abnormal load movements, this is not anticipated to pose a significant risk to road users.

As abnormal loads are required for turbine delivery, it is expected that temporary road closures may be necessary. Sufficient time will be allowed to obtain the required permits and orders prior to commencement of works. If temporary diversions are required, details will be agreed with the Highway Authority and submitted prior to commencement of works.

8.3.3. SPA Results

SPA calculations have been undertaken of the transportation route and are detailed in Appendix 8.2. Analysis has been carried out using a fixed trailer without a rear steer to demonstrate a worst-case scenario. As surrounding access routes have been previously used for wind turbine construction, it is not anticipated that highway improvements are required. However, observation and associated mitigation measures are detailed in Table 8.1. SPA references match those presented in Appendix 8.2 and 8.3.

Table 8.1 Potential Road Improvements

SPA Reference	Location	Observation	Mitigation
PP1	Roundabout at A563	Roundabout passable on own carriageway.	N/A

SPA Reference	Location	Observation	Mitigation
PP2	Junction at A47 and B582	The tracking shows that vehicles can successfully negotiate the turn between the two roads, with both entry and exit movements accommodated within the carriageway without constraint..	N/A
PP3	Turn onto Park House Farm Access Road from B582	The bend radius is tight and the vehicle cannot pass without going off road.	Street sign to be temporarily removed, wheels to mount the verge under police escort vehicle observation and temporary verge protection installed to allow safe vehicle passage.
PP4	Park House Farm Access Road	The bend radius is tight and the vehicle cannot pass without going off road.	Temporary tracking is proposed to allow the vehicle safe passing.
PP5	Park House Farm	The vehicle can navigate unhindered.	Temporary tracking is proposed to allow the vehicle safe passing and ensure the path is clear of all farming equipment and any blockages.
PP6	Turbine Access Track	The existing bend radius is tight and the vehicle cannot pass without going off road.	Temporary tracking is proposed to allow the vehicle safe passing.

If any works are required within the extents of the publicly adopted highway, appropriate consents (separate from the planning process) will be obtained from the Local Highway Authority, in conjunction with the Area Engineer.

8.4. Vehicle Specifications

8.4.1. Construction Programme and Site Traffic

Construction traffic will comprise a mix of HGVs for turbine components, concrete delivery wagons, and cranes, alongside light vehicles for staff and contractors. Traffic generation has been estimated from Cogeo's experience of wind turbine construction, along with the turbine manufacturer's guidance.

Construction personnel will generally travel to the site in private vehicles and minibuses, parking either within the farm or at designated areas on site. The construction programme is estimated to take approximately 10 weeks, with the anticipated normal hours of work generally being 7 am – 7 pm Monday to Friday and 7 am – 4 pm on Saturday. No works are anticipated to take place on-site on a Sunday or Bank Holiday. Where works are impacted by unscheduled interruptions such as weather conditions, work may exceed the noted timeframes to ensure the task is completed promptly (e.g. laying of concrete, extending the turbine base).

8.4.2. Construction Vehicle Specifications

As with all construction projects, there are a variety of vehicles required onsite at different stages throughout the programme. The weight and dimensions of the turbine components, which are known, to be transported to the site are outlined in

Table 8.2.

Table 8.2 Vestas V52 Component Specifications

Turbine Component	Length (m)	Width/Max Diameter (m)	Height (m)	Net Weight (T)
Nacelle in transport frame	~6.68	~2.24	~2.8	22
Tower (top)	~20	2.1	-	~20
Tower (middle)	~20	~3	-	~25
Tower (bottom)	~20	3.6	-	~25
Tube anchor	~3 to 4	~3 to 4	-	~15
Hub	~2.7	~2.24	~2.2	TBC
Generator	~3	~2	2	~6
3 blades in transport frame	25.3	2.3	~1.5 to 2	5.7

8.4.3. Vehicle Allowances

The dimensions and weights of vehicles used on British roads are regulated by the Road Vehicles (Construction & Use) Regulations 1986 (C&U) Regs and Road Vehicles (Authorised Weight) Regulations 1998 (AW) Regs. Special types of vehicles are those that don't meet the C&U and AW Regs but can be used outside these rules under the authority of the Road Vehicles (Authorisation of Special Types) (General) Order 2003 (STGO). Vehicles that don't comply with an STGO order can be used on the road if the Special Orders have been issued by:

- Transport Scotland regarding abnormal loads not covered by C&U and STGO
- The Vehicle Certification Agency (VCA) regarding special vehicles and divisible loads, such as crane ballast, is outside the scope of C&U and STGO

The general allowances for vehicle length, width, and weight using public road networks are outlined in Table 8.3.

