Environmental Impact Assessment

Scoping Report

September 2025

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Calderdale energy park

Contents

1	Introduction	8
2	Planning Policy Context	23
3	Approach to EIA	32
4	Description of Scoping Boundary and the Surrounding Area	45
5	The Proposed Development	60
6	Ornithology	74
7	Biodiversity	137
8	Hydrology, Hydrogeology, Geology and Peat	230
9	Carbon and Climate Change	279
10	Landscape and Visual	301
11	Cultural Heritage	362
12	Access, Traffic and Transport	405
13	Noise and Vibration	423
14	Air Quality	447
15	Socio-Economics and Tourism	465
16	Human Health	485
17	Aviation	511
18	EIA Other Matters (Shadow Flicker)	524
19	Environmental Aspects Scoped Out	541

Tables

Table 1-1: EIA Regulation Scoping Information	11
Table 1-2: PINS Request for Scoping Information	12
Table 1-3: Project Team and Description of Competence	14
Table 4-1: Statutory ecological designations	55
Table 6-1: Data sources for the desk study.	80
Table 6-2 Calderdale Metropolitan Borough Council Scoping Opinion	109

Table 6-3: Consultation Undertaken to Date 116

Table 6-4: Effects Scoped Out from the Detailed Assessment 117

Table 6-5: Likely Significant Effects Scoped into Detailed Assessment 119

Table 6-6: Defining Value/Sensitivity of Ornithological Features 127

Table 6-7: Nature of Effect 131

Table 6-8: Definition of Impact Magnitude. 132

Table 7-1: Search Areas for designated sites 143

Table 7-2: Summary of surveys completed to date 146

Table 7-3: Statutory Designated Sites 152

Table 7-4: Summary of International and National Statutory Designated Sites which overlap with the Cable Corridor Search Areas and Site Access Search Areas 156

Table 7-5: Local Statutory and Non-statutory Designated Sites identified within 5km of the Turbine Area 158

Table 7-6: Summary of Local Statutory designated sites within the Cable Corridor Search Area 162

Table 7-7: Summary of Local Statutory designated sites within the Site Access Search Area 163

Table 7-8: Summary of UK Habitat Classification Survey Results including recorded condition and area. 167

Table 7-9: Summary of protected species and other surveys completed within the Turbine Area to date 173

Table 7-10: Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion 187

Table 7-11: Summary of additional consultation received to date 194

Table 7-12: Definition of importance for Ecological Features 196

Table 7-13: Likely Significant Effects Scoped in to Detailed Assessment 200

Table 7-14: Guidelines for the assessment of the scale of magnitude 208

Table 7-15: Summary of further surveys planned 211

Table 7-16: Summary of consultation responses received following submission of the TCPA Scoping Report 215

Table 8-1: Study Areas 235

Table 8-2: Summary of environmental measures proposed during construction 251

Table 8-3: Summary of environmental measures proposed during operation and maintenance 254

Table 8-4: Calderdale Metropolitan Borough Council Scoping Opinion 256

Table 8-5: Consultation Undertaken to Date 264

Table 8-6: Effects Scoped Out from the Detailed Assessment 265

Table 8-7: Likely Significant Effects Scoped into the Detailed Assessment 266

Table 8-8 Receptor Sensitivity Criteria 272

Table 8-9: Magnitude of Impact Criteria 274

Table 8-10: Significance of Effect 275

Table 8-11 Nature of Effect 275

Table 9-1: CMBC Scoping Opinion 286

Table 10-1: Landscape Designations 314

Table 10-2: Proposed Viewpoint Locations 323

Table 10-3: Potential Elements of the Proposed Development and associated potential effects and receptors 329

Table 10-4: Calderdale Metropolitan Borough Council Scoping Opinion 333

Table 10-5: Effects Scoped Out from the Detailed Assessment 347

Table 10-6: Likely Significant Effects Scoped into the Detailed Assessment 349

Table 10-7: Illustrative Significance Matrix 357

Table 11-1 Recorded features/finds within the Turbine Area 368

Table 11-2 Scheduled Monuments within 5km 373

Table 11-3 Grade I and II* listed buildings within the 5km Study Area 374

Table 11-4 Grade I listed buildings within 15km 377

Table 11-5 Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion 383

Table 11-6 Consultation Undertaken To Date 388

Table 11-7 Effects Scoped Out from the Detailed Assessment 393

Table 11-8 Likely Significant Effects Scoped into the Detailed Assessment 395

Table 11-9 Levels of heritage significance 398
Table 11-10 Magnitude of change 399
Table 11-11 Significance of effect 400
Table 12-1 Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion 411
Table 12-2: Effects Scoped Out from the Detailed Assessment 414
Table 12-3: Classification of Receptor Sensitivity 418
Table 12-4: Classification of Receptor Sensitivity 419
Table 12-5: Determining the Significance of Effects 421
Table 13-1: Noise Monitoring Locations 430
Table 13-2: Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion 433
Table 13-3: Consultation Undertaken to Date 434
Table 13-4: Effects Scoped Out from the Detailed Assessment 439
Table 13-5: Likely Significant Effects Scoped into the Detailed Assessment 441
Table 14-1: AQMAs [a] 451
Table 14-2: Human Receptors for Air Quality Effects 455
Table 14-3 Calderdale Metropolitan Borough Council Scoping Opinion 458
Table 14-4 Effects Scoped Out from the Detailed Assessment 460
Table 14-5: Likely Significant Effects Scoped into the Detailed Assessment 462
Table 15-1: Population Estimates, 2023 468
Table 15-2: Population Projections, 2023-2043 469
Table 15-3: Industrial Structure, 2023 470
Table 15-4: Economic Activity Rates and Wages, 2024 471
Table 15-5: Households in Fuel Poverty, 2023 471
Table 15-6: Calderdale Metropolitan Borough Council Scoping Opinion 474
Table 15-7: Other Consultation Responses 476
Table 15-8: Definition of Terms Relating to the Sensitivity of the Receptor - Economics 478

Table 15-9: Definition of Terms Relating to the Sensitivity of the Receptor – Tourism Assets 479
Table 15-10: Definition of Terms Relating to the Magnitude of Economic Impacts 481
Table 15-11: Definition of Terms Relating to the Magnitude of Tourism Effects 482
Table 15-12: Determining the Significance of Effects 482
Table 16-1 Health indicators (from Fingertips database) 490
Table 16-2 Demographic and behavioural indicators (based on data published in 2018) 491
Table 16-3 Effects Scoped Out from the Detailed Assessment 495
Table 16-4 Likely Significant Effects Scoped into the Detailed Assessment 497
Table 16-5 Magnitude and Sensitivity 509
Table 17-1: Likely Significant Effects Scoped into the Detailed Assessment 518
Table 17-2: Consultation Undertaken To Date 520
Table 17-3: Effects Scoped Out from the Detailed Assessment 521
Table 18-1: Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion 533
Table 18-2: Effects Scoped Out from the Detailed Assessment 534
Table 18-3 Likely Significant Effects Scoped into the Detailed Assessment 535
Table 18-4 Matrix to Support Determining of Effect 537
Table 19-1 Technical Aspects Scoped Out 542

Figures

Figure 4-1: Proposed Turbine Area 48
Figure 4-2: Calderdale Cable Search Areas and Access Routes 49
Figure 4-3: Search Area and Land Potentially Required for the Turbine Area 50
Figure 6-1: Designated Sites 79
Figure 6-2: Vantage Point Locations 86
Figure 6-3: Transect Routes 87
Figure 6-4: Raptor Survey Vantage Point Locations 90
Figure 6-5: Long-Eared Owl Survey Locations 93

Figure 6-6: Nocturnal Transect Route 94
Figure 6-7: Acoustic Monitoring Locations 96
Figure 7-1: Study Area for Proposed Development 144
Figure 7-2: International and National Statutory Designated Sites – Study Area 155
Figure 7-3: Local Statutory Designated Sites – Study Area 161
Figure 7-4: Walshaw Moor Catchment Restoration Plan 165
Figure 7-5: UK Habitat Classification Distribution 170
Figure 7-6: National Vegetation Classification Survey Locations (2024) 172
Figure 7-7: Bat Static Detector Survey Locations 178
Figure 7-8: Great Crested Newt eDNA Survey 179
Figure 8-1: Watercourses and surface water features 244
Figure 8-2: Flood Map for Planning – Flood zones 245
Figure 8-3: Risk of Flooding from Surface Water (RoFSW) – Present Day 246
Figure 8-4: Risk of Flooding from Reservoirs 247
Figure 10-1: National Character Areas 312
Figure 10-2: Landscape Designations 316
Figure 10-3: Registered Parks and Gardens 317
Figure 10-4: Green Belt 318
Figure 10-5: Visual Receptors 321
Figure 10-6: Blade Tip Zone of Theoretical Visibility 327
Figure 10-7: Hub Height Zone of Theoretical Visibility 328
Figure 11-1: Designated heritage assets 379
Figure 11-2: Designated heritage assets 380
Figure 11-3: Non-designated heritage assets and findspots within 5km of the Turbine Area 381
Figure 13-1: Noise Sensitive Receptors and Noise Monitoring Locations 427
Figure 13-2: Cumulative Wind Turbines 428

Figure 14-1 Closest AQMAs to the Turbine Area (see Table 14-1 for AQMAs around the Cable Corridor Search Areas and Site Access Search Areas) 454

Figure 18-1 Study area 530

1 Introduction

1.1 Introduction

1.1.1 Logika Group Ltd has been commissioned to prepare the Environmental Impact Assessment (EIA) Scoping Report to accompany a request for a Scoping Opinion from the Planning Inspectorate (prepared on behalf of the Secretary of State (SoS)) for Calderdale Wind Farm Limited (CWFL) (the 'Applicant').

1.1.2 The Applicant is seeking a Development Consent Order (DCO) for Calderdale Energy Park (the 'Proposed Development'). The Proposed Development would comprise up to 41-wind turbines, an onsite Battery Energy Storage System (BESS) an onsite substation and associated ancillary infrastructure. The Proposed Development would have a total generation capacity of approximately 300MW. There will be offsite highways works to the existing road network and the construction of new access routes associated with the transportation of Abnormal Indivisible Loads (AIL).

1.1.3 The Proposed Development will include offsite compensation measures, and opportunities for mitigating, restoring and where possible, enhancing biodiversity on the moor that will retain water and restore designated bog habitat. Consultation with Natural England has commenced on the approach to mitigation, compensation, restoration and enhancement and the measures will be included with the Environmental Statement (ES).

1.2 The Applicant

1.2.1 The Applicant is CWFL, who are sponsored by NextGen Infra, a global investment group and subsidiary of Al Gihaz Holding. NextGen Infra has a development track record of over 550 MW of renewable energy projects.

1.2.2 Al Gihaz Holding is active across energy, construction, and industrial solutions sectors. Al Gihaz Holding has a strong presence in the UK power supply chain via Lamprell, a leading provider of contracting services in oil, gas and renewables, and Enshore Subsea, an industry expert in subsea cabling solutions for offshore wind infrastructure.

1.3 Consenting Regime and Requirement for Environmental Impact Assessment

The need for EIA

1.3.1 The aim of EIA is to protect the environment by ensuring that a determining authority, such as the SoS, when deciding whether to grant consent for a development which is likely to have significant effects on the environment, does so

in the full knowledge of these likely significant effects, and thus takes them into account in the decision-making process. The EIA Regulations set out a procedure for identifying those developments which should be subject to an EIA, and for assessing, consulting, and coming to a decision on those developments which are likely to have significant environmental effects.

1.3.2 The EIA Regulations at Schedule 1 set out the types of development which must be subject to an EIA, while developments listed in Schedule 2 may be subject to an EIA if they are considered "likely to have significant effects on the environment by virtue of factors such as its nature, size or location". The criteria on which this judgement must be made are set out in Schedule 3 of the EIA Regulations.

1.3.3 The Proposed Development is "Schedule 2 development" paragraph 3(i) of Schedule 2 of the EIA Regulations, being:

"Energy Industry"

(i) Installations for the harnessing of wind power for energy production (wind farms).

Purpose of EIA

1.3.4 The term EIA describes a procedure that must be followed by certain types of development before they can be given 'consent'. Underpinned by the Infrastructure Planning (Environmental Impact Assessment) Regulations 2017[1], as amended (hereafter referred to as the 'EIA Regulations'); EIA is a formal process required for certain types of development that brings together information to identify the likely significant environmental effects of a development and measures for avoiding, preventing, reducing or, if possible, offsetting likely significant effects. Compensation is only used where there are unavoidable effects that cannot be mitigated or offset.

1.3.5 EIA provides decision-makers with the information on the likely significant environmental effects of a development needed to make sustainable decisions when determining applications, in this case for a Nationally Significant Infrastructure Project (NSIP). EIA also provides information for stakeholders and the public to understand as part of participating in the planning process

Requirement for a DCO

1.3.6 In April 2025, the Applicant made a request to the SoS for Energy Security and Net Zero for a direction under section 35 of the Planning Act 2008[2] that the Proposed

1 His Majesty's Office (HMSO) (2017) Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
2 His Majesty's Office (HMSO) (2008) Planning Act 2008 (as amended)-

Development be development for which development consent is required. This direction was sought due to the scale and importance in helping the UK Government deliver its net zero targets by 2050. It is also consistent with the Government's proposals to bring onshore wind projects with a generation capacity of at least 100MW into the NSIP regime by the end of 2025[3]. The SoS issued a direction under Section 35 of the Planning Act 2008 on the 23rd of April 2025.

1.3.7 The Applicant has concluded that the Proposed Development does require an EIA as it could lead to likely significant environmental effects as a result of the Proposed Development's nature, size or location. Owing to the potential for the Proposed Development to meet the criteria within Schedule 3 of the EIA Regulations, the Applicant has therefore chosen to proceed with the production of the documentation to inform an EIA.

1.3.8 This Scoping Report constitutes notification under Regulation 8(1)(b) of the EIA Regulations that the Applicant will prepare and submit an ES in support of the Application, without a request for a Screening Opinion.

1.4 Purpose and Structure of the Scoping Report

1.4.1 The process of identifying the issues to consider within the ES and establishing the scope of the EIA, is known as 'scoping'. Although scoping is not a mandatory requirement under the EIA Regulations, it is recognised as a useful preliminary procedure which helps to identify the main effects that a proposed development is likely to have on the environment.

1.4.2 The purpose of this Scoping Report is to request an opinion from the SoS on the scope, and level of detail, of the information to be provided in the ES under Regulation 10(1) of the EIA Regulations. This will help ensure that the EIA is focused on the key impacts likely to give rise to significant environmental effects and is also used to obtain agreement on the approach and methodologies for assessments which will be reported in the ES, which will accompany the Application.

1.4.3 This Scoping Report also provides the justification and rationale for scoping out environmental aspects or receptors where it is considered that significant environmental effects are unlikely to arise as a result of the Proposed Development.

https://www.legislation.gov.uk/ukpga/2008/29/contents

3 His Majesty's Government (HM GOV) (2025) The Infrastructure Planning (Onshore Wind and Solar Generation) Order 2025 (as amended) – https://www.legislation.gov.uk/uksi/2025/694/contents/made

1.4.4 In addition, under the Town and Country Planning Act (TCPA) 1990[4], in July 2023, an EIA scoping request was previously submitted to Calderdale Council, which was a Scoping Report in request for a Scoping Opinion for a proposed wind farm development and associated infrastructure. The scheme, as part of the TCPA, was a 65-turbine wind farm, with solar array and associated infrastructure.

1.4.5 This scoping report incorporates the details of the previous Scoping Opinion received from Calderdale Council, and other consultees who reviewed the TCPA, and confirms if the opinion is considered within the scope of this assessment, or if it is considered to be scoped out of the technical assessment of this scoping report (with details provided in each topic chapter, of Chapters 6 to 18).

1.4.6 In line with the requirements of Regulation 10(3) of the EIA Regulations, this request contains the information, as presented in Table 1-1, required to assist the Planning Inspectorate (PINS), on behalf of the SoS, in adopting a Scoping Opinion.

Table 1-1: EIA Regulation Scoping Information

Regulation 10(3)	Evidence in Scoping Report
A plan sufficient to identify the land where development could occur	Figure 4-1, Figure 4-2 and Figure 4-3
A description of the Proposed Development, including its location and technical capacity	**Chapter 4: Description of the Scoping Boundary and Surrounding Area**
An explanation of the likely significant environmental effects of the Proposed Development on the environment	**Chapter 5: The Proposed Development**
Such other information or representation as the person making the request may wish to provide or make	Technical Aspect Chapters 6 to 18

1.4.7 In addition, this Scoping Report has been prepared in accordance with PINS Advice Note Seven[5], which recommends that a request for a Scoping Opinion should also include the details in Table 1-2.

[4] HM Government (HM GOV) (1990), Town and Country Planning Act 1990, https://www.legislation.gov.uk/ukpga/1990/8/contents

[5] The Planning Inspectorate (2020), Advice Note Seven: Environmental Impact Assessment: process, preliminary environmental information and environmental statements. [Online]. https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-seven-environmental-impact-assessment-process-preliminary-environmental-information-an/nationally-significant-

Table 1-2: PINS Request for Scoping Information

PINS Advice Note Seven	Evidence in Scoping Report
The Proposed Development	
An explanation of the approach to addressing uncertainty where such remains in relation to elements of the Proposed Development e.g. design parameters	**Chapter 5: The Proposed Development** **Chapter 3: Approach to EIA** Appendix A: Scoping Commitments Register
Referenced plans presented at an appropriate scale to convey clearly the information and all known features associated with the Proposed Development	Figure 4-1, Figure 4-2 and Figure 4-3
EIA Approach and Topic Areas	
A summary table depicting each of the aspects and matters that are requested to be scoped out allowing for quick identification of issues	Technical Aspect Chapters 6 to 18
A detailed description of the aspects and matters proposed to be scoped out of further assessment with justification provided	Technical Aspect Chapters 6 to 18
Results of desktop and baseline studies where available and where relevant to the decision to scope in or out aspects or matters	Technical Aspect Chapters 6 to 18
Aspects and matters to be scoped in, the report should include details of the methods to be used to assess impacts and to determine significance of effects e.g. criteria for determining sensitivity and magnitude	Technical Aspect Chapters 6 to 18
Any avoidance or mitigation measures proposed, how they may be secured and the anticipated residual effects	Technical Aspect Chapters 6 to 18
Information Sources and Guidance	
References to any guidance and best practice to be relied upon	Technical Aspect Chapters 6 to 18

Evidence of agreements reached with consultation bodies (for example the statutory nature conservation bodies or local authorities)	Technical Aspect Chapters 6 to 18
An outline of the structure of the proposed ES	**Chapter 3: Approach to EIA**

1.4.8 A detailed assessment of potential effects upon any associated internationally designated sites will be undertaken as part of a separate Habitats Regulations Assessment (HRA) in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019)). The HRA will be submitted as a separate package of documents alongside the ES. It is not the function of the ES to duplicate this assessment; rather, the ES will summarise and reference the key findings of the HRA where relevant to the EIA process, ensuring cross-referencing between the two assessments for clarity and completeness.

1.5 Project Team

1.5.1 Regulation 14(4) of the EIA Regulations require that in order to ensure the completeness and quality of the ES, '(a) the applicant must ensure that the environmental statement is prepared by competent experts; and (b) the environmental statement must be accompanied by a statement from the applicant outlining the relevant expertise or qualifications of such experts.'

1.5.2 In accordance with this requirement Table 1-3 sets out the technical specialists who have contributed to the preparation of this Scoping Report and will undertake the EIA that will be reported in the ES, and their relevant expertise. Table 1-3 shows the EIA team is competent to undertake the EIA.

Table 1-3: Project Team and Description of Competence

Aspect	Qualifications	Years of Experience	Description of Competence
EIA Director	BSc (Hons), CEnv, CMIEEM.	25 Years	An environmental consultant and ecologist with more than 25 years' experience, working on more than 75 projects, both in the UK and internationally. They are an expert in providing strategic environmental advice to help clients navigate complex environmental legislation and policy.
EIA Project Manager	BSc (Hons), MIAQM, AMIEnvSc, PIEMA	17 Years	Environmental consultant with more than 16 years' experience overseeing the production of EIA Reports and ES' for a range of developments, including solar, throughout the UK. They led the EIA and environmental work for One Earth Solar Farm DCO.
EIA Project Manager	BSc (Hons), IEMA	18 Years	Environmental consultant with more than 18 years' experience overseeing environment and sustainability assessments,

Aspect	Qualifications	Years of Experience	Description of Competence
			including the production of EIA Reports and ES' for a range of major infrastructure developments, throughout the UK.
Biodiversity (Terrestrial Ecology)	BSc (Hons), MSc (Hons)	17 Years	The Biodiversity (Terrestrial Ecology) Lead has over 17 years' experience in ecology, specialising in ornithology, terrestrial ecology and spatial ecology including significant experience of onshore wind in Wales. They have a broad understanding of assessment methods including the delivery of Ecological Impact Assessment (EcIA) and Habitat Regulations assessments (HRA). He has experience of large-scale renewable projects including solar, onshore and offshore wind for both DCO and Town and Country Planning applications.
Ornithology	BSc (Hons) Zoology	4 Years	Experienced ornithological surveyor and project

Aspect	Qualifications	Years of Experience	Description of Competence
	MSc Species Identification and Survey Skills Qualifying member of Chartered Institute of Ecology and Environmental Management (QCIEEM)		manager. Four years' experience working on onshore wind farm projects including authoring ES chapters.
Ornithology	Master of Environmental Sciences (Hons) (MEnvSci) Member of Chartered Institute of Ecology and Environmental Management (MCIEEM) Chartered Environmentalist (CEnv)	20 Years	Extensive experience in ecological consultancy acting as technical lead and ornithology specialist, with a focus on onshore wind farm projects across the UK and Ireland.
Peat (HRA)	BSc (Natural Sciences) MSc (Geomorphology) PhD (Peat Landslides)	25 years	25 years' experience in geoscience consultancy. Fellow of the Geological Society of London since 2004. Chartered Geologist since 2006.
Flood Risk	Ba (Hons), MCIWEM, C.WEM	17 years	17 Years experience in Flood Risk and Drainage. Chartered member of CIWEM.

Aspect	Qualifications	Years of Experience	Description of Competence
Hydrology	BSc (Hons), Geophysical Sciences MSc, Water Resources Systems Engineering	25 years	25 years' of consulting experience in hydrogeology and water resources. Chartered member of CIWEM since 2008.
Cultural Heritage and Archaeology	BA, MCIfA	30 Years	Principal Heritage Consultant with more than 30 years' experience of Historic Environment assessment. Member of ICOMOS UK.
Landscape and Visual Assessment	BA (Hons), FLI	40 Years	Over 40 years LVIA experience throughout the UK.
Traffic and Transport	BEng (Hons), MSc, CEng, FCIHT, CMILT		A highly experienced Transport Planner, having worked on wide range of projects across the UK, Ireland and Scandinavia. They specialise in private sector development and renewable energy projects. They have acted as Expert Witness on several Public Inquiries and NSIP hearings. They have worked on over 600 wind farm sites including onshore wind, over 40 solar

Aspect	Qualifications	Years of Experience	Description of Competence
			farms, peak power plants, battery storage sites, biomass plants and grid enhancement projects.
Carbon and Climate Change	MEarthSci, CSci, Member of the Institute of Environmental Sciences (IES), Member of the Institute of Air Quality Management (IAQM)		They have helped shape a methodology for the assessment of greenhouse gas (GHG) emissions within EIA to satisfy the requirements of the 2017 EIA Regulations and have produced carbon footprints and GHG assessments for a number of projects including major aviation projects, renewable energy DCOs, as well as EIA residential, commercial and mixed-use developments and industrial facilities. Beyond EIA, they have produced lifecycle carbon assessments for a range of projects, undertaken assessments of project's resilience and adaptation to climate change, developed

Aspect	Qualifications	Years of Experience	Description of Competence
			net zero carbon plans and strategies, and undertaken assessments of carbon sequestration and carbon offsets and carbon assessment for land use, land use change and forestry.
Carbon and Climate Change	MChem (Hons), Associate Member of the IES, Associate Member of the IAQM	7 Years	The author is an expert in GHG and Climate Resilience Assessments for development projects, both standalone, and as a component of Environmental Impact Assessments (EIAs). This includes work on renewable energy DCO applications. They also have broad expertise in corporate carbon footprints, helping companies measure and report their carbon emissions, and develop decarbonisation strategies, with a particular focus on the energy sector.

Aspect	Qualifications	Years of Experience	Description of Competence
Noise	MIOA, PIEMA, BSc, MSc	17 Years	Principal Consultant and full member of the Institute of Acoustics and has over 17 years of experience in undertaking noise assessments for wind farm developments.
Air Quality	BSc. (Hons), MIEnvSc, MIAQM, CSci	20 Years	Technical Director. Over 20 years' experience in preparing air quality assessments and EIA chapters for a range of schemes.
Health	BSc (Hons), MSc, PhD, CSci, MIEnvSc, MIAQM		They have delivered multiple Health Impact Assessments for residential and commercial projects, using a proportionate evaluation of relevant health determinants on the local population, following best practice guidance.
Socio-Economics and Tourism	BA (Hons) Economics, MIED, MEDAS	30 Years	Applied Economist with over 30 years of experience in consultancy.

Aspect	Qualifications	Years of Experience	Description of Competence
			Experience in the energy sector includes socio-economic impact assessments of more than 150 proposed wind farm developments. They have given evidence at more than 25 wind farm hearings and inquiries over the last 20 years.
Aviation	MA (Hons), MSc	29 Years	29 years of assessing effects of wind energy developments on aviation.
EIA Other Matters (Shadow Flicker)	Chartered Geographer (Cgeog), PhD, MPhil, BSc	3.5 Years	Chartered Geographer with 3.5 years of experience as a renewable energy consultant. He has undertaken multiple shadow flicker assessments, for single turbine and multi-megawatt turbine developments in the UK and Ireland, on projects involving feasibility assessments, complaints investigations, planning condition compliance, and Environmental Impact

Aspect	Qualifications	Years of Experience	Description of Competence
			Assessments (EIA), from the side of turbine developers and property developers.

2 Planning Policy Context

2.1 Introduction

2.1.1 An overview of national, regional and local planning policy relevant to informing the scope of the EIA, is provided within this Chapter. Further information on planning policy where it is specific to a particular technical aspect, is provided within the aspect chapters themselves (see Chapters 6 to 18).

2.1.2 A review of relevant policy will be included within the ES. Although adherence to planning policy will have often informed the assessment of effects as detailed within the ES, in particular helping to inform whether an effect is significant or not, compliance of the Proposed Development with relevant planning policies will be set out in the Planning Statement. This document is separate to the EIA process and will accompany the Application.

2.2 Planning Act 2008

2.2.1 Under Section 104(2) of the Planning Act 2008, the SoS is required to consider any relevant National Policy Statement (NPS) when deciding whether to grant a DCO. Under the Planning Act 2008 regime, NPSs provide the policy framework from which the SoS examines and makes its decision in relation to NSIP applications.

2.2.2 For the purpose of Section 104(2)(a), the following NPSs have effect in relation to the Proposed Development:

- Overarching National Policy Statement for Energy (EN-1)[6]
- Draft NPS for Energy (Draft: EN-1)[7];
- Draft NPS for Renewable Energy Infrastructure (Draft: EN-3)[8];
- National Policy Statement for Electricity Networks Infrastructure (EN-5)[9]; and
- Draft NPS for Electricity Networks Infrastructure (Draft: EN-5)[10].

[6] Department of Energy and Climate Change (2024) Overarching National Policy Statement for Energy (NPS EN-1)
7 Department for Energy Security and Net Zero (2025) Draft Overarching National Policy Statement for Energy (NPS EN-1)
8 Department of Energy and Climate Change (2025) Draft National Policy Statement for Renewable Energy Infrastructure (NPS EN-3)
9 Department of Energy and Climate Change (2024) National Policy Statement for Electricity Networks Infrastructure (NPS EN-5) (designated in January 2024)
10 Department for Energy Security and Net Zero (2025) Draft National Policy Statement for Electricity Networks Infrastructure (NPS EN-5)

2.2.3 An overview of the current and draft NPSs that will be considered from a planning policy perspective as part of undertaking the EIA are set out in the following text.

2.3 National Policy Statement for Energy (EN-1)

2.3.1 The Overarching NPS for Energy (EN-1), adopted by the Department of Energy and Climate Change (DECC) in July 2011, and updated in 2024, sets out the national policy for delivering major energy infrastructure in England and Wales. The NPS has effect in combination with the relevant technology specific NPS, National Policy for Renewable Energy Infrastructure (Draft: EN-3)[11], and together they provide the primary basis for the Examining Authority's recommendation to the SoS and decisions made by the SoS to grant or refuse Development Consent.

2.3.2 Part 3 of EN-1 identifies the need that exists for nationally significant energy infrastructure. With regards to decision making, paragraph 3.1.1 of EN-1 states how "*government sees a need for significant amounts of new large-scale energy infrastructure to meet its energy objectives and why the government considers that the need for such infrastructure is urgent*".

2.3.3 Applicable to the Proposed Development Paragraph 3.3.21 of EN1 states "a secure, reliable, affordable, net zero consistent system in 2050 is likely to be composed predominantly of wind and solar".

2.3.4 Paragraph 3.3.23 states that "Applications for onshore wind of all sizes should be consented outside of the Planning Act 2008 process, unless the Secretary of State directs otherwise under section 35 of the Planning Act 2008".

2.3.5 Paragraph 3.3.22 notes that renewable energy sources, such as onshore wind, are intermittent and, as a result, need to be complemented with technologies, which supply electricity or reduce demand when the availability of intermittent renewable sources is low. Paragraph 3.3.28 identifies how electrical storage technologies can be used to compensate for intermittence but do have limitations.

2.3.6 Paragraph 4.1.5 of the EN-1 states that in considering any development, and in particular, when weighing its adverse impacts against its benefits, the SoS should take into account:

- *"its* potential *benefits including its contribution to meeting the need for energy infrastructure, job creation, reduction of geographical disparities, environmental enhancements, and any long-term or wider benefits; and*

11 Department of Energy and Climate Change (2024) National Policy Statement for Renewable Energy Infrastructure (NPS EN-3)

- *its* potential *adverse impacts, including on the environment, and including any long-term and cumulative adverse impacts, as well as any measures to avoid, reduce, mitigate or compensate for any adverse impacts, following the mitigation hierarchy."*

2.3.7 Section 4.2 of EN-1 further emphasises there is a Critical National Priority (CNP) for low carbon infrastructure. This infrastructure is identified as "*all onshore and offshore generation that does not involve fossil fuel combustion…*" to which the Proposed Development falls under. Section 4.2 therefore applies a policy assumption that "*subject to any legal requirements (including under section 104 of the Planning Act 2008), the urgent need for CNP Infrastructure to achieving our energy objectives, together with the national security, economic, commercial, and net zero benefits, will in general outweigh any other residual impacts not capable of being addressed by application of the mitigation hierarchy. CNP Infrastructure is defined as nationally significant low carbon.*"

2.3.8 Section 4.3 of EN-1 is related to the requirement for assessment of likely significant environmental effects and reporting within an ES for projects.

2.3.9 Paragraph 4.3.4 of EN-1 states that: "To consider the potential effects, including benefits, of a proposal for a project, the applicant must set out information on the likely significant environmental, social and economic effects of the development, and show how any likely significant negative effects would be avoided, reduced, mitigated or compensated for, following the mitigation hierarchy. This information could include matters such as employment, equality, biodiversity net gain, community cohesion, health and well-being."

2.3.10 Paragraph 4.3.5 continues: "for the purposes of this NPS and the technology specific NPSs the ES should cover the environmental, social and economic effects arising from pre-construction, construction, operation and decommissioning of the project."

2.3.11 Where relevant, the EIA process will take into account the requirements of the relevant NPSs.

2.3.12 When weighing a project's impacts against its benefits, Paragraph 4.1.6 of EN-1 sets out that the SoS should take into account "environmental, social and economic benefits and adverse impacts, at national, regional and local levels. These may be identified in this NPS, the relevant technology specific NPS, in the application or elsewhere (including in local impact reports, marine plans, and other material considerations."

2.3.13 Paragraph 4.3.10 states that "The applicant must provide information proportionate to the scale of the project, ensuring the information is sufficient to meet the requirements of the EIA Regulations." At paragraph 4.3.12 EN1 states "[where some details are still to be finalised, the ES should, to the best of the applicant's knowledge, assess the likely worst-case environmental, social and economic effects of the proposed development to ensure that the impacts of the project as it may be constructed have been properly assessed."

Draft National Policy Statement for Energy (Draft EN-1)

2.3.14 In April 2025 the Department for Energy Security and Net Zero (DESNZ) published a consultation on revisions to EN-1, EN-3 (discussed at 1.7) and EN-5 (discussed at 1.9). Consultation on the material amendments to these draft NPSs was undertaken between April until May 2025.

2.3.15 Draft EN-1 revised EN-1 to incorporate the Clean Power Action Plan 2030[12] into the section that previously focused on Net Zero. This change highlights the Plan as the central policy that the NPSs are designed to support. Introduced in December 2024, the Clean Power Action Plan sets a target for at least 95% of the UK's electricity to come from clean sources by 2030, which is applicable to the Proposed Development. To meet this goal, the DESNZ has defined capacity targets of 27–29 GW for onshore wind.

2.3.16 Section 4.2 of the Draft EN-1 statement would bring projects relevant under the Clean Power Action Plan into the remit of CNP, which gives them a presumption in favour of consent. Introduced in 2024, the CNP policy significantly reduces the likelihood of consent being refused due to residual impacts that remain after the mitigation hierarchy has been applied. It enables the SoS to give due weight to the strategic importance of low-carbon infrastructure when making planning decisions.

2.3.17 The proposed amendments to EN-1 contained in Draft EN-1 include onshore wind within the scope of general policy guidance. Section 1.3, "Scope of the Overarching National Policy Statement for Energy" specifies that once the Infrastructure Planning (Onshore Wind and Solar Generation) Order 2025 comes into force, it will cover onshore wind and solar generating stations in England only where their capacity exceeds 100MW. Section 3.3.24 of EN-1 also reaffirms the UK Government's publication of the Department for Energy Security and Net Zero's 'Clean Power Capacity Range' in the Clean Power Action Plan 2030, which outlines a target range of 27–29 GW for onshore wind capacity.

12 Department for Energy Security and Net Zero (2024) Clean Power 2030 Action Plan: A New Era of Clean Electricity. Available at: assets.publishing.service.gov.uk/media/677bc80399c93b7286a396d6/clean-power-2030-action-plan-main-report.pdf

Draft National Policy Statement for Renewable Energy Infrastructure (Draft: EN-3)

2.3.18 Section 2.12 of Draft EN-3 provides detailed guidance on what onshore wind proposals may consist of and how they should be assessed. Paragraph 2.12.6 states "*Onshore wind farm proposals are likely to involve turbines from between 4.5MW of generating capacity up to 7.5 MW individually. The total number of turbines comprising a wind farm of 100 MW capacity or greater covered by this NPS is therefore likely to be thirteen or more. This is expected to change over time as the technology continues to evolve to become more efficient.*"

2.3.19 With regards to environmental considerations, paragraph 2.12.52 states "applicants should have regard to the specific biodiversity, ecological, hydrological and environmental considerations that relate to the proposed onshore wind development…namely: Birds and bats; and Peat."

2.3.20 Regarding impacts on ecologically designated sites, paragraph 2.12.149 of Draft EN-3 states "the designation of an area as a protected site (including SACs, SPAs, Ramsar sites and SSSIs) does not necessarily restrict the construction or operation of onshore wind farms in, near, or through that area (see also Sections 4.3 and 5.4 of EN-1)." In addition, with regards to Peat "where developments impact on peatlands, the Secretary of State must be satisfied that avoidance, management, mitigation or compensatory mechanisms are sufficiently robust."

National Policy Statement for Renewable Energy Infrastructure (EN-5)

2.3.21 The NPS for Electricity Networks Infrastructure (EN-5) was published by the DECC in July 2011 and was updated in November 2023; this forms part of the suite of energy NPSs and is to be read in conjunction with the Overarching NPS for Energy (EN-1).

2.3.22 Given the Proposed Development is considered as a NSIP, EN-5 is relevant to the Proposed Development which falls within the two main elements of the policy captured at paragraph 1.6.1 set out as follows:

2.3.23 "transmission systems (the long-distance transfer of electricity through 400kV and 275kV lines), and distribution systems (lower voltage lines from 132kV to 230V from transmission substations to the end-user) which can either be carried on towers/monopoles, or undergrounded; and associated infrastructure, e.g. substations (the essential link between generation, transmission, and the distribution systems that also allows circuits to be switched or voltage transformed to a useable level for the consumer) and converter stations to convert DC power to AC power and vice versa".

2.3.24 The policy statement recognises that new electricity networks required for electricity generation, storage and interconnection infrastructure are vital to achieving the nation's transition to net zero.

2.3.25 EN-5 sets out further technology-specific considerations, in addition to those impacts covered in EN-1, for: Biodiversity and Geological Conservation; Landscape and Visual; Noise and Vibration; and electromagnetic frequencies (EMFs).

2.3.26 With regards to cable routing EN5 states "The applicant should consider and address routing and avoidance/minimisation of environmental impacts both onshore and offshore at an early stage in the development process."

Draft National Policy Statement for Renewable Energy Infrastructure (Draft EN-5)

2.3.27 Draft EN-5 introduces the Electricity Transmission Design Principles (ETDP), which would be developed by National Energy System Operator (NESO). These principles will apply to onshore and offshore electricity transmission infrastructure and are intended to provide greater clarity on the type of asset to be used in different environments, how the impact of transmission infrastructure can be mitigated and will set out a level of flexibility for route and technology design. Developers will be required to have regard to the ETDP, once published.

National Planning Policy

2.3.28 The National Planning Policy Framework (2024)[13] (NPPF) sets out the government's planning policies for England and how these are expected to be applied. The NPPF does not contain specific policies for NSIPs as these are determined in accordance with the decision-making framework in the Planning Act 2008 and any relevant NPSs, but it is still an important and relevant matter for the purposes of the Secretary of State's decision making when determining the Application.

2.3.29 The NPPF also provides relevant context for individual assessment topics.

2.3.30 The paragraphs of particular relevance to the Application are as follows:

- Paragraph 8: *"Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):… c) an environmental objective – to protect and enhance our natural, built and historic environment; including making effective use of land, improving biodiversity, using natural*

13 Ministry of Housing, Communities & Local Government (2024). National Planning Policy Framework. [Online]. [Accessed: 19 March 2025]. Available at: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf

resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy."

- Paragraph 165: *"To help increase the use and supply of renewable and low carbon energy and heat, plans should:…b) consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development".*
- Paragraph 168: *"When determining planning applications for all forms of renewable and low carbon energy developments and their associated infrastructure, local planning authorities should: (a) not require applicants to demonstrate the overall need for renewable or low carbon energy, and give significant weight to the benefits associated with renewable and low carbon energy generation and the proposal's contribution to a net zero future;*

Local Planning Policy

2.3.31 The relevant Local Development Plans for the area do not carry the same weight under the Planning Act 2008 in respect of decision making on NSIPs, as they do with determining planning applications under the Town Country Planning Act 1990. The NPSs are the primary consideration for NSIP applications. Nevertheless, the Development Plan is still a matter which is a material consideration and relevant in deciding an application for a DCO, although in the event of any conflict, the NPS prevails.

2.3.32 The following text sets out details of the Local Development Plans as currently identified within the Scoping Boundary (taking account of the Turbine Area and the Cable Corridor Search Areas (see Section 4). It is noted the cable corridor and any land potentially required for the construction, operation, maintenance and decommissioning (accounting for off-site compensation and any highways works to facilitate AIL are to be developed as the design of the Proposed Development progresses). Should the Proposed Development be in any other administrative authority the relevant local planning policy will be considered and detailed in the ES.

Calderdale Council Local Plan 2018/19 to 2032/33

2.3.33 On 22nd March 2023, the Council adopted the Calderdale Local Plan[14]. The Plan includes policies that guide investment and development, while safeguarding the

14 Calderdale Council (2023). The Calderdale Local Plan, https://new.calderdale.gov.uk/planning-and-building-control/planning-policy/local-plan

natural/historic environment, enable adaptation to climate change; and help secure high-quality design.

Rochdale Core Strategy, Adopted October 2016

2.3.34 The Core Strategy for Rochdale borough was adopted on 19 October 2016[15] and is the lead planning document in the Local Plan. Of reference is Policy G3: Renewable and low carbon energy developments, which set out how the Council will promote renewable, low and zero carbon energy generating developments, including wind power, whilst ensuring any harm must be minimised and appropriately mitigated.

Rossendale Local Plan 2019 to 2036

2.3.35 The Rossendale Local Plan seeks to promote sustainable housing and employment growth while protecting and enhancing the special valley and moorland setting of the Borough. The Plan covers the whole of the Borough of Rossendale for the period 2019 to 2036 and provides the statutory planning framework for the borough. The Plan was adopted in December 2021[16] and is used to guide decisions on planning applications and areas where investment should be prioritised.

Bradford Council Core Strategy Development Plan Document 2017-2030

2.3.36 The Core Strategy was adopted by Bradford Council on 18 July 2017[17], and forms part of the statutory Development Plan for the Bradford District and will be used in determining planning applications alongside other adopted Local Plan document. Policy EN6: Energy is applicable to the Proposed Development which states "*proposals for renewable and low carbon generation must include full assessment of the environmental, economic and social impacts and, where assessment shows that potential adverse impacts can be managed, the integration of measures to minimise such impacts*".

Leeds City Council Core Strategy 2017-2033

2.3.37 The Leeds City Council Core Strategy was originally adopted on 12 November 2014 and amended by the Core Strategy Selective Review (CSSR) which was adopted

15 Rochdale Borough Council (2016). Rochdale Adopted Core Strategy. https://www.rochdale.gov.uk/downloads/file/405/core-strategy
16 Rossendale Borough Council (2021) Rossendale Local Plan 2019 to 2036. https://www.rossendale.gov.uk/downloads/file/17076/rossendale_local_plan_2019_to_2036_-_written_statement
17 Bradford Council (2017) Local Plan for the Bradford District. Core Strategy Development Plan Document. https://www.bradford.gov.uk/Documents/planningStrategy/10/Adopted%20core%20strategy//1%20Core%20Strategy%20full%20document.pdf

in September 2019[18]. Policy EN3: Low Carbon Energy provides details specifically to the development of wind energy.

18 Leeds City Council (2019). Core Strategy (as amended by the Core Strategy Selective Review 2019) Leeds Local Plan.

3 Approach to EIA

3.1 The EIA Process

3.1.1 The ES will be prepared in accordance with the EIA Regulations[19], relevant planning policy and guidance; PINS Advice Note Seven[20]; and current best-practice EIA guidelines, including the latest relevant technical guidance notes from PINS. Each technical aspect chapter of the ES will be assessed in line with specific technical methodologies and best-practice guidelines.

3.2 Rochdale Envelope

3.2.1 PINS Advice Note Nine on the 'Rochdale Envelope'[21] provides guidance for handling applications for development consent under the Planning Act 2008[4]. It recognises that during the early stages of scheme design; certain aspects may remain subject to change. A DCO application should therefore ensure that it contains a level of detail that enables a proper assessment of the environmental effects to be made. The extent of flexibility needed depends on the design progress when the detailed application is made.

3.2.2 To accommodate this, technical assessments define an 'envelope' within which the project will unfold, featuring maximum and minimum parameters, so that an assessment of the reasonable worst-case scenario can be undertaken. The parameters should be as realistic as possible to determine likely significant effects as accurately as is possible. The Application will include details on the outline Design Parameters for the Proposed Development.

3.2.3 In line with the Rochdale Envelope approach, it is the Applicant's intention to seek flexibility in the design and layout of the Proposed Development, by considering reasonable 'worst case' scenarios to determine likely significant effects. A Scoping Commitments Register has been included within Appendix A, which summarises the committed impact avoidance, mitigation and enhancement measures for the Proposed Development at this time.

19 His Majesty's Office (HMSO) (2017) Infrastructure Planning (Environmental Impact Assessment) Regulations 2017
20 The Planning Inspectorate (2020). Annex to Advice Note 7 – Presentation of the Environmental Statement. [Online]. Available at: https://assets.publishing.service.gov.uk/media/6579a3e4095987001295dfcc/Annex1_advice_note_7.pdf
21 The Planning Inspectorate (2018). Nationally Significant Infrastructure Projects - Advice Note Nine: Rochdale Envelope. [Online]. Available at: https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-nine-rochdale-envelope/nationally-significant-infrastructure-projects-advice-note-nine-rochdale-envelope

3.3 Constraints Analysis and Design Process

3.3.1 As part of the EIA and design process, the relevant environmental baseline conditions of the site and its surrounds will be used to identify any environmental constraints and opportunities relevant to the technical assessments. This enables design principles to be created to support the evolution of the Proposed Development, to help ensure that important environmental considerations are taken into account during the design development process. The inputs from this process will be included as an Alternatives Chapter of the ES as required by Schedule 4(2) of the EIA Regulations[22].

3.4 Consultation

3.4.1 Sections 42, 47 and 48 of the Planning Act 2008, and Regulation 13 of the EIA Regulations require that certain statutory bodies, stakeholder groups and relevant land interests must be consulted as part of the pre-application process. As part of this process a Preliminary Environment Information Report (PEIR) will be produced and consulted upon, to help statutory consultees understand the likely significant environmental effects of the Proposed Development.

3.4.2 Consultation alongside the EIA process is critical to the preparation of a comprehensive and proportionate ES. Early and ongoing engagement with, and seeking an appropriate level of feedback from, both statutory and non-statutory consultees will be important for the identification of likely significant environmental effects and where further studies and investigations are required. Consultation should influence the design development process by identifying specific issues that should be considered as part of the project design. Consultation, as an ongoing process, will enable measures to be incorporated into the Proposed Development to avoid, minimise or offset adverse environmental effects wherever possible, and to optimise environmental benefits.

Non-Statutory Consultation

3.4.3 Preliminary non-statutory consultation events commenced on 29th April 2025, and continued until 10th June 2025. The aim of this non-statutory consultation was to introduce the Proposed Development to relevant local communities, gather feedback on key issues and options, invite members of the public to ask questions and provide feedback on the early concept design, establish local needs, and engage with statutory bodies during the early stage of design development.

[22] His Majesty's Office (HMSO) (2017) Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

3.4.4 All responses received during non-statutory consultation are being carefully considered and where appropriate, are being addressed through the evolving design of the Proposed Development. The non-statutory consultation responses will be recorded in a Consultation Report which will be submitted as part of the Application.

Statutory Consultation

3.4.5 In accordance with Sections 42 of the Planning Act 2008 and Regulation 13 of the EIA Regulations, statutory consultation will also be undertaken. Engagement with the statutory consultees will be undertaken throughout the design stages of the Proposed Development and all responses received will be considered and, where appropriate, incorporated into the evolving design of the Proposed Development. As above, the statutory consultation responses will be recorded in a Consultation Report which will be submitted as part of the Application.

3.4.6 Regulation 12 of the EIA Regulations 2017 requires the publication of, and consultation on, the Preliminary Environmental Information (PEI) for the development. The Applicant intends to consult on the PEI as part of its statutory consultation under the DCO process and will produce a PEIR. Although the level, detail and format of the PEI is not prescribed it must include information that 'is reasonably required for the consultation bodies to develop an informed view of the likely significant environmental effects of the development (and of any associated development)' (Regulation 12(2)(b) of the EIA Regulations). Details on the format of the PEIR will be provided as the project progresses.

3.4.7 On the 23rd of April 2025 the UK Government announced the potential for changes to be made to remove the requirement for statutory consultation at the pre-application stage for major infrastructure projects, as a result of the Planning and Infrastructure Bill[3]. At the time of writing, no adoption or detail has been made; however, at the time of statutory consultation, the latest requirements, to ensure adequate consultation has been undertaken, will be followed.

Engagement to Date

3.4.8 Engagement commenced during the pre-scoping stage and has continued throughout the scoping process. To date there have been several meetings with statutory consultees including The Environment Agency, Natural England and Historic England; mostly to provide an early introduction to the Proposed Development, obtain baseline environmental data and discuss preliminary baseline survey methodologies with them. This has helped inform the EIA and HRA processes and will contribute towards the PEIR.

3.4.9 Details of specific technical engagement undertaken to date, for each of the environmental aspects, is provided in Chapters 6 to 18 of this Scoping Report.

3.5 Defining the Study Area

3.5.1 Study areas have been defined individually for each environmental aspect (or topic), taking into account the geographic scope of the potential impacts relevant to that aspect, topic-specific guidance where available, and the information required to assess those impacts. The proposed study areas are described within Chapters 6 to 18 of this Scoping Report.

3.6 Baseline and Future Baseline

3.6.1 Appropriate and accurate baseline conditions (i.e. existing conditions on the Turbine Area and within its surrounds to an appropriately considered distance in the absence of the Proposed Development) need to be established in order to assess the likely significant environmental effects of the Proposed Development and to identify the most appropriate environmental measures to be employed to avoid or minimise any likely significant adverse effects.

3.6.2 Baseline information has been, and will be collected, and described in each technical chapter of the ES. This will include existing and available information within the public domain, baseline surveys undertaken as part of the EIA process and additional information provided as part of the consultation process and from engagement. For the majority of the environmental aspects relevant baseline conditions will relate to the existing environmental conditions at the Turbine Area and in the local area. Whilst each chapter has detailed the Site Access Search Areas and Cable Corridor Search Areas as part of the future methodology for inclusion in the ES.

3.6.3 As required by Schedule 4(3) of the EIA Regulations, consideration will be given to future baseline conditions; in particular how the baseline will likely evolve in the future, but without the Proposed Development in place. The likely evolution of the baseline conditions will be described within each technical aspect chapter of the ES, with justification given as to why any change is assumed, and have also been described, where currently known, in the aspect specific Chapters 6 to 18 of this Scoping Report.

3.7 EIA Assessment of Development Phases

3.7.1 The ES will present the assessment of effects of the following phases of the Proposed Development;

- Construction Phase;

- Operational Phase (including maintenance and replacement of equipment); and
- Decommissioning Phase.

3.7.2 An indicative construction programme for the Proposed Development will be presented in the ES. This will include all stages of the construction including activities such as site establishment, onsite access routes, offsite highways works, cabling works, onsite Substation and Battery Energy Storage System (BESS) works (which may be combined), and details of any mitigation and compensation.

3.7.3 For the construction phase, the likely significant environmental effects of the Proposed Development will be assessed for the reasonable worst-case scenario for each technical aspect. For example, for transport this includes the peak in traffic when there are the maximum movements of vehicles on the local road network; for landscape and visual impacts and cultural heritage, this includes construction works at the closest proximity to a sensitive receptor. The reasonable assumptions made during the assessment will be detailed in the ES.

3.7.4 The EIA will assess the maximum development parameters (or the parameters that represent the reasonable worst case for likely significant environmental effects should that be different). The effects of the completed Proposed Development will be assessed and documented within the ES for the first full year of operation. A further assessment scenario for the operational period where mitigation has been established will also be set out for relevant environmental aspects including Landscape and Visual and Cultural Heritage.

3.7.5 Within the ES there will also be an assessment made of the decommissioning phase of the Proposed Development. For the purposes of the EIA the decommissioning assessment will be based on an assumption that the Proposed Development will be operational for approximately 35 years.

3.7.6 It is noted that, at the time that decommissioning would take place, the regulatory framework, good industry practices and the future baseline could have altered. Consequently, as detailed in **Chapter 5: The Proposed Development**, the Applicant will implement a Decommissioning and Environmental Management Plan (DEMP), with an outline DEMP to be submitted with the Application, which will be secured via a DCO requirement that will set out the measures in place to reduce the likelihood of Likely Significant Effects as far as is reasonably possible.

3.8 Prediction of Likely Effects and Determining Significance

3.8.1 Determining the potential for significant effects needs, generally, an aspect- specific approach and these methodologies are detailed within the aspect specific chapters

(see Chapters 6 to 18) themselves. However, there are certain common elements that occur in defining the appropriate scope for the detailed assessment.

3.8.2 Understanding the policy and legal position with regard to a specific environmental aspect is fundamental to determining the likelihood of significant effects occurring. As such, the assessment of effects for every aspect will be informed by a detailed review of existing policy including that at national, regional and local level. In addition, relevant legal requirements will be identified.

3.8.3 Knowledge of the baseline environment, specific to the technical aspect being considered is also required. At this scoping stage, the level of baseline collection is appropriate to allow the gaining of an understanding of whether the Proposed Development has the potential to cause significant effects. In many cases this means that there has been a reliance on desk study data. Therefore, in the future, and to inform the detailed assessment as will be documented within the ES, further baseline data will be collected. Identification of sensitive receptors that could be affected by the Proposed Development will come from an analysis of this baseline data.

3.8.4 At this scoping stage sensitive receptors have been identified and are noted within the aspect specific Chapter (see Chapters 6 to 18) albeit with the collection of more detailed baseline information these may be subject to some change.

3.8.5 Establishing the potential for a significant effect to occur, and therefore which effects should be subject to detailed assessment, has been informed by aspect/topic specific guidance, often validated by a relevant professional body. The same approach will be used to inform the detailed assessment documented within the ES. Generally, guidance, in reaching a conclusion on whether an effect could be significant, requires consideration of the sensitivity of a receptor to change, and importantly consideration of the predicted magnitude of change.

3.8.6 Consideration will be paid to the opportunity to introduce environmental measures (and mitigation) that will help to avoid or reduce the potential for an adverse significant effect to occur. In accordance with Schedule 4(7) of the EIA Regulations, the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset likely significant effects. Specific environmental measures relevant to the technical aspects will be identified and will be considered as part of the assessments (i.e. the assessments of likely significant effects have been undertaken with the inclusion of the environmental measures, as these measures will form part of the Proposed Development). To ensure clarity as to how the environmental measures are secured, a Commitments Register will be included within the submission. A Scoping Commitments Register is included in Appendix A.

3.8.7 Summary of effect tables that summarise the likely significant effects associated with each of the environmental aspects will be provided in the ES at the end of each aspect assessment chapter. These tables will detail sensitive receptors, environmental measures and the likely significant effects. Cumulative effects will be considered as a single coordinated assessment and will be presented as a separate ES Chapter.

3.9 Cumulative Effects

3.9.1 Schedule 4(5)(e) of the EIA Regulations states that the ES should include "a description of the likely significant effects of the development on the environment resulting from… the cumulation of effects with other existing and/or approved projects, taking into account any existing environmental problems relating to areas of particular environmental importance likely to be affected or the use of natural resources".

3.9.2 As required by Schedule 4(5)(e) of the EIA Regulations, the potential cumulative effects will follow the PINS Advice on cumulative effects assessment[23] relevant to NSIPs.

3.9.3 As outlined within the PINS Advice, the approach to cumulative effects assessment is split into four distinct phases:

- The establishment of a long list of development (Stage 1);
- The establishment of a short list (Stage 2);
- Information gathering (Stage 3); and
- Cumulative assessment (Stage 4).

3.9.4 Stage 1 of the cumulative effects assessment will establish whether there are other existing and/or approved developments to be included within the assessment, as well as a quantification of the Zone of Influence (ZOI) for each environmental aspect scoped in for assessment. The current criteria for inclusion in the study, and to establish the long list of other existing and/or approved development are as follows:

- other existing and/or approved projects within the local vicinity (at this stage assumed to be within 10km of the Proposed Development):
- that have planning permission (or development consent) but are not yet built; or

[23] The Planning Inspectorate (2025). Nationally Significant Infrastructure Projects: Advice on Cumulative Effects Assessment. Available at: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-cumulative-effects-assessment

- schemes where a planning application (or DCO application) has been submitted but a decision not yet made; or
- major projects likely to occur due to existing policy.

3.9.5 This information above will be identified based on information available on the local authorities planning registers and on PINS website and discussed during the consultation stages. The long list of other existing and/or approved developments will be agreed with the relevant local planning authorities prior to the cumulative assessment being undertaken.

3.9.6 It should be recognised that many of the projects that will fall within the categories under the first two bullets above may be so small that cumulative environmental effects would be highly unlikely. An example of this would be a house extension or similar. Using professional judgement, projects will therefore be screened for their potential to act in a cumulative way with the Proposed Development with only those where such potential exists considered further. This screening exercise will be detailed within the ES and will also be consulted upon as part of pre-application discussions with the host authorities.

3.9.7 Stage 2 of the cumulative effects assessment includes the development of threshold criteria to the longlist as identified at Stage 1, to then establish a short list which will be included within the assessment within the ES. The criteria should address temporal scope as well as the scale and nature of the identified cumulative development.

3.9.8 To supplement the shortlist of cumulative developments identified at Stage 2, Stage 3 will gather all available information of each of the shortlisted developments to inform the stage 4 assessment. This information should include, but not be limited to design and locational information, any construction, operation and decommissioning information, as well as any environmental data which could help inform the cumulative assessment, which may include baseline data and any potential environmental effects.

3.9.9 Stage 4 as outlined within the PINS Advice Note is the assessment of significant cumulative environmental effects of the Proposed Development with other developments identified within stage 1 to 3 above and will be presented as a separate chapter of the ES. Each technical specialist undertaking the EIA will consider the potential for cumulative effects associated with the schemes identified (for example cumulative assessment of traffic effects from nearby projects that are of a significant scale (and where traffic flows are publicly available)).

3.9.10 Regulation 5(2)[24] states that the EIA must identify, describe and assess in an appropriate manner, in light of each individual case, the direct and indirect significant effects of the proposed development on population and human health, biodiversity, land, soil, water, air and climate, material assets, cultural heritage and the landscape. Regulation 5(2)(e) refers to the need to assess 'the interaction between those factors'. The following types of cumulative effects will be considered in accordance with the EIA Regulations and best practice guidance:

- Combined effects occur when a similar type of effect, for example noise, occurs albeit from differing sources e.g. from both road traffic and aircraft noise. Within the ES, combined effects will be dealt with in the relevant technical Chapter.
- Interactive effects occur when a number of separate effects, for example noise and air quality, together interact to cause an effect to a particular receptor, for example, a protected species. Interactive effects will be dealt with either in the relevant ES Aspects Chapter (for example impacts on protected species would be included in the **Chapter 7: Biodiversit**y, or where they have the potential to affect human health, then within the **Chapter 16: Human Health**).

3.10 Environmental Statement

3.10.1 In accordance with Schedule 4 (Regulation 18(3)) of the EIA Regulations and PINS Advice Note Seven the EIA process will be documented in an ES which will describe the Proposed Development, give full details of the EIA methodology and any technical methodologies and data used in support of the assessment; detail any enhancement, mitigation and compensation measures that have been employed; present the assessment of likely significant environmental effects; and provide a schedule of proposed mitigation and monitoring arrangements.

3.10.2 The ES will present an assessment of the cumulative effects and impact interactions as described in each of the relevant sections in Chapters 6 to 18.

ES Volume 1: Introductory Chapters

3.10.3 This Volume will comprise the main non-technical chapters of the ES, and will include the following:

- Introduction to the ES, including the structure of the ES, details on the technical Chapters, requirements of the EIA Regulations and the Technical Team Competency.

[24] His Majesty's Office (HMSO) (2017) Infrastructure Planning (Environmental Impact Assessment) Regulations 2017

- The overall methodology for this EIA, in terms of determining the significance of likely environmental effects;
- Description of the proposed Order Limits and surrounding area, including the main environmental features;
- An outline of the main alternatives studied and an indication of the main reasons for the design of the Proposed Development as submitted, taking into account the environmental effects; and
- Description of the Proposed Development including the physical conditions and management during the construction, operation and decommissioning phases.

ES Volume 2: Aspect Chapters

3.10.4 This Volume will comprise the technical chapters of the ES. This will include:

- A detailed assessment methodology for each environmental aspect scoped into the EIA;
- A description of the current baseline environment and an outline of the likely evolution thereof without implementation of the Proposed Development for each environmental aspect;
- A description of the embedded environmental measures proposed, including details of any enhancement, mitigation and compensation measures. This will include, where available, the technical details (from monitoring and/or modelling) to provide the justifications on the proposed embedded measures;
- An assessment of predicted environmental effects during the construction, operational and decommissioning phases;
- A description of the expected significant effects of the Proposed Development on the environment;
- An assessment of cumulative effects; and
- Summary of Effects.

Volume 3: Figures and Technical Appendices Supporting ES Volumes 1 and 2

3.10.5 Volume 3 will include all the figures, and a separate volume will include all technical data required to support the assessment conclusions set out in Volume 2.

Non-Technical Summary

3.10.6 A Non-Technical Summary (NTS) will be prepared which will convey the key findings of the EIA in a clear and concise format (in non-technical language) to allow the public to understand the description of the Proposed Development, the significant effects likely to arise from the Proposed Development and the embedded environmental measures.

3.11 Habitat Regulations Assessment (HRA)

3.11.1 The Habitats Directive[25] is transposed into UK law under the Conservation of Habitats and Species Regulations 2017 (as amended)[26], which outlines that a HRA is required where a plan or project has the potential to significantly affect a site designated for its nature conservation importance, including Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) (National Site Network Sites (NSNS)[27])

3.11.2 As part of the EIA scoping process, a desk-based review has been initiated to identify any European sites within a relevant distance of the proposed development. As described in **Chapter 4: Description of the Scoping Boundary and the Surrounding Area**, the Turbine Area is located in the South Pennine Moors SAC and SPA. As such HRA is required to support the Application.

3.11.3 Although the HRA process is separate from the EIA, there is considerable overlap in the information required for both assessments. Therefore, this EIA Scoping Report acknowledges the potential need for HRA and outlines how it will be integrated into the overall environmental assessment process.

3.11.4 The HRA process will be undertaken by the decision maker, informed by advisors. The Applicant will prepare information to inform the HRA (Shadow HRA). The HRA process requires a series of stages to be worked through, each stage is predicated on the stage before. Therefore, the process can be halted at a number of points. The technical team will undertake the following as part of a Shadow HRA in so far as it is appropriate to do so:

- Screening – to determine whether the Proposed Development is likely to have a significant effect on any European designated site, either alone or in combination with other plans or projects.

25 European Union, Council Directive 92/42/EEC (1992), Conservation of natural habitats and of wild fauna and flora. Available at: https://www.legislation.gov.uk/eudr/1992/42/contents
26 His Majesty's Office (HMSO) (2017) The Conservation of Habitats and Species Regulations 2017: https://www.legislation.gov.uk/uksi/2017/1012/contents
27 His Majesty's Office (HMSO) (2019) The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019: https://www.legislation.gov.uk/ukdsi/2019/9780111176573

- Report to Inform an Appropriate Assessment – if required, to consider potential adverse effects on the integrity of the designated site(s) and to identify necessary mitigation measures, as a result of the Proposed Development.
- Derogation – if the Report to Inform an Appropriate Assessment identifies an adverse effect a derogation assessment will be undertaken, which will set out details including:
    - Consideration of alternative solutions;
    - Consideration of Imperative Reasons of Overriding Public Interest (IROPI) – what reasons are there that are sufficient to override the harm to the NSNS.
        - Identification of compensatory measures - Which must be delivered to maintain the coherence of the NSNS. Any proposed compensatory measures will continue to be discussed with Natural England to determine if the measures proposed achieve this aim.

3.11.5 Consultation with the statutory nature conservation body (e.g., Natural England) will be undertaken throughout the process to confirm the approach and scope of the Shadow HRA. Where necessary, information generated for the EIA (e.g., ecological baseline data (including ornithology), air quality modelling, noise assessment, peat baseline data and hydrology information) will be used to inform the HRA.

3.11.6 The outcome of the Shadow HRA, including any mitigation, avoidance measures and any compensation land will be reported separately to meet legal requirements but will also be cross-referenced in the ES.

3.12 Environmental Aspects

3.12.1 Following a review of environmental surveys and preliminary appraisal work to date, it is proposed that the EIA need only to focus on the following environmental aspects where significant effects are likely to occur. This includes the following aspects, which are discussed in Chapters 6 to 18 and set out below:

- Biodiversity;
- Ornithology;
- Hydrology, Hydrogeology, Geology and Peat;
- Cultural Heritage;
- Landscape and Visual;

- Access, Traffic and Transport;
- Carbon and Climate Change;
- Noise and Vibration;
- Air Quality;
- Human Health;
- Socio-economics, Land Use, Tourism and Recreation;
- Aviation and Radar; and
- Other Matters: Shadow Flicker.

3.12.2 Scoped out matters relevant to each of the technical aspects above are dealt with in Chapters 6 to 18 in tabular form, with justifications provided.

3.12.3 Details on those aspects which are unlikely / not significant and which have been scoped out of the EIA are included in **Chapter 19: Environmental Aspects Scoped Out** of this Scoping Report.

4 Description of Scoping Boundary and the Surrounding Area

4.1 Proposed Development Location

4.1.1 The Proposed Development comprises the Turbine Area (which includes the proposed locations for the wind turbines, the Battery Energy Storage System [BESS], on-site substation and associated infrastructure, and the Cable Corridor Search Areas and Access Route Search Areas (see **Chapter 5: The Proposed Development**). Ancillary onsite elements such as onsite access tracks, crane hardstandings, construction compounds, borrow pits, operation and maintenance base, met masts etc. are also included.

4.1.2 The Turbine Area is the area covered by the wind turbines as well as any onsite ancillary infrastructure such as onsite substation, BESS, onsite cabling; but excluding any external cable route corridors to the National Grid substation options, offsite highways works etc., which lie outside of the area of land required for the turbines themselves.

4.1.3 Cable Corridor Search Areas extend outside of the turbine area to the Point of Connection; and are wider siting zones that contain the cable corridor options, but those options are still flexible in the design in terms of exact location. There is a 2km buffer applied to the current cable corridor options to form the intended Cable Corridor Search Areas.

4.1.4 Similarly, the Site Access Search Areas extend outside of the turbine area to the Point of Connection and are wider siting zones that contain the access route options within them, but where those options are still flexible in the design in terms of exact location. There is a 1km buffer applied to the current cable corridor options to form the intended Site Access Search Areas.

4.1.5 The Turbine Area is located within the administrative boundary of Calderdale Council. The Cable Corridor options, within the Cable Corridor Search Areas, are located in Calderdale Council and either, Rochdale Borough Council, Rossendale Borough Council, Bradford Council or Leeds City Council, depending on the corridor (discussed further below). The Site Access Search Area to the east of the Turbine Area is located within the administrative boundaries of Calderdale Council and Bradford Council, and the Site Access Search Area to the west of the Turbine Area is located within the administrative boundaries of Calderdale Council, Bradford Council and Pendle Borough Council.

4.1.6 The Turbine Area is located at OS grid reference SD 96688 33581, which is the approximate centre. The Turbine Area is shown below in Figure 4-1 and consists

of approximately 2,352 hectares (ha) of land at Walshaw Moor, located on either side of the three Walshaw Dean Reservoirs, in West Yorkshire. The nearest point of the Turbine Area is located approximately 3.5km to the north of Hebden Bridge, to the south-east is Halifax, and Burnley is to the west. At its maximum, the Turbine Area extends to approximately 9.3 km in an east-west direction and approximately 4.9 km in a north-south direction.

4.1.7 The Point of Connection is not yet known. The Point of Connection Options are being investigated by the Applicant and their technical advisors. There are currently four options for the cable corridor being considered. These four cable corridor options, would be linked to the Proposed Development by cabling which would be located within the two Cable Corridor Search Areas, which would link the Turbine Area with the Point of Connection. Both Cable Corridor Search Areas are considered in this Scoping Report as shown in Figure 4-2**.** The following text provides information on the location of each of the Cable Corridor Search Areas.

4.1.8 The first Point of Connection would be in the Rochdale area. The western Cable Corridor Search Area option is identified towards the Point of Connection in Rochdale (Rochdale Cable Corridor Search Area). This route would be located within the administrative areas of Calderdale Council, Rochdale Borough Council and Rossendale Borough Council. The second, eastern Cable Corridor Search Area (Bradford West Cable Corridor Search Area) would facilitate a Point of Connection at Bradford West. This Cable Corridor Option Area is located in the Calderdale Council and Bradford Council administrative areas.

4.1.9 Agreement is being sought to connect the Proposed Development to the National Electricity Transmission System at a new facility designated as Leeds North Substation with a 400kV capacity. The location is not confirmed by National Energy System Operator (NESO) or National Grid, and for the purposes of optioneering, it has been assumed it would be located north of Leeds. An extension of the Bradford West Cable Corridor Search Area has been developed to demonstrate this cable option.

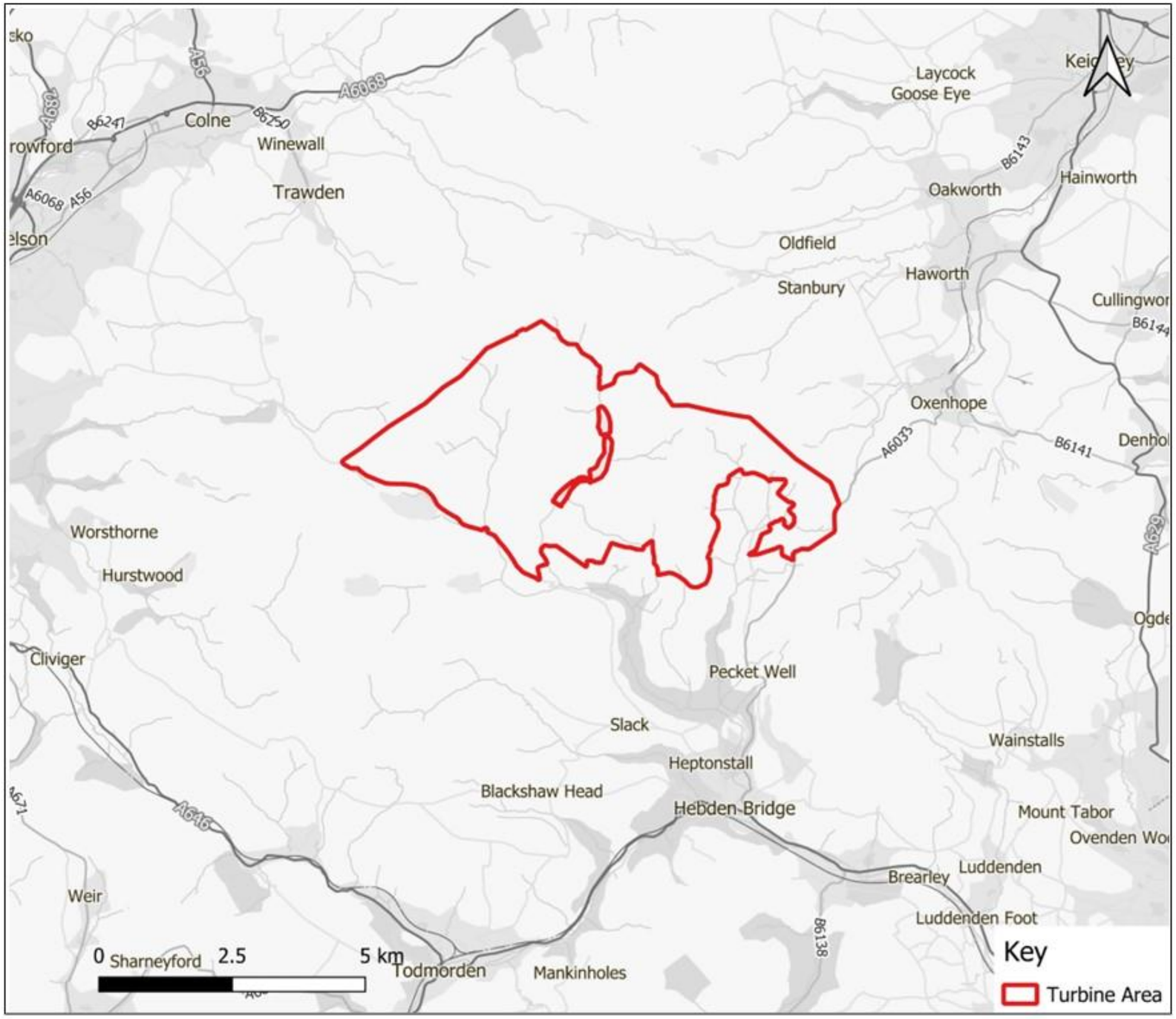
4.1.10 The off-site substations, at the Point of Connection, will not be included in the Application. The Applicant will only be responsible for the cable corridors leading to the substations, where the connections will be made.

4.1.11 The location of the site access, existing highways improvements, and associated access tracks to the Turbine Area have not yet been determined. Figure 4-2 shows two Access Route Search Areas which are currently being investigated by the Applicant and their advisors. The access and the location of tracks will be informed by further environmental work and engineering design. The site access location and

access tracks will be consulted on, with the relevant stakeholders, and the final option presented within the ES.

4.1.12 The expected area of land potentially required for the construction, operation, maintenance and decommissioning of the Proposed Development, which includes land required for permanent and temporary purposes, is shown in Figure 4-3. This includes the search area related to off-site compensation and highways works to facilitate AIL, the potential search area for off-site compensation, the potential locations for the new access tracks (Site Access Search Areas), and the Cable Corridor Search Areas for the potential Point of Connections. It is important to note that this will be subject to change and refinement as the design and EIA progress; however, Figure 4-3 shows the envisaged current extent of search for temporary and permanent land usage for the Proposed Development. This allows for consideration of the potential environmental effects of the full range of options under consideration, to ensure that the likely significant environmental effects of each of the options has been scoped into further assessment.

Figure 4-1: Proposed Turbine Area



Revision History

Rev	Date	By	Detail
xx	xx.xx.xx	LOG	16617A / Calderdale

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Client

Calderdale energy park

Consultant

Logika Group

Drawing number	Revision
N/A	01

Project/Location

16617A / Calderdale

Drawing title

Figure 4-1 Proposed Turbine Area

Drawing status

FOR INFORMATION

Date	Drawn	Checked
27-08-2025	N/A	N/A

Figure 4-2: Calderdale Cable Search Areas and Access Routes

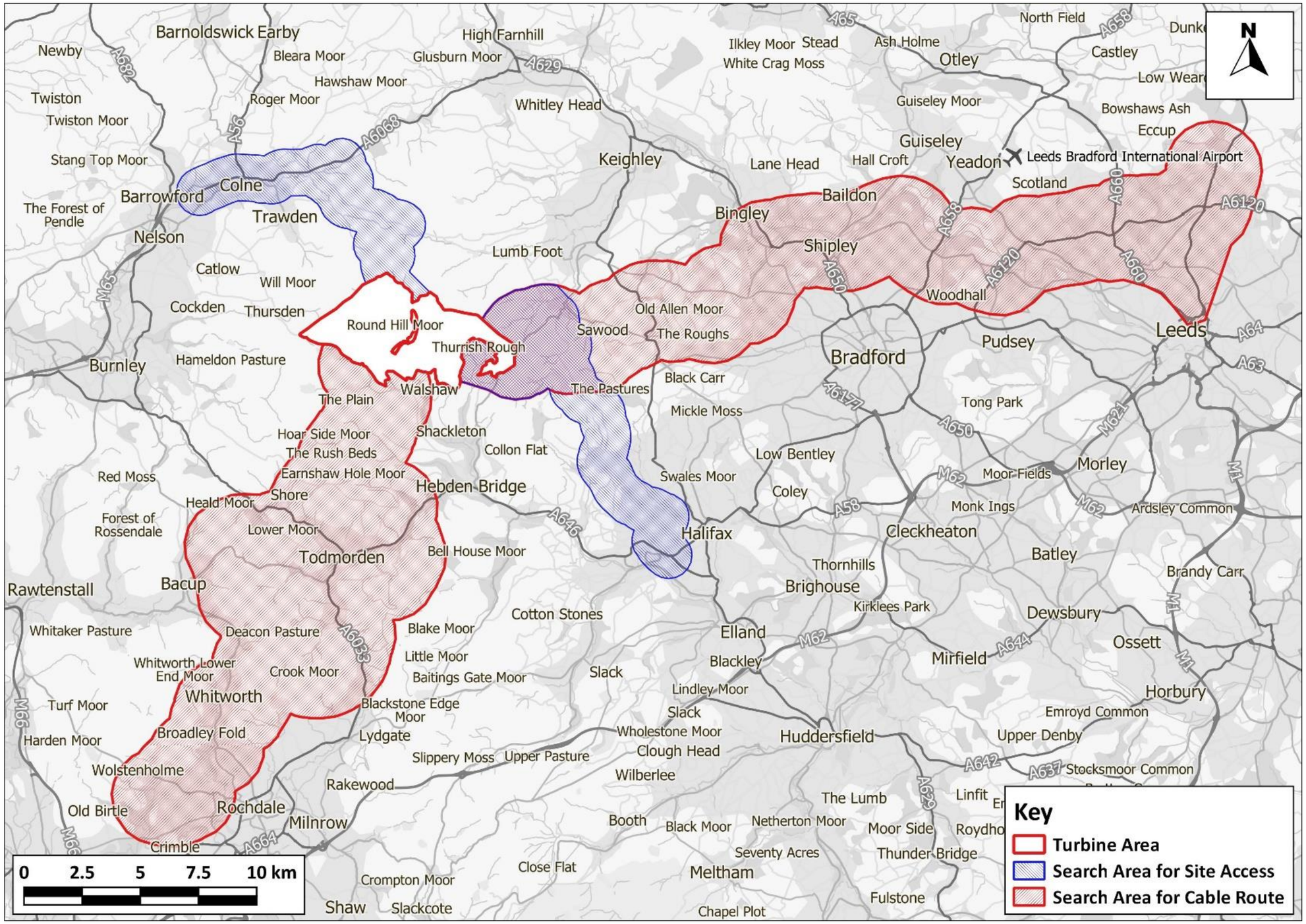
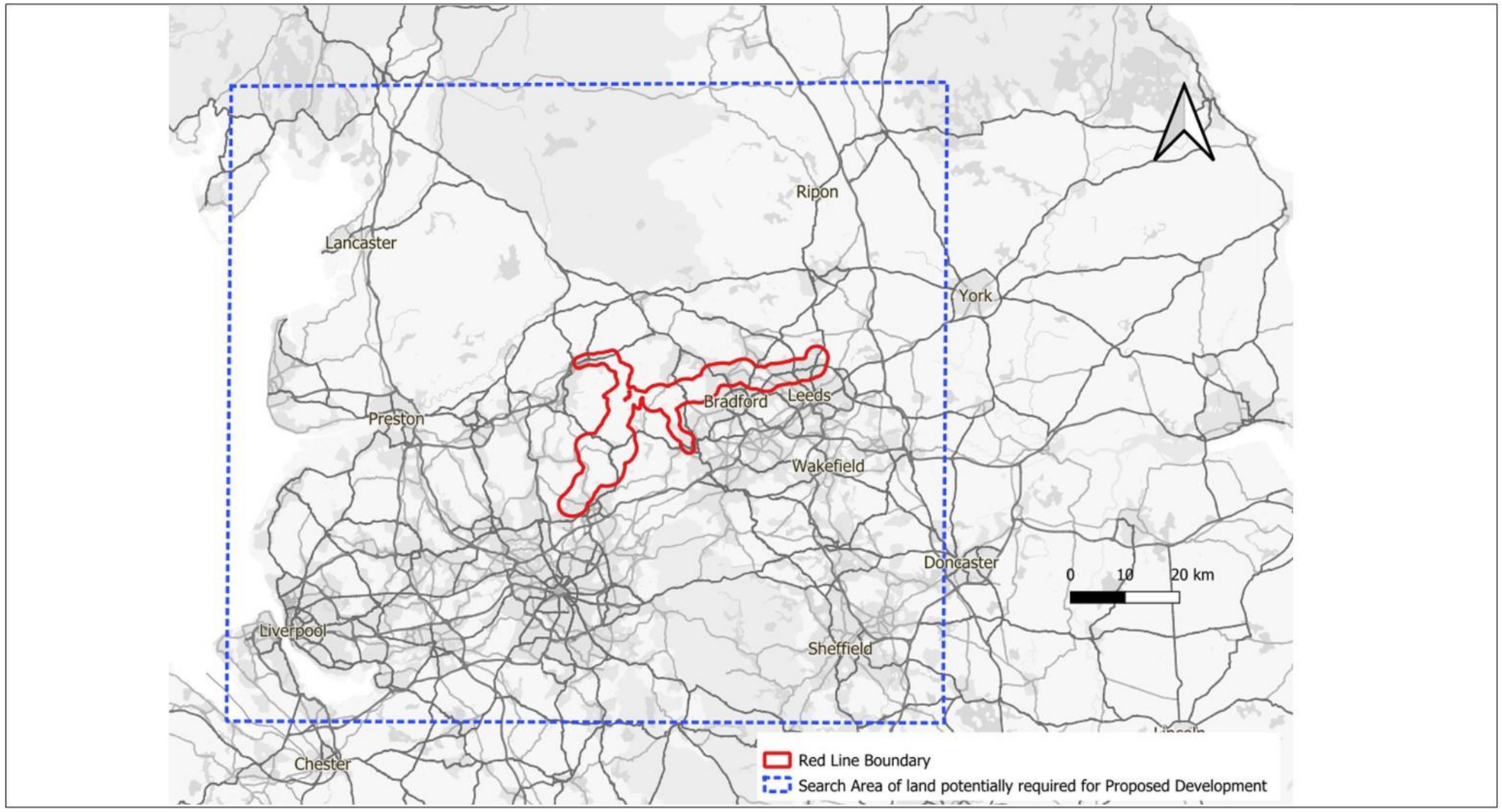


Figure 4-3: Search Area and Land Potentially Required for the Turbine Area



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

Revision History

Rev	Date	By	Detail
01	27-08-2025	LOG	16617A / Calderdale

Copyright of Logika Group. Figured dimensions shall be taken in preference to scaling. The contractor shall check all dimensions on site before commencing work.

Project/Location

16617A / Calderdale

Drawing title

Figure 4-3 Search Area of Land Potentially Required for the Proposed Development

Drawing status

FOR INFORMATION

Date	Drawn	Checked
27-08-2025		

Client

Calderdale energy park

Consultant

Logika GROUP

Drawing number	Revision
N/A	00

4.2 Site Location

4.2.1 The Turbine Area is located within the Walshaw Moor Estate, on either side of the three Walshaw Dean Reservoirs, in West Yorkshire. The Turbine Area lies within the South Pennines Moors Site of Special Scientific Interest (SSSI), the South Pennine Moors Special Area of Conservation (SAC); and South Pennine Moors Special Protection Area (SPA). The Widdop Reservoir lies along the southwestern side of the Turbine Area, whilst the Hebden Water river is located approximately 0.5km south, from the southern boundary of the Turbine Area. Land use within the Turbine Area is characterised by undulating upland moorland and farmland. The Turbine Area is located in Open Access Land. There are a number of ditches and watercourses (ordinary and main) across the Turbine Area.

4.2.2 The nearest towns and villages within 5km of the Turbine Area include:

- Hebden Bridge, approximately 3.5km southeast of the nearest boundary of the Turbine Area;
- Oxenhope, approximately 2.5km northeast of the nearest boundary of the Turbine Area;
- Stanbury, approximately 3km north of the nearest boundary of the Turbine Area;
- Wycoller (hamlet), approximately 3.4km northwest of the nearest boundary of the Turbine Area;
- Trawden, approximately 4.1km northwest of the nearest boundary of the Turbine Area;
- Peckett Well, approximately 1.4km east of the nearest boundary of the Turbine Area; and
- Hepstonstall, approximately 2.4km east of the nearest boundary of the Turbine Area.

4.2.3 There are a small number of isolated properties located within, and in proximity, to the Turbine Area such as:

- two residential properties, one in the centre of the Turbine Area named The Lodge, and one to the south of the Turbine Area named Holme Ends Farmhouse; and
- 48 residential properties approximately within approximately 3.5km of the Turbine Area.

4.2.4 The nearest towns and villages in proximity to the Cable Corridor Search Areas include:

- Rochdale Cable Corridor Search Area
    - The Rochdale Cable Corridor Search Area bypasses the settlement of Todmorden. It is approximately 1.5km from the route at its closest point;
    - The Rochdale Cable Corridor Search Area also bypasses the settlement of Whitworth. It is approximately 0.5km to the west at the southern end of the route;
    - The settlement of Bacup is also bypassed by the Rochdale Cable Corridor Search Area. It is approximately 2km to the west at the central part of the route; and
    - The town of Rochdale is adjacent to the Rochdale Cable Corridor Search Area, to the southern and eastern sections of the route.
- Bradford West Option 1 and 2 Cable Corridor Search Area:
    - Oxenhope is located approximately 1km north of the Bradford Cable Corridor option 1 and 2 within the Cable Corridor Search Area;
    - Cullingworth is located approximately 1.2km north of the Bradford Cable Corridor option 1 and 2 within the Cable Corridor Search Area;
    - Denholme is located adjacent to and between the two cable corridor options within the Cable Corridor Search Area;
    - Mixenden is approximately 3km south of the Bradford Cable Corridor option 1 and 2 within the Cable Corridor Search Area;
    - Haworth is approximately 3.5km northwest of the Bradford Cable Corridor option 1 and 2 within the Cable Corridor Search Area;
    - Bradford is approximately 2km east of the Bradford Cable Corridor option 1 and 2 within the Cable Corridor Search Area; and
    - Halifax is approximately 5km south of the Bradford Cable Corridor option 1 and 2 within the Cable Corridor Search Area.
- Leeds Cable Corridor Search Area:
    - Shipley is within the Leeds and Bradford West Cable Corridor Search Area;

- Bingley is adjacent to the northern edge of the Cable Corridor Search Area;
- Horsforth is within the Leeds Cable Corridor Search Area;
- Leeds Bradford Airport is approximately 1.5km north of the Cable Corridor Search Area;
- Pudsey is approximately 1km south of the Cable Corridor Search Area;
- Eccup is at the northeastern end of the Cable Corridor Search Area; and
- Leeds is approximately 2km south, at the eastern end, of the Cable Corridor Search Area.

4.2.5 The cable corridors within the Cable Corridor Search Areas will be routed to avoid properties.

4.3 Environmental characteristics

4.3.1 The below paragraphs present details relating to the main environmental characteristics of the Turbine Area and the surrounding area. A detailed summary of the environmental baseline of the Turbine Area is contained within each of the individual environmental technical chapters (see Chapters 6 to 18).

Land Use

4.3.2 The Turbine Area is characterised by moorlands, pastures, and gritstone settlements, and includes a network of drains and ditches, as well as sporadic blocks of woodland on the lower ground. Widespread across the Turbine Area are bogs, marshes, water-fringed vegetation, and fens. The habitat is mainly rotationally burned upland heath, managed for and used as a grouse moor, with areas of rough grazing (predominantly for sheep). The Area is also used for other recreational activities, and the vast majority of the Turbine Area is classified as Open Country and Common Land under the Countryside Rights of Way Act 2000[28] .

4.3.3 The Agricultural Land Classification (ALC) mapping published by Natural England indicates that much of the Turbine Area consists of Grade 5, Very Poor Quality Agricultural Land, with some areas of Grade 4, Poor Quality Agricultural Land.

[28] His Majesty's Office (HMSO) (2000), Countryside Rights of Way Act 2000: https://www.legislation.gov.uk/ukpga/2000/37/contents

4.3.4 Upland areas reach heights of 463m Above Ordnance Datum (AOD) at Heather Hill summit in the northwest of the Turbine Area and 452m AOD at Withins Heights in the north.

4.3.5 Blanket bog peat soils are widespread across the Turbine Area. Phase 1 Peat Probing was undertaken across the Turbine Area in February 2022 (see **Chapter 8: Hydrology, Hydrogeology, Geology and Peat** for further information). It has been found that the deepest peat is mainly located in western, northwestern and eastern sides of the Turbine Area, with further patches of deep peat interspersed across much of the Turbine Area. The shallowest peat is located mainly in the southern area of the Turbine Area.

4.3.6 The eastern part of the Turbine Site is Green Belt, and the Turbine Area sits within the Calderdale Special Landscape Area, with more information on landscape designations provided in **Chapter 10: Landscape and Visual**.

4.3.7 Smaller infrastructure associated with land use as a grouse moor is interspersed throughout the wider site, such as Grouse Butts and associated drainage.

Water Resources

4.3.8 The three Walshaw Dean Reservoirs (Walshaw Dean Upper, Middle and Lower reservoirs) are located in the centre of the Turbine Area, with the Widdop Reservoir located to the southwestern side of the Turbine Area. They are managed by Yorkshire Water and were constructed in 1901 for water supply purposes. The reservoirs drain to the Calder Valley.

4.3.9 The Hebden Water is located approximately 0.5km south from the nearest point of the Turbine Area. The Hebden Water is formed by the merging of two streams; Graining Water (adjacent to the Turbine Area), which flows largely south-eastward, and Alcomden Water (within the Turbine Area), which flows largely southward. A network of ditches and drains are present across the Turbine Area.

4.3.10 The government online flood mapping[1] indicates the Turbine Area mostly lies within a Flood Zone 1 (land with less than 0.1% annual probability of flooding. There are small areas in a Flood Zone 3 (land with an estimated 100 (1%) or greater annual probability of flooding from rivers), associated with the reservoirs (including the Walshaw Dean Reservoirs and Widdop Reservoir), Graining Water, Hole Sike and Crimsworth Dean Beck. This indicates a high probability of flooding from these fluvial sources. There are also some smaller areas of Flood Zone 2 (land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding), associated with the reservoirs and Graining Water.

4.3.11 The government website long term flood risk mapping[1] indicates there is a high yearly chance of localised surface water flooding associated with the many watercourses draining the Turbine Area. These flooding extents are shown to increase between 2040 and 2060. A large area at risk of surface water flooding, on the western side of the Turbine Area, is the Waterfall Syke and Cross Dike.

4.3.12 With the exception of a small portion of the far west of the Turbine Area, the entire Turbine Area is located within the Hebden Water catchment, which drains to the River Calder at Hebden Bridge.

4.3.13 There are no recorded flood events within the Turbine Area, however, there are significant events recorded within the wider Calder Catchment and within the Calder Valley towns, including Hebden Bridge. In 2000 there was significant flooding in Hebden Bridge, as well as at the other towns in the catchment, and then again in 2007, increasing in recent years (2020/2024). The Hebden Bridge Flood Alleviation Scheme is currently being developed by the Environment Agency and Calderdale Council.

Biodiversity

4.3.14 The moor is a grouse shooting site and a habitat for several species of ground-nesting birds such as curlew, golden plover, lapwing and snipe.

4.3.15 The Turbine Area is within an area covered by statutory designated ecological designations. Table 4-1 captures the statutory ecological designations and their proximity/distance to the Turbine Area, with a description of their designations. Figure 6-2 shows the location of the ecological designations in proximity to the Proposed Development, which includes the Cable Corridor Search Areas and Access Route Search Areas.

Table 4-1: Statutory ecological designations

Designation	Distance to Turbine Area	Description
South Pennine Moors SAC and SPA	Turbine Area is within SAC and SPA	Designated due to its natural features, particularly its moorland habitats and birdlife, including breeding populations. These habitats, including blanket bog, wet and dry heath, and acid grassland, and support a

		variety of species, some of which are designated as internationally important.
South Pennine Moors SSSI	Turbine Area is within SSSI	Designated due to it being the largest area of unenclosed moorland within West Yorkshire, containing examples of upland plant communities, and habitats including blanket bogs, flushes, and mires.
Crimsworth Dean SSSI	0.5km southeast	Designated due to the geology exposed in the stream bed of Crimsworth Dean Beck. The bed and banks of Crimsworth Dean Beck provide exposures of a series of rock-layers formed about 320 million years ago.
Bradford Pennine Gateway National Nature Reserve (NNR)	2.9km northeast	The Bradford Pennine Gateway National Nature Reserve is the result of a partnership between Natural England and Bradford Council. The National Nature Reserve (NNR) forms part of the King's Series, a national initiative to protect and celebrate the natural heritage of the United Kingdom, and Natural England's commitment to enhancing biodiversity and access to nature for communities.

Colden Clough Local Nature Reserve (LNR)	3.1km south	Colden Clough LNR is designated for its biodiversity and historical significance. It offers a space for people to study, learn about, and enjoy nature. The area features ancient woodlands, diverse flora and fauna, and remnants of industrial history, including old mills and packhorse trails. The reserve is managed to maintain and enhance its wildlife and geology, while also providing access to nature for local communities.

4.3.16 The Turbine Area is currently managed, and will continue to be managed until 2042, under the terms of the Natural England Walshaw Catchment Restoration Plan (2017-2042). This is a programme of interdependent habitat management and infrastructure management techniques agreed between Natural England and the Walshaw Moor Estate; and designed to protect, restore and improve important blanket bog habitat.

4.3.17 The Turbine Area contains internationally significant fungi, within a group of fungi called the CHEGD Fungi[29]. CHEGD Fungi was identified within areas of purple moor grassland and rush pasture.

Cultural Heritage

4.3.18 There are no Registered Parks and Gardens within the Turbine Area. There are two Grade II listed buildings within the southern end of the Turbine Area; Holme Ends Farmhouse and Attached Barn; and Bridge at Holme Ends Over Alcomden Water. There are many Grade II listed buildings in close proximity to the Turbine Area, the closest are:

- Bee Boles in Wall to East of Over Wood Farmhouse, and Over Wood Farmhouse and Attached Barn, both 0.2km to the south of the Turbine Area;

[29] this stands for the key fungi groups involved: spindles, club and coral fungi (Clavarioids), the waxcaps Hygrocybe genus (although recent DNA investigations have split up the genus), pinkgills (Entoloma), earthtongues (Geoglossum and relatives), and crazed caps (Dermoloma and relatives)

- Coppy Farmhouse and Attached Barn, adjacent to southeastern the boundary of the Turbine Area; and
- Land Head and White Hole, both 0.35km to the southeast of the Turbine Area boundary.

4.3.19 There are no Conservation Areas located within the Turbine Area.

4.3.20 Figures 11-1 and 11-2 show the location of the Conservation Areas and Listed Buildings in proximity to the Proposed Development, predominantly within 15-20 km, which includes the Cable Corridor Search Areas and Access Route Search Areas.

4.3.21 The Turbine Area is part of a literary landscape, known as 'Bronte countryside', named after the Bronte sisters (well-known poets and novelists). Top Withens Farmhouse (the inspiration for Wuthering Heights) is approximately 450m from the Turbine Area to the northeast.

4.3.22 There are no Registered Battlefields or World Heritage Sites within 1km of the Turbine Area boundary and the Cable Corridor Search Areas. The nearest World Heritage Site is Saltaire, which is located 13.4km northeast of the Turbine Area. The Saltaire World Heritage Site is approximately 5km east from both of the Bradford West 1 and 2 Cable Corridor Search Areas.

4.3.23 There are four scheduled monuments located within 2km of the Turbine Area, these comprise; Wayside Cross (known as Abel Cross) 0.6km south of the Turbine Area, Small stone circle on Delf Hill 1.4km east of the Turbine Area, Saucer barrow 1.3km east of the Turbine Area, and Ring cairn 1.4km east of the Turbine Area.

4.3.24 The Stoodley Pike Monument (a monument sitting atop Stoodley Pike) is approximately 7.4km south of the Turbine Area.

4.3.25 Figure 11-2 shows the location of the Scheduled Monuments that are found in proximity to the Proposed Development.

Transport and Access

4.3.26 The A6033 is located in the east of the Turbine Area. The A6068 is located to the west of the Turbine Area. Widdop Road and Ridehalgh Lane run adjacent to the southwest of the Turbine Area from Hebden Bridge.

4.3.27 The Turbine Area is currently used for recreational purposes, due to the open access areas and footpaths within the area. The majority of the Turbine Area is located in Open Country land, with pockets in the east and northeast of the Turbine Area classed as Registered Common Land.

4.3.28 The Pennine Way National Trail runs through the middle of the Turbine Area, crossing from northeast to southwest. The Bronte Way which is a long-distance footpath is approximately 2.2 km to the north of the Turbine Area, at its closet point. It starts at Oakwell Hall near Birstall in Kirklees near Bradford and ends at Gawthorpe Hall in Padiham near Burnley. There are several footpaths which cross the Turbine Area, and form part of the local Public Right of Way (PRoW) network. Further information is detailed within **Chapter 12: Access, Traffic and Transport**.

4.3.29 To the south of the Turbine Area, National Cycle Network Route 68 periodically runs along the southwestern boundary and is 0.7km south of the Turbine Area, following Ridehalgh Lane, at its closest point. National Cycle Network Route 68 is also known as Pennine Cycleway, and it runs from Derbyshire to Northumberland.

Existing Infrastructure

4.3.30 There are a number of existing wind turbines within 20 km of the Turbine Area, including:

- 16 MW Coal Clough Wind Farm is located approximately 5.8 km from the boundary of the Turbine Area in a southwest direction;
- 12.3 MW Todmorden Moor is located approximately 8.2 km from the boundary of the Turbine Area in a south direction;
- 22.5 MW Ovenden Moor Wind Farm is located approximately 8.2 km from the boundary of the Turbine Area in an east direction;
- 65 MW Scout Moor Wind Farm is located approximately 17.5 km from the boundary of the Turbine Area in a southwest direction.
- 10.2 MW Reaps Moss Wind Farm is located approximately 10.4 km from the boundary of the Turbine Area in a southwest direction; and
- 23.8 MW Crook Hill is located approximately 11.7 km from the boundary of the Turbine Area in a south direction.