Table 8.3 Vehicle Allowances on Public Highway⁶⁵

Classification	Width (m)	Rigid Length (m)	Weight (T)	Notifications
	>2.9 - ≤6.1	>18.65 - ≤30	>44 - ≤80	2 days' notice to Police

⁶⁵ Highways England, Aide Memoire for notification requirements for the movement of Abnormal Indivisible Loads or vehicles by road when not complying with The Road Vehicles (Construction and Use) Regulations 1986 (commonly known as C & U)

Classification	Width (m)	Rigid Length (m)	Weight (T)	Notifications
Abnormal Load – Special Types General Order			>80 - ≤150	Plus 5 days' notice with signed indemnity to Highway & Bridge Authorities
Abnormal Load – Special Load	>6.1	>30	>150	5 days' notice to Police and Secretary of State 'Special Order'

8.4.4. Permits and Special Orders

Given the nature of the repowering (i.e. larger components being taken to and from the site), there will be a requirement for Permits for vehicles associated with the construction phase of this development. All abnormal deliveries will be guided by banksmen. It is envisaged that Abnormal Special Types General Orders will be sought for the vehicles transporting the nacelle and hub, tower sections, tube anchor, generator, and the blades, as they are over the permitted length, width, and/or weight allowances for the public highway.

Permits will be the responsibility of the haulage contractor charged with delivering the development to Park House Farm. Adequate timing will be afforded to gain the required permits to work, starting on-site.

8.4.5. Heavy Goods Vehicles (Abnormal Loads)

From the specification provided and our understanding of the turbine components, it was possible to identify a number of Abnormal Indivisible Load Vehicle (AILVs) that will require transportation to the development site, these include:

- Tower sections (3 HGV loads)
- Nacelle (1 HGV load)
- Hub (1 HGV load)
- 3x rotor blades (3 HGV loads)

The three blades are expected to be transported individually, with each blade carried on its own vehicle. The remaining loads are to be transported on their own vehicles. The turbine will require one additional HGV load to transport lifting plates, the rotor stand, and fitting tools; this is expected to be a standard HGV movement, not an abnormal load.

Based on the turbine component dimensions for the Vestas V52, it is anticipated that the delivery will require up to eight abnormal load HGVs (including specialist blade delivery vehicles). The exact number of trips will be confirmed once the transportation arrangements are finalised.

Each journey for the wind turbine component delivery stage will be planned and notified to HBBC, Highway and Police Authority according to the requirements of Abnormal Indivisible Loads – Road Vehicles (Authorisation of Special Types) (General) Order 2003. It will also be confirmed with the relevant authorities whether a pilot car or police escort will be required to assist with traffic management.

All large abnormal indivisible load vehicle deliveries will be arranged with a set time for transportation. A full overnight road closure is a possible option for the safe delivery of abnormal load components.

8.4.6. Heavy Goods Vehicles (Normal Loads)

Normal loads are those that utilise vehicles within the weight, length, and width limits set out in the Road Vehicles (Construction and Use) Regulations 1986. These are classed as Normal Loads and can include, but are not limited to:

- Concrete lorries
- Flatbed materials and equipment delivery vehicles;
- Aggregate supplies
- Construction plant

The construction process of the repowered turbine and the decommissioning process of the existing turbine will require the movement of material to and from the site using HGVs. Vehicle numbers and loads are unknown at this stage, with site investigations and geo-testing anticipated post-consent, prior to construction.

8.4.7. Staff Vehicles

Typically, there will be 6-10 members of staff present per day during the turbine installation stage, which will result in a maximum of 10 two-way vehicle movements per day, assuming worst-case car occupancy of 1 person per car/van. Car sharing amongst staff is to be promoted at the site and will be a realistic travel mode for those staff who are employed by the same service company/sub-contractor. The staff vehicle movements would typically occur at the start and at the end of the working day, and generally not coincide with the movement of large vehicles.

8.4.8. Miscellaneous Deliveries

It is envisaged that there will be a small number of miscellaneous deliveries associated with each identified construction phase. These are unscheduled movements that are likely to be infrequent and distributed across the lifespan of the project. These movements will typically take place in light goods vehicles/vans and are not expected to adversely affect the operation of the surrounding highway network.

8.5. Development Timescales

The construction of the repowering will take place in the following sequence:

- Any road widening at junctions is required to be agreed with the Council's Roads Department and constructed to agreed specifications.
- Site preparation, including crane platform extension
- Decommissioning of the existing turbines
- Excavation and construction of foundations
- Erection and installation of the two proposed Vestas V52 turbines

Traffic movements fluctuate depending on the particular stage of construction. HGV movements are at their highest during the decommissioning of the existing turbines, the construction of the crane platform, and the new turbine foundations. This will then be followed by a curing stage for the concrete, where no HGVs are likely to be deployed, with the exception of limited preparatory works if necessary, prior to the delivery of the turbine components and installation. The expected timetable is detailed in Table 8.4, with stages running concurrently.