4.3.31 A concentration of small <10kv power lines and towers are located at the southern end of the Turbine Area, along the Hebden Water river and Crimsworth Dean Beck. There are power lines located adjacent and in close proximity to the northeastern and west side of the Turbine Area.

4.3.32 The nearest meteorological station to the Turbine Area is Bradford station situated 12.7 km to the northeast. The Meteorological Office Radar at Hameldon Hill is located approximately 16km to the west of the Turbine Area.

5 The Proposed Development

5.1 Introduction

5.1.1 The design of the Proposed Development is currently being developed, informed by operational needs, a range of technical and environmental considerations, and responses from the consultation and engagement undertaken to date. At the point of the Application the design will have reached a state of maturity appropriate to allow the EIA to be undertaken.

5.1.2 Information provided on layout and design within the DCO application will be based on the principles of the 'Rochdale Envelope' (See **Chapter 3: Approach to EIA**) in accordance with PINS Nationally Significant Infrastructure Projects - Advice Note Nine: Rochdale Envelope.[30] Technical assessments presented in the ES will define a 'design envelope' within which the Proposed Development will occur. The DCO application and EIA will be based on maximum and, if applicable, minimum parameters. To comply with the EIA Regulations, it is important to define these parameters as narrowly as practicable to identify likely significant effects, rather than exaggerating effects that are improbable.

5.1.3 Incorporating flexibility into the design, subject to the Application is essential to allow for alignment with environmental and technical considerations, post-consent adjustments, and technological advancements.

5.1.4 The ES will define which elements of the Proposed Development have yet to be finalised and provide reasons for this. Where flexibility is sought for any elements, the ES will set out the parameters that would apply, clearly setting out any proposed limits of deviation, ensuring a design envelope that has considered the reasonable worst-case environmental effects. The flexibility will vary depending on the sensitivity of the receptors and may be fixed at certain locations to prevent significant effects.

5.1.5 In addition to the Rochdale Envelope, following PINS Nationally Significant Infrastructure Projects – Advice Note: Commitments Register[31]; to ensure clarity as to how environmental mitigation measures included within the design of the Proposed Development are secured, a Commitments Register will be included within the DCO application. As discussed in **Chapter 3: Approach to EIA**, this will identify how commitments will be secured and implemented, to ensure potential

[30] Planning Inspectorate (2025), Nationally Significant Infrastructure Projects – Advice Note Nine: Rochdale Envelope, Available at: https://www.gov.uk/government/publications/nationally-significant-infrastructure-projects-advice-note-nine-rochdale-envelope/nationally-significant-infrastructure-projects-advice-note-nine-rochdale-envelope

[31] Planning Inspectorate (2024), Nationally Significant Infrastructure Projects: Commitments Register, Available at: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-commitments-register

environmental effects arising from the Proposed Development are mitigated as far as practicable, in accordance with the EIA mitigation hierarchy (as set out Chapter 3: Approach to EIA). In accordance with Nationally Significant Infrastructure Projects: Commitments Register guidance, a Scoping Commitments Register is included in Appendix A, which provides details on the management plans which are currently anticipated to be submitted as part of the DCO Application and any specific commitments made by the Applicant at this (scoping) stage of the Proposed Development. The Commitments Register is a 'live' document that will be updated throughout the DCO process.

5.1.6 The Turbine Area is shown in Figure 4-1. Figure 4-2 shows the Cable Corridor Search Areas and Access Route Search Areas. Figure 4-3 provides a plan sufficient to identify the land where development could occur.

5.1.7 The Proposed Development will comprise the following key components, the detail is provided in the following sections:

- Up to 41 wind turbines, with associated foundations, crane hardstandings and external transformers. The gross electrical output capacity of the wind turbines would be of over 100MW with 41 turbines generating a capacity of approximately 300MW based on current technology;
- BESS, which would comprise a number of battery units;
- Associated infrastructure, which may include; onsite substation(s), access tracks and site accesses, off-site highways work, anemometer masts, underground cables, grid connection infrastructure, services, , borrow pits, construction compounds, drainage, watercourse crossings and landscaping, lighting, CCTV and fencing and enclosures; and
- Mitigation and enhancement measures, which may include offsite compensation measures (subject to conversations with Natural England and any other relevant stakeholders).

5.2 Turbines, Foundations and Crane Hardstandings

5.2.1 Up to 41 wind turbines are proposed. These turbines would have a maximum tip of height of 200m. A candidate turbine has not been identified and each technical aspect will select the worst case scenario turbine for the relevant assessment. It maybe that different turbines are used for different assessments.

5.2.2 The wind turbine foundations are anticipated to be based on a reinforced concrete gravity base design. These will be formed on suitable load bearing strata formed at a minimum of 4m depth. Intrusive advance site investigation work will inform the

ground conditions and the final design, including any ground improvement work required to achieve the load bearing stiffness required. At this stage, it is not known whether concrete batching will be required. Should this be necessary, potential impacts resulting from the concrete batching process, including from the abstraction of water and discharge of wastewater, will be considered in the ES.

5.2.3 As the turbines will exceed 150m there is a requirement for them to be fitted with visible aviation lighting. This will be in accordance with the requirements of the Civil Aviation Authority (CAA). A reduced lighting scheme will be considered in consultation with the CAA to mitigate the environmental effects of the lighting.

5.2.4 Micrositing will be a key consideration when locating wind turbines, which involves choosing the type and exact position of the wind turbine based on a number of parameters such as wind conditions, distance between the individual turbines, accessibility, noise emissions, building requirements (e.g. distance to residences), peat and other considerations etc.

5.2.5 During construction, crane hardstandings will be required to store components and erect the wind turbines. At this stage, the crane hardstandings are anticipated to be 4000m2.

5.2.6 The main crane hardstandings would be left in-situ following erection of the wind turbines to allow for maintenance and replacement of parts as necessary during the operational lifetime of the Proposed Development, and to facilitate decommissioning. The crane assist and blade storage pads would be removed on completion.

5.3 Battery Energy Storage System (BESS)

5.3.1 The BESS will be used to regulate the supply of power to the National Grid. The BESS will store excess energy generated during periods of high wind and release it when it is most needed. It can also import from the grid. This will ensure stable and reliable energy distribution to the National Grid.

5.3.2 The substation and BESS may, subject to more detailed design work, be located in the same compound area. At this stage, the indicative size of the combined substation/ BESS compound is approximately 35,200m2 (220m x 160m). If the substation and BESS are not located within the same compound the BESS compound would be 20,800m2 (160m x 130m), The maximum height of the BESS unit would be approximately 3m above ground level. Foundations, for the BESS units, are likely to consist of reinforced concrete slabs, pads or raft foundations up to approximately 1m deep, subject to confirmation of ground conditions.

5.3.3 The BESS compound will not be permanently lit and will be designed in accordance with Health and Safety requirements. External lighting will be mounted on columns of up to a maximum of 5m high. Task specific lighting will be used in the case of emergency works. Passive Infra-Red controlled lighting with provision for manual switching will be used where access is required outside of daylight hours.

5.3.4 Security fencing (palisade fencing) will be located around the BESS compound, and this fencing will be a height of between 2.4m and 3.0m above ground level.

5.3.5 The battery model and location of the proposed BESS compound has yet to be identified.

5.4 Substation

5.4.1 An onsite dedicated substation will link the Proposed Development to the National Grid distribution network. It will comprise electrical infrastructure including transformers, switchgear, control building(s) and metering equipment to facilitate the import and export of electricity.

5.4.2 The location of the substation has yet to be defined. The indicative size of the combined substation and BESS compound is approximately 35,200m^2 (220m x 160m). If the facilities are not combined the substation compound would be 11,200 (160m x 70m). The maximum height of the substation building is approximately 14m above ground level. Foundations are likely to consist of reinforced concrete slabs, pads or rafts up to 1m deep. Lightning rods up to approximately 20m above ground level may be required, which will be determined by a lightning protection study to be undertaken at the detailed design stage, following DCO consent. For the purposes of assessment, it will be assumed that these will be required.

5.4.3 The substation compound will not be permanently lit and will be designed in accordance with Health and Safety requirements. External lighting will be mounted on columns of up to a maximum of 5m high. Task specific lighting will be used in the case of emergency works. Passive Infra-Red controlled lighting with provision for manual switching will be used where access is required outside of daylight hours.

5.4.4 Within the substation compound there will be electrical control buildings, which will have a maximum footprint of approximately 1,000m² and a maximum height of approximately 14m above ground level. Foundations will consist of reinforced concrete slabs, pads or rafts of up to 1.4m deep. Internal lighting within the control buildings will be designed and operated to minimise light spillage. It is expected that the final design of the substation compound will be the subject of a Requirement which will be included in the DCO. This will ensure the control buildings are

appropriately finished subject to approval by Calderdale Council. Security fencing will be located around the substation compound, and this fencing will be a maximum height of between 2.4m and 3.0m above ground level.

5.5 Office, warehouse and plant storage infrastructure

5.5.1 The Proposed Development will include a permanent office, storeroom, protection and Supervisory Control and Data Acquisition (SCADA) room, DNO control room, metering room, 33kV switch rooms, battery room, storerooms and welfare facilities. This will be located in a single building which would have a maximum height of approximately 14m and a maximum footprint of up to approximately 1,000m^2. The location of the buildings will be provided as part of the DCO application information but will form part of the substation site compound.

5.6 Onsite Cabling

5.6.1 Onsite cabling will transfer electrical energy between the wind turbines and the onsite substation. Further work is being undertaken to determine the onsite cable routes, as well as the construction activities. At this stage the parameters for the onsite cabling are as follows:

- Wind turbines will be arranged in arrays, with each array connected to the on-site substation using underground cables, with each cable circuit connecting several wind turbines together in an array;
- The routing of these underground cables is expected to predominantly follow the onsite access track verges;
- Cabling will be underground and laid in trenches at depths of cover normally 0.9m – 1.5m depth and will be of a varying width depending on the number of circuits; and the cables will be bedded and covered with sand and backfilled with the excavated material; and
- If required ducting will be used for the cables.

5.7 Fencing and security

5.7.1 It is not proposed to fence in the wind turbines. Security (palisade) fencing would be installed around the substation and BESS compound(s).

5.7.2 CCTV towers will be installed within the Proposed Development (at the BESS compound) up to a maximum height of 5m above ground level. CCTV lighting will be infrared (not visible in the dark) and will only be operated outside of daylight hours.

5.7.3 Further details of the fencing and security will be assessed in the EIA and will be provided as part of the DCO application.

5.8 Borrow pits

5.8.1 The Proposed Development would require quarried stone to construct new tracks, hardstandings and compound areas, and where suitable to improve the existing tracks within the Turbine Area. The crushed stone will be required to form the track and hardstanding surface areas for the cranes and the site tracks. Suitable volumes of quarried stone will be sourced from onsite borrow pits, where it is possible. The utilisation of onsite borrow pits will assist with minimising the potential environmental and transport network effects associated with transporting imported aggregate to the Turbine Area.

5.8.2 Further information on the borrow pits and identification of aggregate requirements for the Proposed Development will be presented in the ES.

5.9 Watercourse Crossing

5.9.1 The Proposed Development would require watercourse crossings. The type of crossing would be determined following further hydraulic assessment, and in consultation with the Environment Agency and the Lead Local Flood Authority. At this stage, the type of crossing could include:

- Closed pipe culvert
- Bottomless Arch Culvert
- Bridge Structure

5.9.2 The details of the watercourse crossings will be presented in the ES.

5.10 Site Access

5.10.1 As discussed in **Chapter 4: Description of the Scoping Boundary and the Surrounding Area** and shown in Figure 4-2 the locations of the site access have not yet been determined.

5.10.2 Currently, construction access to the Turbine Area is proposed to be taken from the west and east of the site as demonstrated by the Site Access Search Areas, as shown in Figure 4-2. Currently, access to the west will also provide access for general construction traffic as well as AIL traffic associated with the delivery of wind turbine components. Whilst, currently, access to the east will be taken for general construction traffic and construction staff from the A6033. The Site Access Search

Areas and site accesses will be further refined as the design evolves. More detail is provided in the Chapter 12: Access, Traffic and Transport Chapter.

5.10.3 The Site accesses will be used for all phases of the Proposed Development.

5.10.4 There may be other accesses for operational/maintenance AIL access, but these are still being developed.

5.10.5 An AIL assessment will be undertaken and will include detailed swept path analyses for the main constraint points on the route from the nearest suitable trunk road junction through to the Turbine Area site access; to demonstrate that wind turbines, cranes and all other infrastructure required for the Proposed Development can be delivered to the Turbine Area and to identify any temporary and permanent road works which may be necessary, as well as identifying any additional temporary oversailing rights that might be needed.

5.10.6 A Route Survey Report describing the access route and road modifications for the AIL delivery traffic during construction, to the Turbine Area, will be submitted as part of the DCO application.

5.11 Grid Connection

5.11.1 As discussed in **Chapter 4: Description of the Scoping Boundary and the Surrounding Area** and shown in Figure 4-2, there are currently four Cable Corridor options, within the two Cable Corridor Search Areas, being investigated to connect the Proposed Development to the Point of Connection. Undergrounding of the electricity cables between the Proposed Development and the Point of Connection is the preferred method of construction unless there are technical reasons why undergrounding is not reasonable or overgrounding is required by statutory bodies.

5.11.2 The parameters for the cable installation along the Cable Corridor options within the Cable Corridor Search Areas include:

- Minimum burial depth of 0.8m;
- Single circuit trench width of 0.91m;
- Twin circuit trench widths of 1.91m; and
- Maximum diameter / width of the cable of 105mm.

5.11.3 Where two single circuit trenches are used along the route, they may be separated by a distance of up to approximately 8m with a haul road in between.

5.12 Off-site highway works

5.12.1 The AIL routes have not yet been determined and a route survey will be undertaken. Once the survey has been undertaken, the Applicant will consider the options. This consideration will include any additional temporary oversailing rights and street works that may be needed. The final details will be presented in the ES.

5.12.2 For the purposes of Scoping Figure 4-3 shows the current search area for temporary and permanent highways works.

5.13 Off-site Biodiversity Compensation and Onsite Biodiversity Mitigation

5.13.1 The Proposed Development is anticipated to include off-site compensation measures that will compensate for the loss of bog habitat; and will include opportunities for mitigating and restoring biodiversity within the Turbine Area. Consultation with Natural England has commenced on the approach to mitigation, compensation, restoration and enhancement and the measures will be included within the DCO Application.

5.13.2 A stand-alone shadow HRA will be submitted within the DCO Application. For the purposes of Scoping Figure 4-3 shows the current area of search for off-site biodiversity compensation measures.

5.14 Construction

Programme and Activities

5.14.1 Subject to obtaining development consent it is anticipated that the construction phase would be approximately 30 months, with an anticipated earliest construction onsite date of Quarter 2, 2029 Further construction details will be provided as part of the DCO application.

5.14.2 Construction activities will include but are not limited to:

- Enabling works including highway improvement works.
- Transportation of construction materials, plant and equipment.
- Set up of temporary construction site compounds, offices and welfare and storage facilities, and batching plants.
- Construction of fencing and security measures.
- Targeted site clearance, establish site borrow pits, earthworks and excavations.
- Works for drainage systems, crossings and water managements.

- Construction and formation of access tracks, hardstandings and compounds.
- Construction of Electrical Substation and BESS.
- Construction of Wind Turbine Generator (WTG) foundations.
- Construction of hardstanding and laydown areas.
- Transportation and storage of WTG components and plant.
- Erection of the WTGs.
- Installation of electrical cables, substation equipment and BESS.
- Installation of grid connection cables.
- Commissioning. and,
- Landscaping and habitat enhancement.

5.14.3 No demolition works are proposed, although there may be the potential for felling.

5.14.4 Construction working hours will be 07:00 to 18:00 Monday to Friday and 08:00 to 14:00 Saturday, with no working on Sundays or Public / Bank Holidays. Exceptions to these working hours may arise, for example, AILs are delivered and offloaded and through intensive activities like Horizontal Directional Drilling (HDD) for cabling and concrete pouring; or to conduct specialist activities. There may also be a requirement to erect turbines over a 24-hour period.

Environmental Management

5.14.5 As part of the DCO application the following outline management plans will be submitted, which will detail the environmental measures to be implemented during construction of the Proposed Development. There will also be an Ecological Clerk of Works (ECoW) during the construction of Proposed Development to advise on ecological avoidance and mitigation measures. The use of these management plans is detailed within the Scoping Commitments Register (Appendix A).

5.14.6 The construction management plans will include:

- Outline Construction Environmental Management Plan (oCEMP): the oCEMP will set out the effective, site-specific procedures and mitigation measures to monitor and control environmental impacts throughout the construction phase of the Proposed Development. This will ensure that construction activities, so far as is practicable, do not adversely impact amenity or the environment in the surrounding area. The oCEMP will set out the monitoring and auditing activities

required to ensure that such mitigation measures are carried out, and that they are effective. An Outline Lighting Strategy, if required, will be prepared in accordance with the oCEMP and approved by the relevant planning authority. The strategy would be employed, where necessary, to avoid light pollution and avoid/minimise impacts of lighting on nocturnal species such as Bats and Otter, during the construction phase. Works are not anticipated to be required at night, however access routes, Substation, BESS, and construction compounds may require security lighting and some out of hours working may be required. The Construction Method Statement will also work alongside the oCEMP to outline how construction tasks will be carried out safely and efficiently, with appropriate health, safety and environmental mitigations in place.

- Outline Construction Traffic Management Plan (oCTMP): purpose of the oCTMP is to propose how construction traffic including site personnel movements will be safely controlled by the Applicant and its sub-contractors. This will include:
    - routing of construction vehicles;
    - access arrangements to the Proposed Development;
    - details of the vehicle holding area(s);
    - details of AIL;
    - coordination with the highways authorities and police; and
    - details of any diversion, disruption or other abnormal use of the public highway or public right of ways during construction works.
- Outline Peat Management Plan (oPMP): the oPMP will set out how peat will be managed during the construction phase of the Proposed Development. The oPMP will be discussed and agreed with the Environment Agency and will include details on how peat will be identified, handled, and managed. It will provide a framework for minimising peat disturbance, reducing adverse impacts, and ensuring regulatory compliance.
- Outline Soils Management Plan (oSMP): this will manage any potential impacts to the soil (and agricultural land) during and on completion of the construction of the Cable Corridor and proposed access routes. The oSMP will identify those areas within the Proposed Development which may be more susceptible to damage. It will set out details of when soil handling should be avoided (for example when it is wet or after periods of heavy rainfall or high winds) and it will advise on when soils are suitable for being handled or trafficked. The oSMP will also detail measures for soil management and follow the principles of best

practice to maintain the physical properties of the soil, with the aim of restoring the land to its pre-construction condition following temporary construction use, and at the end of the lifetime of the Proposed Development.

- Outline Employment Skills and Supply Chain Management Plan (oESSMP): the oESSCMP sets out measures to maximise opportunities to promote economic benefits in relation with skills, supply chains, and employment in the local region, which is required to deliver the Proposed Development.
- Outline Site Waste Management Plan (oSWMP): this will set out the standard good practice measures that will be implemented by the Applicant to manage waste generated by the construction of the Proposed Development.
- Outline Public Rights of Way Management Plan (oPROWMP): this management plan will outline how PRoW will be managed for the Proposed Development. This is to ensure that they have been suitably considered and are able to operate, in terms of both user safety and accessibility, during the construction of the Proposed Development.
- A Written Scheme of Investigation (WSI): the WSI will outline the methodology for archaeological work, with the primary purpose to ensure that archaeological remains are identified, recorded and potentially preserved or mitigated appropriately during development.
- Archaeological Mitigation Strategy: this strategy will outline how to mitigate effects on buried archaeological remains that cannot be avoided by a programme of archaeological investigation.

5.15 Operation

Programme and Activities

5.15.1 It is anticipated that the Proposed Development will become operational in 2031, depending on the grid connection; and remain in operation for up to approximately 35 years. During the operational phase of the Proposed Development, onsite activities will include routine servicing and maintenance of plant and equipment. Other maintenance works will include management of access tracks and vegetation.

Environmental Management

5.15.2 During operation and maintenance, the Proposed Development will be subject to the following management plans. The use of these management plans is detailed within the Scoping Commitments Register (Appendix A).

5.15.3 The operational management plans will include:

- Outline Operational Environmental Management Plan (oOEMP): this will set out measures to manage environmental impacts during the operational phase of the development, ensuring compliance with environmental regulations, best practices, and planning requirements.
- Outline Landscape and Ecology Management Plan (oLEMP): this will set out the short and long-term measures and practices that will be implemented to establish, monitor, and manage landscape and ecology mitigation and enhancement measures embedded in the design of the Proposed Development. The oLEMP will include the location, extent, type of habitat creation, timeframe for establishment, ongoing maintenance and monitoring requirements.
- Outline Peat Management Plan (oPMP): this will manage any potential impacts to the peat during operation of the Proposed Development.
- Outline Battery Safety Management Plan (oBSMP): this will set out the key fire safety provisions for the BESS proposed to be installed including measures to reduce fire risk and fire protection measures. The oBSMP will take into account good practices for battery fire detection and prevention, in addition to setting an emergency response plan. Water Management will be a key issue in the event of a fire.
- Outline Soils Management Plan (oSMP): this will manage any potential impacts to the soil (and agricultural land) during operation of the Proposed Development.
- Outline Employment Skills and Supply Chain Management Plan (OESSMP): the oESSCMP sets out measures to maximise opportunities to promote economic benefits in relation with skills, supply chains, and employment in the local region, which is required to deliver the entirety of the Proposed Development.
- Outline Site Waste Management Plan (oSWMP): this will set out the standard good practice measures that will be implemented by the Applicant to manage waste generated by the operation and maintenance of the Proposed Development.
- Outline Public Rights of Way Management Plan (oPROWMP): this management plan will outline how PRoW will be managed for the Proposed Development during the operational phase.
- A reduced lighting scheme will be considered in consultation with the CAA to mitigate the environmental effects of the lighting.

5.16 Decommissioning

Programme and Activities

5.16.1 After up to approximately 35 years of operation, it is anticipated that decommissioning will commence. Equipment will be removed over a period of time, typically over 24 months. The foundations and cabling are likely to remain in-situ and will be confirmed within the ES. Any additional enhancement or compensation measures will be left in place. Above ground infrastructure will be dismantled and recycled or disposed of in accordance with best practice policy and requirements at that time. As detailed in the Commitments Register (see Appendix A).

Environmental Management

5.16.2 During decommissioning, the Proposed Development will be subject to the following management plans. The use of these management plans is detailed within the Scoping Commitments Register (Appendix A).

5.16.3 The decommissioning management plans include:

- Outline Decommissioning Environmental Management Plan (oDEMP): This will set out the principal decommissioning activities and the measures that will be implemented, so far as is practical, to ensure the works do not adversely impact amenity, traffic or the environment in the surrounding area. It will also set out the monitoring and auditing activities designed to ensure that such mitigation measures are carried out, and that they are effective.
- Outline Peat Management Plan (oPMP): this will manage any potential impacts to the peat during decommissioning of the Proposed Development.
- Outline Soils Management Plan (oSMP): this will manage any potential impacts to the soil (and agricultural land) during decommissioning of the Proposed Development.
- Outline Employment Skills and Supply Chain Management Plan (oESSMP): the oESSCMP sets out measures to maximise opportunities to promote economic benefits in relation with skills, supply chains, and employment in the local region, which is required to deliver the entirety of the Proposed Development.
- Outline Site Waste Management Plan (oSWMP): this will set out the standard good practice measures that will be implemented by the Applicant to manage waste generated by the decommissioning of the Proposed Development.

- Outline Public Right of Way Management Plan (oPROWMP): this management plan will outline how PRoW will be managed for the Proposed Development during the decommissioning phase.
- Decommissioning Traffic Management Plan (DTMP): this will set out measures as to how traffic will be managed during the decommissioning stage.

6 Ornithology

6.1 Introduction

6.1.1 This Chapter of the Scoping Report presents the scope of a detailed environmental assessment for ornithology for the Proposed Development. Specifically, this section of the Scoping Report presents the policy and legislative context, the approach to collecting baseline data relevant to this scoping chapter and an overview of the relevant ornithological baseline conditions within the Site and surrounding area. It concludes by setting out the scope of assessment including, with justification, those effects that are proposed to be scoped in or out for detailed assessment and concludes by outlining the method that will be used to undertake the detailed environmental assessment.

6.2 Review of Policy, Legislation and Relevant Guidance

6.2.1 Legislation, planning policy and guidance relating to ornithology, and relevant to the Proposed Development comprises:

Legislation

- European Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (the EC Habitats Directive) (1992) [implemented through the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019];
- European Commission (EC) Directive 2009/147/EC on the Conservation of Wild Birds (2009) [implemented through the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019];
- European Parliament and of the Council Directive 2011/92/EU, on the assessment of the effects of certain public and private projects on the environment (2011) (The EIA Directive) [governed and implemented through the Town and Country Planning Act (Environmental Impact Assessment) Regulations 2011 (as amended)];
- Wildlife and Countryside Act (WCA) (1981) (as amended);
- Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019);
- Natural Environment and Rural Communities (NERC) Act (2006); and

- Environment Act (2021).

National Planning Policy

- Overarching National Policy Statement for Energy (EN-1) (2023)[32];
- Draft Overarching National Policy Statement for Energy (EN-1) (2025)[33]
- Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (2025)[34];
- National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023)[35];
- Draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (2025)[36]; and
- National Planning Policy Framework (NPPF) (updated February 2025)[37].

Local Planning Policy

- Calderdale Local Plan 2018/19 – 2032/33 (Calderdale Council, 2023)[38];
- Rochdale Core Strategy, Adopted October 2016 (Rochdale Borough Council, 2017)[39]; and

[32] Department for Energy Security & Net Zero (2023) Overarching National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf
[33] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[34] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[35] Department for Energy Security & Net Zero (2023) National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147382/NPS_EN-3.pdf
[36] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[37] Ministry of Housing Communities & Local Government (2024) National Planning Policy Framework (December 2024) Updated online February 2025. Available at: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf
[38] Calderdale Council (2023). *Calderdale Local Plan. Adopted on 22 March 2023*. Available at: https://calderdale.objective.co.uk/portal/planning_services/adt/calderdale_local_plan
[39] Rochdale Borough Council (2017) *Rochdale Core Strategy, Adopted October 2016*. Available at: https://www.rochdale.gov.uk/local-planning-policy

- Local Plan for the Bradford District – Core Strategy Development Plan Document, Adopted July 2017 (City of Bradford Metropolitan District Council, 2017)[40];
- Pendle Borough Council Core Strategy (adopted December 2015)[41];
- Rossendale Local Plan 2019 - 2036[42];
- Burnley's Local Plan 2018 [43]; and
- Leeds City Council - Core Strategy (as amended by the Core Strategy Selective Review 2019) (adopted 2019)[44].

National Guidance

- Guidelines for Ecological Impact Assessment (EcIA) in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine Version 1.3 (Chartered Institute of Ecology and Environmental Management [CIEEM], 2018)[45];
- Wild birds: surveys and monitoring for onshore wind farms (Natural England, 2015)[46];
- Recommended bird survey methods to inform impact assessment of onshore windfarms (NatureScot, 2025)[47];
- NatureScot pre-application guidance for onshore wind farms (NatureScot, 2024)[48];

[40] City of Bradford Metropolitan District Council (2017) *Local Plan for the Bradford District – Core Strategy Development Plan Document, Adopted 2017*. Available at: https://www.bradford.gov.uk/planning-and-building-control/planning-policy/adopted-local-plan/
[41] Pendle Borough Council, 2015. Available at: https://www.pendle.gov.uk/info/20072/planning_policies/275/development_plan_documents/2
[42] Rossendale Borough Council Available at: https://www.rossendale.gov.uk/local-plan/adopted-local-plan
[43] Burnley Borough Council Available at: https://burnley.gov.uk/wp-content/uploads/2022/04/Burnleys-Local-Plan-Adopted-Version-Final-With-erratum-28-Sep-2018.pdf
[44] Leeds City Council, 2019. Available at: https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/core-strategy-introduction
[45] CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine Version 1.3.* Chartered Institute of Ecology and Environmental Management, Winchester.
[46] Natural England (2015*) Wild birds: surveys and monitoring for onshore wind farms.* Available at: Wild birds: surveys and monitoring for onshore wind farms - GOV.UK
[47] NatureScot (2025) *Recommended bird survey methods to inform impact assessment of onshore wind farms*. NatureScot, Perth. Available at: https://www.nature.scot/doc/recommended-bird-survey-methods-inform-impact-assessment-onshore-windfarms
[48] NatureScot (2024) *NatureScot pre-application guidance for onshore wind farms*. NatureScot. Available at: https://www.nature.scot/doc/naturescot-pre-application-guidance-onshore-wind-farms

- Guidance on using an updated collision risk model to assess bird collision risk at onshore wind farms (Band 2024[49]; NatureScot, 2024)[50];
- Guidance Note – Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected area (NatureScot, 2025)[51];
- Guidance – Assessing the cumulative impacts of onshore wind farms on birds (Scottish Natural Heritage [SNH], 2018)[52];
- Good practice during wind farm construction (NatureScot, 2024)[53]; and
- Guidance - Assessing Connectivity with Special Protection Areas (SPAs) Version 3 (Scottish Natural Heritage [SNH], 2016)[54].

6.2.2 Several guidance documents referenced above have been published by NatureScot, formerly SNH or by SNH. These are proposed to be used where there is no comparable guidance in England and it represents the most up to date guidance relevant to the ornithological assessment.

6.3 Existing Baseline Conditions

6.3.1 This section of the Scoping Chapter for ornithology sets out the known baseline conditions at this (scoping) stage. It is noted that ongoing surveys and assessment will inform the technical assessment for the Environmental Statement (ES) (see details below and scope of the further baseline data below under Section 6.6).

Study Area

6.3.2 Study areas were chosen to reflect standard best practice guidance as described within Natural England's standing advice for assessing the impacts of wind farms on wild birds (Natural England, 2015)[46] and NatureScot (2025)[47] guidance on recommended bird survey methods to inform impact assessment of onshore wind farms, as well as other necessary species-specific guidance.

[49] Band, W. (2024) *Using a collision risk model to assess bird collision risks for onshore wind farms*. NatureScot Research Report 909.
[50] NatureScot (2024) *Guidance on using an updated collision risk model to assess bird collision risk at onshore wind farms*. Available at: https://www.nature.scot/doc/guidance-using-updated-collision-risk-model-assess-bird-collision-risk-onshore-wind-farms
[51] NatureScot (2025) Guidance Note – *Assessing the significance of impacts on bird populations from onshore wind farms that do not affect protected area*. Available at: https://www.nature.scot/doc/guidance-note-assessing-significance-impacts-bird-populations-onshore-wind-farms-do-not-affect
[52] Scottish Natural Heritage (2018) *Assessing the cumulative impacts of onshore wind farms on birds*. SNH, Perth.
[53] NatureScot (2024) *Good practice during wind farm construction*. Available at: https://www.nature.scot/doc/good-practice-during-wind-farm-construction
[54] Scottish Natural Heritage (2016) *Assessing Connectivity with Special Protection Areas (SPAs) Guidance*. Version 3 – June 2016. SNH, Perth.

6.3.3 The study area for the desk study includes the Proposed Development and appropriate buffers described below:

- Up to 20km for internationally designated sites of ornithological interest;
- Up to 10km for nationally designated sites of ornithological interest; and
- Up to 2km for specially protected and/or noteworthy species records.

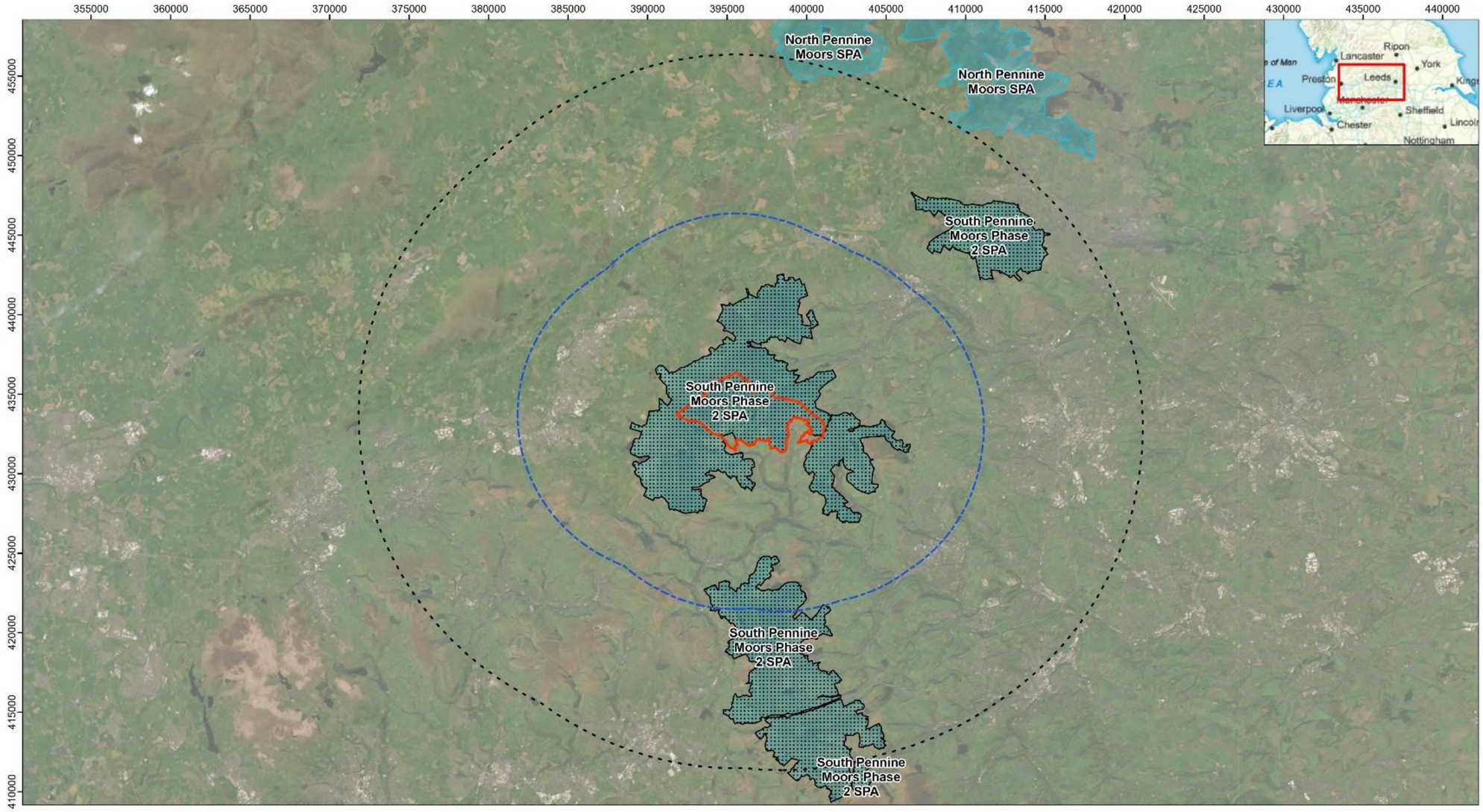
6.3.4 The study area for ornithological surveys has evolved over time as the proposed Scoping Boundary has changed to exclude a small area of land in the north-east of the Turbine Area and subsequently to include new areas that include access roads. The areas for surveys undertaken to date were also dependent upon provision of access permission by surrounding landowners.

- Breeding bird transect surveys in 2024 and 2025 were carried out over an area defined by a buffer of 500 m from the Turbine Area. In 2025 this included surveys of some of the Search Areas for Site Access and Cable Corridors, with 500 m buffers, wherever land access was possible. Transect surveys for both breeding birds (2021, 2022 and 2023) and non-breeding birds (2022 and 2022-23) were confined to within the Turbine Area; and
- Land within and up to 2km from the Turbine Area including for breeding raptor surveys, owl surveys (up to 1km), nocturnal surveys (within the Turbine Area) and acoustic monitoring (within the Turbine Area).

6.3.5 The majority of the Turbine Area falls within the South Pennine Moors Phase 2 SPA (Figure 6-1) which is designated for breeding merlin (*Falco columbarius*) and golden plover (*Pluvialis apricaria*) and additionally for its breeding bird assemblage including but not limited to short-eared owl (*Asio flammeus*), dunlin (*Calidris alpina*), curlew (*Numenius arquata*), redshank (*Tringa totanus*), twite (*Linaria flavirostris*) and lapwing (*Vanellus vanellus*). The study area and thus the baseline assessment have taken this into consideration, with surveys targeting these qualifying species where necessary to inform a robust impact assessment of the Proposed Development.

6.3.6 Habitats within the Turbine Area consist mainly of rotationally burned upland heath managed for grouse with areas of blanket bog and rough grazing (predominantly for sheep). Further details of the different habitats found within the Proposed development are included within **Chapter 7: Biodiversity**.

Figure 6-1: Designated Sites



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

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Revision History

Rev	Date	Drawn	Checked	App
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World Imagery: Earthstar Geographics
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© Crown copyright 2025 OS AC0000066432
Natural England - © Natural England copyright 2025.
Contains Ordnance Survey data © Crown copyright and database right 2025.

Legend

- Site boundary
- 10km buffer
- 20km buffer
- Special Protection Area (SPA)
- South Pennine Moors - Site of Special Scientific Interest (SSSI)

Project/Location

2487562 Calderdale

Drawing title

Designated Sites of Ornithological Importance

Drawing status

FOR INFORMATION

Date	Drawn	Checked	App
29/07/2025	HD	RS	TW

Client

Calderdale energy park

Consultant

Logika GROUP

Drawing number	Revision
Figure 6.1	00

Document Path: C:\OneDrive - RSK Group\2487562 - Calderdale Windfarm Ornithology\08 GIS - 2487562 - Calderdale Windfarm Ornithology\02 - APRX\2487562 - Calderdale Windfarm Ornithology - Figure 6.1 - Designated Sites of Ornithological Importance.aprx

Approach to the Collection of Baseline Data for Scoping

6.3.7 Baseline data was collected using the following sources of data, as well as by undertaking project specific surveys.

Desk Study

6.3.8 In accordance with best practice guidance (NatureScot, 2025)[47], a desk study was undertaken to identify relevant designated sites and specially protected and notable bird species to the Proposed Development. This enabled a broad overview of potential ornithological constraints to be established and helped guide the identification of focal bird species for subsequent field surveys.

6.3.9 The following data sources were consulted as part of this desk study (see Table 6-1).

Table 6-1: Data sources for the desk study.

Information obtained	Available from
Protected and noteworthy species records	West Yorkshire Ecology Service & Lancashire Environmental Record Network
Designated site location and citations	Natural England Website (https://designatedsites.naturalengland.org.uk/)
	Joint Nature Conservation Committee (JNCC) Website (https://jncc.gov.uk/)
	West Yorkshire Ecology Service & Lancashire Environmental Record Network
Designations and legal protection of noteworthy species	JNCC Website

6.3.10 A search was made for any internationally statutory designated sites of ornithological interest (i.e. SPAs and Ramsar sites) within 20km and any nationally statutory designated site of ornithological interest (e.g., Sites of Special Scientific Interest [SSSI]) within 10km of the Proposed Development. This search area was selected based on knowledge of core foraging ranges for sensitive bird species, which are typically between <5km and 20km (SNH, 2016[54]; NatureScot, 2025[47]).

6.3.11 To provide information on the presence of specially protected and otherwise notable bird species in the wider area, records were obtained from the West Yorkshire Ecology Service and the Lancashire Environmental Record Network in June 2025. Records were obtained for:

- Species listed as qualifying interests of relevant internationally and nationally designated sites;
- Species afforded protection under wildlife legislation (e.g. EC Birds Directive [2009/147/EC] Annex 1 species, WCA 1981 Schedule 1 species and NERC Act 2006 Section 41 (S41) Species of Principal Importance); and
- Species considered to be of conservation importance (e.g. Birds of Conservation Concern (BoCC) Red or Amber listed bird species (Stanbury *et al.,* 2021[55]; Stanbury *et al*., 2024[56])).

6.3.12 Information has been obtained from the British Trust for Ornithology (BTO) Bird Ringing Scheme and Nest Recording Scheme of the Walshaw Moor Estate (which the Turbine Area falls within) between 2012 and 2023. Undertaken by Craig Bell, a BTO bird ringer of 40 years and a Natural England Schedule 1 Rare Breeding Bird nest disturbance license holder of 38 years, the monitoring focuses on the distribution and breeding success of birds of prey, particularly merlin and short-eared owl. This information will be used to supplement the breeding assessment for the study area, particularly for merlin and short-eared owl, which are qualifying species of the South Pennine Moors Phase 2 SPA.

Field Surveys Overview

6.3.13 Detailed ornithological field surveys of the study area were undertaken between 2022 and 2025 to identify bird populations, and to gather supporting data to enable detailed impact assessment (e.g. through Collision Risk Modelling [CRM]). The scope of field surveys has been refined over time, especially to take into account comments and advice from consultees upon the submission of the previous Scoping Report to Calderdale Metropolitan Borough Council (CMBC) (see Section 6.5); associated with the previous proposed application under the Town and Country Planning Act 1990.

6.3.14 Field surveys undertaken to inform this Scoping Report were as follows:

- Vantage Point (VP) surveys undertaken during the breeding and non-breeding seasons between 2022 and 2025 (ongoing), including detailed recording of bird flight activity by target species (see Paragraph 6.3.17);

[55] Stanbury, A.J., Eaton, M.A., Aebischer, N.J., Balmer, D., Brown, A.F., Douse, A., Lindley, P., McCulloch, N., Noble, D.G. & Win, I. (2021) The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain. *British Birds*, **114**, 747.
[56] Stanbury, A.J., Burns, F., Aebischer, N.J., Baker, H., Balmer, D., Brown, A.F., Dunn, T., Lindley, P., Murphy, M., Noble, D.G., Owens, R. & Quinn, L. (2024) The status of the UK's breeding seabirds. *British Birds*, **117**, 471–487.

- Walked transect surveys undertaken in the breeding and non-breeding seasons between 2022 and 2025 (ongoing);
- Breeding raptor surveys undertaken in the breeding seasons between 2023 and 2025 (ongoing);
- Long-eared owl (*Asio otus*) surveys undertaken in April and May 2023 and 2024;
- Nocturnal surveys undertaken in the breeding seasons in 2024 and 2025 (ongoing); and
- Acoustic monitoring undertaken in the breeding season in 2024.

6.3.15 The survey approach adopted was based on best practice guidance and professional judgement, in reference to known bird-habitat associations and best practice survey methods for 'target species' (see below). The geographical scope of the field surveys was determined in reference to Natural England, NatureScot and CIEEM guidance (Natural England, 2015[46]; NatureScot, 2025[47]; CIEEM 2018[45]).

Target Species

6.3.16 Whilst counts of all bird species encountered during field surveys were recorded, based on the desk study, best practice guidance (Natural England, 2015[46]; NatureScot, 2025[47]) and professional judgement, certain bird species were identified as 'target species' for particular consideration during field surveys and impact assessment. Identification of target species was informed by the following:

- Their relevance to nearby designated sites (e.g. SPAs/Ramsar sites/SSSIs);
- Their known or likely presence within or in close proximity to the Site;
- Their likely sensitivity to the Proposed Development (particularly their collision risk and/or susceptibility to disturbance from new wind turbines); and
- Their level of legislative protection and conservation concern.

6.3.17 Target species for the ornithological surveys and thus the subsequent impact assessment are as follows:

- Bird species included under the citation of the South Pennine Moors Phase 2 SPA (see Section 6.3.44);
- Bird species included under the citation of the South Pennine Moors SSSI (see Section 6.3.50);

- All species of waterfowl;
- All species of raptor;
- All species of owl;
- All species of grouse;
- All species of wader;
- All species of gull; and
- Any other birds which are included under the criteria in Section 6.3.16.

Vantage Point Surveys

6.3.18 VP surveys were undertaken in accordance with best practice guidance (Natural England, 2015[46]; NatureScot, 2025[47]) to record bird activity throughout the study area during the breeding and non-breeding seasons, including flight activity by target species. As recommended within best practice guidance, VP surveys were undertaken over multiple years to establish a robust ornithological baseline for the study area and to account for any inter-annual variation in bird activity.

6.3.19 To enable detailed coverage of the study area, 12 locations were selected for the VP surveys. VP locations and viewsheds (i.e. the area over which birds could be observed by the ornithologist from a given VP) are shown in Figure 6-2 and were selected to maximise coverage of the airspace over the Turbine Area; particularly the airspace over the proposed turbine locations and to aid observation of any likely flight lines and habitat assessed as being most likely to be used by target species. Although it is not normal practice (under the NatureScot 2025 guidelines)[47], viewsheds were intended to overlap to ensure good coverage for small raptors such as merlin. VP locations were reviewed to ensure they:

- Covered the entire study area, such that no airspace surveyed within the Turbine Area was further than 2km from a VP;
- Minimised blind spots;
- Did not exceed a maximum arc of 180 degrees of visibility; and
- Were an appropriate distance from areas in which birds were likely to be susceptible to disturbance (e.g. key feeding areas, roosts and nesting areas).

6.3.20 VP surveys commenced in July 2022 and remain ongoing at the time of writing, with the aim of achieving a total watch time of 72 hours per VP during each breeding season and 36 hours per VP during each non-breeding season, as requested by

Natural England during consultations in 2023 (see Section 6.5). Any shortfalls in survey effort due to access restrictions or other limitations will be fully addressed in the ES and taken into consideration during the impact assessment and Collision Risk Modelling (CRM).

6.3.21 The VP surveys followed the standard approach specified within good practice guidance (Natural England, 2015[46]; NatureScot, 2025[47]), with surveyors scanning the pre-determined viewsheds from the VP locations for a continual watch time of three hours during any given survey. VP surveys covered a range of times, aiding the recording of species that are active at different times of day. All flight activity and aggregations of target species were recorded onto standardised recording forms and maps, with flight parameters recorded as described below. Counts were also recorded for non-target species. Bird identification and counting was aided by using high-powered optical equipment (e.g., binoculars, telescopes) where necessary. Observations of breeding behaviour of target species (especially those listed as qualifying species of the South Pennine Moors Phase 2 SPA) were additionally noted and mapped to supplement and support the breeding bird assessment, enabling more detailed coverage of the study area.

6.3.22 During each VP survey, the following flight parameters were recorded for any flights by target species observed:

- Start time of flight observation;
- Duration of flight observation;
- Species and number of individuals;
- Approximate flight height in metres when first observed, and at 15 seconds intervals thereafter; and
- The flight route and observed or likely purpose of the flight (e.g. foraging, displaying, commuting etc.).

Transect Surveys

6.3.23 In accordance with best practice guidance (Natural England, 2015[46]; NatureScot, 2025[47]), VP surveys were accompanied by walked transect surveys to record supplementary information on bird assemblages present within the study area. As for VP surveys, transect surveys were undertaken over multiple years and completed during the breeding and non-breeding seasons.

6.3.24 All transect surveys broadly followed the Common Bird Census (CBC) methodology whereby surveyors walked pre-determined transect routes (Figure 6-3) and

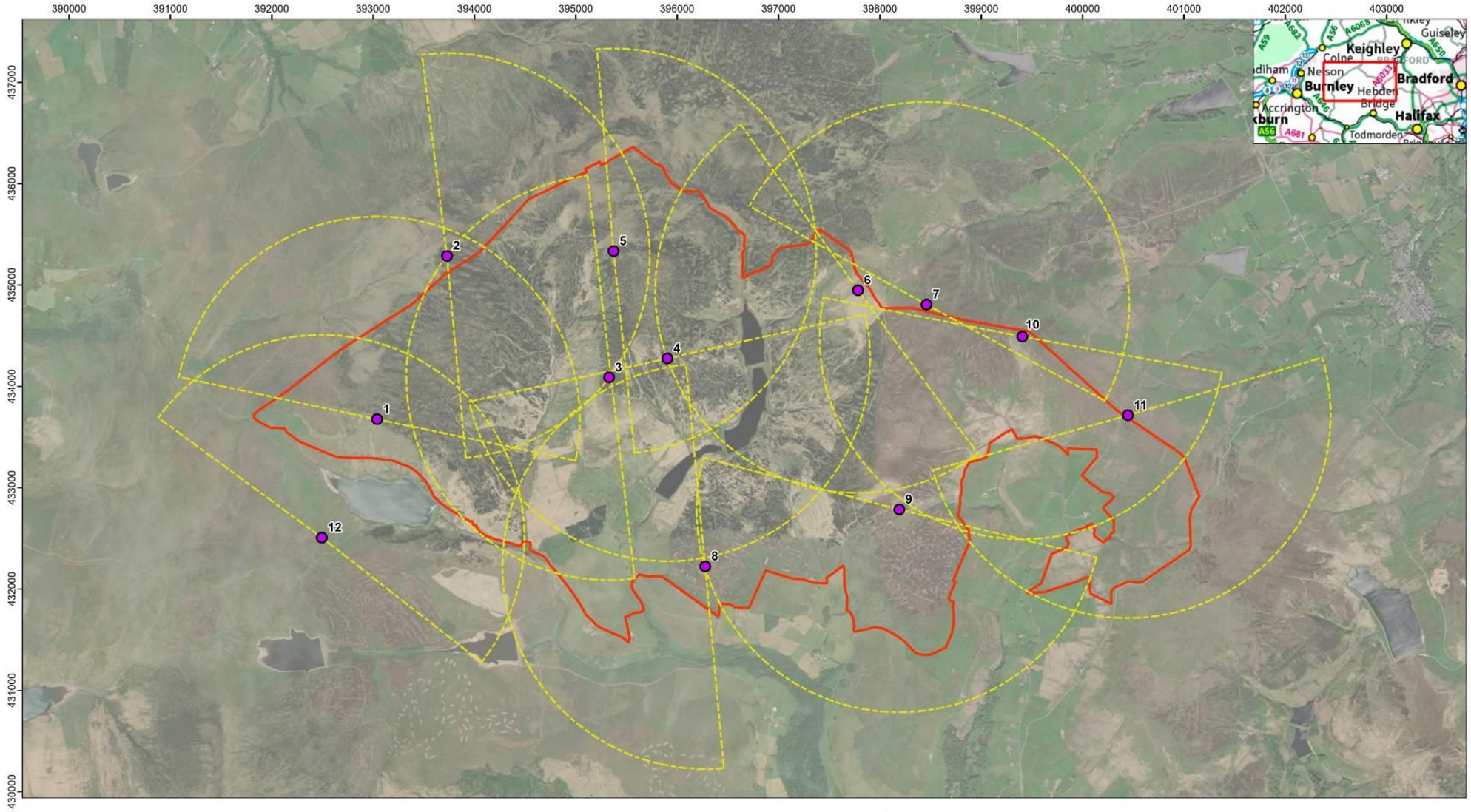
recorded target species onto standardised maps using recommended BTO species codes and behaviour notation (Marchant, 1983)[57]. Counts for non-target species were also recorded. Transect routes were interspersed with stops, during which the ornithologist scanned for birds using optical equipment.

6.3.25 Transect routes were selected to pass within approximately 100 m of all parts of the study area, following the Brown and Shepherd (1993)[58] survey methodology for censusing upland waders. This methodology was chosen based on the known bird-habitat associations within the study area (i.e. the upland habitat and the known presence of the qualifying species of the South Pennine Moors Phase 2 SPA and South Pennine Moors SSSI).

6.3.26 Transect surveys were undertaken in predominantly suitable weather conditions, avoiding extreme temperatures, heavy rain, snow or fog during which bird activity may be atypical and/or surveying may be impractical or unsafe.

[57] Marchant, J.H. (1983) *BTO Common Birds Census instructions*. British Trust for Ornithology. Tring.
[58] Brown, A. F. & Shepherd, K. B. (1993) A method for censusing upland breeding waders. *Bird Study,* **40**, 189-195.

Figure 6-2: Vantage Point Locations



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

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Revision History

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Vantage point:
2km vantage point viewshed:
World Imagery: Maxar, Microsoft
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Legend

- Site boundary
- 2km vantage point viewshed
- Vantage point

Project/Location

2487562 Calderdale

Drawing title

Vantage Point Locations

Drawing status

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Date	Drawn	Checked	App
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Client

Calderdale energy park

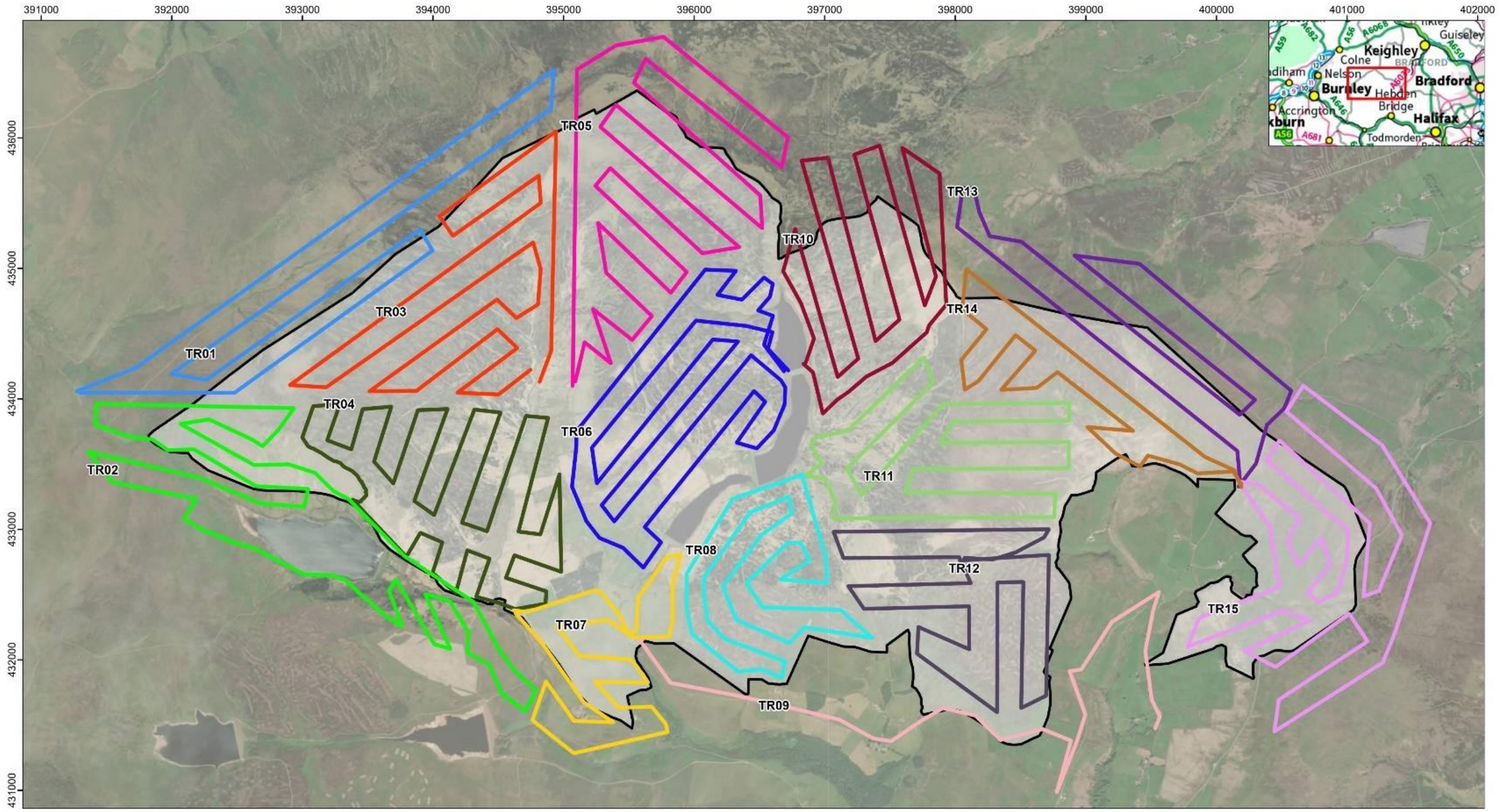
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Figure 6-3: Transect Routes



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1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
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Legend

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- Transect Route
- TR01
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- TR03
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- TR09
- TR10
- TR11
- TR12
- TR13
- TR14
- TR15

Project/Location

2487562 Calderdale

Drawing title

Transect Routes

Drawing status

FOR INFORMATION

Date	Drawn	Checked	App
29/07/2025	HD	RS	TW

Client

Calderdale energy park

Consultant

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Figure 6.3	00

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Breeding Season

6.3.27 Transect surveys during the breeding season were undertaken during the months outlined below. Due to access restrictions during the breeding seasons of 2023 and 2024, the surveys could not progress during certain months. Any shortfalls in survey effort due to access restrictions or other limitations will be explained in the ES and taken into consideration during the impact assessment.

- March 2022 – July 2022;
- March 2023 – April 2023;
- March 2024 – July 2024; and
- March 2025 – July 2025.

Non-breeding Season

6.3.28 Transect surveys were undertaken during the non-breeding season to supplement the results of the VP surveys with regards wintering and passage bird activity. Surveys were undertaken during the months outlined below. Any shortfalls in survey effort due to access restrictions or other limitations will be fully addressed in the ES and taken into consideration during the impact assessment.

- Wintering birds – between January and February 2022; between November 2022 and February 2023; and
- Passage birds – March 2022 and October 2022.

Breeding Raptor Surveys

6.3.29 The selection of target species identified nesting raptors as being of potential relevance in the context of the Proposed Development, with moorland and woodland providing suitable nesting habitat within, and in close proximity, to the Turbine Area. As such, a detailed search was undertaken for any evidence of nesting by these species, in reference to species-specific information and methodologies (Gilbert *et al.*, 1998[59]; Hardey *et al.*, 2009[60]). Transect surveys described above focused on recording all breeding species within the Turbine Area (including raptors), and so the aim of these targeted surveys was to extend the search for breeding raptors up to 2km from the Turbine Area boundaries.

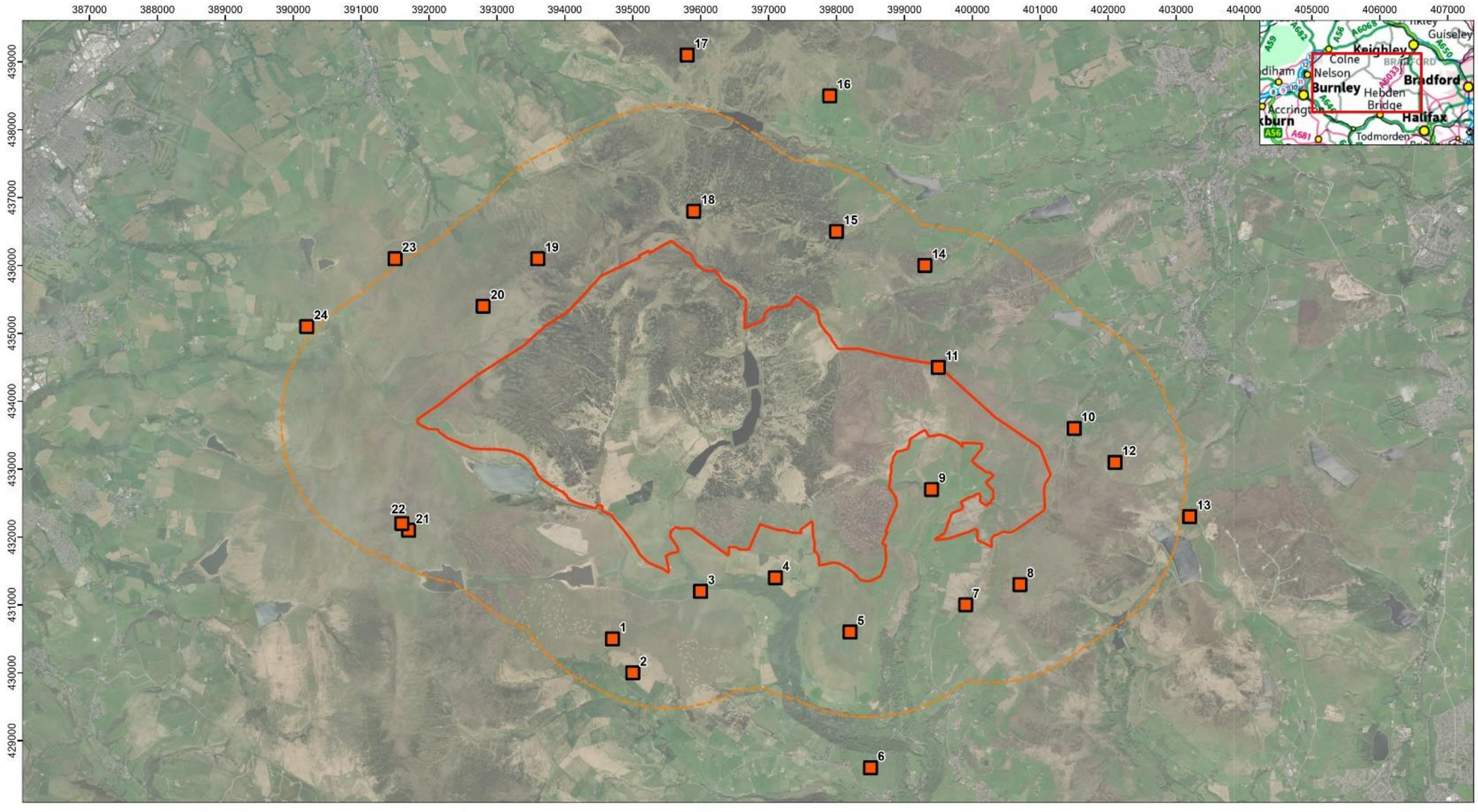
[59] Gilbert, G., Gibbons, D.W., & Evans, J. (1998) *Bird Monitoring Methods: A Manual of Techniques for UK Key Species.* The Royal Society for the Protection of Birds (RSPB), Sandy, Bedfordshire, England.
[60] Hardey, J., Crick, H., Wernham, C., Riley, H., Etheridge, B. & Thompson, D. (2009) Raptors: A Field Guide to Survey and Monitoring, 2nd Edition. TSO, Edinburgh.

6.3.30 Twenty-four Vantage Point (VP) locations were selected (Figure 6-4) providing visibility to woodland parcels and other suitable habitat within 2km of the Turbine Area that were identified as being of potential value to breeding raptors (e.g. merlin, peregrine [*Falco peregrinus*], hen harrier [*Circus* cyaneus] and owl species such as barn owl [*Tyto alba*], long-eared owl and short-eared owl).

6.3.31 Visits were completed over a period of several days with one survey day covering at least four of the VP locations, with observations timed to at least one hour from each location per survey. All raptors and any evidence of breeding related activity (including any confirmed, probable or possible nest sites) were recorded onto standardised maps using recommended BTO species codes and behaviour notation (Marchant, 1983)[57]. Survey effort is provided below. It should be noted that due to access restrictions in 2023 and 2024, surveys could not be completed during the months of May and June. Any shortfalls in survey effort due to access restrictions or other limitations will be explained in the ES and taken into consideration during the impact assessment.

- April 2023: one visit to each VP location;
- April 2024 and July 2024: one visit to each VP location during each month; and
- May 2025 – July 2025: one visit to each VP location in each month.

Figure 6-4: Raptor Survey Vantage Point Locations



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

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Revision History

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Raptor survey vantage point.
World Imagery: Maxar, Microsoft
OS Open Raders: Contains OS data © Crown Copyright and database right 2022
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Legend

- Site boundary
- 2km buffer
- Raptor survey vantage point

Project/Location

2487562 Calderdale

Drawing title

Raptor Survey Vantage Point Locations

Drawing status

FOR INFORMATION

Date	Drawn	Checked	App
29/07/2025	HD	RS	TW

Client

Calderdale energy park

Consultant

Logika GROUP

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Long-eared Owl Surveys

6.3.32 Crepuscular transect surveys of all woodlands within 1km from the Turbine Area were undertaken in April and May 2023 and April and May 2024, in order to locate potential breeding owl nest sites, in particular those of long-eared owls.

6.3.33 Seventeen woodland parcels potentially suitable for long-eared owl were located within 1km of the Turbine Area and included a mixture of mature conifer, ancient woodland, and areas of scrub ranging from 0.2 to 35 hectares (ha) in extent (Figure 6-5).

6.3.34 The survey visits were conducted between dusk and two hours after dusk. Surveyors walked through or around woodland, noting down any visible sightings, calling males or young, and/or nest sites onto standardised maps using recommended BTO species codes and behaviour notation (Marchant, 1983)[57].

Nocturnal Surveys

6.3.35 As the study area is known to support populations of breeding golden plover and other wader species known to exhibit nocturnal activity, Natural England advised the implementation of nocturnal surveys (see Section 6.5). The objective of these surveys was to facilitate an assessment of nocturnal movements associated with these species in the context of the areas of the Proposed Development, particularly given their potential to utilise distinct foraging areas at night compared to those during the day.

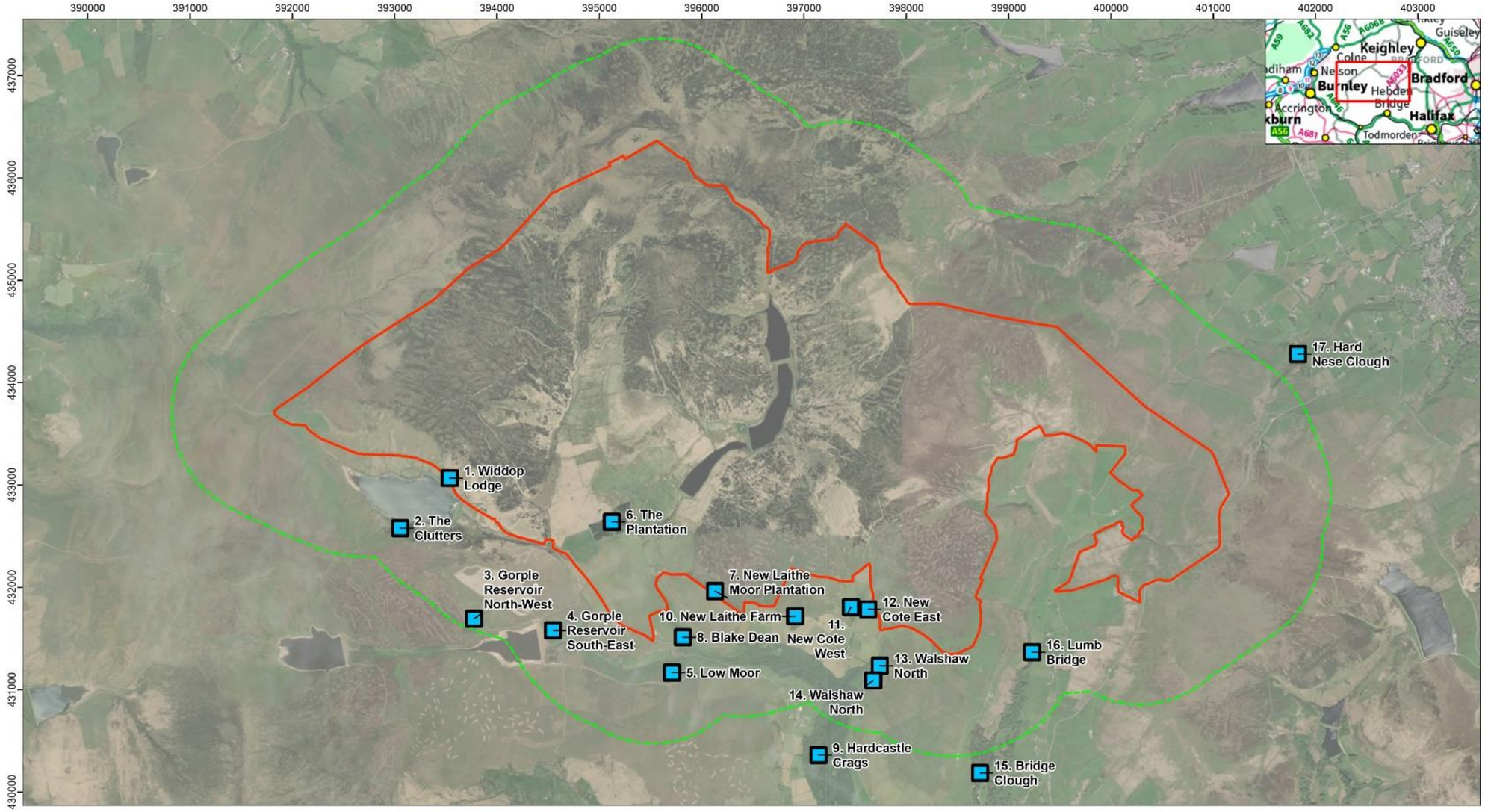
6.3.36 In accordance with NatureScot (2025)[47], alternative survey methods employed a transect approach conducted at night, focusing on wader activity across pasture and moorland. Transects (Figure 6-6) followed the roads and tracks throughout the Turbine Area, incorporating designated stopping points. Adhering to these transects along roads and tracks with stopping points minimised disturbance to sensitive breeding bird species and represented the only practical and safe method for surveying an upland area of this nature at night.

6.3.37 Surveyors made use of thermal imaging cameras and scopes to record activity onto standardised maps using recommended BTO species codes and behaviour notation (Marchant, 1983)[57]. A single nocturnal survey, completed over two consecutive nights (one night focusing on pasture and the other on moorland), was conducted per month as per the below. It should be noted that a visit in May 2024 could not be completed due to access restrictions. As such, any shortfalls in survey effort due to such limitations will be addressed in the ES and taken into consideration during the impact assessment.

- February 2024 – April 2024;

- June 2024; and
- June 2025 – July 2025.

Figure 6-5: Long-Eared Owl Survey Locations



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

0 500 1,000 1,500
Metres

SCALE: 1:35,000 @ A3

Revision History

Rev	Date	Drawn	Checked	App
00	29/07/2025	HD	RS	TW

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Legend

- Site boundary
- 1km buffer
- Owl survey location

Project/Location

2487562 Calderdale

Drawing title

Long-Eared Owl Survey Locations

Drawing status

FOR INFORMATION

Date	Drawn	Checked	App
29/07/2025	HD	RS	TW

Client

Calderdale energy park

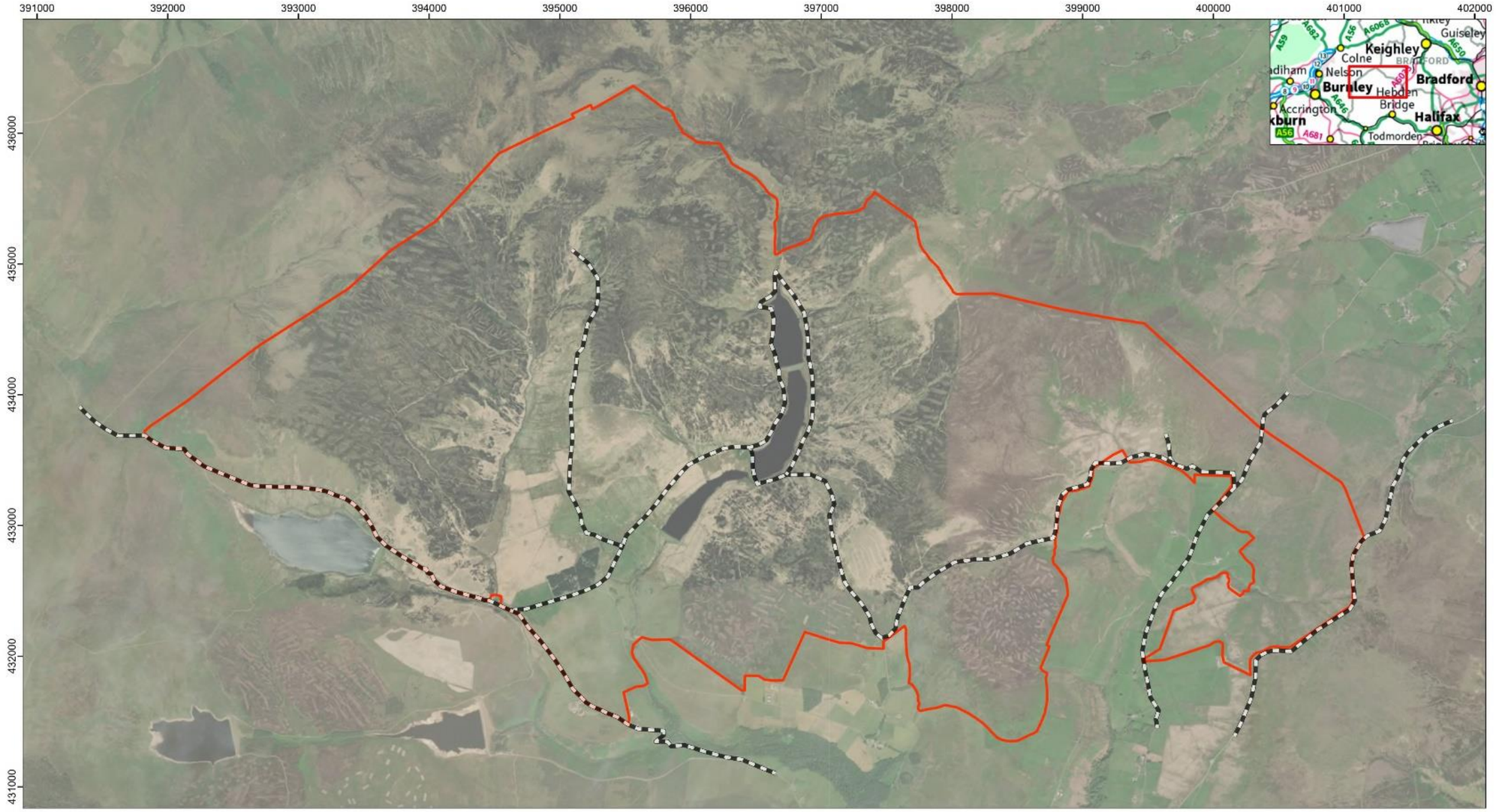
Consultant

Logika GROUP

Drawing number	Revision
Figure 6.5	00

Document Path: C:\OneDrive - RSK Group\2487562 - Calderdale Windfarm Ornithology\08 GIS - 2487562 - Calderdale Windfarm Ornithology\02 - APRX\2487562 - Calderdale Windfarm Ornithology - Figure 6.5 - Long-Eared Owl Survey Locations.aprx

Figure 6-6: Nocturnal Transect Route



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

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Revision History

Rev	Date	Drawn	Checked	App
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Legend

- Site boundary
- Nocturnal transect route

Project/Location

2487562 Calderdale

Drawing title

Nocturnal Transect Routes

Drawing status

FOR INFORMATION

Date	Drawn	Checked	App
29/07/2025	HD	RS	TW

Client

Calderdale energy park

Consultant

Logika GROUP

Drawing number	Revision
Figure 6.6	00

Document Path: C:\OneDrive - RSK Group\2487562 - Calderdale Windfarm Ornithology\08 GIS - 2487562 - Calderdale Windfarm Ornithology\02 - APRX\2487562 - Calderdale Windfarm Ornithology - Figure 6.6 - Nocturnal Transect Routes.aprx

Acoustic Monitoring

6.3.38 Acoustic monitoring was undertaken to supplement the field surveys above; providing more coverage of the study area to further understand bird presence and activity (especially during nocturnal periods).

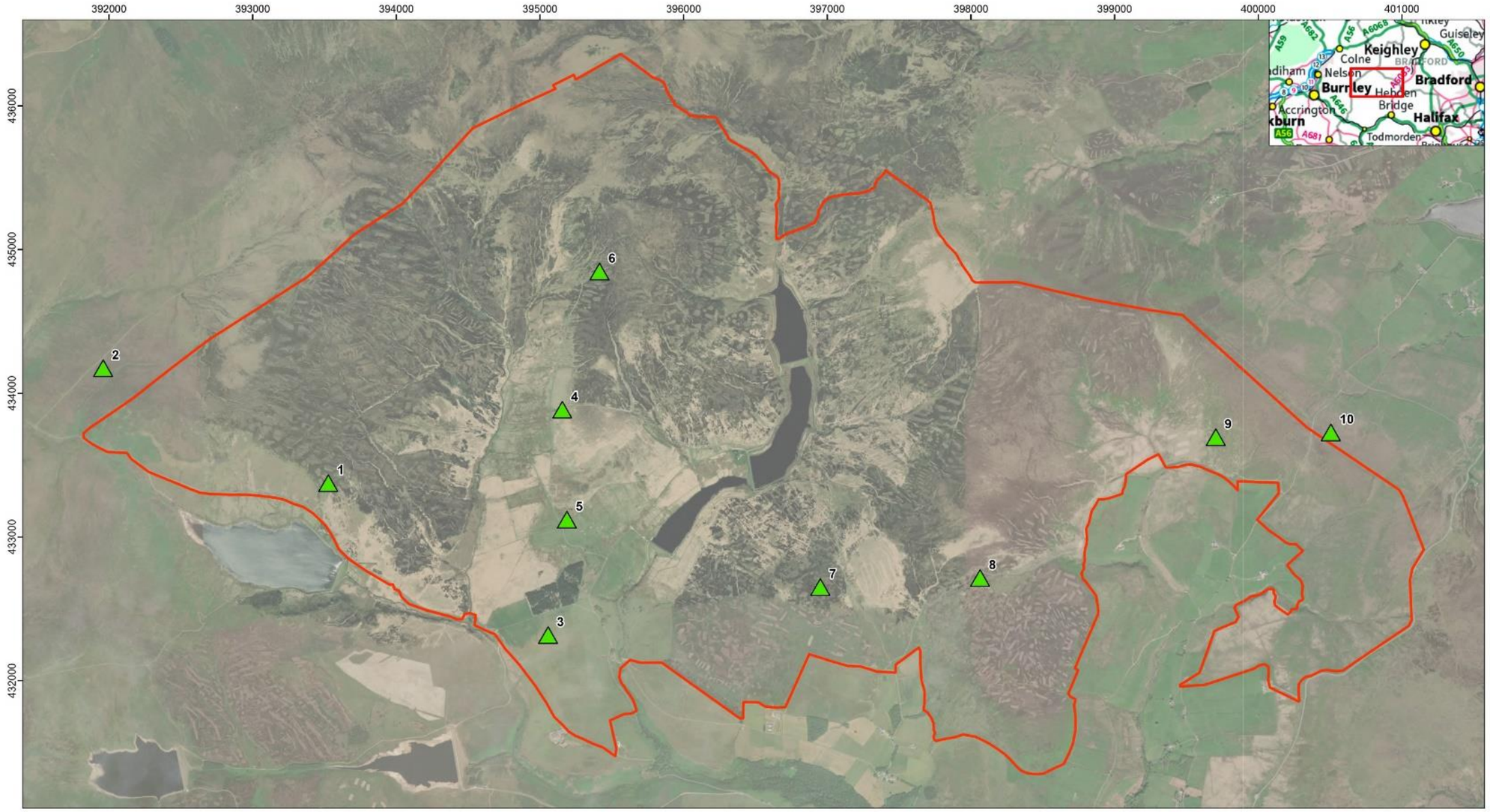
6.3.39 Passive recording devices were positioned at 10 locations (Figure 6-7), and were set out during February, March and June 2024 to target breeding wader species known to be present within the study area.

Assessment of Breeding Status

6.3.40 Results from the assessments described above including from the desk study (particularly data from the BTO Bird Ringing Scheme and Nest Recording Scheme), transects, raptor surveys, long-eared owl surveys, nocturnal surveys and acoustic monitoring will be used to assess the breeding statuses of the bird species recorded, in accordance with the criteria presented in Gilbert *et al*. (1998)[59] and taking into consideration understanding of the breeding ecology of the species in question. In addition, observations of breeding behaviour of target species during VP surveys will be used to supplement and support this assessment, enabling a more detailed coverage of the study area.

6.3.41 The criteria presented in Gilbert *et al*. (1998)[59] are based on the principle that many species are territorial during the breeding season and, as such, observation or certain behaviours (e.g. singing, displaying, aggressive interactions) can be used to infer breeding, or likely breeding, by a given species. Each species will be given a status (Confirmed, Probable, Possible or Non-breeding) based on these criteria.

Figure 6-7: Acoustic Monitoring Locations



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

0 500 1,000 1,500
Metres

SCALE: 1:25,000 @ A3

Revision History

Rev	Date	Drawn	Checked	App
00	29/07/2025	HD	RS	TW

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Legend

- Site boundary
- Acoustic monitoring locations

Project/Location

2487562 Calderdale

Drawing title

Acoustic Monitoring Locations

Drawing status

FOR INFORMATION

Date	Drawn	Checked	App
29/07/2025	HD	RS	TW

Client

Calderdale energy park

Consultant

Logika GROUP

Drawing number	Revision
Figure 6.7	00

Document Path: C:\OneDrive - RSK Group\2487562 - Calderdale Windfarm Ornithology\08 GIS - 2487562 - Calderdale Windfarm Ornithology\02 - APRX\2487562 - Calderdale Windfarm Ornithology - Figure 6.7 - Acoustic Monitoring Locations.aprx

Relevant Baseline Conditions

6.3.42 The following section outlines the relevant baseline conditions, drawing on information obtained through desk-based studies and summarising the key findings from completed and ongoing ornithological surveys. It is important to note that this overview is not intended to represent a comprehensive assessment of the ornithological baseline within the study area. Rather, it provides a preliminary summary of the notable ornithological features identified to date, pending the completion of further survey work, data analysis, and assessment. A more detailed preliminary evaluation will be presented in the forthcoming Preliminary Environmental Information Report (PEIR) and the full assessment will be set out in the ES, upon conclusion of all surveys and assessments.

Designated Sites

6.3.43 Outlined below are the internationally and nationally designated sites of ornithological interest within 20km and 10km of the Turbine Area respectively. Details of the sites and their qualifying species are provided along with a general description of the integral habitats that support these species.

South Pennine Moors Phase 2 SPA – within the Turbine Area

6.3.44 The South Pennine Moors SPA (Phases 1 and 2) include the major moorland blocks of the South Pennines from Ilkley in the north to Leek and Matlock in the south. They lie in the Southern Pennines National Character Area, which forms part of the Pennine ridge of hills lying between the Peak District National Park and Yorkshire Dales National Park. This is a landscape of large-scale sweeping moorland and pastures enclosed by drystone walls, with gritstone-dominated settlements contained within narrow valleys.

6.3.45 The Phase 2 SPA includes two discrete blocks of moorland, one south of Ilkley and another (of which the majority of the Turbine Area falls within) on the watershed between Bradford and Burnley and stretching to Marsden at the northern edge of the Peak District. It covers extensive tracts of semi-natural moorland habitats including upland heath and blanket mire.

6.3.46 The SPA is an upland of international importance, providing habitat for an important assemblage of moorland and moorland fringe birds. The principal habitats supporting the assemblage of birds are blanket bogs, European dry heaths, acid grassland, Northern Atlantic wet heaths and dense bracken beds.

6.3.47 The site qualifies under Article 4.1 of the EC Birds Directive (79/409) by supporting nationally important breeding populations of two Annex 1 bird species; namely merlin and golden plover. Upon designation in June 1997, the site supported 28

pairs of merlin (4.3% of the British population) and 292 pairs of golden plover (1.2% of the British population). The density of breeding golden plover is high compared to other regional populations in northern England and Scotland. In particular, Rombalds Moor region in the north, Oxenhope Moor, Stairs Swamp and Harry Side in the central block of the SPA, all support good breeding densities of golden plover, whilst the southern block of the SPA supports fewer breeding numbers.

6.3.48 The site additionally qualifies under Article 4.2 of the EC Birds Directive (79/409) by supporting, in summer, a diverse assemblage of breeding migratory birds of moorland and moorland fringe habitats including golden plover, lapwing, dunlin, snipe (*Gallinago gallinago*), curlew, redshank, common sandpiper (*Actitis hypoleucos*), short-eared owl, whinchat (*Saxicola rubetra*), wheatear (*Oenanthe oenanthe*), ring ouzel (*Turdus torquatus*) and twite.

6.3.49 The South Pennine Moors support the southernmost assemblage of breeding merlin, golden plover, dunlin, short-eared owl and twite in the world, and so the site therefore has an important role in maintaining the breeding range of these species.

South Pennine Moors SSSI – within the Turbine Area

6.3.50 Largely covering a similar area, the South Pennine Moors SSSI in part legally underpins the South Pennine Moors Phase 2 SPA. Similarly to the SPA, the citation states that the mosaic of habitats supports a moorland breeding bird assemblage which, because of the range of species and number of breeding birds it contains, is of regional and national importance.

6.3.51 The moorlands support nationally important numbers of golden plover, curlew, merlin and twite. Important features of the SSSI include:

- The blanket bogs, which are the main breeding grounds for golden plover and dunlin, which need relatively short vegetation to nest in and access to wet areas to feed, a combination provided by the blanket mires;
- The deeper cover provided by the heather provides nest sites for merlin and red grouse (*Lagopus lagopus*) with golden plover also known to nest on recently burnt heather;
- Wet acid grassland and semi-improved areas are used by nesting curlew (0.8% of the British breeding population), lapwing and, in the wettest areas, by snipe and redshank;
- Twite on the South Pennine Moors represent 1% of the British breeding population, where they use all the moorland habitats at different stages of their life cycle including heather for nesting and the grassy areas throughout the

moorlands, moorland edges, semi-improved pastures and burnt *Molinia* grassland for feeding;

- Peregrine nest on suitable crags and disused quarries and short-eared owl nest (three pairs at designation) in moorland;
- The moors support breeding wheatear, whinchat, ring ouzel and stonechat (*Saxicola torquate*);
- Large reservoirs within and adjacent to the SSSI provide feeding areas for moorland nesting dunlin as well as nesting habitat for common sandpiper, grey wagtail (*Motacilla cinerea*), little ringed plover (*Charadrius dubius*) and shelduck (*Tadorna tadorna*); and
- The streams draining the reservoirs and the moors support small numbers of dipper (*Cinclus cinclus*).

North Pennine Moors SPA – 18.85km north of the Turbine Area

6.3.52 The North Pennine Moors SPA includes parts of the Pennine moorland massif between the Tyne Gap (Hexham) and the Ribble-Aire corridor (Skipton). It encompasses extensive tracts of semi-natural moorland habitats including upland heath and blanket bog.

6.3.53 The site qualifies under Article 4.1 of the Directive (79/409/EEC) as it is used regularly by 1% or more of the British populations of the following species listed in Annex 1:

- Hen harrier: 11 breeding pairs (2.3% of the British population);
- Merlin: 136 breeding pairs (10.5% of the British population);
- Peregrine: 15 breeding pairs (1.3% of the British population); and
- Golden plover: 1,400 breeding pairs (6.2% of the British population).

Breeding Birds

6.3.54 The assemblage of breeding birds present within the study area is characteristic of upland areas in Northern England. The species assemblage largely comprises common and widespread species, typical of moorland and grassland landscapes. As would be expected due to current land use, the assemblage across the study area is dominated by red grouse, with skylark (*Alauda arvensis*) and meadow pipit (*Anthus pratensis*) ubiquitous.

6.3.55 Merlin utilise young heather and moorland habitats across the study area for nesting, with up to three breeding pairs recorded during the 2022 surveys. Data from the BTO Nest Recording Scheme and Bird Ringing Scheme indicate that between two and five pairs have been recorded every year within the Walshaw Moor Estate (within which the majority of the study area is situated) over the period from 2012 to 2023, with at least two to three pairs regularly nesting within the Turbine Area. Merlin are known to be faithful to nest sites when breeding is successful and even sometimes when breeding is unsuccessful; and this data will be integral in informing the Proposed Development.

6.3.56 Golden plover primarily use the more upland areas within the study area for nesting within the highest hills in the west, east and north-east of the study area. Notable high densities occur in the wet heath areas of Harry Side, Sun Hill, Oxenhope Moor and Middle Moor, corroborating historical understanding of the South Pennine Moors Phase 2 SPA as referenced in the citation (Natural England, 2014)[61]. The species are also present in significant numbers on Heather Hill, Wadsworth Moor and Widdop Moor. Approximately 28 pairs were recorded within the study area in 2022, with subsequent ongoing surveys aiming to facilitate an inter-annual assessment. Dunlin are also associated with the highest hills within the study area, with pairs recorded on Mare Greave Slack and activity at Lord's Allotment and Lower Cock Hill, within and adjacent to, known historical breeding populations (Natural England, 2025)[62] at Lord's Allotment, Will Allotments and Nab Hill.

6.3.57 Short-eared owl nest in moorland and acid grassland surrounded by heather across the study area with three pairs recorded in 2022. Data from the BTO Nest Recording Scheme and Bird Ringing Scheme indicate that between two and seven pairs have been recorded every year within the Walshaw Moor Estate over the period from 2012 to 2023, with up to six pairs identified nesting within the Turbine Area in 2023.

6.3.58 Curlew are widespread across the study area, utilising acid grassland and moorland for nesting and foraging. Particularly high densities are noted within the sloping hills of Widdop Moor and Wadsworth Moor as well as on the higher hills in the north-east between Under Hill and Roms Hill. Notable numbers are also present in the lower-lying areas of pasture in the south, particularly around Holme Ends where in

[61] Natural England (2014) *European Site Conservation Objectives and Citation for South Pennine Moors (Phase II) SPA (K9007022)*. Available at: https://publications.naturalengland.org.uk/publication/4885083764817920

[62] Natural England (2025) *Natural England Conservation Advice for Protected Sites South Pennine Moors Phase 2 SPA*. Available at: https://designatedsites.naturalengland.org.uk/ConservationAdvice.aspx?SiteCode=UK9007022&SiteName=South%20Pennine&SiteNameDisplay=South%20Pennine%20Moors%20Phase%202%20SPA&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&HasCA=1&NumMarineSeasonality=0&S

addition to curlew, the majority of breeding lapwing, oystercatcher (*Haematopus ostralegus*), snipe, and redshank are present within the study area.

6.3.59 Reservoirs in these lower-lying areas including the Walshaw Dean Reservoirs within the Turbine Area support breeding common sandpiper, mallard (*Anas platyrhynchos*) and greylag goose (*Anser anser*), with the Widdop Reservoir in the wider study area to the south supporting breeding little ringed plover. Streams around these areas, including Graining Water, support small breeding populations of dipper.

6.3.60 Raptors and owls utilise the moorland, grassland, and surrounding areas of woodland within the study area for foraging during the breeding season; including barn owl, buzzard (*Buteo buteo*), goshawk (*Astur gentilis*), hen harrier, hobby (*Falco subbuteo*), kestrel (*Falco tinnunculus*), little owl (*Athene noctua*), marsh harrier (*Circus aeruginosus*), peregrine, red kite (*Milvus milvus*) and sparrowhawk (*Accipiter nisus*). Raptors generally use cloughs, gritstone escarpments or dilapidated buildings for nesting, with confirmed breeding within the study area recorded for barn owl, kestrel, peregrine and sparrowhawk.

6.3.61 Wheatear are relatively common across the study area, primarily in the west, nesting in available rocky crevices, dilapidated walls, and under stones. Other notable passerine species breeding within the Proposed Development and study area include, but are not limited to, cuckoo (*Cuculus canorus*), mistle thrush (*Turdus viscivorus*), reed bunting (*Emberiza schoeniclus*), stonechat (*Saxicola rubicola*) and willow warbler (*Phylloscopus trochilus*).

Non-breeding Birds

6.3.62 The non-breeding bird assemblage within the study area is characteristic of moorland and grassland habitats and predominantly comprises common and widespread species. As expected, due to active management for driven grouse shooting, red grouse is the most frequently recorded species. Skylark and meadow pipit are common, though they are present in considerably lower numbers than during the breeding season.

6.3.63 Autumn and spring migration periods are marked by increased movement of passage species across the study area, particularly thrushes. Notable among these are redwing (*Turdus iliacus*), fieldfare (*Turdus pilaris*) and song thrush (*Turdus philomelos*), which are regularly observed in high numbers during late autumn and early spring. For example, in November 2022, 2,000 redwing, 3,000 fieldfare and 200 song thrush were observed moving through the study area. These movements coincided with northerly and north-easterly winds and reflected broader migratory trends across the South Pennine uplands.

6.3.64 Pink-footed geese (*Anser brachyrhynchus*) are regularly observed in flight during spring/autumn, with movements consistent with passage to and from wintering and breeding grounds. To a lesser extent whooper swan (*Cygnus cygnus*) move through the study area on passage but are also thought to utilise the surrounding reservoirs during the winter. Other notable passage species present include curlew, lapwing, mistle thrush and golden plover.

6.3.65 The study area is of particular note for supporting a regular winter roost of hen harrier near Gorple Reservoirs (which lies approx. 700 m south of the Turbine Area at the closest point), with four – six individuals typically recorded in most winters and occasional counts reaching up to 11 birds. This represents one of the most significant winter roosts in England and reflects the importance of the managed moorland habitat for this species. A number of other raptors and owls additionally make use of the study area primarily for foraging including but not limited to barn owl, short-eared owl, marsh harrier, peregrine, merlin, buzzard, red kite, kestrel and sparrowhawk. Other notable wintering species present include redwing, fieldfare, mistle thrush, dipper, woodcock (*Scolopax rusticola*), snipe and gull species.

Receptors Identified

6.3.66 The methodology for assessment of important receptors or 'Important Ornithological Features' (see Section 6.6.26) has followed a precautionary approach within this Scoping Report. An Important Ornithological Feature is identified as a species occurring within the study area of the Proposed Development upon which likely significant effects are anticipated and will be assessed. In accordance with CIEEM (2018) guidelines[45], an Important Ornithological Feature is a feature which is 'both of sufficient value to be material in decision making and likely to be affected significantly'. Therefore, the likely Important Ornithological Features will include:

- South Pennine Moors Phase 2 SPA;
- South Pennine Moors SSSI; and
- Target species listed in Section 6.3.16.

6.4 Environmental Measures

6.4.1 Consideration will be paid to the opportunity to introduce environmental measures (and mitigation) that will help to avoid or reduce the potential for an adverse significant effect to occur. In accordance with Schedule 4(7) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset (where appropriate) likely significant effects (see Section 6.6.8). Specific

environmental measures relevant to ornithology will be identified and will be considered as part of the assessments (i.e. the assessments of likely significant effects have been undertaken with the inclusion of the environmental measures, as these measures will form part of the Proposed Development). At this stage of the project, the following environmental measures will be implemented and included within the Proposed Development.

Construction

Design

6.4.2 The design of the Proposed Development will be required to comply with relevant legislation, standards and guidance including:

- The Environmental Protection Act (1990);
- The Pollution Prevention and Control Act (1999);
- The Environmental Permitting Regulations (2016);
- The Environmental Noise (England) Regulations (2006); and
- The Air Quality Standards Regulations (2010).

6.4.3 The design of the Proposed Development, will wherever practicable, reduce and minimise the need for extensive works to be conducted. For example, the design of the wind turbines will be as such so that they are primarily assembled prior to their delivery to the Turbine Area.

6.4.4 As part of the design of the Proposed Development, the turbine layout has been adapted so that it minimises impacts, where practicable, on the most sensitive aspects of the South Pennine Moors Phase 2 SPA and the South Pennine Moors SSSI. Utilising data from the BTO Nest Recording Scheme and Bird Ringing Scheme undertaken at the Proposed Development, as well as targeted surveys to inform the Proposed Development, initial constraints mapping has been used to identify the most sensitive areas for species that frequently return to particular nest sites (such as merlin, short-eared owl and barn owl, for example). These areas have been avoided wherever practicable in the design of the Proposed Development.

Construction Environmental Management Plan

6.4.5 Good practice construction measures will be adopted to minimise potential construction impacts on ornithological features. These will be detailed within a Bird Protection Plan (BPP) included within an outline Construction Environmental

Management Plan (oCEMP) as part of the DCO application. This will be based upon standards set out within the BSI Standards Publication on Biodiversity – code of practice for planning and development (BS 42020:2013)[63]. A finalised version of the BPP and management plan will then be prepared in accordance with the oCEMP post ES submission. The oCEMP will include measures to minimise working areas to avoid unnecessary habitat removal/alteration and disturbance, and measures to avoid/minimise the generation of additional noise, dust, light spill, vibration, and pollution. In general, the oCEMP will be proportionate and tailored to the ecology/ornithology of the Proposed Development, identified through the onsite assessments, and based on the following considerations:

- Identification of 'biodiversity protection zones' and areas;
- Inclusion of details for the implementation of methods statements to achieve ornithological outcomes and mitigation measures;
- Identification of practical measures and sensitive working practices to avoid construction related impacts;
- The location and timing of sensitive works to avoid harm to ornithological features;
- The times during construction when particular specialists are required to be present to oversee works;
- Responsible persons and lines of communications;
- Defining the role and responsibilities of an Ecological Clerk of Works (ECoW); and
- Use of protective barriers and warning signs to avoid and prevent harm to ornithology and biodiversity.