Timescales relating to the delivery of components will be confirmed by the winning Contractor post-consent, prior to commencement of development. Any delays to timescales out with the control of the Applicant or Contractor will be verbalised to the Local Authorities' Roads Department when known.

Table 8.4 Expected Timetable

Stage	Duration
Site and foundation Preparation	1 week
Concrete curing	6 weeks
Decommissioning of existing turbine	3 weeks
Turbine Component delivery, installation, grid connection and commissioning of turbine	3 weeks

8.6. Proposed Improvements

SPA has confirmed that the route is largely navigable. Other than minor temporary arrangements (such as bollard removal at the A47/B582 junction and the use of temporary tracking), no permanent highway improvements are required. Any temporary works within the public highway will be subject to the necessary consents from the Local Highway Authority.

8.7. Mitigation Measures

Mitigation measures adopted to minimise environmental impacts associated with the construction stage are outlined in Table 8.5.

Table 8.5 Construction phase mitigation measures

Concern	Mitigation Measure
Noise during construction	Working and delivery times will be scheduled within normal working hours: Monday – Friday: 7am – 7pm Saturday: 7am – 4pm Sunday: No work Timings of deliveries to the site will aim to avoid peak traffic periods whenever possible.
Road safety	If deemed necessary, appropriate warning signs notifying the road used for construction on-site will be placed along the road. All vehicles will adhere to the speed limits and rules of the road. All drivers associated with the development will be issued a copy of the TMP for reference.
Road condition survey	A Road Condition Survey could be completed prior to works commencing onsite for the repowering at Park House Farm, with findings presented to the HBBC's Road Department. A post-construction Road Condition Survey follows to ensure any damage caused by construction vehicles is remediated satisfactorily at a cost to the developer.
Temporary Traffic signage	It is recommended that suitable temporary signs are provided in the vicinity of the site to warn other road users of the likely presence of construction vehicles in the area. All temporary traffic management and signage will follow the Traffic Signs Regulations and General Directions 2016, the Traffic Signs Manual 2009, and conform to the Safety at Street Works and Road Works Code of Practice 2013.
Neighbour notification	Local residents will be notified of scheduled works along the roadway prior to commencement to minimize disruption.

8.8. Conclusion

A study of the site in terms of access and potential impact on the local road network during the construction phase of the proposed development would indicate that no adverse, long-term effects will be posed. Existing roads and tracks will be used for vehicles associated with the development, with only minor temporary adjustments or maintenance undertaken if required. If necessary, the site entrance may be subject to temporary measures to allow the safe entry and exit of vehicles on-site. Further assessment in terms of access and transportation is deemed unnecessary as a result of the information available to date, combined with the review undertaken. Through the adoption of best practice measures and appropriate mitigation, impacts to the local and wider road network as a result of repowering at the Park House Farm are considered minimal.

9. HERITAGE ASSESSMENT

The proposal involves the repowering of two existing turbines with two Vestas V52 turbines of increased tip height. While the replacement machines will be approximately 15m taller, they will occupy the same field and maintain a visual relationship consistent with the existing baseline surroundings.

Within 2km of the application site, there are a number of designated heritage assets, including: eight Grade II Listed Buildings (LBs), one Scheduled Monument (SM), and Desford Conservation Area (CA). The positioning of these assets in relation to the repowering location are illustrated in Figure 9.1.