6.4.6 An ECoW will be appointed to address issues relating to ornithological features during construction, as will be described within the oCEMP. Their responsibilities will include:

- Undertake pre-construction surveys / check to ensure that significant effects to any newly colonised ornithological feature will be avoided;
- Inform and educate site personnel of sensitive ornithological features within the proposed development and how effects on these features could occur;

[63] BSI (2013) *Biodiversity: Code of practice for planning and development*. BS 42020:2013.

- Oversee management of ornithological issues during the construction period and advise on ornithological issues as they arise;
- Monitoring and reporting on complaints with legal, planning contract requirements;
- Provide guidance to contractors to ensure legal compliance with respect to protected habitats and species onsite and offsite;
- Liaise with officers from consenting authorities and other relevant bodies and contractors with regular updates in relation to construction progress; and
- Monitoring post-construction/implementation success of mitigation methods and aftercare of sensitive habitats and features.

6.4.7 Construction work will avoid the peak nesting period (April – May) wherever practicable to minimise impacts on the qualifying breeding bird species of the South Pennine Moors Phase 2 SPA and South Pennine Moors SSSI. This will be prioritised wherever practicable, but if construction work does need to take place during these times (and at any time during the nesting season), then standard good practice appropriate mitigation measures will be put in place as described below.

Site Clearance

6.4.8 Any removal of suitable bird nesting habitat (particularly habitat associated with the qualifying breeding bird species of the South Pennine Moors Phase 2 SPA and South Pennine Moors SSSI) to be removed during the nesting season, will first be checked for nests by the ECoW immediately prior to clearance. If nests are found, they will be retained (with a suitable, species-specific buffer from works established) and protected from damage or abandonment until the young have fledged.

Noise

6.4.9 Noise prevention measures will be implemented to reduce the impact of disturbance on qualifying breeding bird species, including:

- All plant and machinery to comply with specific noise legislation (The Noise Emission in the Environment for use Outdoors Regulations 2001 (as amended)) and will be turned off when not in use;
- Contractors to control noise on the working areas in accordance with BS 5228, Noise Control on Construction and Open Sites[64]. Site inspections by the appointed contractor shall include checks to ensure that plant is being operated

[64] BSI (2014) *Biodiversity Code of practice for noise and vibration control on construction and open sites*. BS 5228-1:2009+A1:2014

with any specified acoustic covers in place. Excessively noisy plant shall be removed from the Proposed Development for repair or maintenance. Quieter construction methods will be used, where required and considered reasonable and feasible;

- Where feasible to do so, plant and equipment that generates low levels of noise and vibration shall be adopted as well as the use of hand-held equipment to carry out works where practicable in lieu of mechanical means; and
- Regular briefings for operators of moving plant to emphasise the importance of noise mitigation, specifical avoiding movement over irregular surfaces (which tends to create more noise/vibration emissions).

Lighting

6.4.10 In general, artificial light creates a barrier to crepuscular species, so the use of artificial lighting during construction will be avoided wherever practicable. As will be described within a oCEMP, construction activities within the Proposed Development will take place during daylight hours where practicable to minimise disturbances to crepuscular species. If works are required to take place at night due to necessity; the project ECoW will limit night-time works to sections of the Proposed Development that avoid sensitive features. Where lighting is required, directional lighting (i.e., lighting which only illuminates work areas and not nearby habitat features) will be used to prevent overspill. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvers, and shields to direct the light to the intended areas only.

Other Measures

6.4.11 Other measures for inclusion within the oCEMP will include:

- No removal of habitats or movement of construction machinery will occur outside of the development works area during the construction phase, clearly marking out the works footprint for Site staff.
- All edible and putrescible waste will be stored and disposed of in an appropriate and timely manner. Construction materials will be stored and stockpiled according to strategies set out within the oCEMP.
- Standard good practice pollution prevention guidance including managing the input of dust, cement, stilt, hydrocarbons, and other chemicals to watercourses and other habitats. Measures such as stilt traps, plant inspection, good practice re-fuelling of machinery, and drainage monitoring will be implemented as part of

the oCEMP. An emergency plan for the construction phase to deal with accidental spillages will be contained within the oCEMP.

- Delineation of buffer zones of sensitive habitats (e.g. important areas of the South Pennine and Moors Phase 2 SPA and South Pennine Moors SSSI) in order to safeguard and limit these habitats from construction related disturbance.

Operation and Maintenance

6.4.12 Good practice measures described in relation to construction methods will also be adopted during operational maintenance activities, as will be detailed within an outline Landscape Environmental Management Plan (oLEMP) and an outline Operational Environmental Management Plan (oOEMP) with final versions prepared in accordance with these outlines post ES submission Specifically, operational maintenance will minimise the level of removal of suitable habitat and use existing access routes where possible. Best practice methods will be adopted to minimise the potential for disturbance (e.g., to minimise generation of additional noise, light and vibration). In particular, effects on active bird nests will be minimised by undertaking any required vegetation maintenance by timing works outside the peak nesting season (April – May) and undertaking nesting bird checks prior to clearance of any suitable nesting habitat where avoidance is not possible.

6.4.13 During the operational phase, continued monitoring of the Proposed Development will be undertaken to assess the ongoing effects of the Proposed Development, as will be secured within the oLEMP and oOEMP. This will include an avian fatality monitoring programme to confirm the accuracy of the Collision Risk Modelling (CRM) predictions that will be made in the assessment.

Decommissioning

6.4.14 Good practice measures described in relation to construction methods will also be adopted during the decommissioning stage, with a commitment to produce a outline Decommissioning Environmental Management Plan (oDEMP) that will be similar in form and function to a oCEMP. As with a oCEMP, this will include measures to minimise disturbance to bird species (including through noise, vibration, additional lighting), minimising habitat removal, temporal considerations to works (avoiding peak nesting season), pollution prevent measures etc.

6.4.15 As part of the assessment, the Proposed Development will include a clear commitment to habitat restoration following decommissioning. Upon cessation of operations, the majority of infrastructure associated with the wind farm will be removed, and a comprehensive habitat reinstatement plan will be implemented. This plan will aim to return the Proposed Development to a condition that aligns

with the ecological and ornithological character and conservation objectives of the surrounding South Pennine Moors Phase 2 SPA and South Pennine Moors SSSI. Where feasible, restoration efforts will seek not only to restore but to enhance the quality of habitats to support and potentially improve condition for the key breeding species of the SPA/SSSI. All restoration activities will be developed in consultation with relevant statutory bodies, including Natural England, to ensure they are ecologically appropriate and contribute to the long-term conservation of the Site.

6.5 Scope of the Assessment

Consultation Undertaken to Date

Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

6.5.1 As discussed in **Chapter 1: Introduction**, under the Town and Country Planning Act 1990, in July 2023, an EIA scoping request was submitted to CMBC, which was a Scoping Report in request for a Scoping Opinion for a proposed wind farm development and associated infrastructure at the Site, including cable connection. Table 6-2 presents the details of the Scoping Opinion received from CMBC relevant to ornithology and reconfirms if the opinion is considered within the proposed scope of assessment (as set out below) or if it is considered to be scoped out of the technical assessment, with details provided in Table 6-4.

Table 6-2 Calderdale Metropolitan Borough Council Scoping Opinion

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
CMBC	A scoping response for the Proposed Development under the TCPA was received from the CMBC on 14 December 2023. In relation to ornithology, the response details the requirements for further data and consideration within the impact assessment in regard to designated sites and their qualifying interests; species-specific surveys; breeding bird and VP surveys; and Collision Risk Modelling. Details are summarised below: • Surveys within the scope to include VP and breeding birds with a minimum survey effort of two full survey years and sufficient coverage across the study area. • Additional non-standard surveys for wind farms include species specific-surveys following best practice guidance for nocturnal/crepuscular species (e.g. infra-red, night vision and acoustic surveys) and comparative control area surveys within the surrounding area. • Ecological Impact Assessment inclusive of Collision Risk Modelling with particular consideration of ornithological movement along the Pennine chain, evidencing the mitigation hierarchy, post-development/decommissioning impacts on habitat to moorland birds and increased activity from disturbance associated with operation.	As detailed within Section 6.3, at least two years of breeding bird and VP surveys following best practice guidance[4647] have been undertaken with sufficient coverage of the study area provided for assessing the bird assemblages present, with ongoing VP surveys aiming to achieve a total watch time of 72 hours per VP during the breeding season. Additional surveys following best practice guidance[47] were undertaken for raptors, nocturnal moorland species and long-eared owl. The suite of surveys undertaken are considered to be sufficient for assessing impacts to crepuscular/nocturnal species. Further details of additional surveys are provided in Section 6.3. Due to land access restrictions, it has not been possible to undertake comparative control area surveys beyond the boundary of the Proposed Development. However, the ornithological survey effort conducted within the study area has yielded sufficient data to support a robust assessment of the ornithological interests present and its relationship to populations identified through the desk study and broader county-level data. Furthermore, the Proposed Development will include a commitment to post-construction monitoring, which will provide an appropriate mechanism for assessing operational impacts in relation to the established baseline conditions.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	• Shadow Habitats Regulations Assessment (HRA). • Assessment of north south movements of birds along the Pennine chain as the Proposed Development is located at the highest point of the South Pennines, and as birds are known to follow strong topographical features, the moorland spine may represent a very important corridor.	An Ecological Impact Assessment with Collision Risk Modelling will be completed as part of the Chapter 6: Ornithology, the methodology of which is detailed in Section 6.6. A shadow HRA will be completed alongside the ES and submitted as a standalone document, as detailed in paragraph 6.6.2. An assessment of the north south movement of birds along the Pennine chain will be completed using results from the VP surveys of the study area with a particular focus on those surveys conducted in the spring and autumn passage periods.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
Natural England	Natural England's response to the scoping request was received on 26 October 2023. The response details their requirements within the Ornithology Impact Assessment for consideration of the following: designated sites (including South Pennine Moors SSSI and South Pennine Moors Phase 2 SPA), national and local available bird data on species and regionally/locally important sites, impacts to ornithological receptors during all phases of development (i.e. construction, operation and decommissioning), cumulative impacts. Specific reference to the approach for assessment of impacts to the South Pennine Moors Phase 2 SPA was provided by Natural England whereby they advised: • Two full years of breeding bird surveys following the Bird Survey Guidelines. • Two full years of VP surveys following best practice guidance with 72 hours survey effort completed in the breeding season. Watches should last no longer than two hours. All parts of each VP survey area should be visible within 1km. Ideally all VPs should be located outside of the proposal area. There should be a particular focus in the period between February and July to observe nesting golden plover. Survey effort also	As detailed in Section 6.3, surveys will include two full seasons of breeding bird surveys based on the Brown & Shepherd (1993)[58] survey approach for censusing upland breeding waders, targeting four visits between mid-March and early July that aim to approach all accessible parts of the study area to within approximately 100m, with an additional two visits (six in total) undertaken during the crepuscular/nocturnal periods (see below). A detailed in Section 6.3, ongoing surveys are aiming to achieve a total watch time of 72 hours per VP during the breeding season with an additional 36 hours of observations from each VP during the non-breeding season. It is noted that Natural England recommend VP survey durations do not exceed 2-hour watches, to minimise the effects of surveyor fatigue. Three-hour VP survey durations are considered standard practice in survey guidance published by NatureScot (2025)[47] and have been adopted during surveys to inform the Proposed Development, in order to minimise potential disturbance to birds, particularly ground-nesting species. Furthermore, adequate provisions were made during the surveys to minimise potential effects of surveyor fatigue, including use of highly experienced professional ornithologists familiar with undertaking VP surveys, implementing suitable rest breaks between surveys and

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	to be completed within the post-breeding passage period between August to November. • Nocturnal surveys relevant for nocturnally active moorland species (e.g. golden plover)	curtailing planned surveys should surveyors become fatigued. As in accordance with industry standard good practice survey guidelines (NatureScot, 2025)[47], VP surveys were undertaken with a 2km viewshed. Whilst it is acknowledged that smaller species such as merlin may be difficult to observe over such a distance, a large degree of overlap in the viewsheds of these VPs exists, which will minimise the limitations associated with observing such species over this distance. This coupled with the additional data gathered as part of the walked transect surveys and third-party data provided by the BTO Nest Recording Scheme and Bird Ringing Scheme, which undertakes annual monitoring of the merlin population within the study area, will allow a sufficiently robust assessment of the likely effects of the Proposed Development on merlin to be undertaken, without the need to reduce the viewsheds to 1km. VP surveys between February and July ensured all breeding observations of golden plover were noted and included within the breeding assessment. A suite of nocturnal surveys following different best practice methodologies[47] for improved detectability of typically cryptic species were completed in addition to the breeding bird surveys (see Section 6.3), including

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
		nocturnal moorland surveys, acoustic surveys and long-eared owl surveys.
Royal Society for the Protection of Birds (RSPB)	RSPB's scoping response in relation to ornithology mainly raised concerns over the potential for the Proposed Development to significantly impact the SPA and SSSI and the qualifying species for which they support, through direct habitat loss, displacement and disturbance and the potential for collision related mortality. As a result, the RSPB stressed the importance of the application including sufficient information to allow the competent authorities to carry out an Appropriate Assessment under the Habitats Regulations. RSPB additionally highlighted the following concerns with regards to the bird survey methodology outlined in the Scoping Report: • The breeding bird and VP survey areas should cover the whole Site plus a 500 m buffer in accordance with NatureScot and Natural England guidance. • According to NatureScot and Natural England guidance, VPs should be located outside of the survey area where possible to minimise the observer effect on bird behaviour and to also cover the 500 m buffer zone.	A shadow HRA will be completed alongside the ES and will be submitted as a standalone report. Sufficient information will be provided to the competent authority in order for an Appropriate Assessment to be completed. Breeding bird transect surveys in 2024 and 2025 were carried out over an area defined by a buffer of 500 m from the Turbine Area and Site Access in accordance with NatureScot[47] and Natural England[46] guidance. Furthermore, whilst not all of the 12 VP locations were positioned outside of the Turbine Area (due to access and topographical restrictions), these locations provided sufficient coverage of the Turbine Area; the 2km viewsheds additionally providing coverage across the 500 m buffer zone. Whilst sufficient provisions were made to minimise the observer effect on bird behaviour, it should be noted that the usage of the Turbine Area as an operational grouse moor constitutes a baseline of anthropogenic disturbance which renders the presence of surveyors unlikely to significantly alter bird behaviour. The survey design has incorporated a suite of nocturnal surveys following different best practice methodologies for improved detectability of typically cryptic species (see

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	• Survey design lacks monitoring for nocturnal migration and foraging activity by owls, waders and wildflower. • Recommendation of three years of surveys. • Highlight the requirement for comparable control or reference sites to be surveys at the time of initial surveys, to allow post construction monitoring. RSPB further highlighted gaps in the in the survey effort at the time of the Scoping Report: • Breeding and passage transect surveys are incomplete with missing visits. • The number of VP surveys in 2022 does not meet the required 72 hours in reference to Natural England guidance. • Raptor surveys have only been carried out during the breeding season. RSPB highlighted the significance to conduct these surveys in the winter to identify important winter roost sites within 2km. • RSPB highlighted concerns around raptor and night owl surveys only being carried out over one year with a recommendation for at least two years of survey data to be included within the assessment.	Section 6.3), including nocturnal moorland surveys, acoustic surveys and long-eared owl surveys. Due to land access restrictions, it has not been possible to undertake surveys at comparative control or reference sites beyond the Proposed Development. However, the ornithological survey effort conducted within the study area has yielded sufficient data to support a robust assessment of the ornithological interests present and its relationship to populations identified through the desk-based review and broader county-level data. Furthermore, the Proposed Development will include a commitment to post-construction monitoring, which will provide an appropriate mechanism for assessing operational impacts in relation to the established baseline conditions. Surveys since the submission of the Scoping Report submitted under the TCPA 1990 have focused on meeting all recommendations under necessary guidance including two full years of breeding bird surveys and VP surveys aiming to achieve 72 hours per VP during the breeding season with an additional 36 hours of observations from each VP during the non-breeding season. In addition, this includes two years of raptor surveys and nocturnal surveys as described above.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
		Targeted surveys (including from VP and non-breeding transects surveys) will determine the presence of important winter roosts within the study area with supplementation by third party data and anecdotal information from local land managers for the wider area.
Yorkshire Wildlife Trust	The Yorkshire Wildlife Trust's response in relation to ornithology primarily raised concerns of the impact to protected sites, particularly the South Pennine Moors Phase 2 SPA and the South Pennine Moors SSSI. They noted the requirement of an Appropriate Assessment of the SPA under the Habitats Regulations as well as an assessment of impacts upon the SSSI in line with the Wildlife and Countryside Act 1981.	A shadow HRA will be completed alongside the ES and will be submitted as a standalone report. Sufficient information will be provided to the competent authority in order for an Appropriate Assessment to be completed. An assessment of impacts upon the SSSI as a result of the Proposed Development will be included within the ES.

Other Consultation Undertaken to Date

6.5.2 An overview of other consultation (beyond the CMBC Scoping Opinion) undertaken to date for ornithology, and how this has informed the scope to the assessment is provided in Table 6-3.

Table 6-3: Consultation Undertaken to Date

Consultee	Summary	Consideration within the Scope of Assessment
Natural England	Further consultation was sought with Natural England (on 8 May 2025 and 10 May 2025) for additional guidance in regards to ongoing surveys at the Site: • The approach to the breeding bird transect surveys, specifically using the Brown & Shepherd (1993)[58] survey methodology instead of the BSG survey methodology[65]; • Advice on 72 hours of VP watches per relevant season; • Approach to the VP surveys with regard to using 2km viewsheds instead of 1km viewsheds; and • The duration of each VP watch (i.e. continuing with 3-hour watches instead of 2-hour watches as recommended in the scoping opinion – see Table 6-2 above). Natural England requested that in addition to the Brown &	A suite of nocturnal surveys as described in Section 6.3 have been included within the scope of the assessment (including nocturnal moorland surveys, acoustic monitoring and long-eared owl surveys). This includes two nocturnal survey visits that are being conducted in 2025 as part of the breeding bird surveys. Ongoing VP surveys are aiming to achieve a total watch time of 72 hours per VP per breeding season, when breeding raptors are known to be present. Natural England agree that the viewsheds of the VP locations selected do indeed overlap in a way that will mean coverage is good for small raptors such as merlin. They also recommended to illustrate 1km viewsheds from the VP locations to identify any potential significant gaps in survey coverage for this species which will be presented in the ES chapter.

[65] Bird Survey and Assessment Steering Group (2025) *Bird Survey Guidelines for Assessing Ecological Impacts, v. 0.1.1.* Available at: https://birdsurveyguidelines.org/

Consultee	Summary	Consideration within the Scope of Assessment
	Shepherd (1993)[58] survey methodology (four repeat visits per season) that an additional two nocturnal or crepuscular visits be conducted to ensure adequate coverage for species active at this time of day (i.e. golden plover). Natural England recommended the full 72 hours VP survey coverage per relevant season due to the known presence of raptors such as merlin, peregrine and hen harrier across the study area.	Although Natural England recommends 2-hour VP duration to minimise the effects of surveyor fatigue, they acknowledge that durations of 3-hours is acceptable if there are suitable rest breaks and surveyors reduce the VP duration if they are becoming fatigued. This approach was implemented across all VP surveys with a duration of 3-hours.

Effects Scoped Out from Detailed Assessment

6.5.3 Table 6-4 presents the ornithology matters that are unlikely to give rise to significant adverse effects and, therefore, which are proposed to be scoped out from detailed assessment.

Table 6-4: Effects Scoped Out from the Detailed Assessment

Ornithological Feature / Development Feature	Agreement in CMBC Scoping Opinion	Rationale to Scoped Out
The North Pennine Moors SPA	The North Pennine Moors SPA was not specifically commented on during the CMBC Scoping Opinion; likely owing to its distance from the Proposed Development.	The North Pennine Moors SPA is designated for its breeding populations of hen harrier, merlin, peregrine, and golden plover. This designated site is located approximately 18.85km from the Turbine Area (with Cable Corridor and Access Search Areas coming to within approximately 9.5km and 14.34km respectively at their closest point), placing it beyond the core ranges of all qualifying species, as defined in SNH guidance on assessing connectivity with SPAs (SNH, 2016)[54]. On this basis, it is considered that

Ornithological Feature / Development Feature	Agreement in CMBC Scoping Opinion	Rationale to Scoped Out
		the Proposed Development (including Cable Corridor Search Areas and Access Route Search Areas) does not provide Functionally Linked Land (FLL)[66] [67] supporting habitat for the qualifying species of the North Pennine Moors SPA. Accordingly, potential effects on the integrity of this SPA can be scoped out of further assessment for all phases of the Proposed Development.
Non-target species (i.e. species not afforded additional legislative protection or included on any lists of conservation importance).	Non-target species were not specifically commented on during the CMBC Scoping Opinion.	Non-target bird species are neither considered sensitive to wind farm-related impacts such as collision risk nor afforded specific legislative protection or priority conservation status (e.g. under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended), the Birds of Conservation Concern Red or Amber lists[5556], or Annex I of the Birds Directive). These species are typically common and widespread, with adaptable habitat preferences and broad population distributions. Given the low potential for significant habitat loss, the limited scale of land take, and the embedded mitigation measures in place (including the avoidance of peak nesting periods during vegetation clearance), any potential impacts on these non-target species are expected to be minimal and not significant in the context of the EIA. Accordingly, these species are proposed to be scoped out of further detailed assessment for all phases of the Proposed Development.

[66] FLL describes areas of land or sea occurring outside a designated site, which is considered to be critical to, or necessary for, the ecological or behavioural functions in a relevant season of a qualifying features for which a SPA or Ramsar site has been designated. These habitats are frequently used by qualifying species and support the functionality and integrity of the designated sites for these features. The loss of FLL or disturbance/displacement of qualifying species with FLL has the potential to lead to changes in species distribution and, ultimately, prevent the conservation objectives of a SPA or Ramsar site from being met.

[67] Natural England (2021) *Identification of Functionally Linked Land supporting Special Protection Areas (SPAs) waterbirds in the North-West of England Plan*.

Ornithological Feature / Development Feature	Agreement in CMBC Scoping Opinion	Rationale to Scoped Out
Operation of the cable route	Operational impacts from the cable route were not specifically commented on during the CMBC Scoping Opinion.	Operational effects of the Cable Corridor Search Areas, on ornithology can be scoped out of the assessment on the basis that the connection will be installed entirely underground. As the cable will be buried, there will be no physical infrastructure above ground during the operational phase that could lead to ongoing disturbance, habitat loss, or collision risk to bird species. Once reinstatement is complete, the land along the cable corridor will be returned to its previous use, allowing habitats to recover and function as before. There will be no operational lighting, noise, or activity associated with the cable infrastructure post-construction, and therefore no long-term direct or indirect effect on ornithological features is anticipated. As such, provided construction-phase impacts are appropriately assessed and mitigated, no further assessment of operational ornithological impacts arising from the Cable Corridor Search Areas is considered necessary.

Likely Significant Effects Scoped into the Detailed Assessment

6.5.4 Table 6-5 presents the ornithology matters that could give rise to significant adverse effects and, therefore, which are proposed to be scoped into the detailed assessment.

Table 6-5: Likely Significant Effects Scoped into Detailed Assessment

Ornithological Feature	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
South Pennine	CMBC Scoping	As the Proposed Development falls within the South Pennine Moors Phase 2 SPA, there is

Ornithological Feature	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
Moors Phase 2 SPA	Opinion (including comments from Natural England, RSPB, Yorkshire Wildlife Trust) agree on the requirement of assessment for potential impacts of the South Pennine Moors Phase 2 SPA.	clear potential for direct and indirect impacts on qualifying features and supporting habitats, both during construction and operation. Potential impacts may include disturbance/displacement, habitat loss and degradation, death/injury to qualifying species, changes in prey availability etc. In line with the requirements of the Conservation of Habitats and Species Regulations 2017 (as amended) and relevant guidance on assessing impacts on internationally designated sites[4647], the South Pennine Moors Phase 2 SPA must therefore be scoped into the assessment for all phases of the Proposed Development. A full consideration of potential effects on the qualifying features of the SPA will be undertaken through the EIA process and, where appropriate, the HRA process (see Section 6.6.2).
South Pennine Moors SSSI	CMBC Scoping Opinion (including comments from Natural England, RSPB, Yorkshire Wildlife Trust) agree on the requirement of assessment for potential impacts of the South Pennine Moors SSSI.	The Proposed Development is situated within the South Pennine Moors SSSI which legally underpins the internationally designated South Pennine Moors Phase 2 SPA. As the Proposed Development lies within the boundary of the SSSI, there is potential for both direct and indirect impacts on qualifying features, including habitat loss and degradation, disturbance/displacement to sensitive bird species, death/injury to qualifying species etc. In accordance with Section 28 of the Wildlife and Countryside Act 1981 (as amended), and the requirement to avoid adverse impacts on SSSI features, the South Pennine Moors SSSI will be scoped into the EIA. Detailed assessment will be undertaken to evaluate potential impacts on the SSSI's ornithological interest features from all phases of the Proposed Development, and appropriate mitigation measures will be identified where necessary.

Ornithological Feature	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
Target species identified in paragraph 6.3.16.	CMBC Scoping Opinion (including comments from Natural England and RSPB) agree on the requirement of assessment for potential impacts of target species (including Collision Risk Modelling [CRM]).	A range of target bird species have been recorded within the study area that are either sensitive to potential wind farm impacts (including collision risk and displacement) or are afforded protection under national and international legislation and conservation frameworks. Given their conservation status and/or ecological sensitivity to wind energy infrastructure, these species may be affected by direct or indirect impacts such as disturbance/displacement, habitat loss, and collision-related mortality. As such, target species will be scoped into the EIA for all phases of the Proposed Development to ensure that any significant effects are identified, assessed, and, where necessary, mitigated in accordance with relevant policy and legislative requirements.

6.6 Proposed Approach to the ES

Scope of the Assessment

6.6.1 The methods that will be adopted to inform and undertake the assessment that will be presented in the ES chapter are described in this section. The scope of the approach prescribed by CIEEM's EcIA guidelines (CIEEM, 2018)45, including an explanation of the key terminology, is described below. In summary, the guidelines advocate the following approach:

- Prediction of the activities associated with a Proposed Development that are likely to generate biophysical changes which may lead to significant effects (either adverse or beneficial) upon ornithological features and resources of importance;
- Identification of the likely Zone of Influence of the Proposed Development;

- Scoping to select the ornithological features and resources (ecological features) that are likely to fall within the potential Zone of Influence of the Proposed Development, to be considered within the assessment;
- Evaluation of ornithological features likely to be affected (and identification of Important Ornithological Features);
- Assessment of the significance of effects on Important Ornithological Features;
- Refinement of the Proposed Development to incorporate enhancements, and mitigation for significant adverse effects of Important Ornithological Features;
- An assessment of the significance of residual effects and the need for compensation; and
- Advice on the consequence of residual significant effects for decision-making.

6.6.2 A detailed assessment of potential effects upon any associated internationally designated sites, including the South Pennine Moors Phase 2 SPA will be undertaken as part of a separate Habitats Regulations Assessment (HRA) in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations (2019)). The HRA will submitted as a separate package of documents alongside the ES. It is not the function of the Ornithology chapter of the ES to duplicate this assessment; rather, the ES will summarise and reference the key findings of the HRA where relevant to the EIA process, ensuring cross-referencing between the two assessments for clarity and completeness.

Determining the Zone of Influence

6.6.3 The Zone of Influence (ZoI) is defined as 'the area over which features may be affected by biophysical changes as a result of the proposed project and associated activities' (CIEEM, 2018)[45]. To determine the potential ZoI, an assessment of the spatial and temporal extent of biophysical changes likely to be generated by the Proposed Development with the potential to lead to effects upon ornithological features is required.

6.6.4 The ZoI therefore potentially extends beyond the Proposed Development boundary due to ecological and hydrological links between the Proposed

Development and areas that fall outside its boundaries, especially when internationally designated sites (i.e. SPAs and Ramsar sites) and their Functionally Linked Land (FLL) are taken into consideration. Additionally, the ZoI is likely to differ between different ornithological features depending on their characteristics and likely sensitivities. For individual ornithological features, the ZoI will be assessed following available best guidance (McGuinness *et al.,* 2015[68]; SNH, 2016[54]; NatureScot, 2025[47]).

Further Baseline Data

6.6.5 As outlined in Section 6.3, a comprehensive programme of ornithological surveys is currently being undertaken within the study area to inform a robust assessment of the likely significant effects associated with the Proposed Development. The continued survey effort includes VP surveys with an aim to achieve 72 hours per VP during each breeding season and 36 hours per VP during each non-breeding season, in line with consultation with Natural England. To supplement the VP data, continued targeted raptor surveys are being undertaken to identify the presence and breeding activity of key raptor species in the wider study area potentially interacting with the Proposed Development. Breeding bird surveys are also continuing in 2025 in accordance with the Brown & Shepherd (1993)[58] methodology to map the distribution and abundance of territorial species. In addition, two nocturnal surveys are being undertaken to inform the assessment of nocturnal species activity, including golden plover, which may use the study area during key periods.

6.6.6 Baseline ornithological information of the Cable Corridor Search Areas will be gathered to ensure an adequate assessment of bird activity within areas of potential impact. Surveys undertaken to date include breeding bird transect surveys based upon the Brown & Shepherd (1993)[58] approach of censusing upland breeding waders. In addition, raptor surveys that extend beyond 2km from the Turbine Aera and VP surveys which cover a viewshed of 500 m past the Turbine Area have provided some coverage in the areas for which a cable route option is proposed. The full extent, alignment and micro-siting of the cable corridors within the Cable Corridor Search Areas is still under development; as such, the final ornithological survey approach will be confirmed once the route is finalised. This will ensure all relevant habitats and ornithological sensitivities, both within designated sites (such as the South

[68] McGuinness, S., Muldoon, C., Tierney, N., Cummins, S., Murray, A., Egan, S. & Crowe, O. (2015) *Bird Sensitivity Mapping for Wind Energy Developments and Associated Infrastructure in the Republic of Ireland*. BirdWatch Ireland, Kilcoole, Wicklow.

Pennine Moors Phase 2 SPA) and in the surrounding landscape, are adequately characterised. The finalised survey approach and results will be fully presented within the Ornithology Chapter of the ES as described below.

6.6.7 The data collected through the ongoing and proposed survey programme will establish and enhance the ornithological baseline required to support the Ornithological Impact Assessment. Results will be analysed to identify patterns of habitat use, species sensitivity, and temporal variation in activity. Surveys are being conducted across appropriate seasonal periods to ensure sufficient temporal coverage and to account for potential inter-annual variability in bird activity. The outcomes of the current and proposed survey programme (including surveys along the cable route wherever possible), along with relevant data from previous years, will be fully presented in the forthcoming PEIR and/or the Ornithology Chapter of the ES, and will underpin the assessment of likely significant effects and the development of appropriate mitigation and monitoring measures.

Potential Likely Significant Effects

6.6.8 As per NatureScot (2025)[47] guidance, wind farms and their associated infrastructure (e.g. access roads, cable corridor routes, substations etc.) present the following potential risks to ornithological features (Drewitt & Langston, 2006[69]; 2008[70]; Band *et al*., 2007[71]; Band, 2024[49]):

- Direct habitat loss and alteration: through construction and (generally to a lesser extent) operational maintenance and decommissioning of wind farm infrastructure;
- Disturbance and displacement: the construction, operational and decommissioning stages of the wind farm have the potential to cause disturbance of birds using habitats within/near to the wind farm. This may lead to birds avoiding the wind farm and its surrounding area (displacement). Displacement may also include barrier effects, in which birds are deterred from using normal routes to feeding or roosting grounds; and

[69] Drewitt, A. L. & Langston, R.H.W. (2006) Assessing the impacts of wind farms on birds. *Ibis*, **148**, 29-42.
[70] Drewitt, A. L. & Langston, R.H.W. (2008) Collision effects of wind-power generators and other obstacles on birds. *Annals of the New York Academy of Sciences*, **1134**(1), 233-266(34).
[71] Band, W., Madders, M. & Whitfield, D.P. (2007) *Developing field and analytical methods to assess avian collision risk at windfarms*. In De Lucas, M., Janss, G. and Ferrer, M. (eds) 'Birds and Wind Power'

- Death/injury: through collision or interaction with turbine blades and other infrastructure.

6.6.9 For each of these risks, detailed knowledge of bird distribution and flight activity within and adjacent to the Proposed Development gained from the desk and field assessments will be used to predict the potential effects of the Proposed Development on birds. The likely significance of those effects will be assessed with regard to the construction phase, the operational phase, the decommissioning phase and cumulatively in consideration with other plans and projects.

Collision Risk Modelling

6.6.10 Ornithological VP survey data relating to species at potential significant risk or sensitivity of collision with proposed turbines (i.e., 'target species' – see Section 6.3.16) will be analysed using the NatureScot Collision Risk Model. This will be undertaken in accordance with the following best practice guidance:

- Recommended bird survey methods to inform impact assessment of onshore wind farms (NatureScot, 2025)[47];
- Guidance on using an updated Collision Risk Model to assess bird collision risk at onshore wind farms (NatureScot, 2024)[50];
- Using a collision risk model to assess bird collision risks for onshore wind farms (Band, 2024)[49];
- Wind farms and birds: Calculating a theoretical collision risk assuming no avoiding action (SNH, 2000)[72];
- Developing field and analytical methods to assess avian collision risk at wind farms (Band *et al*., 2007)[71]; and
- Use of Avoidance Rates in the NatureScot Wind Farm Collision Risk Model (NatureScot, 2025)[73].

[72] Scottish Natural Heritage (2000) *Guidance – Windfarms and birds: Calculating a theoretical collision risk assuming no avoiding action.* SNH, Perth.
[73] NatureScot (2025) *Wind farm impacts on birds – Use of Avoidance Rates in the NatureScot Wind Farm Collision Risk Model*. Available at: https://www.nature.scot/doc/wind-farm-impacts-birds-use-avoidance-rates-naturescot-wind-farm-collision-risk-model

6.6.11 There are two published models for calculating collision risk. These models are appropriate for different scenarios, depending on how the target species are using the Wind Farm Area (WFA)[74]:

- The 'Airspace' Model applies where birds are typically recorded within the airspace of the WFA; for example, birds with breeding territories or observed foraging within the WFA; and
- The 'Fly Through' Model applies where birds are typically recorded using regular commuting routes across the WFA.

6.6.12 Based on the flight activity recorded during the VP surveys, the most appropriate model will be selected for each target species.

6.6.13 The results of the Collision Risk Modelling will be used to estimate the number of target species likely to be impacted, applying those impacts on a geographical scale along with their potential relationship and significance to SPAs, especially the South Pennine Moors SPA and South Pennine Moors SSSI.

Determination of Significance

6.6.14 The assessment of likely significant effects from the Proposed Development on ornithological features will include the following:

- Determine the importance of ornithological features affected;
- Assess impacts potentially affecting important features;
- Characterise the impacts e.g. the nature of effect and magnitude of impact;
- Identify cumulative impacts; and then
- Identify significant effects of impact in the absence of mitigation.

Assessment of the Importance of Ornithological Features

6.6.15 The baseline importance and conservation status of ornithological features identified within the ZoI will be determined to identify those with sufficient importance and vulnerability for effects from the Proposed Development to be taken forward for consideration at the assessment of likely significant effects

[74] The Wind Farm Area (WFA) refers to the geographic area encompassing the turbine layout within which birds may be at risk of colliding with operational wind turbines. This area typically includes the footprint of all proposed turbine locations plus a buffer zone that accounts for the rotor sweep (the area swept by turbine blades) and potential flight paths of birds through or near the turbines.

stage. In line with CIEEM guidance[45], the following geographic scale of reference to determine the importance of ornithological features will be used:

- International importance;
- National importance (i.e. important in a British context);
- County/District importance (i.e. important in the context of West Yorkshire); and
- Local importance (i.e. locally important populations/assemblages of bird species and/or protected and/or priority species/habitats).

6.6.16 Details of definitions for feature value and sensitivity with regard to CIEEM guidance are shown in Table 6-6.

Table 6-6: Defining Value/Sensitivity of Ornithological Features

Value/Sensitivity of Ornithological Receptor	Example criteria
International	An internationally designated site or candidate/proposed site (SPA, potential SPA and/or Ramsar site). Land that is functionally linked to an internationally designated site of ornithological importance to the extent that it essential to maintaining the coherence of the designated site. Sustainable population of an internationally important species or site supporting such species (or supplying a critical element of their habitat requirement) e.g. IUCN Red List species that is listed as critically endangered, endangered or vulnerable; species listed in Annex IV of the Habitats Directive; or sites that support 1% or more of a biogeographic population of a species.
National	A nationally designated site of ornithological importance (i.e. SSSI, National Nature Reserve). Resident or regularly occurring populations of birds assessed to be important at the national level (e.g. a site that supports >1% of the national population), including species listed in Annex 1 and/or referred to in Article 4(2) of

Value/Sensitivity of Ornithological Receptor	Example criteria
	the Birds Directive, species protected under the Wildlife and Countryside Act 1981 (as amended) and the NERC Act 2006 and/or species included on the BoCC Red List.
County/District	Resident or regularly occurring populations of birds assessed to be important at the county level (e.g. a site that supports >1% of the county population), including species listed in Annex 1 and/or referred to in Article 4(2) of the Birds Directive, species protected under the Wildlife and Countryside Act 1981 (as amended) and the NERC Act 2006 and/or species included on the BoCC Red or Amber List.
Local	Very low important and low rarity, local scale. Resident or regularly occurring populations of birds assessed to be important at the local level, including species listed in Annex 1 and/or referred to in Article 4(2) of the Birds Directive, species protected under the Wildlife and Countryside Act 1981 (as amended) and the NERC Act 2006 and/or species included on the BoCC Red or Amber List, or populations of species that are assessed as uncommon in the local area.

6.6.17 Where the importance is considered less than 'Local' it is considered 'Negligible' and will be scoped out of the detailed assessment of effects, since there would not be a material consideration for planning and any effects on these features would not be significant in the context of the local population statuses of these species or species assemblages. Therefore, any feature which is assessed as being of Local importance or higher will be brought forward for assessment of effects from the Proposed Development, unless it can be proven without any reasonable scientific doubt that impacts would be negligible.

6.6.18 The importance of an ornithological feature (using the geographical scale of importance detailed above) can be assessed based on the following factors described below.

Conservation Status

6.6.19 The assessment of the importance of the bird population will take into consideration the conservation statuses of the species recorded. Species afforded special statutory protection or included on lists of species of conservation interest will be evaluated. These will include:

- Species listed under the designation of a statutory designated site;
- EC Birds Directive (2009/147/EC) Annex 1 species;
- Wildlife and Countryside Act 1981 (as amended) Schedule 1 species;
- NERC Act 2006 S41 Species of Principal Importance; and
- BoCC Red and Amber list species (Stanbury *et al.,* 2021[55]; Stanbury *et al*., 2024[56]).

Species Abundance

6.6.20 The assessment of the importance of bird populations will take into consideration their sizes relative to international, national, and regional population estimates for the species in question.

6.6.21 International 1% population thresholds (i.e. the size at which a population is assessed as being of international importance, as it comprises over 1% of the international population for a given species) will be obtained from the International Union for the Conservation of Nature (IUCN) and Wetlands International[75].

6.6.22 National 1% population thresholds (i.e. the size at which a population is assessed as being of national importance, as it comprises over 1% of the national population for a given species) will be calculated from the national population estimates detailed by Woodward *et al*. (2020)[76].

6.6.23 The assessment of county, district or local importance will be based on professional judgement and in reference to county population data detailed within the relevant county bird report.

[75] As detailed by Wetlands International. Available at: Waterbird Population Estimates (wetlands.org)
[76] Woodward, I., Aebischer, N., Burnell, D., Eaton, M., Frost, T., Hall, C., Stroud, S. & Noble, D. (2020) APEP 4 Population Estimates of birds in Great Britain and the United Kingdom. *British Birds*, **113**, British Trust for Ornithology (BTO).

Species Diversity

6.6.24 The assessment of the importance of the populations will take into consideration the size of ornithological species assemblages (i.e. the number of species) recorded during the breeding and non-breeding seasons.

Relevant Designated Sites with Features of Ornithological Interest

6.6.25 The importance of the bird populations will be assessed in the context of the relevant designated sites for features of ornithological interest within the ZoI of the Proposed Development (e.g. the South Pennine Moors Phase 2 SPA and South Pennine Moors SSSI). Specifically, where species recorded during field surveys are deemed to potentially belong to populations of nearby SPAs (in reference to SNH [2016] guidance[54]), if the populations of the species recorded within/in close proximity to the Site exceeded 1% of the cited population estimates for those species for the relevant SPA(s), the populations recorded will be assessed as being potentially significant in the context of the SPA(s). As such, any adverse effects on those populations could potentially result in effects on ornithological features of international and/or national importance and therefore undermine the integrity of such designated site(s).

Identification of Important Ornithological Features

6.6.26 The methodology for assessment will follow a precautionary screening approach with regard to the identification of Important Ornithological Features. For the ornithology chapter of the ES, an Important Ornithological Feature will be identified as a species occurring within the ZoI of the Proposed Development upon which likely significant effects are anticipated and assessed. In accordance with CIEEM (2018) guidelines[45], an Important Ornithological Feature is a feature which is 'both of sufficient value to be material in decision making and likely to be affected significantly'. For this assessment, Important Ornithological Features will be identified as receptors with a value of local importance or greater, which may be subject to likely significant effects from the Proposed Development, either directly or indirectly. It also includes those species subject to detailed Collision Risk Modelling.

Characterising the Impact

Nature of Effect

6.6.27 The assessment process includes a description regarding the nature of the effect. Nature of effect is defined as 'the influence an effect has on a feature

and across which temporal scale' (CIEEM, 2018)[45]. This term provides additional information about how features will be influenced by an impact from an effect with assessment descriptors. Details of assessment descriptors are included in Table 6-7.

Table 6-7: Nature of Effect

Term	Nature of effect descriptors
Adverse	An effect which has the potential to decrease feature value or status relative to baseline conditions.
Beneficial	An effect which has the potential to increase feature value or status relative to baseline conditions.
Short-term	Effects that persist only for a short time, e.g. during the construction phase only; includes reversible effects.
Medium-term	Effects that may persist until additional mitigation measures have been implemented and become effective.
Long-term	Effects that persist for a much longer time, e.g. for the duration of the operational phase (essentially until the development ceases or is removed/ reinstated); includes effects which are permanent (irreversible), or which may decline over longer timescales.
Temporary	A reversible effect where recovery is possible and for which effects would persist only for a short or medium-term.
Frequent	Refers to a recurring effect that occurs repeatedly; in some cases, a lower level of impact may occur with sufficient frequency to reduce the ability of a feature to recover effectively.
Direct	An effect directly attributable to a defined action of the Proposed Development such as the physical loss of a habitat or the immediate mortality of an individual of a particular species.
Indirect	An effect attributable to an action which affects ecological resources through effects on an intermediary ecosystem, process or feature, e.g. a loss of food resources for an ornithological species downstream of a site due to fish-kill by polluted runoff entering a river.
Cumulative	Collective effects of changes that may be insignificant individually but in combination, often over time, have the potential to be significant (especially with other projects in the vicinity).

Term	Nature of effect descriptors
Residual	After assessing the impacts of the proposal all attempts should be made to avoid and mitigate ecological impacts. Once measures to avoid and mitigate ornithological impacts have been finalised residual effects are identified.

Magnitude of Impact

6.6.28 The magnitude of impact from the Proposed Development's effects refers to the size, amount, intensity and volume. Such impacts have been defined into categories as detailed in Table 6-8.

Table 6-8: Definition of Impact Magnitude.

Magnitude	Summary
Large	Any impact which significantly undermines or improves the favourable conservation status of the qualifying interests of any internationally or nationally designated conservation site. An impact which obliterates sensitive characteristics. Total/near total loss or change of a bird population due to mortality or displacement. Total/near total loss or change of productivity in a bird population due to disturbance. Guide: >80% of feature extent or population change.
Medium	An impact which, by its character, magnitude, duration, or intensity significantly alters most of a sensitive aspect of the environment. Major change in the status or productivity of a bird population due to mortality, displacement or disturbance. Guide: 21-80% of feature extent or population change.
Small	An impact that alters the character of the environment or causes noticeable changes without affecting its sensitivities or is consistent with existing and emerging trends. Partial but discernible change in the status or productivity of a bird population due to mortality, displacement or disturbance. Guide: 1-20% of feature extent or population change.

Magnitude	Summary
Negligible	An impact that can cause noticeable changes in the character of the environment without significant consequences. No or very slight change in the status or productivity of a bird population due to mortality, displacement, or disturbance. Change barely discernible, approximating to a 'no-change' situation. Guide: <1% of feature extent or population change.

Cumulative and In-Combination Effects

6.6.29 Cumulative effects will be assessed in line with the methodology set out in **Chapter 3: Approach to EIA**, which accords with the Planning Inspectorate's Advice on Cumulative Effects Assessment. A long list of existing, consented, and proposed developments will be agreed with the relevant local planning authorities prior to undertaking the assessment. The certainty of these developments will be determined using the tiered approach recommended by PINS. For each environmental topic, the potential Zone of Influence (ZoI) of the Proposed Development during construction, operation (including maintenance), and decommissioning will be identified. The outcomes of the cumulative effects assessment will be reported within the Environmental Statement.

Significance of Effects

6.6.30 Following the classification of the identified features and effects based on the factors described above, a clear statement will be made as to whether the effect is 'significant' or 'not significant' in EIA terms. In accordance with CIEEM (2018) guidelines[45], the significance of an effect on an ornithological feature will be determined based on analysis of the factors that characterise the effect.

6.6.31 Significance is assessed by consideration of the value/sensitivity of the ornithological feature, and the likely magnitude of the potential effects. A significant effect is defined as 'an effect that either supports or undermines biodiversity conservation objectives for the ecological feature or for biodiversity in general' (CIEEM, 2018)[45]. The assessment will consider whether an effect has the potential to affect the conservation status of a species or species assemblage, or the integrity of a site.

6.6.32 The conservation status of a species or species assemblage is defined as 'the sum of the influences acting on it which may affect its long-term distribution and abundance, within the geographical area of interest'. Conservation status is considered to be favourable under the following circumstances:

- Population dynamics indicate that the species is maintain itself on a long-term basis as a viable component of its habitats;
- The natural range of the species is not being reduced, nor is it likely to be reduced for the foreseeable future; and
- There is (and probably will continue to be) a sufficiently large habitat to maintain its population on a long-term basis.

6.6.33 Site integrity has been defined as 'the coherence of its ecological structure and function across its whole area which enables it to sustain the habitats, complex of habitats and/or population levels of the species for which it was classified (designated). Paragraph 20 of ODPM Circular 06/2005 on Biodiversity and Geological Conservation[77].

6.6.34 Within the ES, a significant effect will be determined whereby the magnitude of the impact leads to a 1% change in the feature extent or population (i.e. a small magnitude impact – see Table 6-8) of an Important Ornithological Feature.

Mitigation Hierarchy

6.6.35 In accordance with CIEEM's (2018) guidelines[45], a sequential process will be adopted to avoid, mitigate and compensate adverse ornithological impacts and effects, otherwise known as the 'mitigation hierarchy'. As part of the Proposed Development, avoidance, mitigation, offsetting (or compensation), and enhancement measures will be identified as part of the impact assessment process. These principles underpin any EcIA and are adapted from CIEEM as follows:

- Avoidance: seek options that avoid harm to ornithological features (for example, by locating an alternative site);
- Mitigation: adverse effects should be avoided or minimised through mitigation measures, either through the design of the Proposed

[77] Office of the Deputy Prime Minister & Department for Environment, Food and Rural Affairs (2005) *Biodiversity and geological conservation – statutory obligations and their impact within the planning system.* ODPM Circular 06/2005, Defra Circular 01/2005. The Stationery Office. ISBN: 0 11 753951 1.

Development or subsequent measures that can be guaranteed – for example, through a condition of planning;

- Offsetting: where there are significant residual adverse ornithological effects despite the mitigation proposed, these should be offset by appropriate compensatory measures; and
- Enhancement: seek to provide benefits for biodiversity over and above requirements for avoidance, mitigation, or offsetting.

6.6.36 Wherever practicable, strategies of avoidance will be implemented to minimise any impacts to ornithological features. If avoidance is not practicable, mitigation and offsetting measures will be required.

Assumptions, Limitations and Uncertainties

6.6.37 Specific plans describing detailed construction methodologies and Proposed Development designs, as well as required vegetation loss has not been evaluated in detail at this stage as the design is evolving, and so a precautionary approach has been taken during the production of this Scoping Report. This will be addressed and included within the impact assessment as the design evolves towards the ES.

6.6.38 Good practice guidance (NatureScot, 2025)[47] recommends positioning VP locations outside (i.e. looking into) the Proposed Development. However, due to access and topographical restrictions as well as the large extent of the Turbine Area, some VPs were positioned within the Turbine Area. Surveyors (and therefore viewsheds) were orientated to maximise coverage of the habitats within the airspace over the Turbine Area. Surveyors took care both while travelling to and surveying at the VP locations not to cause disturbance to birds. The usage of the Turbine Area as an active grouse moor constitutes a baseline of anthropogenic activity which would render the presence of the surveyors highly unlikely to significantly alter bird behaviour.

6.6.39 Field surveys for birds were undertaken at appropriate times of day and in predominantly suitable weather conditions. Considering the extents and types of habitats present within and immediately adjacent to the study area, and the species for which the study area is suitable, the survey approach presented is considered sufficient to record the bird populations present.

6.6.40 Whilst desk study data are useful in providing supplementary ecological information for a site, it should be acknowledged that these data are dependent on the submission of records to the relevant organisation. as such,

a lack of records for a particular species does not necessarily means that the species is absent from the study area. Similarly, records of a particular species do not necessarily mean that the species is still present within the study area.

7 Biodiversity

7.1 Introduction

7.1.1 This Chapter of the Scoping Report presents the scope of a detailed environmental assessment for biodiversity for the Proposed Development. Specifically, this section of the Scoping Report presents the policy and legislative context, the approach to collecting baseline data relevant to this scoping chapter and an overview of the relevant baseline conditions within the Turbine Area, Cable Corridor Search Areas and the Site Access Search Areas. It concludes by setting out the scope of assessment including, with justification, those effects that are proposed to be scoped in or out for detailed assessment and concludes by outlining the method that will be used to undertake the detailed environmental assessment.

7.2 Review of Policy, Legislation and Relevant Guidance

7.2.1 Legislation, planning policy and guidance relating to biodiversity, and relevant to the Proposed Development comprises:

Legislation

7.2.2 The following key pieces of legislation are of relevance to the Proposed Development:

- Wildlife and Countryside Act 1981 (as amended) (WCA) [78];
- Protection of Badgers Act 1992 ('the Protection of Badgers Act') [79];
- Hedgerow Regulations 1997 [80];
- Countryside and Rights of Way Act 2000 ('the CRoW Act') [81];
- Conservation of Habitats and Species Regulations 2017 ('the Habitats Regulations') as amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019[82];

[78] Wildlife and Countryside Act 1981 c.69. Available at: https://www.legislation.gov.uk/ukpga/1981/69
[79] The Protection of Badgers Act 1992 c.51. Available at: https://www.legislation.gov.uk/ukpga/1992/51/contents
[80] The Hedgerow Regulations 1997. Available at: https://www.legislation.gov.uk/uksi/1997/1160/regulation/1/made
[81] Countryside and Rights of Way Act 2000 c.37. Available at: https://www.legislation.gov.uk/ukpga/2000/37/contents
[82] The Conservation of Habitats and Species Regulations 2017. Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents/made

- The Environment Act 2021[83]; and

- Natural Environment and Rural Communities Act 2006 (as amended by the Environment Act 2021) ('the NERC Act') [84].

National Planning Policy

7.2.3 National Planning Policy relevant to the proposed development includes;

- National Policy Statement (NPS) EN-1 – Overarching NPS for Energy[85]. Specifically, Section 4.6 – Environmental and Biodiversity Net Gain and Section 5.4 – Biodiversity and Geological Conservation;
- Draft Overarching National Policy Statement for Energy (EN-1) (2025)[86];
- Draft National Policy Statement EN-3 - NPS for Renewable Energy Infrastructure (Draft dated April 2025)[87]. Specifically, Section 2.12 – Onshore Wind;
- National Policy Statement EN-5 - NPS for Electricity Networks Infrastructure EN-5[88]. Specifically, Section 2.5 – Environmental and Biodiversity Net Gain;
- Draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (2025)[89]; and
- National Planning Policy Framework (2024). Specifically, paragraph 187.

[83] The Environment Act 2021. Available at: https://www.legislation.gov.uk/ukpga/2021/30/contents?section-102-3
[84] The Natural Environment and Rural Communities Act 2006 c.16. Available at: https://www.legislation.gov.uk/ukpga/2006/16/contents
[85]National Policy Statement (NPS) EN-1 – Overarching NPS for Energy. Available at: https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1
[86] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[87] National Policy Statement EN-3 - NPS for Renewable Energy Infrastructure. Available at: https://assets.publishing.service.gov.uk/media/6809f0588c1316be7978e7cb/draft-nps-en-3.pdf
[88] National Policy Statement EN-5 - NPS for Electricity Networks Infrastructure EN-5. Available at: https://assets.publishing.service.gov.uk/media/65a78a5496a5ec000d731abb/nps-electricity-networks-infrastructure-en5.pdf
[89] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements

Local Planning Policy

7.2.4 The Turbine area is located within administrative boundary of Calderdale Metropolitan Borough Council. The adopted Development Plan comprises the

Calderdale Local Plan[90] (adopted 22 March 2023). Planning policies considered of relevance include:

- Policy GB1 Development in Green Belt;
- Policy GN1 Securing Green Infrastructure Provision;
- Policy GN2 A Joined-Up Green Infrastructure Network;
- Policy GN3 Natural Environment;
- Policy GN4 Landscape;
- Policy GN5 Trees; and
- Policy GN8 Protection of Local Green Spaces.

7.2.5 In addition, a Supplementary Planning Document (SPD) for Biodiversity Net Gain (BNG) has been published and provides specific guidance with respect to BNG.

7.2.6 Calderdale has also published a Calderdale Ecological Emergency Action Plan (August 2024-30) which includes reference to the "Calderdale Wildlife Habitat Network". Mapping of the Network is available via the online portal though no further information relating to the network was available.

7.2.7 The Cable Corridor Search Areas and Site Access Search Areas, as well as overlapping with the Calderdale Metropolitan Borough Council administrative boundary, intersect with multiple administrative boundaries. A list of the local planning authorities and relevant planning policies are provided below and include;

- Bradford Council;

[90] Calderdale Local Plan 2018/19 – 2032/33. Available at: https://new.calderdale.gov.uk/planning-and-building-control/planning-policy/local-plan

- SP11: Protecting the South Pennine Moors Special Protection Area (SPA)/ Special Areas of Conservation (SAC) and Their Zone of influence;
- TR2: Transport and Environment (e. The protection of wildlife);
- EN2: Biodiversity and Geodiversity;
- EN3: Trees and Woodland;

- Burnley Borough Council;
  - NE1: Biodiversity and Ecological Networks;
  - NE4: Trees, Hedgerows and Woodland;
- Craven Borough Council;
  - ENV4: Biodiversity;
  - ENV5: Green Infrastructure;
- Leeds City Council;
  - P12: Landscape;
  - G1: Enhancing and extending green infrastructure (v);
  - G8: Protection of Important Species and Habitats;
  - G9: Biodiversity Improvements;
- Pendle Borough Council;
  - ENV1: Protecting and Enhancing Our Natural and Historic Environments;
  - ENV3: Renewable and Low Carbon Energy Generation (Ecological, biodiversity or geodiversity assets);
- Rossendale Borough Council;
  - ENV4: Biodiversity, Geodiversity and Ecological Networks;
  - ENV5: Green Infrastructure networks;

- ENV6: Environmental Protection;
- ENV7: Wind Turbines;
- ENV10: Trees and Hedgerows;

- Rochdale Borough Council;
  - G7: Increasing the value of biodiversity and geodiversity;
  - G3: Renewable and low carbon energy developments;
  - G6: Enhancing green infrastructure; and
  - G5: Managing protected open land.

National Guidance

- Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM 2018)[91];
- BS42020:2013 Code of Practice for Planning and Development[92];
- BS 8683:2021 Process for designing and implementing biodiversity net gain[93]; and
- NatureScot – Bats and Onshore wind turbines – survey, assessment and mitigation (2021)[94].

Local Guidance

- Calderdale Council – BNG: https://new.calderdale.gov.uk/planning-and-building-control/bng;

[91] CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.3. Chartered Institute of Ecology and Environmental Management, Winchester.

[92] British Standard Institution (2013) Biodiversity: Code of Practice for Planning and Development: Available at: https://knowledge.bsigroup.com/articles/standardizing-biodiversity-in-planning-and-development

[93] British Standard Institution (2021) Process for designing and implementing Biodiversity Net Gain. Specification. Available at: https://knowledge.bsigroup.com/products/process-for-designing-and-implementing-biodiversity-net-gain-specification

[94] NatureScot (2021). Bats and onshore wind turbines – survey assessment and mitigation. Available at: https://www.nature.scot/doc/bats-and-onshore-wind-turbines-survey-assessment-and-mitigation

- Calderdale Local Requirements Template for Biodiversity and Geological Conservation – Local List Requirement, published July 2013[95];
- Calderdale Countryside & Forestry Unit (2025). Calderdale Species Inventory[96]; and
- West Yorkshire Ecology Services - Bats and Wind Turbines. Developer Guidance – Assessing the impacts of wind turbines and wind farms on bats.[97]

7.3 Existing Baseline Conditions

7.3.1 This section of the Scoping Chapter for biodiversity sets out the known baseline conditions at this (scoping) stage of the Proposed Development. It is noted that further surveys and assessments are proposed to inform the technical assessment for the Environmental Statement (see details and scope of the further baseline data below under Section 7.3.2).

Study Area

7.3.2 The Study area encompasses the area for which desk-study and field-survey data were collected to inform the scoping biodiversity assessment and will continue to be collected for further assessment.

7.3.3 The extent of the Study Area varies dependant on the relative sensitivity of the ecological features and the Zone of Influence of different aspects of the Proposed Development. Separate Study Areas have therefore been applied to the Turbine Area, Cable Corridor Search Areas and the Site Access Search Areas. These are defined below for desk study (Table 7-1) and site surveys (Table 7-2) and shown on Figure 7-1. Note that site surveys have only been completed to date within the Turbine Area.

7.3.4 The extent of the areas of search and field survey areas were determined based on good practice guidance and a high-level overview of the types of

[95] Calderdale Council (2013) Local Requirements Template for Biodiversity and Geological Conservation – Local List Requirement: Available at: https://new.calderdale.gov.uk/sites/default/files/2023-06/Biodiversity-Geological-Conservation-Validation-Checklist.pdf

[96] Calderdale Countryside & Forestry Unit (2025). Calderdale Species Inventory. Available at: https://www.calderdale.gov.uk/environment/countryside/conservation/publications/speciesaudit/Countryside-species-audit-2025.pdf

[97] West Yorkshire Ecology Services - Bats and Wind Turbines. Developer Guidance – Assessing the impacts of wind turbines and wind farms on bats. Available at: https://www.wyjs.org.uk/media/1375/1000527-wind-turbines-and-bats-in-west-yorkshire.pdf

ecological features present, informed by the initial survey data and the potential effects that could occur.

Approach to the Collection of Baseline Data for Scoping

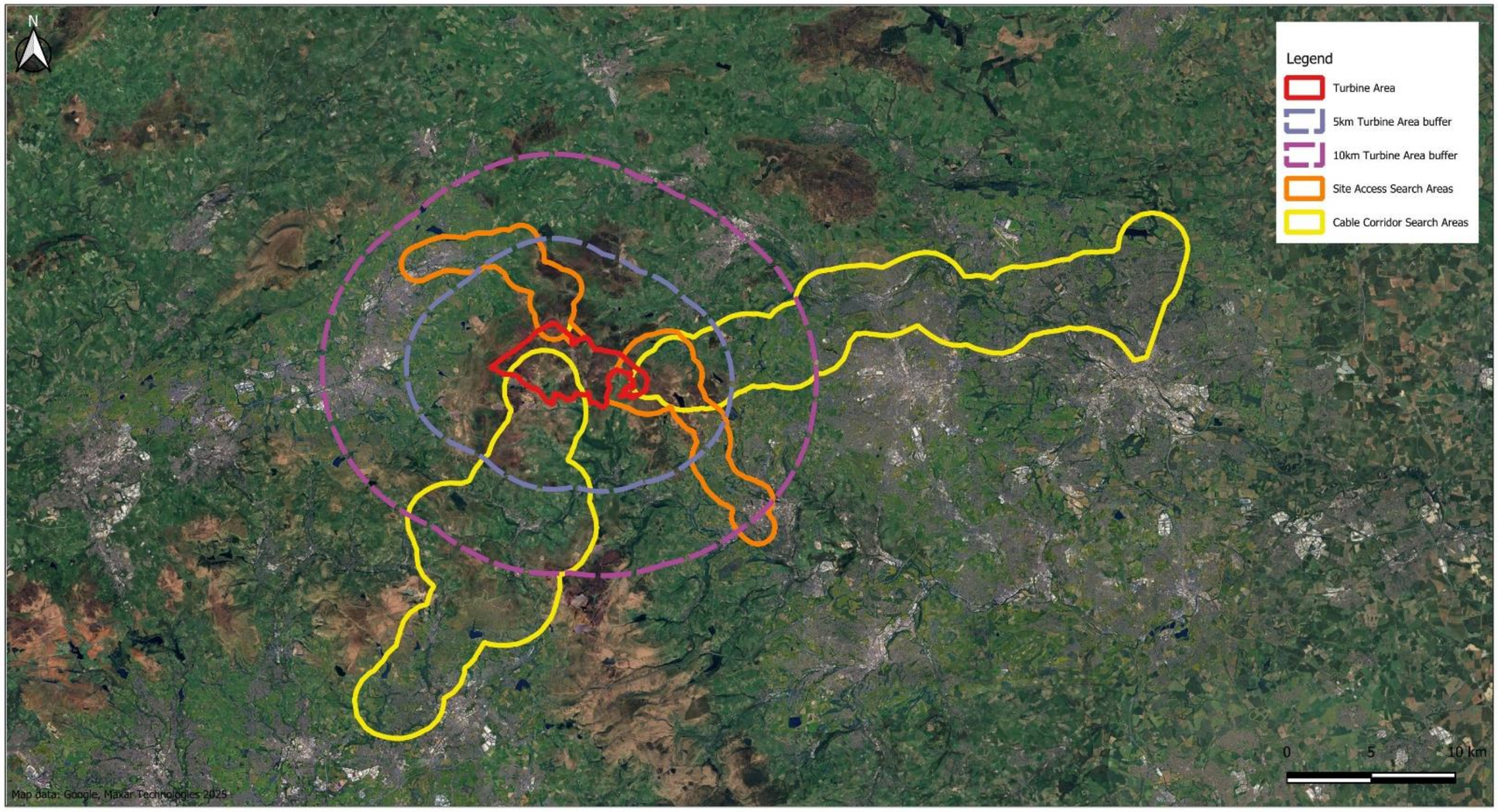
7.3.5 A desk study has been undertaken to identify designated sites which occur within the search distances defined in Table 7-1.

Table 7-1: Search Areas for designated sites

Designated Site Classification	Turbine Area – distance	Cable Corridor Search Area – distance	Site Access Search Area – distance
International Statutory Designated Sites (SAC/Ramsar)	10km	Sites which occur within search area	Sites which occur within search area
National Statutory Designated Sites (Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR))	5km	Sites which occur within search area	Sites which occur within search area
Local Statutory Designated Sites (Local Nature Reserves)	5km	Sites which occur within search area	Sites which occur within search area
Non-Statutory Designated Sites (Local Wildlife Sites (LWS))	5km	Sites which occur within search area *	Sites which occur within search area*

*Data for Non-statutory designated sites will be obtained for the preferred cable and access routes ahead of PEIR.

Figure 7-1: Study Area for Proposed Development



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

Revision History

Rev	Date	By	Detail
01			

Copyright of Logika Group. Figured dimensions shall be taken in preference to scaling. The contractor shall check all dimensions on site before commencing work.

Project/Location
Calderdale Energy Park

Drawing title
Study Area for Proposed Development

Drawing status
FOR INFORMATION

Date	Drawn	Checked
29/07/2025	MR	MS

Client
Calderdale energy park

Consultant
Logika GROUP

Drawing number	Revision
Figure 7-1	01

Project Specific Surveys

7.3.6 Baseline surveys were started in 2023 and have been ongoing throughout 2024 and 2025, the provisional results of surveys have been used to inform this Scoping Report and will form the baseline data set for the Development Consent Order (DCO) application. Surveys to date have focused on the Turbine Area only but will be extended to include the preferred options for the Cable Corridor and Site Access Search Areas. Calderdale Energy Park Scoping Report – **Chapter 6: Ornithology** provides a summary of the bird surveys completed to date (see Table 7-2).

Table 7-2: Summary of surveys completed to date

Survey Type	Summary of survey purpose	Survey Guidance	Date Completed	Study Area
High-Level habitat walkover assessment	Designed to provide an initial overview of the distribution of habitats within the Turbine Area and identify requirements for additional surveys.	Butcher, B., Carey, P., Edmonds, R., Norton, L., and Treweek, J. (2020) The UK Habitat Classification User Manual Version 1.1 at http://www.ukhab.org	August and March 2023	Within Turbine Area Boundary
UK Habitat Classification and Condition Assessment	Designed to classify habitats present on site using relatively broad habitat types. Condition assessments to support BNG calculations were completed alongside this.	Butcher, B., Carey, P., Edmonds, R., Norton, L., and Treweek, J. (2020) The UK Habitat Classification User Manual Version 1.1 at http://www.ukhab.org Department for Environment Food and Rural Affairs (2024). The Statutory Biodiversity Metric – User Guide.	September – November 2023 September 2024	Within Turbine Area Boundary

Survey Type	Summary of survey purpose	Survey Guidance	Date Completed	Study Area
National Vegetation Classification (NVC) Surveys	Designed to provide detailed botanical information to enable identification of specific habitat types and inform impacts on sensitive habitats	Rodwell, J.S. (2006) NVC Users' Handbook, JNCC, Peterborough, ISBN 978 1 86107 574 1	September – October 2024	Within Turbine Area Boundary
Modular (MoRPH) River Surveys	Surveys designed to provide detailed condition assessment surveys for watercourse.	The Morph Survey Technical Reference Manual (2019) [Online] Available at: https://modularriversurvey.org/wpcontent/uploads/MoRPh-Manual-ver-11.pdf	August – September 2024	Within Turbine Area Boundary
Reptile Survey	Surveys included presence/absence surveys for reptiles within the Turbine Area	Froglife Advice Sheet 10. Reptile Survey – An introduction top planning, conducting and interpreting surveys for snake and lizard conservation.	July – September 2024	Within Turbine Area Boundary

Survey Type	Summary of survey purpose	Survey Guidance	Date Completed	Study Area
Protected Mammal Survey	Combined surveys designed to identify field signs for badger, otter and water vole.	Bang, P. & Dahlstrøm, P. (2001). Animal Tracks and Signs. Oxford University Press, Oxford. Sargent, G., Morris, P. and Troughton, G. (2003). How to Find and Identify Mammals, 3rd Edition. The Mammal Society, Southampton. Neal, E., Cheeseman, C. (1996). Badgers. Poyser Natural History, London Chanin, P. (2003). Monitoring the Otter Lutra lutra. Conserving Natura 2000 Rivers: Monitoring Series No. 10. English Nature, Peterborough. Strachan, R., Moorhouse, T. & Gelling, M. (2011). The Water Vole Conservation Handbook. Third Edition, Wildlife Conservation Research Unit, University of Oxford, Abingdon	September – November 2023	Within Turbine Area Boundary
Static Acoustic Bat Detector Survey	Designed to provide estimates of bat activity levels and species present.	Bat Conservation Trust. (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th edition - Guidance for professionals. [online]	April – October 2023 Ongoing	Within Turbine Area Boundary

Survey Type	Summary of survey purpose	Survey Guidance	Date Completed	Study Area
		NatureScot (2021) Bats and Onshore Wind Turbines: Survey, Assessment and Mitigation, Original 2019, updated August 2021		
Bat Emergence Surveys	Designed to identify active bat roosts.	Bat Conservation Trust. (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th edition - Guidance for professionals. [online]	August – September 2024	Within Turbine Area Boundary+ suitable features within 200m of turbines.
Bat Swarming Surveys	Designed to identify specific swarming behaviour for bats which may indicate presence of hibernating bats.	Bat Conservation Trust. (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th edition - Guidance for professionals. [online]	August – September 2024	Within Turbine Area Boundary

Survey Type	Summary of survey purpose	Survey Guidance	Date Completed	Study Area
Bat Hibernation Surveys	Designed to identify use of features by hibernating bats.	Bat Conservation Trust. (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th edition - Guidance for professionals. [online]	October 2024 – February 2025	Within Turbine Area Boundary+ suitable features within 200m of provisional turbine locations.
Great Crested Newt (GCN) – Habitat Suitability Index (HSI) & Environmental DNA (eDNA)	HSI surveys provide an overview of pond characteristics and their suitability to support GCN. eDNA surveys provided presence/absence data for	Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (Triturus cristatus). Herpetological Journal 10(4), 143-15 Biggs J et al, (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus)	June 2024	Within Turbine Area Boundary+ 250m (ponds and waterbodies only)

Survey Type	Summary of survey purpose	Survey Guidance	Date Completed	Study Area
	sampled water bodies.			
High-Level Fungi Walkover	Designed to identify the presence/absence of conservation notable species or assemblages of fungi.	Bespoke survey approach	September – November 2024	Within Turbine Area Boundary
High-Level Invertebrate Sampling	Designed to identify the presence/absence of conservation notable species or assemblages of invertebrates	Bespoke survey approach	September – October 2024	Within Turbine Area Boundary

7.4 Relevant Baseline Conditions

7.4.1 The baseline conditions and potential ecological constraints have been identified using a combination of desk and field-based study. Desk study information has been gathered from freely available sources including:

- Natural England Designated Sites View (https://designatedsites.naturalengland.org.uk); and
- JNCC Multi-Agency Geographic Information for the Countryside website (Magic.defra.gov.uk).

Designated Sites

International and National Statutory Designated Sites – Turbine Area

7.4.2 The Turbine Area is located on the South Pennine Moors. This area holds SPA, SAC and SSSI designations. Table 7-3 provides a summary of the designated features for statutory designated sites. The South Pennine Moors also have an SPA designation relating to its importance for breeding birds; Merlin *Falco columbarius*, Golden plover *Pluvialis apricaria* and general breeding bird assemblage. Details of the designation are provided in **Chapter 6: Ornithology**.

7.4.3 There were no other international or national statutory sites identified within 10km or 5km respectively. Figure 7-2 shows the location and extent of the designated sites with respect to the Turbine Area and Cable Corridor/Site Access Search areas.

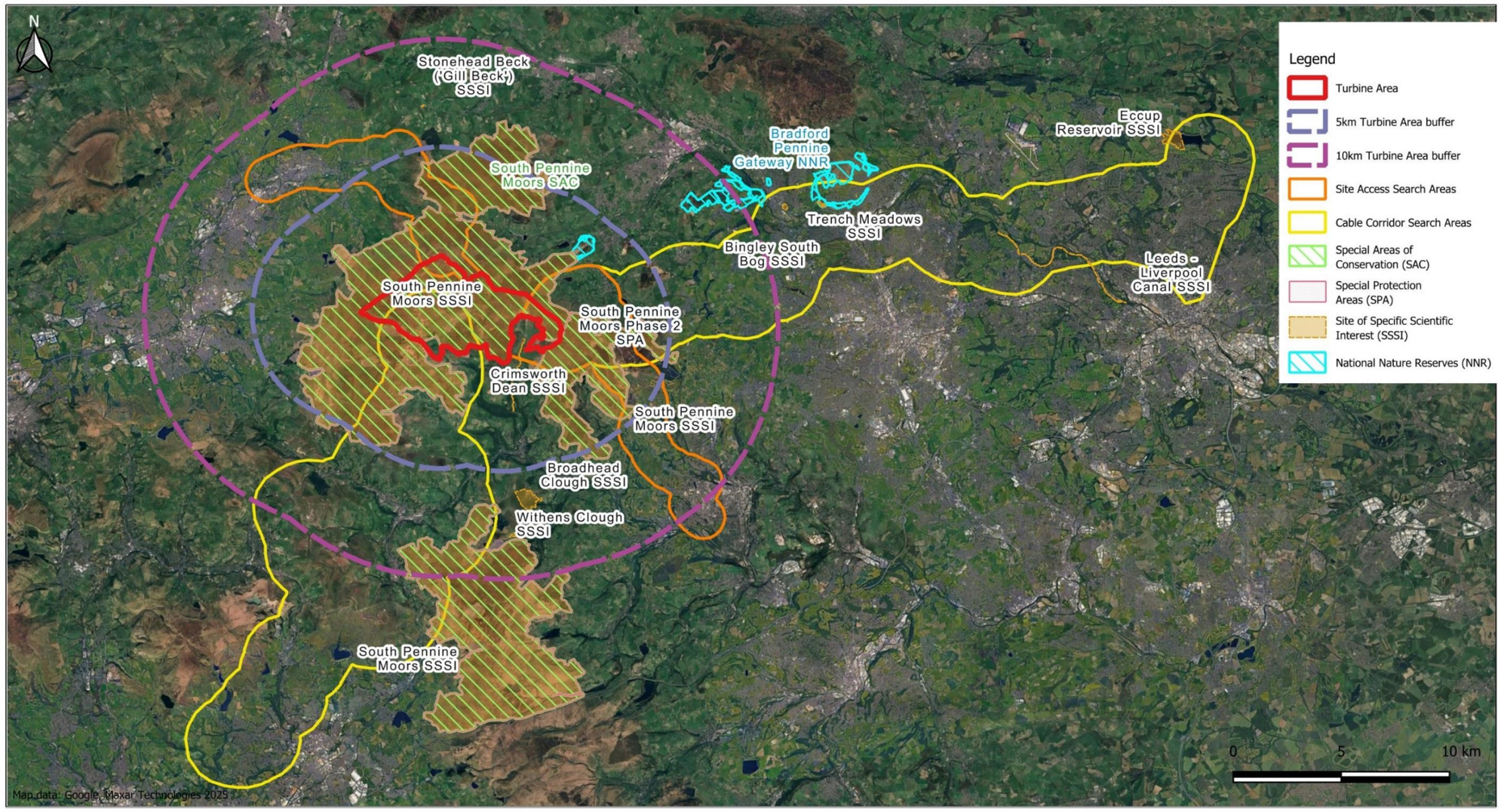
Table 7-3: Statutory Designated Sites

Site	Details	Qualifying Features
South Pennine Moors SAC Site Code: UK0030280	Designated for its' Annex I habitats: • Dry heaths • Blanket bog • Old sessile oak woodland with holly and hard fern. • Northern Atlantic wet heaths with cross-leaved heath • transition mires • Quaking bogs.	H4010. Northern Atlantic wet heaths with Erica tetralix; Wet heathland with cross-leaved heath H4030. European dry heaths H7130. Blanket bogs H7140. Transition mires and quaking bogs; Very wet mires often identified by an unstable `quaking`

Site	Details	Qualifying Features
	Of these, blanket bog is considered the priority feature of the SAC designation. The designation goes on to reference the poor botanical diversity, levels of peat erosion and dry parcels within the designated areas.	surface H91A0. Old sessile oak woods with Ilex and Blechnum in the British Isles
South Pennine Moors SPA Site Code: UK9007022	Designated for nationally important breeding populations of; Merlin Golden plover Also supports an assemblage of moorland and moorland fringe breeding birds including; • Golden plover • Lapwing Vanellus vanellus • Dunlin Calidris alpina • Snipe Gallinago gallinago • Redshank Tringa tetanus • Common Sandpiper Actitis hypoleucos • Short-eared owl *Asio flammeus* • Whinchat Saxicola rubetra • Wheatear Oenanthe Oenanthe • Ring ouzel Turdus torquatus • Twite Carduelis flavirostris	Under article 4.1 of the EC Directive on the Conservation of Wild Birds (79/409); Merlin Golden plover Under article 4.2 of the EC Directive on the Conservation of Wild Birds (79/409) Upland breeding bird assemblage

Site	Details	Qualifying Features
South Pennine Moors SSSI	The SSSI contains the largest area of unenclosed moorland within West Yorkshire and the most diverse and extensive examples of upland plant communities in the county. • Extensive areas of blanket bog occur on the upland plateaux and are punctuated by species rich acidic flushes and mires. • There are also wet and dry heaths and acid grasslands. • Three of the habitat types that occur are listed on Annex 1 of the EC habitats and Species Directive (92/43) EEC. These communities are typical of and represent the full range of upland vegetation classes found in the South Pennines.	Habitats (as per SAC) Breeding Birds (as per SPA)

Figure 7-2: International and National Statutory Designated Sites – Study Area



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

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The site boundary is for indicative purposes only and requires confirmation on site.

Revision History

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Project/Location
Calderdale Energy Park

Drawing title
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Drawing status
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Date	Drawn	Checked
30/07/2025	MR	MS

Client
Calderdale energy park

Consultant
Logika GROUP

Drawing number	Revision
Figure 7-2	01

International and National Statutory Designated Sites – Cable Corridor Search Area and Site Access Search Area

7.4.4 The search areas for the Cable Corridor and Site Access intersect with the statutory designated sites identified in Table 7-4. Figure 7-2 shows the location and extent of the designated sites with respect to the Turbine Area and Cable Corridor/Site Access Search areas.

Table 7-4: Summary of International and National Statutory Designated Sites which overlap with the Cable Corridor Search Areas and Site Access Search Areas

Site	Nature of overlap	Reason for designation
South Pennine Moor SAC	Partial overlap with Cable Corridor and Site Access Search Areas	As per Table 7-3.
South Pennine Moor SPA	Partial overlap with Cable Corridor and Site Access Search Areas	As per Table 7-3.
South Pennine Moor SSSI	Partial overlap with Cable Corridor and Site Access Search Areas	As per Table 7-3.
Bingley South Bog SSSI	Complete overlap with the Cable Corridor Search Areas	The designated site supports a mosaic of neutral grassland and transitional fen supports large quantities of a number of sedges. Central swamp is dominated by horsetail including two relatively rare in West Yorkshire species (thread-leaved crowfoot *Ranunculus trichophyllus* and mare's-tail *Hippuris vulgaris*).
Leeds-Liverpool Canal SSSI	Partial overlap with Cable Corridor Search Areas	Designated for its unique slow-flowing freshwater habitat.

Site	Nature of overlap	Reason for designation
		Its alkaline, low-pollution waters and base-rich clay substrate support a diverse aquatic flora. The canal also supports rare and regionally uncommon plants like flowering rush *Butomus umbellatus* and sweet flag *Acorus calamus*, as well as rich populations of fish, amphibians, and invertebrates
Eccup Reservoir SSSI	Partial overlap with Cable Corridor Search Areas	Designated for its wintering population of goosander *Mergus merganser*. Supports 1-2% of the overwintering populations and is the fourth largest in the British Isles.
Trench Meadows SSSI	Complete overlap with the Cable Corridor Search Areas	Designated for its rare, species-rich lowland grassland, featuring a mix of neutral and acid grassland along with wet flushes. These habitats support a high diversity of grasses and wildflowers, some of which are indicators of unimproved, semi-natural grassland.
Crimsworth Dean SSSI	Partial overlap with Cable Corridor Search Areas	This site is of national geological importance as it exposes a well-preserved sequence of Namurian (Kinderscoutian Stage) rock layers.
Bradford Pennine Gateway NNR	Partial overlap with Cable Corridor Search Areas	A large NNR that comprises multiple sites throughout West Yorkshire and includes Ilkley Moor, Baildon Moor, Shipley Glen, Trench Meadows, St Ives Estate, Harden Moor, Bingley Bog North, and Penistone

Site	Nature of overlap	Reason for designation
		Country Park. Approximately 90% of the NNR comprises UK Priority Habitats including peat bog, heathland and wetlands. Supports species including breeding curlew, golden plover and short-eared owl along with rare reptiles including adder.

Local and non-statutory designated sites – Turbine Area

7.4.5 Table 7-5 provides a summary of the local statutory and non-statutory designated sites identified within 5km of the Turbine Area. Figure 7-3 shows the location of Local Nature Reserve within the Study Area (note, spatial information relating to LWS has not been provided).

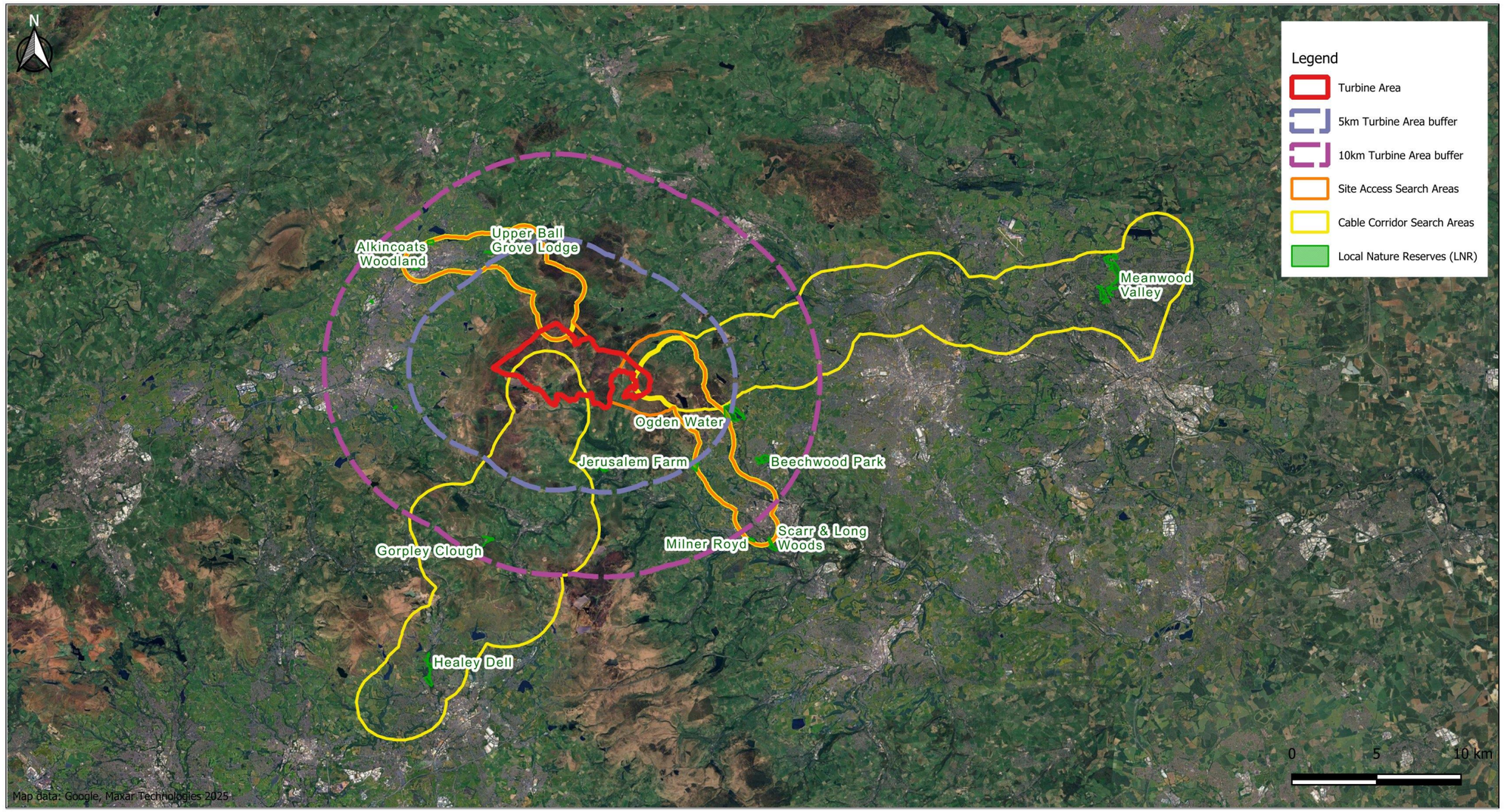
Table 7-5: Local Statutory and Non-statutory Designated Sites identified within 5km of the Turbine Area

Site	Distance from Turbine Area (KM)	Details
Hardcastle Crags (LWS) (165m)	0.17	Mixed woodland managed to encourage natural regeneration.
Sun Hill Clough, Oxenthorpe (LWS)	0.4	Information not publicly available.
Nan Scar Clough, Oxenhope (LWS)	2.18	Information not publicly available.
Popples Common (LWS)	2.33	Information not publicly available.
Penistone Hill Country Park (LWS)	2.33	Information not publicly available.

Site	Distance from Turbine Area (KM)	Details
Whinny Nook Slack (LWS)	2.61	Information not publicly available.
Ives Plantation, Oxenhope (LWS)	3.1	Information not publicly available.
Black Moor (LWS)	3.58	Information not publicly available.
Earnshaw Hole Moor (LWS)	3.94	Information not publicly available.
Airedale Spring Mill Pond, Haworth (LWS)	4.06	Information not publicly available.
Clunters Moor (LWS)	4.36	Information not publicly available.
Jumble Hole (LWS)	4.38	Information not publicly available.
Brow Moor with Sugden End (LWS)	4.38	Information not publicly available.
Staups Moor (LWS)	4.6	Information not publicly available.
Colden Clough (LNR & LWS)	3.46	Wooded valley which is important for wildlife and highlights the importance of waterpower during the industrial revolution.
Ogden Water (LNR & LWS)	4.47	Includes a reservoir, upland streams, woodland including coniferous plantation, upland oak woodland and wet woodland, heather moorland, blanket bog and acid grassland.
Jerusalem Farm (LNR & LWS)	4.75	Habitats include upland stream, upland oak woodland/wet woodland,

Site	Distance from Turbine Area (KM)	Details
		and grassland with a known bat roost.

Figure 7-3: Local Statutory Designated Sites – Study Area



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Revision History

Rev	Date	By	Detail
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Project/Location
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Client
Calderdale energy park

Consultant
Logika GROUP

Drawing number	Revision
Figure 7-3	01

Local statutory designated sites – Cable Corridor Search Areas and Site Access Search Areas

7.4.6 The Cable Corridor and Site Access Search Areas intersect with the statutory designated sites identified in Table 7-6 and Table 7-7. Figure 7-3 shows the location of Local Nature Reserve (LNR) within the Study Area (note, spatial information relating to LWS has not been obtained for the Cable Corridor and Site Access Search Areas).

Table 7-6: Summary of Local Statutory designated sites within the Cable Corridor Search Area

Site	Extent of overlap with Search Area	Summary of features
Ogden Water LNR	Partial overlap with Cable Corridor Search Area	Assemblage of birds associated with moorland and woodland and common amphibians and reptiles.
Jerusalem Farm LNR	Partial overlap with Cable Corridor Search Area	Known bat roost assemblage of birds including woodland and upland. Assemblages of plants and fungi. Wide variety of invertebrates and class 1A stream used for dipping (mayfly and stonefly).
Alkincoats Woodland LNR	Partial overlap with Cable Corridor Search Area	Planted as a native community woodland, with a belt of mature woodland at the top of the ridge. A small pond and wetland is located in the middle of the designated site.
Milner Royd LNR	Partial overlap with Cable Corridor Search Area	Habitats include scrub woodland and grassland. Good number of plant and bird species including kestrel *Falco tinnunculus*, woodpeckers and song

Site	Extent of overlap with Search Area	Summary of features
		thrush *Turdus philomelos*.
Greenfield LNR	Completely contained within Cable Corridor Search Area	Site supports woodland and scrub, grassland, wetland and tall ruderal vegetation.
Upper Ball Grove Lodge LNR	Completely contained within Cable Corridor Search Area	Information not available
Scarr & Long Woods LNR	Partial overlap with Cable Corridor Search Area	The woodland has a good bird population along with numerous mammals including roe deer *Capreolus capreolus* . In autumn this is a very good area to discover fungi.

Table 7-7: Summary of Local Statutory designated sites within the Site Access Search Area

Site	Extent of overlap with Search Area	Summary of features
Gorpley Clough LNR	Completely contained within the Cable Corridor Search Area	Important area for birds including woodpeckers and common redstart *Phoenicurus phoenicurus*. Insects and butterflies are present in summer months. Evidence of mining on the LNR site that could house bat species.
Healey Dell LNR	Completely contained within the Cable Corridor Search Area	Wildlife sanctuary rich in industrial archaeology.
Meanwood Valley LNR	Completely contained within the Cable Corridor Search Area	Habitats include ancient woodland, heath, meadow, flushes, mire,

Site	Extent of overlap with Search Area	Summary of features
		streams and ponds. Wildlife includes stone loach *Barbatula barbatula*, bullhead *Cottus gobio*, ferns, mosses and liverworts.

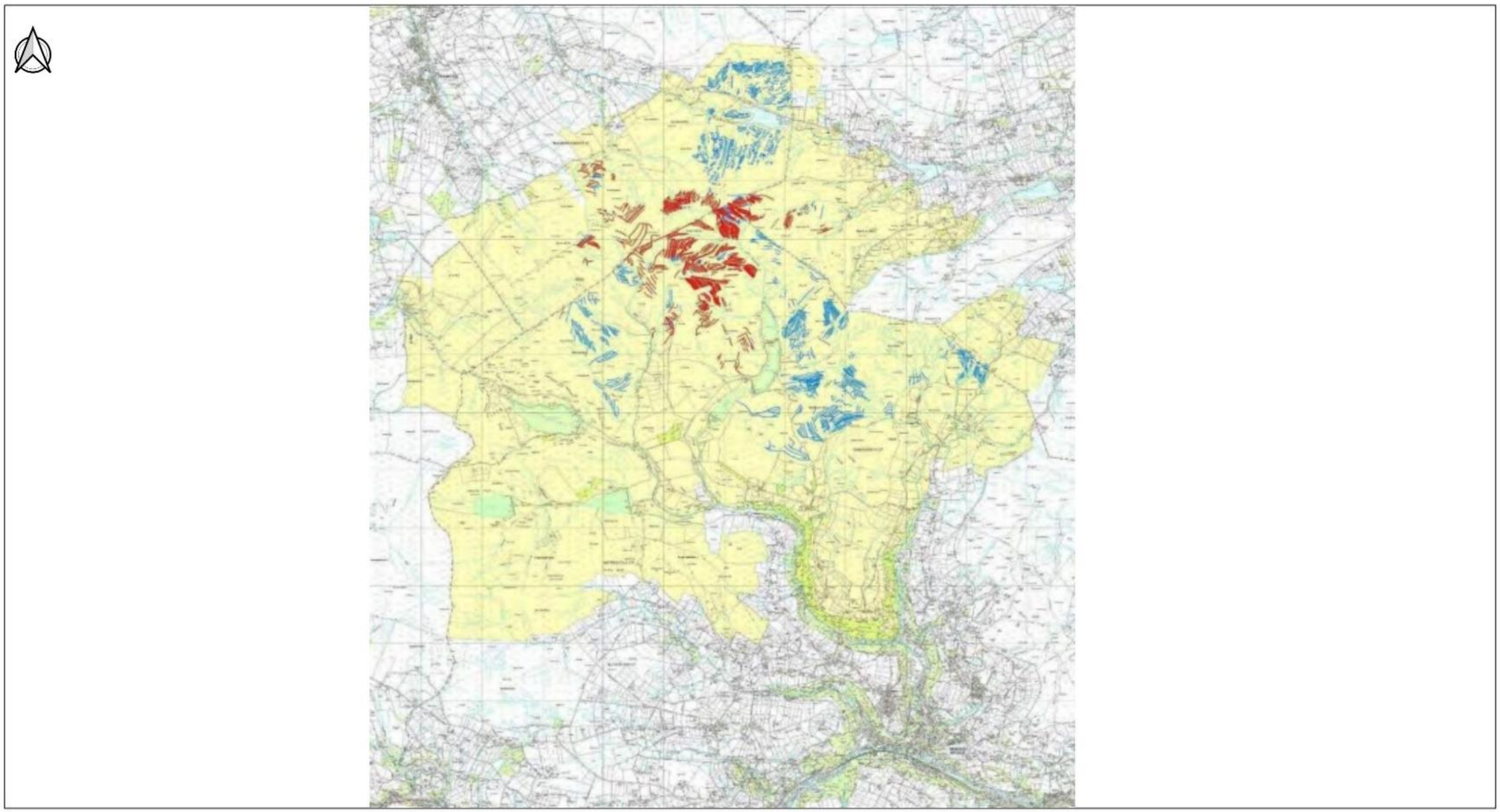
Walshaw Moor Catchment Restoration Plan

7.4.7 In 2017, following a condition assessment of the Walshaw Moor Estate by Natural England, a Catchment Restoration Plan (CRP)[7] was prepared. The CRP included numerous restoration locations within the Turbine Area and the wider Estate (outwith the Turbine Area). The areas included are shown in Figure 7-4 (reproduced from the CRP). The aims of the CRP included the "restoration of 1,000 ha of blanket bog over the term of this agreement. Up to 100 ha per annum will be restored". Measures to achieve the aims within the CRP, included:

- Habitat restoration (e.g. through grip blocking, gulley re-profiling, restoration of areas dominated by Molinia species);
- Habitat management (within areas of blanket bog, wet and dry heath habitats);
- Heather beetle control;
- Invasive vegetation management; and
- Installation of a track.

7.4.8 Actions under the CRP were instigated in 2017 with significant areas subject to restoration including the blocking of grips and re-profiling of channels. Ongoing monitoring has not yet been provided but is subject to ongoing discussion with Natural England and the Walshaw Moor Estate.

Figure 7-4: Walshaw Moor Catchment Restoration Plan



GENERAL NOTES:

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3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

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Revision History

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Figure has been reproduced from Walshaw Moor Estate Catchment Restoration Plan 2017-2042

Can be accessed from: https://publications.naturalengland.org.uk/publication/6389907001442304

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Calderdale Energy Park

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Walshaw Moor Catchment Restoration Plan

Drawing status
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30/07/2025	MR	MS

Client
Calderdale energy park

Consultant
Logika GROUP

Drawing number	Revision
Figure 7-4	01

Habitats Regulations Assessment

7.4.9 Due to the presence of two European Protected Sites within the Turbine Area, Cable Corridor Search Area and Site Access Search Area, information to inform a Habitat Regulations Assessment (HRA) will be prepared as a "Shadow HRA". This will be provided as a separate document to the Environmental Statement.

Habitats

7.4.10 The Turbine Area comprises typical upland habitats including areas of blanket bog, dry and wet heath, acidic and neutral grasslands. The Turbine Area is currently utilised as grazing for livestock and for driven grouse shooting. A network of streams, rivers, managed manmade ditches and drains exist across the Turbine Area, facilitating the removal of water from the moor. At the time of survey, bracken and exposed peat could be seen in some areas. The Walshaw Dean Reservoirs are in the centre of the Turbine Area whilst they are outwith the scoping boundary itself.

7.4.11 There are several priority habitats situated within the indicative site that are listed on the Priority Habitat Inventory. These include: grass moorland, blanket bog, upland heath and good quality semi-improved grassland.

7.4.12 The Study Area for habitats has incorporated all areas within the Turbine Area as shown on Figure 7-1. Habitat surveys of the Cable Corridor Search Areas and Site Access Search Areas will be completed following identification of the preferred options. It is anticipated that that provisional results will be available for inclusion in the Preliminary Environmental Impact Report (PEIR).

Habitats – UK Habitat Classification and Condition Assessment

7.4.13 The UK Habitat Classification survey results (see Table 7-8) show that approximately 50% of the 2,262 ha Turbine Area comprises of blanket bog in varying condition. Of the 1,110.19 ha of blanket bog habitat recorded, 134.65 ha was f1a5 Blanket bog (H7130) in good condition, whilst 878.05 ha comprises fla6 degraded blanket bog in varying condition. Secondary codes recorded across the blanket bog habitats included depressions on peat substrates (H7150), grouse moor, scattered scrub and evidence of burning.

7.4.14 After blanket bog, the most common habitat was dry heath, which account for 544 ha (24.57%) of the Turbine Area including 513.54 ha of "h1b5 dry heaths; upland heath (H4030)" which was in varying condition (225.54ha in good condition and 243.28 ha in poor condition). Secondary codes recorded in the upland heath (H4030) habitat included; areas of recent habitat management such as burning; non-native species; as well as depressions on peat substrates (H7150) and

scattered dwarf shrubs. Another 30.81 ha of other upland heathland habitats was recorded, including 12.81 ha of h1b6 wet heathland with cross-leaved heath; upland heath (H4010) was also recorded within the Turbine Area.