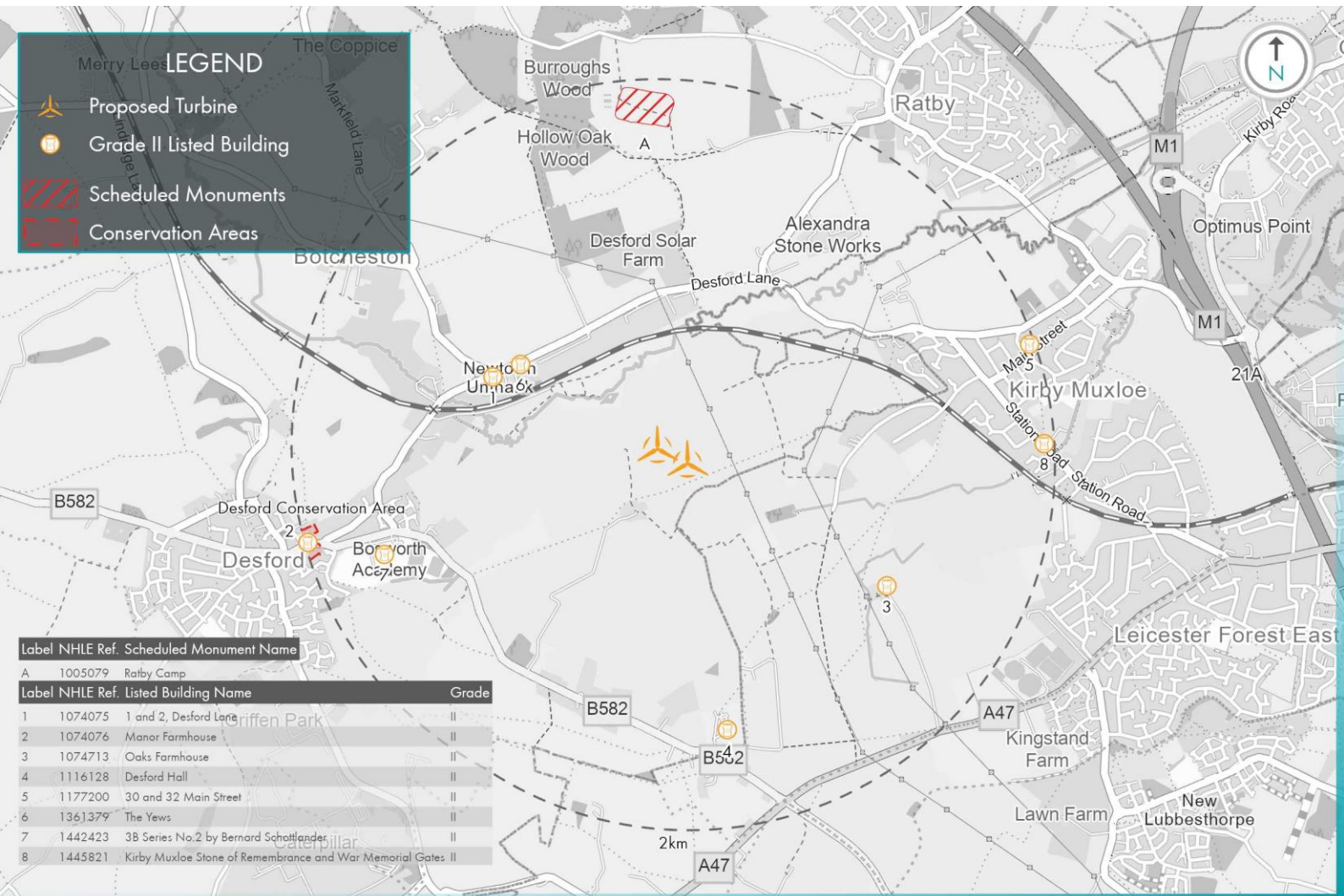


Figure 9.1 All Heritage Assets

No physical impacts are anticipated for any identified assets due to proximity from development. Desk-based assessment indicates no new intervisibility between the proposed turbines and the identified LBs. The repowering therefore, will not result in significant new impacts to the heritage value of these assets, or their settings, with detailed assessment unnecessary. Similarly, Ratby Camp SM and Desford CA will not experience significant new effects due to the existing separation, local screening, as well as the established presence of turbines on site. No further assessment is therefore required regarding these assets.

There are no known archaeological assets recorded within the application site, and no archaeological requirements or findings were identified during the construction of the existing turbines. The potential for unrecorded remains on site is therefore considered negligible.

The development represents a continuation of the established renewable energy use at Park House Farm, with the proposal for the replacement of turbine typologies with another. Given the absence of new intervisibility and the limited change in scale and siting of the turbines, it is considered that the proposal will not harm the significance of designated heritage assets within the study area. The development is therefore compliant with the requirements of the NPPF and local policies DM11, DM12 and DM13 of the HBBC Development Plan.

10. PLANNING CONSIDERATIONS

This chapter details additional planning considerations for this application. The considerations in Table 10.1 should be read in context with the existing turbine development, as this application represents a minor change from the consented application.

Table 10.1 Planning Considerations

Consideration	Assessment
Telecommunication	Although wind turbines can sometimes interfere with telecommunications, no issues have been reported with the existing turbines on site. As the proposal is for repowering with modern equipment of similar scale, no adverse impacts are anticipated.
Flood Risk and Drainage	The development site is not located within a Flood Risk Zone and therefore no further consideration for this is necessary. The proposal is limited to turbine replacement and will not materially alter ground conditions or site drainage, with no increased risk of flooding or surface water run-off.
Soil	The turbines are proposed to be constructed on land currently in mixed agricultural and renewable energy use. The field itself will remain in agricultural use, with the guyed areas of the existing turbines reinstated to agriculture, thereby reducing the overall land requirement. The development footprint is small, limited to the turbines and the proposed access track extension, and has been designed to ensure minimal impact on soil quality and existing ground conditions.