7.4.15 The distribution of habitats is shown on Figure 7-5.

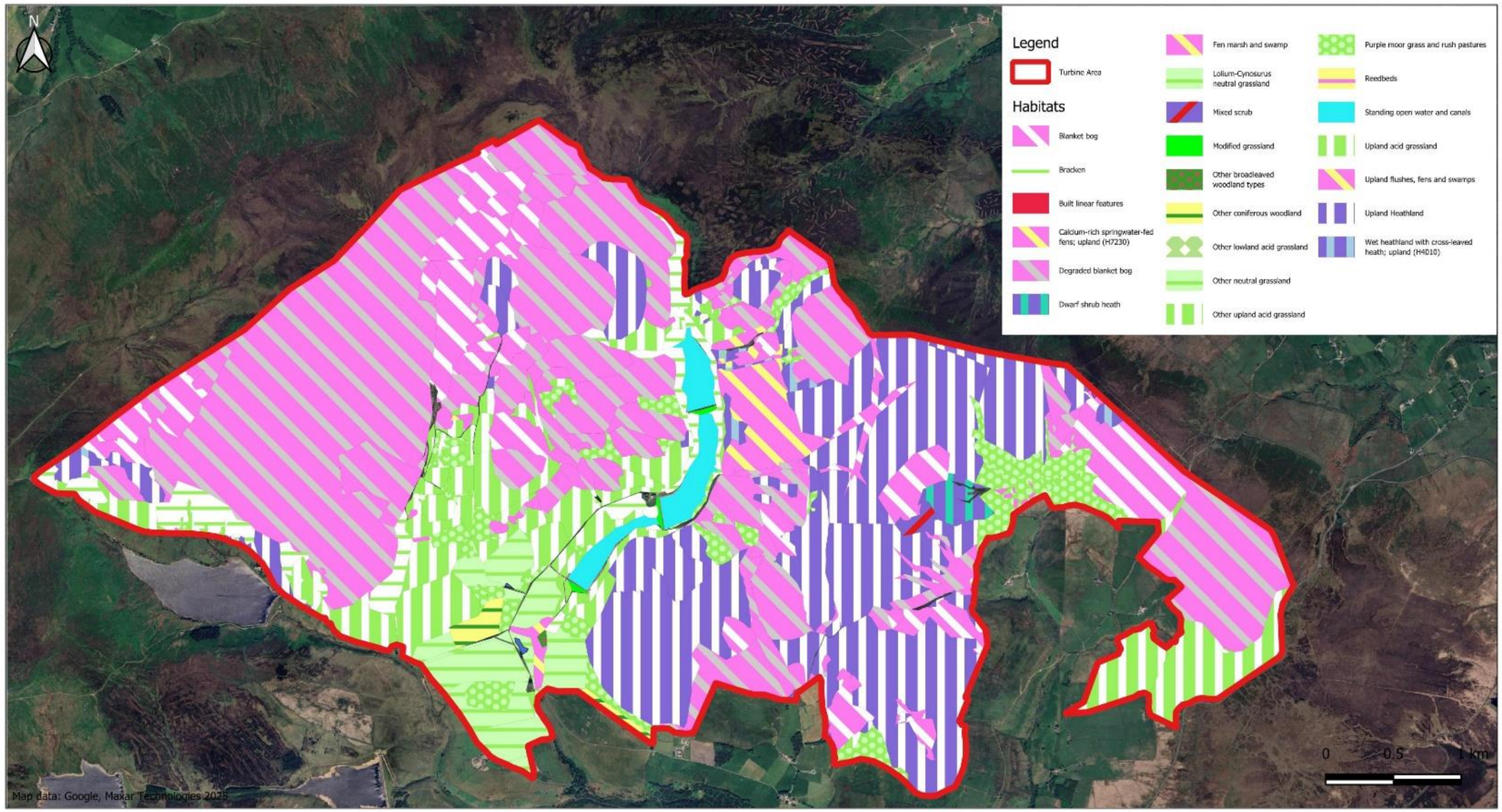
Table 7-8: Summary of UK Habitat Classification Survey Results including recorded condition and area.

UK Habitat Classification	Condition			
	Good	Moderate	Poor	Total area (Ha)
f1a Blanket bog	8.08	0.15	0	8.23
f1a5 Blanket bog (H7130)	134.65	89.25	0	223.97
f1a6 Degraded blanket bog	201.33	676.72	0	878.05
f2 Fen marsh and swamp	5.04	3.89	0	8.94
f2b Purple moor grass and rush pastures	40.15	27.07	0	67.22
f2b5 Purple moorgrass meadows (H6410)	28.93	11.85	0	40.78
f2c Upland flushes, fens and swamps	42.57	0	0	42.57
f2c7 Calcium-rich springwater-fed fens; upland (H7230)	0.18	0	0	0.18
f2e Reedbeds	0.76	0	0	0.76
g1 Acid grassland	0	0	0.91	0.91
g1b Upland acid grassland	1.31	8.59	24.91	34.82
g1b6 Other upland	49.23	89.48	85.86	224.57

UK Habitat Classification	Condition			
	Good	Moderate	Poor	Total area (Ha)
acid grassland				
g1c Bracken	0	0	0	67.91
g1d Other lowland acid grassland	0	0.15	0	0.15
g3c Other neutral grassland	0	0	15.38	15.38
g3c6 Lolium Cynosurus neutral grassland	0	37.87	38.20	76.08
g4 Modified grassland	0	0.56	1.07	1.63
h1 Dwarf shrub heath	0	0	12.87	12.87
h1b Upland Heathland	5.12	0	0	5.12
h1b5 Dry heaths; upland (H4030)	225.54	44.72	243.28	513.54
h1b6 Wet heathland with cross-leaved heath; upland (H4010)	9.88	2.94	0	12.81
h3h Mixed scrub	0	4.22	0	4.22
r1 Standing open water and canals: Reservoir	0	9.03	0	9.03
r1c7 Acid peat-stained lakes and ponds (H3160): Reservoir	0	25.25	0	0
w1g6 Line of trees	0	0.7	0	0.7

UK Habitat Classification	Condition			
	Good	Moderate	Poor	Total area (Ha)
w1g7 Other broadleaved woodland types	0	0	0.62	0
w2c Other coniferous woodland	0	0	11.67	11.67
TOTALS	752.77	1032.44	434.77	2262.11

Figure 7-5: UK Habitat Classification Distribution



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Rev	Date	By	Detail
01			

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Calderdale energy park

Consultant
Logika GROUP

Drawing number	Revision
Figure 7-5	01

Habitats – National Vegetation Classification

7.4.16 Surveys completed in 2024 were restricted to a section of the Turbine Area to the east of the reservoirs with survey data collected from the locations shown on Figure 7-6.

7.4.17 Where surveys were undertaken, the NVC survey results aligned with the UK Habitat Classification with habitat types associated with heather dominated heath (H9) and *Dechampsia flexuosa* grassland (U2b) being the most commonly recorded habitat type. Also recorded were blanket mires (M19 and M19a), heath (H12) and grassland/ rush pasture habitats (U4, M23). Surveyor notes included the dominance of *Molinia caerulea* degrading habitats in different areas, the dominance of rushes and the indication of recent or absent management.

7.4.18 Further NVC surveys will take place in 2025 with details provided in Table 7-15**.**

Habitats – River Condition Assessment

7.4.19 Eleven watercourses were identified within the Turbine Area as requiring River Condition Assessment surveys to inform Biodiversity Net Gain assessments and options for habitat enhancement. Observations were recorded at 142 locations across the Turbine Area. The water courses were largely natural in character with no dominant or subdominant artificial ground cover on either bank at 98 survey locations.

7.4.20 However, non-native and invasive species were recorded, including Himalayan balsam at six survey locations (five on the River Kelvin and one on the Water of Feugh). Rhododendron was also recorded at two locations along the Black Dean. Artificial reinforcement of the watercourses was recorded at 20 locations and included use of brick/ stone, gabions and culverting.

Protected Species

7.4.21 As described in Table 7-2, a range of protected species surveys have been undertaken in 2023 and 2024. A summary of the findings is presented in Table 7-9.

Figure 7-6: National Vegetation Classification Survey Locations (2024)



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

Revision History

Rev	Date	By	Detail
01			

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Project/Location
Calderdale Energy Park

Drawing title
National Vegetation Classification Survey Locations (2024)

Drawing status
FOR INFORMATION

Date	Drawn	Checked
30/07/2025	MR	MS

Client
Calderdale energy park

Consultant
Logika GROUP

Drawing number	Revision
Figure 7-6	01

Table 7-9: Summary of protected species and other surveys completed within the Turbine Area to date

Protected Species	Surveys	Date Completed	Results
Bats	Static Acoustic Bat Detector Surveys	April – October 2023	Static detectors were deployed across the Turbine Area as shown on Figure 7-7. Detectors were located in areas to sample a range of habitats and potential turbine locations. Deployment of statics were limited to some degree by the sensitive nature of the Turbine Area and the challenges of access in remote locations meaning that the number of detectors deployed varied between the different seasons. In the spring season, 23 detectors were deployed. This was increased to 29 detectors during subsequent summer and autumn sampling periods. Summer showed the highest level of activity with approximately 84% of all activity recorded during the summer deployment. The most frequently recorded species was the common pipistrelle which accounted for approximately 89% of all recorded activity. The majority of static locations recorded very low levels of activity, with the majority of all passes recorded at locations 26, 28 and 29 which are located on the eastern side of the Turbine Area. Locations 26 and 29 in particular are located at the edge of the Turbine Area and connected to habitats and potential roost locations associated with Hardcastle Crags LWS.
	Emergence/ Re-entry and hibernation/swarmi	August – September 2024	Roost assessments of buildings and trees within the Turbine Area identified 12 structures potentially suitable to support roosting bats. This includes 8 buildings and two culvert entrances. Suitable trees have been identified within the Turbine Area including a number of suitably aged trees adjacent to the Greave Clough. However, no potential roost features were identified.

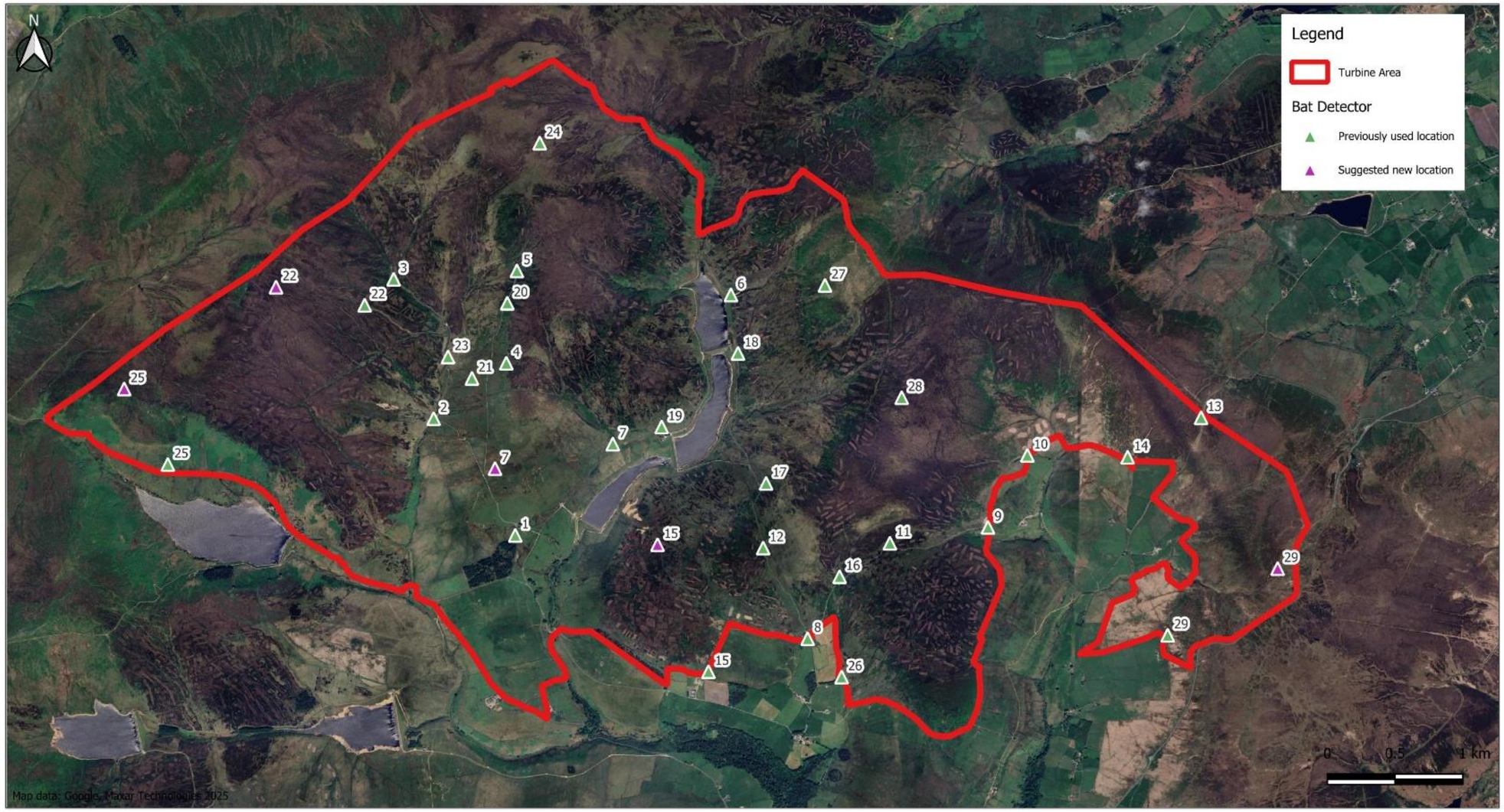
Protected Species	Surveys	Date Completed	Results
	ng surveys		Targeted surveys were completed in 2024, with a single bat (species not identified) seen emerging from a farm building. No other emergence or re-entries were recorded. During the surveys, foraging activity was recorded and included common pipistrelle, noctule and *Myotis sp.* Bats were recorded foraging and commuting along watercourses as well as over open moorland.
Great Crested Newt	Habitat Suitability Index and eDNA surveys	June 2024	Habitat Suitability Index (HSI) and eDNA surveys were completed from 5 permanent ponds within the Turbine Area. All ponds were deemed to be either of "average" or "below average" suitability for GCN. The eDNA surveys returned one positive and two indeterminate results from ponds 2, 3 and 4 which are located in the western part of the Turbine Area and shown on Figure 7-8. Terrestrial habitats within the Turbine Area are suitable to support GCN and include opportunities for refugia and hibernacula such as rubble piles and fallen walls.
Reptiles	Walkover Survey	July – September 2024	During the walkover survey, five areas with high suitability for reptiles were identified in addition to debris piles and fallen stone walls which are present across the Turbine Area and offer suitable locations for refugia for a range of reptile species.

Protected Species	Surveys	Date Completed	Results
	Refugia Monitoring		Common lizard (*Zootoca vivipara)* were first observed by other surveyors during ornithology surveys, regularly seen on access tracks. Presence absence surveys completed in 2024 also recorded common lizard with a peak count of four recorded under refugia. Sloughed lizard skin was also recorded. No other species were recorded. Given the nature and scale of the Turbine Area, other reptile species may be present, however the widespread availability of suitable refugia may limit the effectiveness of artificial refugia surveys.
Badger	Walkover survey	September – November 2023	During all surveys, no signs of badger have been recorded to date. Whilst the Turbine Area supports suitable habitat for foraging, areas of blanket bog and other wet habitats may be unsuitable for sett establishment.
Otter	Walkover survey	September – November 2023	Otter have been confirmed as being present within the Turbine Area. Regular watercourse, ditches and large reservoirs at its centre offer suitable habitat for foraging, commuting and breeding. A single well used otter holt was recorded with lots of spraint in a cave at the edge of the Walshaw Dean Lower Reservoir in addition to two couches on different watercourses.
Water Vole	Walkover survey	September – November 2023	Suitable habitat for water voles was recorded throughout the Turbine Area including water courses and permanent/ ephemeral water bodies. However, surveys only recorded a single potential burrow adjacent the Walshaw Dean Lower Reservoir; no other evidence of water vole was recorded.

Protected Species	Surveys	Date Completed	Results
			Evidence of American mink, as recorded along the Greave Clough and connected watercourse, may limit the potential for water vole to occur in this part of the Turbine Area.
Fungi	High-level walkover	September – November 2024	Following identification of fungi as a potential constraint, walkover surveys were completed in 2024. CHEGD species were identified within purple moor grassland and rush pasture, although the areas identified as short-sward grassland also had increased diversity and abundance of CHEGD species. Note, CHEGD stands for the key fungi groups; spindles, club and coral fungi (Clavarioids), the waxcaps *Hygrocybe* genus (although recent DNA investigations have split up the genus), pinkgills (*Entoloma*), earthtongues (*Geoglossum* and relatives), and crazed caps (*Dermoloma* and relatives). A minimum of 45 CHEGD species were recorded in total, of which 23 species were true waxcaps. The most notable were *Gloioxanthomyces vitellinus* and a species that (pending DNA barcoding) is likely to be *Clavaria messapica*. A number of other cryptic species of *Entoloma* and a very rare *Hodopilus sp. (Cf. hymenocephalus*) were also recorded. DNA barcoding is ongoing, and results will be provided when they become available
Invertebrates	High-level walkover	September – October 2024	Across the seven survey areas, 19 different locations were sampled, and 139 different invertebrates were recorded. The most widespread species recorded within the survey was *Conomelus anceps* (a species of planthopper) which was recorded in all sample locations followed by *Nemastoma bimaculatum* (a species of

Protected Species	Surveys	Date Completed	Results
			harvestman) and *Pachygnatha clercki* (a species of orb weaver spider), which were both recorded in six survey locations. *Stictonectes Lepidus* (a freshwater beetle) was the only invertebrate recorded which is considered 'Near Threatened' in the International Union for Conservation of Nature (IUCN) Red List 27. However, 53 other invertebrate species are also included in the Red List but are of 'Least Concern'. Two other nationally notable species were recorded during the surveys: *Altica longicollis* (a flea beetle) and *Aquarius najas* (a river skater).

Figure 7-7: Bat Static Detector Survey Locations



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Drawing Notes:

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Revision History

Rev	Date	By	Detail
01			

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Project/Location
Calderdale Energy Park

Drawing title
Bat Static Detector Survey Locations

Drawing status
FOR INFORMATION

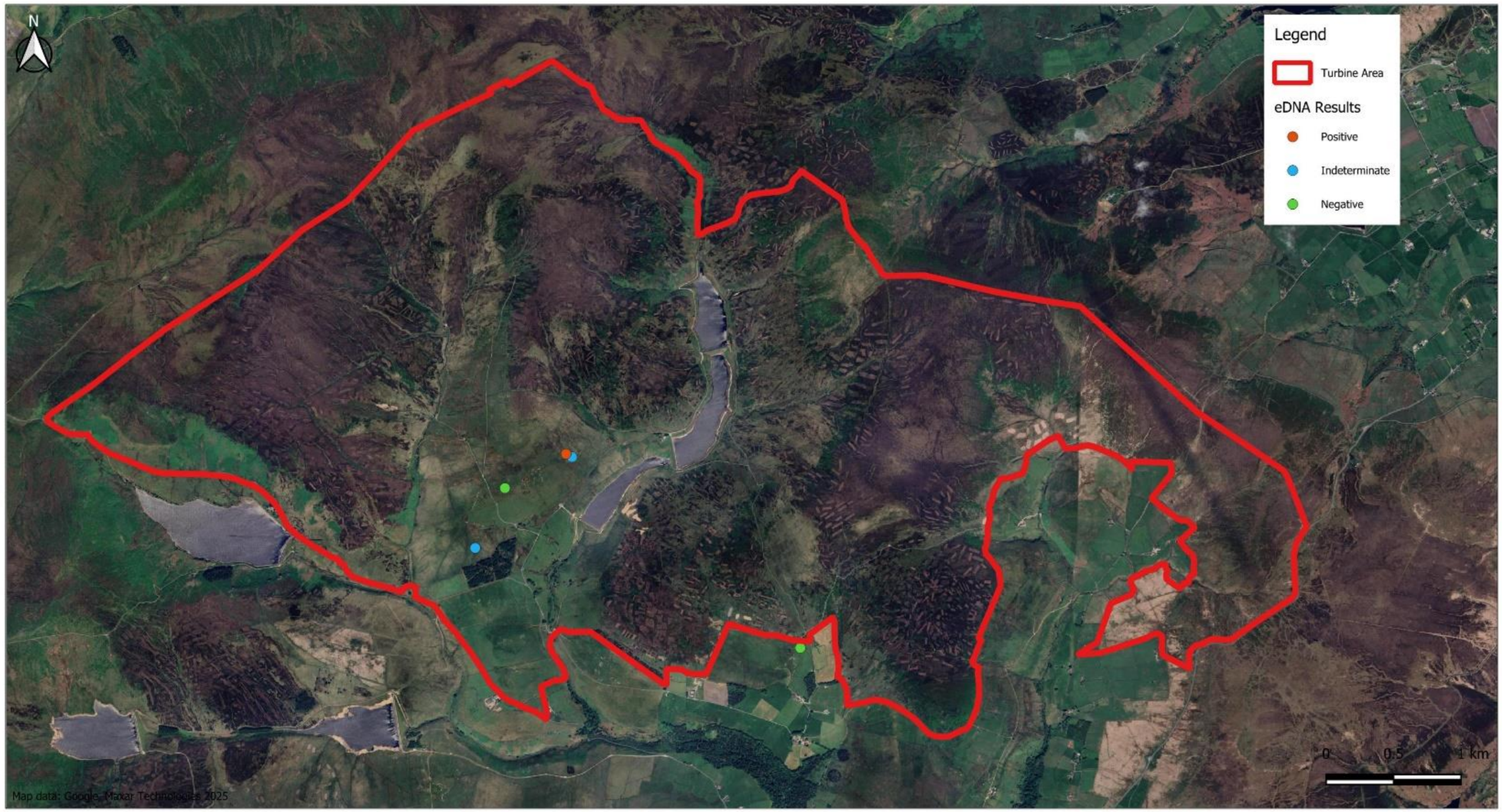
Date	Drawn	Checked
30/07/2025	MR	MS

Client
Calderdale energy park

Consultant
Logika Group

Drawing number	Revision
Figure 7-7	01

Figure 7-8: Great Crested Newt eDNA Survey



GENERAL NOTES:

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Revision History

Rev	Date	By	Detail
01			

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Project/Location
Calderdale Energy Park

Drawing title
Great Crested Newt eDNA Survey

Drawing status
FOR INFORMATION

Date	Drawn	Checked
29/07/2025	MR	MS

Client
Calderdale energy park

Consultant
Logika GROUP

Drawing number	Revision
Figure 7-8	01

Receptors Identified

7.4.22 Based on the findings of the desk study and initial survey results the following potential ecological receptors have been identified within the Turbine Area;

- Designated Sites (including international, national, local and non-statutory sites);
- Habitats;
- Bats;
- Great crested newt;
- Reptiles;
- Invertebrates;
- Otter and water vole; and
- Fungi.

7.4.23 Other receptors which have not yet been identified on site or through desk study as being present or likely present include;

- White-clawed crayfish.

7.4.24 Further surveys will be considered for these species, subject to the development of the design and consultation with relevant consultees.

7.4.25 No site surveys have yet been completed within the Cable Corridor and Site Access Search Areas. Therefore no confirmed receptors have been identified. At present all species are therefore scoped in for consideration with respect to these areas. Requirements for further survey and assessment will be confirmed as the design and route of both the Cable Corridor and Site Access areas evolve.

7.5 Environmental Measures

7.5.1 Consideration will be given to the opportunity to introduce environmental measures that will help to avoid or reduce the potential for an adverse significant effect to occur. In accordance with Schedule 4 paragraph 7 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset (where appropriate) likely significant adverse effects. Specific environmental measures relevant to biodiversity will be identified and will be considered as part of the assessments (i.e. assessments of likely significant effects will be undertaken

with the inclusion of the embedded environmental measures, as these measures will form part of the Proposed Development).

7.5.2 The mitigation hierarchy will be applied to biodiversity (CIEEM 2018) to ensure design first seeks to avoid significant harm, to mitigate where it is unavoidable, and, as a last resort, to compensate for residual effects that remain after avoidance and mitigation measures are implemented. The avoidance of significant harm is being considered through the design process and potential mitigation measures associated with conservation notable and legally protected flora and fauna will also be actively considered and incorporated as appropriate. These measures include determining the extent and distribution of suitable habitats required within the development to account for the likely effects on legally protected (e.g. reptiles, bats etc.) and other conservation notable species, the types of habitats that they may require and how these can be incorporated within developing designs. As more information becomes available from the ongoing field survey programme and as the development design and construction phase plans develop, mitigation plans will evolve.

7.5.3 Specific environmental measures relevant to biodiversity will be identified and will be considered as part of the assessments (i.e. the assessments of likely significant effects have been undertaken with the inclusion of the environmental measures, as these measures will form part of the Proposed Development). At this stage of the project, the following environmental measures will be implemented and included within the Proposed Development.

Biodiversity Net Gain

7.5.4 Since the start of April 2024, obligations for Biodiversity Net Gain have been applied to most planning permissions applied for and consented under the Town and Country Planning Act 1990 (as amended). Requirements for all DCOs are scheduled to become mandatory from May 2026.

7.5.5 It is anticipated that the requirements for DCO projects will mirror that for Town and Country Planning Act applications and will be required to deliver a minimum of 10% biodiversity net gain, with supporting evidence provided at DCO application stage through a biodiversity net gain plan.

7.5.6 BNG requirements relating to irreplaceable habitats are particularly relevant to the Turbine Area due to the large areas of blanket bog which are present within the Turbine Area. Bespoke agreements and strategies are required to account for any losses to such habitats and will need to be agreed in principle with relevant consultees (i.e., Natural England).

7.5.7 As the Proposed Development falls under the DCO regime and is scheduled for the submission of a full application in 2026, the approach to BNG will be applied and considered alongside the EIA and HRA. This will include the use of the statutory biodiversity metric to quantify the proposed gains and will be supported by a biodiversity net gain plan. Given the scale of the Proposed Development and the nature of the Site, a draft Habitat Management and Monitoring Plan (HMMP) will also be submitted alongside the plan.

7.5.8 Delivery of BNG will consider limitations and rules relating to designated sites, it will consider the existing CRP any mitigation with respect to protected species and the application of "additionality" to calculations. Where necessary, offsite gains may be required to ensure overall delivery of a minimum 10% net gain for biodiversity.

Construction

Design

7.5.9 The design of the Proposed Development will be required to comply with relevant legislation, standards and guidance including:

- The Environmental Protection Act (1990);
- The Pollution Prevention and Control Act (1999);
- The Environmental Permitting Regulations (2016);
- The Environmental Noise (England) Regulations (2006); and
- The Air Quality Standards Regulations (2010).

7.5.10 The design of the Proposed Development, will wherever practicable, reduce and minimise the need for extensive works to be conducted. For example, the design of the wind turbines will be as such so that they are primarily assembled prior to their delivery to the Turbine Area.

Construction Environmental Management Plan

7.5.11 Construction will be undertaken using good practice approaches to avoid and minimise the potential impacts on ecological features including habitats and protected species. Note that impacts on ornithological features are considered separately in **Chapter 6: Ornithology** but will utilise many of the same mechanisms and approaches.

7.5.12 Measures will be described in an outline Construction Environmental Management Plan (oCEMP) to be submitted as part of the DCO application. This will be based upon standards set out within the BSI Standards Publication on Biodiversity – code

of practice for planning and development (BS 42020:2013). A finalised version of the oCEMP will then be prepared in post ES submission.

7.5.13 Given the sensitivity of the habitats within the Turbine Area (and likely to occur within sections of the Cable Corridor and Site Access Search Areas) the CEMP will include specific measures to avoid and minimise impacts on sensitive habitats. The CEMP will also be supported by an outline Peat Management Plan (oPMP) which will include specific measures relating to the protection of peat soils and a Precautionary Working Method Statement (PWMS) to include specific measures relating to protected species and habitats.

7.5.14 The oCEMP, oPMP and PWMS will include measures to avoid/minimise the generation of additional noise, dust, light spill, vibration, and pollution. In general, the oCEMP will be proportionate and tailored to the ecology of the Proposed Development, identified through the onsite assessments, and based on the following considerations:

- Identification of 'biodiversity protection zones' and areas;
- Inclusion of details for the implementation of methods statements to achieve ornithological outcomes and mitigation measures;
- Identification of practical measures and sensitive working practices to avoid construction related impacts;
- The location and timing of sensitive works to avoid harm to ecological features;
- The times during construction when particular specialists are required to be present to oversee works;
- Responsible persons and lines of communications;
- Defining the role and responsibilities of an Ecological Clerk of Works (ECoW); and
- Use of protective barriers and warning signs to avoid and prevent harm to ornithology and biodiversity.

7.5.15 The oCEMP, oPMP and PWMS will include measures to minimise working areas to avoid unnecessary habitat removal/alteration and disturbance, and measures to avoid/minimise the generation of additional noise, dust, light spill, vibration, and pollution. In general, the oCEMP will be proportionate and tailored to the ecology/ornithology of the Proposed Development, identified through the onsite assessments, and based on the following considerations:

- Identification of 'biodiversity protection zones' and areas;
- Identification of practical measures and sensitive working practices to avoid construction related impacts;
- The location and timing of sensitive works to avoid harm to ecological features;
- The times during construction when particular specialists are required to be present to oversee works;
- Responsible persons and lines of communications;
- Defining the role and responsibilities of an ECoW; and
- Use of protective barriers and warning signs to avoid and prevent harm to biodiversity.

7.5.16 Where necessary, protected species licencing may be applicable (for example for great crested newts or bats). Consideration for requirements will be identified through the assessment and confirmed as part of the DCO submission. Appropriate pre-construction surveys will be proposed, the full approach to be agreed with relevant consultees.

7.5.17 Construction will also increase the number of vehicle movements within the Proposed Development. To account for potential impacts on habitats and protected species an outline Construction Traffic Management Plan (oCTMP) is proposed which will include measures to ensure protection of habitats and minimisation of risk associated with collisions for protected species.

7.5.18 A sensitive lighting strategy will be employed to avoid unnecessary light pollution and avoid/minimise impacts of lighting on nocturnal species such as bats and otter. This will be detailed as part of the oCEMP.

Operation and Maintenance

7.5.19 Good practice measures described in relation to construction methods will also be adopted during operational maintenance activities, as will be detailed within an outline Landscape Environmental Management Plan (oLEMP) and an outline Operational Environmental Management Plan (oOEMP) with final versions prepared in accordance with these outlines post ES submission

7.5.20 To mitigate and likely compensate for the loss of habitats. Areas of habitat enhancement or restoration will be identified. Due to the sensitive nature of the habitats within the Site, a bespoke strategy for the delivery of habitat enhancement or restoration will be required and the approach agreed with relevant consultees.

7.5.21 Maintenance and operation of the Proposed Development will be required and will include a range of activities and regular attendance at site by engineers using a range of vehicles and machinery. Operations on site will be complete following the oOEMP which will include measures to avoid impacts on the Designated Sites, their features and protected species

7.5.22 To further avoid, minimise and potentially mitigate impacts on Protected Species during operation, a Protected Species Mitigation and Monitoring Strategy will be developed which will support the oOEMP. This will include recommended monitoring approaches for key species, including bats, reptiles and amphibians. This will include species specific measures such as monitoring for collision and barotrauma risk for bats.

7.5.23 Any protected species licencing requirements will likely include ongoing monitoring during operation to ensure success of mitigation measures required. Details will be specified in each licence agreement and include as part of the Protected Species Mitigation and Monitoring Strategy.

7.5.24 A HMMP will be submitted as part of the Biodiversity Net Gain Plan and will require ongoing monitoring throughout the operational life cycle of the Proposed Development.

Decommissioning

7.5.25 It is assumed that the environmental measures required to support decommissioning will be broadly similar in scope to those required for construction and will be underpinned by the proposed outline Decommissioning Environmental Management Plan (oDEMP). As with a oCEMP, this will include measures to minimise disturbance to bird species (including through noise, vibration, additional lighting), minimising habitat removal, temporal considerations to works (avoiding peak nesting season), pollution prevent measures etc.

7.5.26 Specific requirements for ECoW, PWMS and species specific licencing will be identified and confirmed as part of the DCO application,

7.5.27 In addition, habitat management proposals will seek to include proposed restoration/re-instatement of habitats at the end of the project lifecycle where applicable or areas of hard standing will remain in situ as removal will increase the risk of damage to habitats. This plan will aim to return the Proposed Development to a condition that aligns with the ecological and ornithological character and conservation objectives of the surrounding South Pennine Moors Phase 2 SAC, SPA and South Pennine Moors SSSI. All restoration activities will be developed in consultation with relevant statutory bodies, including Natural England, to ensure

they are ecologically appropriate and contribute to the long-term conservation of the Site.

Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

7.5.28 As discussed in **Chapter 1: Introduction**, under the Town and Country Planning Act 1990, in July 2023, an EIA scoping request was submitted to CMBC, which was a Scoping Report in request for a Scoping Opinion for a proposed wind farm development and associated infrastructure at the Site, including cable connection. Table 7-10 presents the details of the Scoping Opinion received from CMBC relevant to biodiversity and if the opinion is considered within the proposed scope of assessment (as set out below) or if is considered to be scoped out of the technical assessment, with details provided in between paragraphs 7.6.7 and 7.6.9.

Table 7-10: Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
CMBC	The site lies within an SAC, SPA and SSSI. Given the likely significant impacts of the proposal on these designated habitats site, a HRA must form part of an ES to assess the proposal's likely significant impacts on the conservation objectives of these designated sites	A separate HRA will be produced and will be considered alongside the EIA.
CMBC	The proposal will directly impact irreplaceable habitat such as blanket bog and peatland. The site also lies within the Calderdale Wildlife Habitat Network…	As part of the assessment, consultation will be sought with Natural England to discuss approaches to mitigation and compensation with regard to impacts on sensitive habitats. Impacts and potential benefits will also be considered against the objectives of the Calderdale Wildlife Habitat Network to ensure that mitigation or compensation is sympathetic to the objectives of the network and enhances connectivity. Information will be south and confirmed with CMBC through consultation.
CMBC	The LPA notes that… [various] Local Wildlife Sites are missing from the Scoping Report and should be assessed for potential impacts as part of the EIA process:	A full review of desk study data will be undertaken ahead of the PEIR and ES To include all designated sites, including relevant Local Wildlife Sites (LWS)

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
CMBC	The assessments undertaken as part on an ES should be informed by a suitable level of surveys, including an EcIA, NVC surveys, peat depth surveys and hydrological surveys. The assessments should also include any land outside the designated site which has a critical function to a habitat feature within a designated site, e.g., by being linked hydrologically.	Habitat surveys comprising UK Habitat Classification and NVC surveys are ongoing and will comprise a proportionate level of survey to inform assessment and proposed mitigation/ compensation approaches. Peat depth and hydrology have also been subject to survey with further work ongoing following review of the Proposed Development. This will include consideration of habitats within the Turbine Area, Cable Search Corridor and Site Access Search Area, Details of peat surveys and hydrology are provided in **Chapter 8**.
CMBC	It will be important to consider the findings of hydrological and hydrogeological assessments in the assessment of effects on habitats and species.	Impacts associated with changes in hydrology are scoped in for assessment and are also critical to understanding the opportunities for habitat enhancement and restoration.
CMBC	The LPA considers that, for the reasons set out in the Scoping Report, assessment of Great Crested Newts can be scoped out. The LPA requires reptile surveys are undertaken and mitigation for both reptiles and amphibians are considered within an ES.	Following review of consultation comments, surveys for great crested newts and reptiles were completed in 2024 and will be considered fully within the PEIR and ES.
CMBC	There is no reference to potential impacts to invertebrates as a result	Following review of consultation comments, surveys for invertebrates have been

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	of the proposals in the Scoping Report. The habitats within the South Pennine Moors SAC support a rich invertebrate assemblage and as identified within the Scoping Report.	completed in 2024 and are ongoing during 2025. Impacts on invertebrates will be considered fully within the PEIR and ES.
CMBC	The LPA considers that 23 bat detectors are likely to be adequate for Spring deployment. However, it is noted that the locations of the bat detectors to date focusses on the central band of the site only. There are un-surveyed areas in the south west around Widdop Moor and along the north of the site around Middle Moor and Heather Hill.	Efforts to expand the coverage of bat statics surveys has been considered for 2025 surveys. Limitations associated with safe access and the sensitivity of the site for breeding birds is a limitation for all surveys on the Turbine Area, however the Applicant has been working with site managers to increase coverage where practicable.
CMBC	Notwithstanding the proposed locations, the scope and methodologies of bat surveys and assessments set out in the submitted Scoping Report are considered to be inadequate.	Further surveys have been completed during 2023 and 2024 to include assessments of potential roost and hibernation sites. Further surveys are ongoing during 2025, including night time bat walkover surveys, statics and additional roost assessments.
CMBC	The applicant is advised that the agreed guidance on the Minimum Standards for Bats and Wind Turbines in West Yorkshire will	Bat surveys have been designed and completed following best practice guidance and with reference to NatureScot along with reference to local guidance.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	need to be followed, which requires static detectors at the height of the proposed turbines in order to gather an accurate estimate for collisions and barotrauma. Bat records should be requested from West Yorkshire Ecology and the West Yorkshire Bat Group.	Positioning of static detectors at height is not possible within the Turbine Area due to the absence of suitable structures (such as masts).
CMBC	The ES should assess the impact across all phases of development on other protected species, including water voles, badgers, White Claw Crayfish, etc. which may be present on the site and its vicinity, which not already highlighted in this Scoping response. In doing so, consideration should also be given to the wider context of the site including in terms of habitat linkages and protected species populations in the wider area.	Species to be scoped in for consideration are listed in Section 7.6, and Table 7-13.
CMBC	Calderdale supports areas of long-term pasture with internationally significant populations of CHEGD fungi.	Surveys for fungi were undertaken in 2023/ 2024 and will be used to inform the assessment and approach to mitigation and/or compensation and habitat enhancement.
CMBC	The Catchment Recovery Plan being	The Walshaw Moor Catchment Restoration Plan will be

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	implemented on Walshaw Moor in conjunction with Natural England aims to restore Irreplaceable Blanket Bog Habitats. Assessment of the impacts of the proposal on habitats and other ecological features should consider the improving baseline habitat conditions that will be expected if the CRP was to continue in the absence of the wind farm scheme. The assessment of impacts and effects should include consideration of habitat condition and species distribution changes likely to occur as a result of the cessation of grouse moor management, including shooting and burning.	considered as a key part in the assessment of habitats and in the design of mitigation and/or compensation and enhancement. Baseline levels to be used for assessment in the ES and other documents (BNG/ HRA) will be discussed with relevant consultees.
CMBC	The ES should assess and describe how habitat restoration works, whether part of bespoke compensation and enhancement strategies or as required for BNG will result in positive outcomes for habits and associated species. Habitat function for protected and notable species as well as other	A oLEMP and HMMP will be devised, in consultation with relevant consultees that includes consideration of how habitat mitigation, compensation and enhancement is applied to all relevant assessments (ES/ BNG/ HRA). The restoration plan will seek to identify opportunities to enhance connectivity and habitat function for key species and habitats and also, identify other ecosystem

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	ecosystem services like water storage and carbon capture should be referenced in the Ecology section of the ES.	services which are addressed through its delivery.
CMBC	A Biodiversity Net Gain (BNG) Assessment will be required as part of an ES and be accompanied by the working BNG Metric 4.0 (or latest version) Excel spreadsheets. The submitted Scoping Report details the provision of a full UKHab classification and condition assessment of the site. Whilst this is appropriate for the BNG Assessment, due to the presence of designated site features (including priority and irreplaceable habitat) assessment to National Vegetation Classification (NVC) will be required in all areas where direct or indirect impacts are possible.	A BNG assessment will be provided as part of the application at submission (see Section 7.5) using the Statutory Biodiversity Metric (updated since the previous Scoping Opinion was received) Given the presence of irreplaceable habitats in the Turbine Area and surrounds, this is expected to include bespoke mitigation/compensation and enhancement strategies with any approach to be discussed with relevant consultees. NVC surveys are ongoing (as described above) and will be used to inform the BNG assessment.
CMBC	As the majority of the site is designated as SAC, SPA and a SSSI, any habitats identified as a designated feature of these sites are subject to a restore	The approach to delivery with respect to the designated sites and the Walshaw Moor Catchment Restoration Plan will be consulted upon ahead of submission.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	objective required through the relevant legislation. It is noted that the site is also subject to the Walshaw Moor Catchment Restoration Plan in agreement with Natural England. The applicant will need to apply the principle of additionality when enhancing habitats for BNG to demonstrably exceed existing obligations.	Initial consultation with Natural England has indicated that an additionality in respect of compensation or BNG will need to be additional actions which are not described in the Catchment Restoration Plan and will need to be in addition to actions which will be considered "normal practice" under the objectives of the designated sites. Further consultation is ongoing to agree the approach and will be confirmed through the DCO process.

Other Consultees – Scoping Response

7.5.29 Additional responses to the 2023 Scoping Report were received from relevant consultees including Natural England, Yorkshire Wildlife Trust and the Royal Society for the Protection of Birds (RSPB) amongst other consultees ranging from other local planning authorities, local parish councils, conservation charities and individuals. These are summarised in Table 7-16. The responses received were broadly similar in nature, highlighting concerns relating to impacts on the habitats present such as blanket bog and heathland; impacts on protected species, including bats, amphibians and reptiles; impacts on rare fungi; and overall concerns relating to the delivery of a net gain for biodiversity and impacts to the designated sites.

7.5.30 Natural England advised that potential impacts will include;

- Damage to/ loss of SAC habitat as a result of works or changes in hydrology;
- A change in water quality as a result of a potential for increased nutrient and other pollutant inputs; and
- Potential direct and indirect impacts from woodland creation.

7.5.31 They also advised that assessments will need to be informed by a suitable level of surveys including; NVC surveys, peat depth survey and hydrological surveys. All of

these surveys have been completed or will be completed in support of the design and assessment of the Proposed Development.

7.5.32 The comments provided have provided additional information for specific receptors (such as fungi) and have been considered alongside the responses received from the CMBC to inform additional survey efforts completed in 2024 and further surveys which are ongoing.

Other Consultation Undertaken to Date

7.5.33 An overview of other consultation (beyond the CBC Scoping Opinion) undertaken to date for biodiversity, and how this has informed the scope to the assessment is provided in Table 7-11.

Table 7-11: Summary of additional consultation received to date

Date	Consultee	Summary
20/05/2025	Natural England	An introductory meeting was held in May 2025 with Natural England to provide an overview of the current status of the project, baseline surveys and assessments. Specific questions relating to BNG and Mitigation/Compensation were shared with Natural England with responses provided. Ongoing consultation will be scheduled with Natural England to ensure agreement of approach, in particular relating to baseline survey data and the proposed approaches to habitat mitigation, enhancement and where necessary compensation.
01/07/2025	Natural England	Natural England provided written consultation via the Discretionary Advice Service (UDS-A019065). This provided detailed recommendations for the approaches to be taken for assessment of impacts on the South Pennine Moors SAC and SPA. It also provided initial advice relating to compensation and additionality. The advice provided has been reviewed by the project team and is being used to ensure that approaches to baseline data collection, assessment and delivery of

Date	Consultee	Summary
		mitigation/compensation is in line with the expectations presented by Natural England.
10/07/2025	Natural England	A meeting was held with Natural England to present the approach being taken to HRA and open discussions relating to delivery of mitigation and compensation. It was also an opportunity to discuss the written advice provided by Natural England on 1st July 2025. The project team presented slides relating to specific topics (peat/hydrology, terrestrial ecology and ornithology). The key outcomes of the consultation included; • Requirement for the project to develop an evidence plan to be submitted alongside the screening report. This will detail the evidence that has/is being collected and how it will be used to support the HRA; • Natural England referred to their written advice with respect to compensation and "additionality". Approaches to compensation need to be provided by the Applicant for review by NE as part of the Appropriate Assessment. • Natural England stated that if areas of blanket bog are in "unfavourable, declining" condition (following Commons Standards Monitoring) then actions to restore that habitat will not be considered compensation as the objectives of the SAC/SPA include a commitment to restore the extent and condition of habitats to a favourable condition. • Natural England have a preference for NVC survey where there a botanically diverse habitats.

7.6 Scope of Assessment

Potential ecological features

7.6.1 The starting point for defining which ecological features will be taken forward to the detailed assessment stage will be to use the baseline data collected through the desk study and field surveys to determine which of the identified ecological features are 'important' at the level of the project. Following CIEEM (2018, version 1.3) guidance, the importance of ecological features will be determined using a geographic scale and described in relation to UK legislation and policy, and with regard to the extent of habitat or size of population that may be affected by the Proposed Development.

7.6.2 The importance of ecological features can therefore differ from that which will be conferred solely by legislative protection or identification as a conservation notable species. For example, house sparrow is important at a national level (in policy terms) because it is a Section 7 species and features on the Birds of Conservation Concern red list. However, a small population that could be affected by a development might be assessed as being of local importance only due to the large, albeit declining, UK population (in excess of 5 million pairs).

7.6.3 Wherever practicable, information regarding the extent and population size, population trends and distribution of the ecological features will be used to inform the categorisation and determine importance at the project level. Where detailed criteria or contextual data are not available, professional judgement will be used to determine importance. A justification of all determinations of importance are provided in Table 7-12.

Table 7-12: Definition of importance for Ecological Features

Geographic context of importance	Description
International or European	European sites including SPAs, SACs, candidate SACs and Sites of Community Importance (SCI). Potential SPAs (pSPA), and Ramsar sites (designated under international convention). Areas of habitat or populations of species which meet the published selection criteria based on discussions with Natural England and field data collected to inform the Ecological Impact Assessment (EcIA) for designation as a European site, but

Geographic context of importance	Description
	which are not themselves currently designated at this level.
National (UK)	A nationally designated site including SSSIs and NNRs. Areas (and the populations of species which inhabit them) which meet the published selection criteria guidelines for selection of biological SSSIs, but which are not themselves designated based on field data collected to inform the EcIA, and in agreement with NRW. NERC Act Section 41 habitats and species, Red listed and legally protected species that are not addressed directly in Part 2 of the "Guidelines for Selection of Biological SSSIs" but can be determined to be of national importance using the principles described in Part 1 of the guidance. Areas of Ancient Woodland e.g. woodland listed within the Ancient Woodland Inventory and ancient and veteran trees.
County (West Yorkshire)	LNRs and Non-Statutory Designated sites including Local Wildlife Sites of County Importance. Areas which, based on field data collected to inform the EcIA, meet the published selection criteria for those sites listed above (for habitats or species, including those listed in relevant Local Biodiversity Action Plans) but which are not themselves designated.
Local	NERC Act Section 41 habitats and species, Red listed and legally protected species that based on their extent, population size, quality etc are determined to be at a lesser level of importance than the geographic contexts above.

Geographic context of importance	Description
	Common and widespread semi-natural habitats occurring within the study area in proportions greater than may be expected in the local context. Common and widespread native species occurring within the study area in numbers greater than may be expected in the local context.
Negligible	Common and widespread semi-natural habitats and species that do not occur in levels elevated above those of the surrounding area. Areas of heavily modified or managed land uses (e.g. hard standing used for car parking, as roads etc.)

7.6.4 Where protected species are present and there is the potential for a breach of the legislation in the absence of a licence, those species will be considered as 'important' features. With the exception of such species receiving specific legal protection, or those subject to legal control (e.g. invasive species), all ecological features determined to be important at negligible level will be scoped out of the assessment.

7.6.5 Further, ecological features of local importance, where there is a specific technical justification, will also be scoped out. This is because effects on them will not influence the decision-making about whether or not consent should be granted for the development (on this basis a significant effect in EIA terms could not occur). This approach is consistent with that described in CIEEM 2018.

7.6.6 All legally protected species and ecological features that are of sufficient importance will then be taken through to the next stage of the assessment.

Effects Scoped Out from Detailed Assessment

7.6.7 The ongoing design and development of access routes and cable connection options means that the spatial extent of the Proposed Development could be subject to change and may impact habitats and locations not yet considered. Therefore, it is not currently appropriate to scope out any ecological receptors from assessment with respect to effects associated with the Cable Corridor Search Areas or Site Access Search Areas.

7.6.8 Within the Turbine Area, the following species are considered likely absent and therefore have been scoped out, with respect to effects associated with the Turbine Area only;

- Badger – no field signs were recorded within Turbine Area and no known badger setts have been identified. Given the nature of the habitats within the Turbine Area, it is not considered suitable for sett building; and
- Dormouse – there is no suitable habitat for dormouse within the Turbine Area.

7.6.9 It is assumed that there will be no operational effects associated with the cable connection or selected access routes once constructed. The current proposals assume a buried cable which will remain in situ for the duration of the operational period. Access routes, once established will be subject to low levels of use by operational staff and therefore and not considered likely to result in impacts on ecological receptors.

Likely Significant Effects Scoped into the Detailed Assessment

7.6.10 In accordance with the EIA Regulations 2017, the EIA for Calderdale Energy Park will consider those impacts where there is a risk of a likely significant effect only. The following section draws on industry experience and expertise to identify those effect-receptor pathways that may potentially lead to a significant effect.

7.6.11 The likely significant effects relating to biodiversity that will be taken forward for assessment in the ES are summarised in Table 7-13.

Table 7-13: Likely Significant Effects Scoped in to Detailed Assessment

Activity	Effect	Receptors scoped in
Construction – Turbine Area		
Change of land use including ground clearance for construction sites (including laydown areas, staff facilities etc.), enabling works and accesses.	Degradation and/ or loss of habitat (including irreplaceable habitats). Loss of ecological connectivity through severance of habitats resulting in fragmentation.	Designated Sites – International, National and Local Habitats and plants Amphibians (including GCN) Bats Fungi Invertebrates Otter and Water Vole Reptiles White-clawed crayfish
Construction noise, activity and increased human presence	Disturbance of potentially sensitive species resulting in displacement or a reduction in productivity/survival rates.	
Construction/ alteration of drainage to facilitate construction works.	Changes to local hydrology resulting in changes or loss of surrounding habitats with subsequent effects on fauna that they support.	
Dust deposition as a result of construction and vehicle movement.	Degradation and/ or loss of habitat (including irreplaceable habitats).	
Use of chemicals (e.g. fuels, solvents etc.) and liberation of pollutants and fine material	The introduction of toxic pollutants or sediments into the environment resulting in changes, loss or damage to terrestrial or	

Activity	Effect	Receptors scoped in
through excavation, demolition or surface water flows during rainfall events	freshwater environments and the species/species groups they support.	
Vehicle movements to facilitate construction.	Emissions from plant and delivery traffic during the construction phases could lead to habitat change through nutrient deposition, acidification and direct toxicity. Collision with protected species resulting in mortality.	
Construction – Cable Route and Access Route		
Change of land use including ground clearance for track construction.	Degradation and/ or loss of habitat (including irreplaceable habitats). Loss of ecological connectivity through severance of habitats resulting in fragmentation.	All receptors scoped in
Construction/ alteration of drainage to facilitate construction works.	Changes to local hydrology resulting in changes or loss of surrounding habitats with subsequent effects on fauna that they support.	

Activity	Effect	Receptors scoped in
Dust deposition as a result of construction and vehicle movement.	Degradation and/ or loss of habitat (including irreplaceable habitats).	
Use of chemicals (e.g. fuels, solvents etc.) and liberation of pollutants and fine material through excavation, demolition or surface water flows during rainfall events	The introduction of toxic pollutants or sediments into the environment resulting in changes, loss or damage to terrestrial or freshwater environments and the species/species groups they support.	
Vehicle movements to facilitate construction.	Emissions from plant and delivery traffic during the construction phases could lead to habitat change through nutrient deposition, acidification and direct toxicity. Collision with protected species resulting in mortality.	
Operation – Turbine Area		
Permanent changes to the landscape	Presence and operation of wind turbines may result in indirect habitat loss with species being displaced by turbines and associated infrastructure (to include cable corridors and off-site access routes).	Designated Sites – International, National and Local Habitats and plants Amphibians (including GCN)

Activity	Effect	Receptors scoped in
		Bats Fungi Invertebrates Otter and Water Vole Reptiles White-clawed crayfish
Operation of wind turbines	Collision with turbine blades resulting in injury or death.	Bats
Maintenance activity and increased human presence	Disturbance of potentially sensitive species resulting in displacement or a reduction in productivity/survival rates.	Designated Sites – International, National and Local Habitats and plants Amphibians (including GCN) Bats Fungi

Activity	Effect	Receptors scoped in
		Invertebrates Otter and Water Vole Reptiles White-clawed crayfish
Use of chemicals (e.g. fuels, solvents etc.) during maintenance work including potential presence of vehicles and heavy plant.	The introduction of toxic pollutants into the environment resulting in changes, loss or damage to terrestrial or freshwater environments and the species/species groups they support.	Designated Sites – International, National and Local Habitats and plants Amphibians (including GCN) Bats Fungi Invertebrates Otter and Water Vole Reptiles

Activity	Effect	Receptors scoped in
		White-clawed crayfish
Decommissioning – Turbine Area		
Change of land use including ground clearance for decommissioning sites (including laydown areas, staff facilities etc.)	Degradation and/ or loss of habitat (including irreplaceable habitats).	Designated Sites – International, National and Local Habitats and plants Amphibians (including GCN) Bats Fungi Invertebrates Otter and Water Vole Reptiles White-clawed crayfish
Decommissioning activity and increased human presence	Disturbance of potentially sensitive species resulting in displacement or a reduction in productivity/survival rates.	
Alteration of drainage to facilitate decommissioning works.	Changes to local hydrology resulting in changes or loss of surrounding habitats with subsequent effects on fauna that they support.	
Dust deposition as a result of decommissioning and vehicle movement.	Degradation and/ or loss of habitat (including irreplaceable habitats).	
Use of chemicals (e.g. fuels, solvents etc.) and liberation of pollutants and fine material	The introduction of toxic pollutants or sediments into the environment resulting in changes, loss or damage to terrestrial or	

Activity	Effect	Receptors scoped in
through excavation, demolition or surface water flows during rainfall events	freshwater environments and the species/species groups they support.	
Vehicle movements to facilitate decommissioning.	Emissions from plant and delivery traffic during the decommissioning phase could lead to habitat change through nutrient deposition, acidification and direct toxicity. Collision with protected species resulting in mortality.	

7.7 Proposed Approach to the ES

Assessment Methodology

7.7.1 The generic project-wide approach to the assessment methodology is set out in **Chapter 3: Approach to EIA**. However, whilst this will inform the approach used in the biodiversity assessment, it is necessary to align with the standard industry guidance provided by CIEEM (2018).

7.7.2 The assessment will be based upon not only the results of the desk study and field surveys, but also relevant published information (for example on the status, distribution, sensitivity to environmental changes and ecology of the features scoped into the assessment, where this information is available), and professional knowledge of ecological processes and functions.

7.7.3 For each scoped-in ecological feature, effects will be assessed against the predicted future baseline conditions for that feature during construction, operation and decommissioning.

7.7.4 Throughout the assessment process, the initial results of the assessment regarding potentially significant effects will be used to inform whether additional baseline data collection is required, together with the identification of environmental measures that should be embedded into the development proposals to avoid or reduce adverse effects or to deliver enhancements.

7.7.5 Where part of a designated site is located within the ecological Zone of Influence relating to a particular biophysical change as a result of the Proposed Development, an assessment will be made of the effects on the designated site as a whole. A similar approach will be taken for areas of notable habitat.

7.7.6 For species that occur within the Zone of Influence, the assessment will consider the total area that is used by the affected individuals or the local population of the species (e.g. for foraging or as breeding territories).

Significance evaluation methodology

7.7.7 CIEEM (2018) defines a significant effect as one “that either supports or undermines biodiversity conservation objectives for ‘important ecological features’ or for biodiversity in general”.

7.7.8 When considering potentially significant effects on ecological features, whether these be adverse or beneficial, the following characteristics of environmental change are taken into account:

- Extent – the spatial or geographical area over which the environmental change may occur;
- Magnitude – the size, amount, intensity or volume of the environmental change;
- Duration – the length of time over which the environmental change may occur;
- Frequency – the number of times the environmental change may occur;
- Timing – the periods of the day/year etc. during which an environmental change may occur; and
- Reversibility – whether the environmental change can be reversed through restoration actions.

Magnitude of change

7.7.9 Although the characteristics described above are all important in assessing effects by using information about the way in which habitats and species are likely to be affected, a scale for the magnitude of the environmental change, as a result of the Proposed Development, has been described in Table 7-14 to provide an understanding of the relative change from the baseline position, be that adverse or beneficial changes.

Table 7-14: Guidelines for the assessment of the scale of magnitude

Scale of change	Criteria and resultant effect
High	The change permanently (or over the long-term) affects the conservation status of a habitat/species, reducing or increasing the ability to sustain the habitat or the population level of the species within a given geographic area. Relative to the wider habitat resource/species population, a large area of habitat or large proportion of the wider species population is affected. For designated sites, integrity is compromised. There may be a change in the level of importance of the receptor in the context of the project.
Medium	The change permanently (or over the long term) affects the conservation status of a habitat/species reducing or increasing the ability to sustain the habitat or the population level of the species within a given geographic area. Relative to the wider habitat resource/species population, a small-medium area of habitat or small-medium proportion of the wider species population is affected. There may be a change in the

Scale of change	Criteria and resultant effect
	level of importance of this receptor in the context of the project.
Low	The quality or extent of designated sites or habitats or the sizes of species' populations, experience some small-scale reduction or increase. These changes are likely to be within the range of natural variability, and they are not expected to result in any permanent change in the conservation status of the species/habitat or integrity of the designated site. The change is unlikely to modify the evaluation of the receptor in terms of its importance.
Very Low	Although there may be some effects on individuals or parts of a habitat area or designated site, the quality or extent of sites and habitats, or the size of species populations, means that they will experience little or no change. Any changes are also likely to be within the range of natural variability and there will be no short-term or long-term change to conservation status of habitats/species receptors or the integrity of designated sites.
Negligible	A change, the level of which is so low, that it is not discernible on designated sites or habitats or the size of species' populations, or changes that balance each other out over the lifespan of a project and result in a neutral position.

Determining significance - adverse and beneficial effects

7.7.10 The significance of an effect is the product of the magnitude of the impact and the importance or sensitivity of the ecological feature affected. Adverse effects are assessed as being significant if the favourable conservation status of an ecological feature will be lost as a result of the Proposed Development. Beneficial effects are assessed as those where a resulting change from baseline improves the quality of the environment (e.g. increases species diversity, increases the extent of a particular habitat etc., or halts or slows down an existing decline). For a beneficial

effect to be considered significant, the conservation status will need to positively increase in line with a magnitude of change of "high" as described in Table 7-14.

7.7.11 Conservation status is defined as follows (as per CIEEM 2018):

"For habitats, conservation status is determined by the sum of the influences acting on the habitat that may affect its extent, structure and functions as well as its distribution and typical species within a given geographical area;

For species, conservation status is determined by the sum of influences acting on the species concerned that may affect its abundance and distribution within a given geographical area".

7.7.12 The decision as to whether the conservation status of an ecological feature will alter has been made using professional judgement, drawing upon the information produced through the desk study, field survey and assessment of how each feature is likely to be affected by the Proposed Development.

7.7.13 A similar procedure is used where designated sites may be affected by the Proposed Development, except that the focus is on the effects on the integrity of each site; defined as:

"The coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified".

7.7.14 The assessment of effects on integrity draws upon the assessment of effects on the conservation status of the features for which the site has been designated.

Further Baseline Data

7.7.15 Table 7-15 presents a summary of further biodiversity surveys planned for 2025 and 2026. Requirements for additional baseline survey may be adapted dependant on the evolving design. For example, options for potential cable routes and access routes are still being considered. Once preferred designs and routes are agreed with the design team, surveys will be designed based on the nature of the, the habitats and locations they are likely to cross and will be designed to be proportionate to the ecological features likely to be present and the nature of the construction/installation.

Table 7-15: Summary of further surveys planned

Survey Type/Data Collection	Description	Timing
Updated desk study data	An updated desk study will be sought to identify recent records of protected or notable species, habitats and local non-statutory designated sites within 2km of the Turbine Area and preferred cable options and other infrastructure. Desk study data requests will be made for the following designations: High Hirst Meadows; New High Laithe Farm (CHEGD); Crimsworth Dean Pastures (CHEGD); Clough Hole Pasture (CHEGD); Hollin Hall (CHEGD); Lower Height Farm Ridings; Hoyle Grasslands; and Acre Mill Meadow.	August 2025 – to ensure information is available ahead of design freeze and PEIR submission.
Bat activity surveys	Static detector surveys will be repeated in 2025 with opportunity for additional monitoring in Spring 2026 if required. Night-time bat walkover surveys will also be	June 2025 – October 2025 To ensure information is available ahead of PEIR submission.

Survey Type/Data Collection	Description	Timing
	completed seasonally in 2025.	
Bat emergence surveys	Additional surveys of high suitability buildings will be completed to supplement surveys completed in 2024.	July 2025 onwards To ensure information is available ahead of PEIR submission.
Habitat surveys (NVC and habitat condition surveys)	Comprehensive NVC surveys will be completed across the Turbine Area, targeting areas of sensitive habitats and locations where construction impacts are expected to occur. NVC surveys will also be completed of potential habitat restoration areas to inform management. Where necessary, surveys will be extended into the Cable Corridor and Site Access Search Areas.	July 2025 onwards To ensure information is available ahead of PEIR submission (Turbine Area only) Any additional habitat surveys required of the preferred cable and access routes will produce data that is only expected to be available for final ES submission.
Targeted protected species surveys (badger, otter, water vole, white clawed crayfish)	Requirements for any additional surveys for other species will be determined by the evolving design. Where necessary, surveys will be extended into the Cable Corridor and Site Access Search Areas.	As required Any additional habitat surveys required of the preferred cable and access routes will produce data that is only expected to be available for final ES submission.
Invertebrate Surveys	Additional surveys proposed within the Turbine Area to expand	August/September 2025

Survey Type/Data Collection	Description	Timing
	on the results of surveys completed in 2024.	To ensure information is available ahead of PEIR submission.
Fungi Survey Results	Further analysis is ongoing following surveys in 2024. Results will be assessed and requirements for further surveys considered	As required to ensure information is available ahead of PEIR or ES submission.

Habitat Regulations Assessment

7.7.16 Given the presence of two European Sites within the Proposed Development, information to inform a Habitat Regulations Assessment (HRA) will be prepared as a "Shadow HRA". This will follow the key stages of HRA including;

- Stage 1 – Screening
- Stage 2 – Appropriate Assessment; and where necessary
- Stage 3 –Derogation

7.7.17 This will be provided as a separate report and assessment but will be considered as part of the Environmental Statement.

Cumulative and in-combination assessment

7.7.18 Cumulative effects will be assessed in line with the methodology set out in **Chapter 3: Approach to EIA**, which accords with the Planning Inspectorate's (PINS) Advice on Cumulative Effects Assessment. A long list of existing, consented, and proposed developments will be agreed with the relevant local planning authorities prior to undertaking the assessment. The certainty of these developments will be determined using the tiered approach recommended by PINS. For each environmental topic, the potential Zone of Influence (ZoI) of the Proposed Development during construction, operation (including maintenance), and decommissioning will be identified. The outcomes of the cumulative effects assessment will be reported within the Environmental Statement

Assumptions, Limitations and Uncertainties

7.7.19 The current design incorporates broad search areas for the cable corridor and access routes. Additional desk study, baseline survey and assessment are to be completed in these areas, however the extent and scope of any further works will be determined based on the preferred options.

7.7.20 Surveys completed in 2023 – 2025 have been required to consider the sensitivity of the Turbine Area in relation to the features of the SPA and other breeding birds. This has meant that certain parts of the Site have not been fully accessible during the peak of the breeding bird season (covering March – July inclusive). In 2023 and 2025, this meant that deployment of static detectors for bat surveys was not possible in remote parts of the Site as access will require surveyors or site staff to disturb areas of dense moorland. Consent to complete certain surveys was obtained from Natural England ahead of the 2025 survey season, however this applied certain restrictions to surveys, including the use of established pathways and restrictions around use of vehicles.

7.7.21 The Site is large and remote and therefore requires careful consideration of surveyor safety. Access to remote areas of the Site have therefore been restricted to specific times of the year and also, to take into account management of the Site. Managed as a grouse moor, regular shooting takes place from August onwards.

7.7.22 Surveys for terrestrial ecology have needed to consider potential impacts on other ongoing surveys. An extensive programme of ornithology surveys is also ongoing (as set out in **Chapter 6: Ornithology**) and have required access to be co-ordinated which as in some instances limited access to certain areas of the Site.

7.7.23 Scoping of effects assumes that all cable infrastructure and sections of track way within the Turbine Area will remain in situ following decommissioning.

Table 7-16: Summary of consultation responses received following submission of the TCPA Scoping Report

Date	Consultee	Summary of comments	How these will be addressed in the assessment
04/12/2023	Ban the Burn	Ban the Burn's response to the scoping report detailed the concerns they have with the development's location. Despite being favourable to both on shore and offshore wind they went on to state that the development will have detrimental impacts on the blanket bog, degraded blanket bog priority habitats and any associated wildlife within the indicative site.	The concern related to the sensitive habitats on Site have been noted. The nature and extent of habitats on site, in particular blanket bog will be subject to extensive survey effort and assessment through both EIA and HRA approaches. Appropriate and proportionate mitigation and compensation measures are being developed to account for losses of sensitive habitat and will be provided in greater detail at PEIR and ES stage. These will also consider potential impacts on species associated with these habitats.
18/10/2023	Bradford City Council (BCC)	BCC views on the ecology of the site acknowledge the presence of very high	The presence of very high and high distinctiveness habitats has been identified by the project team.

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		and high distinctiveness habitats, namely the blanket bog habitats. Their response goes on to say that the development will adversely affect significant areas of these valuable habitats and as result of this will not be able to achieve an overall biodiversity net gain. Additionally, they infer that reptiles and amphibians should be scoped into the assessment, with the EIA offering a means of habitat enhancement for these impacted species.	Appropriate and proportionate mitigation and compensation measures are being developed to account for losses of sensitive habitat and will be provided in greater detail at PEIR and ES stage. Assessments will include EIA, HRA and BNG calculations. Reptiles and amphibians have been scoped into the assessment with surveys completed during 2024. Approaches to mitigation and compensation will also consider opportunities for habitat creation/enhancement for species present. Positions of static detectors for bat activity monitoring is limited by the nature of the site and the sensitivity of habitats and ground nesting birds present. An updated deployment has been proposed for 2025, sampling additional areas where access is possible. This follows good practice guidance provided by NatureScot.

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		BCC also added that bat monitoring was largely focused on the sites central band. Going on to highlight that there were surveyed areas towards the sites southwest, in which there are water courses that offer commuting and foraging routes for bats.	
	Ms Catherine Bann	Ms Catherine Bann, when consulted, commented that the development will have a significant impact on the environment adding that they will need to see a very serious Environmental Impact Assessment.	This comment was noted and every effort will be made to ensure that the Environmental Impact Assessment is thorough and proportional to the potential impacts.
	Wadsworth Parish Council (WPC)	Comment that the site includes irreplaceable,	The presence of very high and high distinctiveness habitats has been identified by the project team.

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		very high and high distinctive habitats and that the scheme will adversely affect significant areas of these protected habitats. They also comment that as a result of this the project will not be able to achieve a 10% biodiversity net gain. The council also comments that reptiles should be scoped in for assessment due to their rate of decline and legally protected status. Additionally, WPC feel that any tree planting associated with the scheme should be weighed against the impact this could have	Appropriate and proportionate mitigation and compensation measures are being developed to account for losses of sensitive habitat and will be provided in greater detail at PEIR and ES stage. Assessments will include EIA, HRA and BNG calculations. The approach to BNG will be subject to a bespoke approach (due to the presence and potential impacts on irreplaceable habitats). Habitats to be created or enhanced will need to be appropriate and due consideration given to potential impacts of tree planting (if proposed). Reptiles and amphibians have been scoped into the assessment with surveys completed during 2024. Approaches to mitigation and compensation will also consider opportunities for habitat creation/enhancement for species present.

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		on Blanket bog and heathland habitats, further commenting that Calderdale pastureland supports internationally significant populations of CHEGD fungi.	
	Heptonstall Parish Council (HPC)	HPC comment that the development will result in the destruction of significant areas of Peat Bog and habitat for wildlife.	The concern related to the sensitive habitats on Site have been noted. The nature and extent of habitats on site, in particular blanket bog will be subject to extensive survey effort and assessment through both EIA and HRA approaches.
17/10/2023	The National Trust	The National Trust was informed of the scoping opinion and provided a response to its contents on the 17/10/2023. Their response expressed their concern due to the ecology sensitive nature of the study area.	The concern related to the sensitive habitats on Site have been noted. The nature and extent of habitats on site, in particular blanket bog will be subject to extensive survey effort and assessment through both EIA and HRA approaches. Appropriate and proportionate mitigation and compensation measures are being developed to account for losses of sensitive habitat and will be provided in greater detail at PEIR and ES stage. These will also consider potential impacts on species associated with these habitats.

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		The National Trust stated that in the absence of a detailed design, they couldn't foresee how the development will present an opportunity to enhance biodiversity. They went on to comment that the loss of priority habitats is of significant concern and that at the stage it was not clear what mechanism could be employed to mitigate for its loss.	
	Natural England (NE)	NE advises that potential impacts on South Pennine Moors SPA will include: Direct loss and deterioration of habitat Indirect habitat loss through disturbance	Impacts on the South Pennine Moors SPA are addressed separately in **Chapter 6: Ornithology**. Proposals for mitigation and compensation will be designed to ensure suitability for features of all designated sites and features. The potential impact on the South Pennine Moors SAC are noted and have been included in the scoping section above. Proposals for tree planting are not currently included. Appropriate and

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		and/ or displacement (including disruption to flight lines resulting from avoidance action) - construction, operation and decommissioning Natural England recommend thorough surveys to determine the scale of the impact. NE also advises that the impact on the South Pennine Moors SAC will include: Damage to/ loss of SAC habitat as a result of works or changes in hydrology A change in water quality as a result of a potential for increased nutrient and other pollutant inputs	proportionate mitigation and compensation measures are being developed to account for losses of sensitive habitat and will be provided in greater detail at PEIR and ES stage. Ongoing surveys include NVC, peat depth and hydrological surveys with the extent and nature of surveys being adapted to any changes to the design of the Proposed Development. A HRA will be completed alongside the EIA following the standard stages through Screening, Appropriate Assessment and where necessary Derogation. Appropriate and proportionate mitigation and compensation measures are being developed to account for losses of sensitive habitat and will be provided in greater detail at PEIR and ES stage. A broad range of species and habitat specific surveys have been completed and are ongoing as described in Tables 7-5 and Table 7-20. This baseline will form the basis of the ES chapter.

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		Potential direct and indirect impacts from woodland creation. NE continues stating that assessments in the Environmental Statement should be informed by a suitable level of surveys, including: National Vegetation Classification (NVC) surveys, Peat depth surveys and Hydrological surveys. NE considers any credible risk of a measurable loss of terrestrial habitat within a European site as a 'likely significant effect' and the full significance of its impact on site integrity should be screened-in	

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		and further tested by an Appropriate Assessment. NE state that the ES should assess: impacts of the proposal on any ancient woodland, ancient and veteran trees, and the scope to avoid and mitigate for adverse impacts impact of all phases of the proposal on protected species (including, for example, great crested newts, reptiles, birds, water voles, badgers and bats) any important habitats present. NE add that ornithological, botanical, and invertebrate surveys	

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		should be carried out at appropriate times in the year, to establish whether any scarce or priority species are present.	
24/10/2023	RSPB	The RSPB was informed of the scoping opinion and provided a response to its contents on the 24/10/2023. Their response called the proposal highly inappropriate stating that the development will likely lead to habitat degradation and adversely impact biodiversity. They continued to say that these effects will be so significant that the project will need to address the Habitats	A HRA will be completed alongside the EIA following the standard stages through Screening, Appropriate Assessment and where necessary Derogation. Appropriate and proportionate mitigation and compensation measures are being developed to account for losses of sensitive habitat and will be provided in greater detail at PEIR and ES stage.

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		Regulations derogations.	
	Upper Calderdale Wildlife Network (UCWN)	UCWN state there will be a requirement to provide habitat mitigation and compensation for the loss of irreplaceable blanket bog habitat. UCWN go on to say that the EIA must fully consider the extensive damage to fragile moorland vegetation caused by the proposed development. They believe the infrastructure required for the scheme is vastly underestimated and will cause permanent damage which will be very	The presence of very high and high distinctiveness habitats has been identified by the project team. Appropriate and proportionate mitigation and compensation measures are being developed to account for losses of sensitive habitat and will be provided in greater detail at PEIR and ES stage. This will include consideration of restoration options and the plant species/structures present on site. Assessments will include EIA, HRA and BNG calculations. Reptiles and amphibians have been scoped into the assessment with surveys completed during 2024. Approaches to mitigation and compensation will also consider opportunities for habitat creation/enhancement for species present. Positions of static detectors for bat activity monitoring is limited by the nature of the site and the sensitivity of habitats and ground nesting birds present. An updated deployment has been proposed for 2025, sampling additional areas where access is possible. This follows good practice guidance provided by NatureScot. Requirements for building surveys will be considered based on the design of the turbine layout and the distance to known buildings. This will follow good practice guidance provided by NatureScot.

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		difficult to mitigate against. UCWN consider that reptiles and amphibians should be scoped into the study as they are declining species and their distribution and movement across the site needs to be understood. They feel this information should then be used to locate access tracks where they will cause the least impact when migrations to and from breeding grounds take place. UCWN also state that a small population of white clawed crayfish once considered extinct in Calderdale,	Potential for crayfish will be considered where watercourse crossings are required. The design has tried to avoid unnecessary crosses where practicable.

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		has been discovered in within 7km of the site. They also suggest that white clawed crayfish may be present in watercourses in and around Walshaw Moor and that surveys should be carried out to determine whether there are further populations. If additional populations are recorded, they suggest this provides an opportunity for habitat measures to be put in place for confirmed populations. They specify that surveys should be carried out to prevent cross contamination between water courses. As a result of the confirmed presence,	

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		UCWN state the impact of construction works on existing water courses downstream needs ensure run off from constructions sites and pollution is avoided. UCWN state that Cloud berry could be an important component of peat moors and mixed heath habit occurring very scarcely in the region. Regarding bat detection within the survey area UCWN comment that the location of bat detectors focused on the central part of the proposed development, leaving un-surveyed areas.	

Date	Consultee	Summary of comments	How these will be addressed in the assessment
		Future surveys should ensure that all water courses are considered as well as cellars associated with now demolished old buildings within the site boundary.	
31/10/2023	Yorkshire Wildlife Trust	Yorkshire Wildlife Trust responded to the initial scoping on the 31/10/2023. They detailed their concerns objecting to the principle of the development, based on the impact it will have on the blanket bog priority habitat, and on the integrity and structure of peatland soils and carbon stores.	The concern related to the sensitive habitats on Site have been noted. The nature and extent of habitats on site, in particular blanket bog will be subject to extensive survey effort and assessment through both EIA and HRA approaches. Appropriate and proportionate mitigation and compensation measures are being developed to account for losses of sensitive habitat and will be provided in greater detail at PEIR and ES stage. Consideration of peatland soils and carbon stores are provided in Chapter 08 and 09 respectively.

8 Hydrology, Hydrogeology, Geology and Peat

8.1 Introduction

8.1.1 This Chapter of the Scoping Report presents the scope of detailed environmental assessment for Hydrology, Hydrogeology, Geology and Peat, considering the Turbine Area, Cable Corridor Search Areas and Site Access Search Areas. There are currently up to four cable options being considered within the Cable Corridor Search Areas.

8.1.2 This Chapter of the Scoping Report presents the policy and legislative context, the approach to collecting baseline data relevant to this scoping chapter, and an overview of the relevant baseline conditions within the Turbine Area, Cable Corridor Seach Areas and Site Access Search Areas. It concludes by setting out the scope of assessment including, with justification, those effects that are proposed to be scoped in or out for detailed environmental assessment and outlines the method that will be used to undertake the detailed environmental assessment.

8.2 Review of Policy, Legislation and Relevant Guidance

8.2.1 Legislation, planning policy and guidance relating to Hydrology, Hydrogeology, Geology and Peat, and relevant to the Turbine Area, Cable Corridor Search Areas and Site Access Search Areas are set out below.

Legislation

- The European Water Framework Directive (WFD) (2000/60/EC)[98];
- The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017[99];
- Flood Directive (2007)[100];
- Environmental Protection Act (1990)[101];
- Water Resources Act (1991) (as amended 2009)[102];
- Land Drainage Act (1991)[103];

[98] European Commission, Water Framework Directive. 2000. Available at: https://environment.ec.europa.eu/topics/water/water-framework-directive_en
[99] UK Statutory Instruments, 2017. Available at: https://www.legislation.gov.uk/uksi/2017/407/contents
[100] European Parliament Flood Directive, 2007. Available at: https://www.legislation.gov.uk/eudr/2007/60
[101] UK Public General Act, 1990. Available at: https://www.legislation.gov.uk/ukpga/1990/43/contents
[102] UK Statutory Instruments, 2009. Available at: https://www.legislation.gov.uk/uksi/2009/3104/contents
[103] UK Public General Acts, 1991. Available at: https://www.legislation.gov.uk/ukpga/1991/59/contents

- Environment Act (1995)[104];
- Water Act (2014)[105];
- The Groundwater (England and Wales) Regulations (2009)[106];
- The Pollution Prevention and Control (England and Wales) Regulations 2000[107] (note: 2000 version has been revoked, reference has been made to the Pollution Prevention and Control Act 1999);
- The Private Water Supplies (England) (Amendment) Regulations 2018[108];
- The Water Supply (Water Quality) Regulations 2018[109];
- The Waste (England and Wales) (Amendment) Regulations 2012[110];
- Part II of the Environment Protection Act 1990[111];
- The Town and Country Planning Environmental Impact Assessment (EIA) Regulations 2017[112]; and
- The Environmental Permitting (England and Wales) Regulations 2016[113].

National Planning Policy

- Overarching National Policy Statement for Energy (EN-1) (2023) – specific reference to Part 5, Section 5.8, which relates to Flood Risk, and Section 5.16, which relates to Water Quality and Resources;
- Draft Overarching National Policy Statement for Energy (EN-1) (2025)[114];
- Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (2025) – specifically paragraphs 2.3.1 to 2.3.4 and paragraphs 2.10.15 to 2.10.75. Furthermore, section 2.12 relating to Onshore Wind[115];

[104] UK Public General Acts, 1995. Available at: https://www.legislation.gov.uk/ukpga/1995/25/contents
[105] UK Public General Acts, 2014. Available at: https://www.legislation.gov.uk/ukpga/2014/21/contents
[106] UK Statutory Instruments, 2009. Available at: https://www.legislation.gov.uk/uksi/2009/2902/contents/made
[107] UK Public General Acts, 1999. Available at: https://www.legislation.gov.uk/ukpga/1999/24/contents
[108] UK Statutory Instruments, 2009. Available at: https://www.legislation.gov.uk/uksi/2018/707/contents/made
[109] Wales Statutory Instruments, 2018. Available at: https://www.legislation.gov.uk/wsi/2018/647/contents
[110] UK Statutory Instruments, 2009. Available at: https://www.legislation.gov.uk/uksi/2012/1889
[111] UK Public General Act, 1990. Available at: https://www.legislation.gov.uk/ukpga/1990/43/part/II
[112] UK Statutory Instruments, 2017. Available at: https://www.legislation.gov.uk/uksi/2017/571/contents
[113] UK Statutory Instruments, 2016. Available at: https://www.legislation.gov.uk/uksi/2016/1154/contents
[114] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[115] Department for Energy Security and Net Zero, 2025. Available at: https://assets.publishing.service.gov.uk/media/6809f0588c1316be7978e7cb/draft-nps-en-3.pdf

- National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023)[116];
- Draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (2025)[117]; and
- National Planning Policy Framework (NPPF) (updated February 2025) – specific reference to Section 14[118].

Local Planning Policy

- Calderdale Metropolitan Borough Council Local Plan 2018/19 – 2032/33 (adopted March 2023) – specific reference to Policies CC1, CC2, CC3 and CC4[119];
- Pendle Borough Council Core Strategy (adopted December 2015)[120];
- Rochdale Core Strategy (adopted October 2016) [121];
- Local Plan for the Bradford District – Core Strategy Development Plan Document (adopted 2017)[122];
- Leeds City Council - Core Strategy (as amended by the Core Strategy Selective Review 2019) (adopted 2019)[123];
- Rossendale Local Plan 2019 - 2036[124]; and
- Burnley's Local Plan 2018 [125].

[116] Department for Energy Security & Net Zero (2023) National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147382/NPS_EN-3.pdf
[117] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[118] Ministry of Housing, Communities and Local Government, 2025. Available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2
[119] Calderdale Metropolitan Borough Council, 2023. Available at: https://new.calderdale.gov.uk/sites/default/files/2023-12/Local-Plan-Written-Statement.pdf
[120] Pendle Borough Council, 2015. Available at: https://www.pendle.gov.uk/info/20072/planning_policies/275/development_plan_documents/2
[121] Rochdale Borough Council, 2016. Available at: https://www.rochdale.gov.uk/downloads/download/266/core-strategy
[122] City of Bradford Metropolitan District Council, 2017. Available at: https://www.bradford.gov.uk/planning-and-building-control/planning-policy/core-strategy-dpd/
[123] Leeds City Council, 2019. Available at: https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/core-strategy-introduction
[124] Rossendale Borough Council Available at: https://www.rossendale.gov.uk/local-plan/adopted-local-plan
[125] Burnley Borough Council Available at: https://burnley.gov.uk/wp-content/uploads/2022/04/Burnleys-Local-Plan-Adopted-Version-Final-With-erratum-28-Sep-2018.pdf

National Guidance

8.2.2 In the absence of relevant English guidelines in relation to wind farm developments, this guidance list includes Scottish guidelines that will be adopted as they are considered to be the most established and tested guidance to date.

- Control of Water Pollution from Construction Sites: Guidance for Consultants and Contractors C532[126];
- Environmental Good Practice on Site CIRIA 5th Edition[127];
- Control of Water Pollution from Linear Construction Projects: Technical Guidance C648[128];
- Good Practice During Windfarm Construction (Scottish Renewables, SNH, SEPA & Forestry Commission Scotland, July 2024)[129];
- Guidance on Road Construction and Maintenance (Forests and Water Guidelines 5th Edition, 2011, Forestry Commission[130];
- Guidance on Developments on Peatland: Peatland Survey (Scottish Government, Scottish Natural Heritage & SEPA, 2017)[131];
- Guidance on the assessment of peat volumes, reuse of excavated peat and the minimisation of waste (Scottish Renewables & SEPA, 2012)[132];
- Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (Scottish Government, 2017)[133];
- National Highways Design Manual for Roads and Bridges (DMRB)[134]; and
- Planning Practice Guidance (PPG) (2024) Flood Risk and Coastal Change (updated 2022)[135].

[126] CIRIA, 2001. Available at: https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C532
[127] CIRIA, 2023. Available at: https://www.ciria.org/ItemDetail?iProductCode=C811d&Category=DOWNLOAD
[128] CIRIA, 2006. Available at: https://www.ciria.org/CIRIA/CIRIA/Item_Detail.aspx?iProductCode=C648&Category=BOOK
[129] Scotland's Nature Agency, 2024. Available at: https://www.nature.scot/doc/good-practice-during-wind-farm-construction
[130] UK Forestry Standard Guidelines, 2011. Available at: https://cdn.forestresearch.gov.uk/2006/03/ukfs_water_fcgl007.pdf
[131] Scottish Government, Scottish Natural Heritage, SEPA, 2017. Available at: https://www.gov.scot/publications/peatland-survey-guidance/
[132] Scottish Renewables, SEPA, 2012. Available at: https://www.gov.scot/publications/assessment-of-peat-volumes-reuse-of-excavated-peat-and-minimisation-of-waste-guidance/
[133] Scottish Government, 2017. Available at: https://www.gov.scot/publications/peat-landslide-hazard-risk-assessments-best-practice-guide-proposed-electricity/
[134] National Highways, 2020. Available at: https://nationalhighways.co.uk/suppliers/design-standards-and-specifications/design-manual-for-roads-and-bridges-dmrb/
[135] Ministry of Housing, Communities and Local Government, 2022. Available at: https://www.gov.uk/guidance/flood-risk-and-coastal-change

Local Guidance

- Calder Catchment Strategic Flood Risk Assessment (SFRA) Level 1 – Volumes I and II (2016)[136];
- West Yorkshire Combined Authority Sustainable Drainage Systems Guidance[137];
- Calderdale Metropolitan Borough Council Adopted Flood Risk and Drainage Supplementary Planning Document (2024)[138];
- Calderdale Metropolitan Borough Council Local Flood Risk Management Strategy (LFRMS) (2016)[139]; and
- Calderdale Metropolitan Borough Council Ordinary Watercourse and Land Drainage Consent (2025)[140].

8.2.3 Several guidance documents referenced above have been published for use in Scotland. These are proposed to be used where there is no comparable guidance in England and it represents the most up to date guidance relevant to the Hydrology, Hydrogeology, Geology and Peat assessment.

8.3 Existing Baseline Conditions

8.3.1 This section of the Scoping Chapter for Hydrology, Hydrogeology, Geology and Peat sets out the known baseline conditions at this (scoping) stage of the Proposed Development. It is noted that further surveys and assessment are proposed to inform the technical assessment for the Environmental Statement (see details and scope of the further baseline data in Section 8.6).

Study Area

8.3.2 The proposed Study Areas will include the Turbine Area, Cable Corridor Search Areas and Site Access Search Areas, with appropriate buffers applied where relevant. Options for the Cable Corridor and Site Access are yet to have been determined, and so for the purposes of this Scoping Report, Search Areas have been provided. Please refer to Figure 4-2 within **Chapter 4**, for identified locations.

[136] Calderdale Metropolitan Borough Council, 2016. Available at: https://new.calderdale.gov.uk/sites/default/files/2023-06/calder-catchment-sfra-volume-1.pdf and https://new.calderdale.gov.uk/sites/default/files/2023-06/calder-catchment-sfra-volume-2.pdf
[137] West Yorkshire Combined Authority. Available at: https://www.calderdale.gov.uk/docs/planning/wyca-suds-guidance.pdf
[138] Calderdale Metropolitan Borough Council, 2024. Available at: https://calderdale-consult.objective.co.uk/kse/event/38086
[139] Calderdale Metropolitan Borough Council, 2016. Available at: https://new.calderdale.gov.uk/environment/flooding/local-flood-risk-management-strategy
[140] Calderdale Metropolitan Borough Council, 2025. Available at: https://new.calderdale.gov.uk/environment/flooding/ordinary-watercourses-and-land-drainage-consent

8.3.3 The proposed Study Areas will be finalised once the Cable Corridor and Site Access are decided, and will include the buffers outlined in Figure 4-2.

8.3.4 Further information on what effects are to be assessed within the different Study Areas is provided in Table 8-1.

Table 8-1: Study Areas

Study Area	Buffer provided from Turbine, Cable Corridor and Site Access Areas	Description
Flood Risk	1km	In the absence of any specific guidance relating to wind farm developments and in accordance with Design Manual for Roads and Bridges (DMRB) LA 113, a 1km buffer has been considered appropriate as a sufficient distance to encompass catchments associated with the Turbine Area, Cable Corridor and Site Access Search Areas to enable the deposition of silts in overland flows and the dilution of any concentrated pollutants. Therefore, any impacts to waterbodies beyond 1km from the Site are considered to be negligible.
Hydrology, Hydrogeology, Geology and Peat	2km to 5km	The study area assessed will comprise a buffer zone of 2km around the Turbine, Cable Corridor and Site Access areas. It is assumed that hydrological effects are likely to have attenuated at distances from the Site infrastructure in excess of 2km, although if a direct pathway exists, e.g. a watercourse, these are also considered beyond 2km and up to 5km downstream.

Approach to the Collection of Baseline Data for Scoping

8.3.5 Baseline data was collected using the following sources of data:

- Ordnance Survey (OS) and British Geological Survey (BGS) Mapping;
- Environment Agency (EA) Flood Map for Planning, Surface Water Flood Risk Mapping and Reservoir Flood Risk Mapping;

- BGS Aquifer Designations, EA Groundwater Vulnerability Mapping, and Source Protection Zone Mapping;
- Calder Catchment SFRA Level 1 – Volumes 1 and 2 (2016);
- EA LiDAR 1m Topographic Dataset;
- Ordinary watercourse and main river mapping;
- Centre for Ecology and Hydrology (CEH): National River Flow Archive (NRFA);
- EA: Catchment Data Explorer;
- EA: Drinking Water Safeguard Zones and Source Protection Zones;
- Meteorological Office website for rainfall data;
- EA: Water Framework Directive River Basin Management Plans and Catchment Data Explorer;
- Joint Nature Conservation Committee (JNCC): Designated Sites View and Geological Conservation Review (GCR) site archives;
- National Biodiversity Network (NBN) Atlas (formerly NBN Gateway;
- Natural England: England Peat Map Project Final Report, May 2025. Natural England Research Report 149;
- Multi-Agency Geographic Information for the Countryside (MAGIC) website;
- Mining Remediation Authority Map Viewer; and
- Walshaw Moor Estate Catchment Restoration 2017-2042 Plan.

Relevant Baseline Conditions

Topography - Turbine Area

8.3.6 The Turbine Area lies within the Walshaw Moor Estate and is located approximately 3.5km to the north of Hebden Bridge in West Yorkshire. Land use consists of undulating upland moorland and farmland, predominantly common land and grazing. Upland areas reach heights of 463m Above Ordnance Datum (AOD) at Heather Hill summit in the northwest of the Turbine Area and 452m AOD at Withins Heights in the north of the Turbine Area. Several moors are named within the Turbine Area including Widdop Moor which covers the western portion of the Turbine Area and Wadsmorth Moor covering the eastern portion of the Turbine Area. Heather Hill and Withins Heights slope down to Walshaw Dean Reservoirs

which run north south across the centre of the Turbine Area at approximately 300m AOD.

8.3.7 The moor is a grouse shooting site and a habitat for several species of ground-nesting birds such as curlew, golden plover, lapwing and snipe. There are several grouse butt structures across the Turbine Area and associated drainage.

8.3.8 Walshaw Moor is open to free public access and is a well-used recreation area. There are established long distance trails throughout the area such as the Pennine Way which crosses through the centre of the moor.

8.3.9 The Turbine Area is part of the Walshaw Moor Estate Catchment Restoration 2017-2042 Plan[141] documents state that over the past 35 years the Walshaw Moor Estate has suffered wildfires, some within the Turbine Area. Further infrastructure such as stone lined access track is planned as part of measures to reduce the risk of wildfires. These are outlined in the Restoration Plan.

Topography - Cable Corridor Search Areas

8.3.10 The Cable Corridor Seach Areas cover large areas and naturally vary in topography. They are described at 8.3.2.

Topography - Site Access Search Areas

8.3.11 The Site Access Search Areas cover large areas and naturally vary in topography. They are described at 8.3.2.

Geology, Hydrogeology and Peat - Turbine Area

8.3.12 Online 1:50K British Geological Survey (BGS) mapping indicates the Turbine Area to the west of the Walshaw Dean reservoirs is predominantly underlain by the Upper Kinderscout Grit consisting of Sandstone, and the Millstone Grit Group comprising Mudstone, Siltstone and Sandstone. In the area to the east of the reservoirs, these deposits are overlain by the Woodhouse Flags consisting of Sandstone and the Marsden Formation comprising Mudstone and Siltstone.

8.3.13 Historical maps indicate that areas in the vicinity of the Turbine Area were previously quarried for sandstone.

8.3.14 The majority of the Turbine Area is underlain by superficial peat deposits and elsewhere superficial deposits are absent.

[141] Walshaw Moor Estate Catchment Restoration 2017-2042 Plan (MRP002)

8.3.15 Some borehole records are available; most apparently relate to site investigation holes drilled to investigate foundation conditions for the reservoirs and dam walls. One historical borehole record (SD93SW22) indicates depth to rock of 4.5m.

8.3.16 The BGS Aquifer designation dataset for England and Wales provided on the MAGIC website (https://magic.defra.gov.uk/MagicMap.html) indicates the bedrock is classified as a Secondary A aquifer and the superficial deposits are classified as unproductive. A Secondary A type of aquifer is defined as an aquifer *supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.*

8.3.17 Environment Agency (EA) groundwater vulnerability maps on MAGIC indicate aquifer vulnerability below the area is low to medium.

8.3.18 The Millstone Grit formation of the Central Pennines is an important local aquifer, providing water for potable and industrial use and is classed by BGS as a moderately productive aquifer. Flow is predominantly via fractures and discontinuities, and the sandstone horizons act as separate aquifers while the shale and mudstone layers are generally aquicludes or aquitards. Intergranular permeability in both the sandstones and shales/mudstones is low. Borehole yields are highly variable and are dependent on the degree of fracturing encountered but are typically less than 10 L/s. The degree of fracturing is reported to decrease with depth such that significant groundwater flow and well production generally occurs in the upper 60 metres, though targets associated with major structures at greater depth might be productive.

8.3.19 Hydrochemical characteristics are highly variable due to the complex geology and layered nature of the aquifer(s), rock chemistry and other controls on hydrochemistry. No chemistry records have been located for groundwater in the vicinity of the Turbine Area.

8.3.20 The Millstone Grit aquifers are known to host springs which are noted on old historical maps as emerging on slopes that drain to the Alcomden Water and Walshaw Dean Water.

8.3.21 There is one recorded historical water well close to the Turbine Area boundary, at Widdop Lodge (Geoindex reference SD93SW22), installed in 1991 for domestic use. A number of other historic water wells are indicated within 5km of the boundary and it is not known if these are still in use. The available borehole logs indicate stratification of shale. Consultation with the local authority and the EA will be carried out to identify any licenced and unlicenced active Private Water Supplies (PWSs).

8.3.22 The England Peat Map online mapping indicates the area to be underlain predominantly by peat (no minimum depth definition but >50% organic matter) or shallower peaty soil (organic matter >20%). This corresponds with BGS 1:50K scale superficial geology data, which shows peat as the primary superficial deposit other than on steeper valley sides and in valley floors. Both sets of online mapping data are superseded by site-specific Phase 1 probing data undertaken on a 100m grid over the majority of the Turbine Area.

8.3.23 A peat model interpolated from the Phase 1 data confirms the presence of peat (>0.3m by the Soil Survey of England & Wales definition) over much of the Turbine Area, with much of the Turbine Area deeper than 1.0m and several areas > 3.0m in depth. Peat condition is highly variable across the Turbine Area, being a function of both natural geomorphological processes and management pressures.

8.3.24 In the west of the Turbine Area, extensive natural gully networks have eroded peat and focus drainage into the valley floors. In the centre, north and east of the Turbine Area, extensive artificial drainage networks (moor drains or 'grips') have the same effect. Both sets of features have been subject to a degree of restoration to slow water flows under the Walshaw Moor Estate Catchment Restoration Plan ('WMECRP', 2017-2042).

8.3.25 In the east of the Turbine Area, there is evidence of past peat cutting (possibly for fuel or horticultural end use), grazing, and burning to support habitat for game birds.

8.3.26 To the north and outside of the Turbine Area, there are two recorded peat landslides, one of which is known as the Crow Hill bog burst (Ross, 2020), described by the Rev. Patrick Brontë. LiDAR data indicates no equivalent features within the proposed turbine area.

8.3.27 Peatland habitats are considered in **Chapter 7: Biodiversity**.

Geology, Hydrogeology and Peat - Cable Corridor Search Areas and Site Access Search Areas

8.3.28 Online 1:50K British Geological Mapping indicates the Cable Corridor and Site Access search areas are underlain by Milstone Grit and interbedded Lower Coal Measure sequences of mudstone, siltstone and sandstone, and Rossendale Formation sandstones.

8.3.29 A large proportion of the Cable Corridor Search Areas and eastern Site Access Search Areas have no superficial deposits and where present, lie within peat deposits. The western Site Access Search Area is underlain by superficial deposits of Glacial Till where present.

8.3.30 Isolated areas of artificial Infilled ground are indicated on the 1:50K British Geological Survey (BGS) mapping, within the Cable Corridor Search Areas and Site Access Search Areas. All areas of infill along the corridors could potential be sources of contamination and require further assessment through consultation with the EA and local authorities.

8.3.31 The BGS Aquifer designation dataset for England and Wales is provided on the MAGIC website and indicates that the superficial deposits beneath the search areas are predominantly classified as unproductive Secondary (undifferentiated) aquifers. The bedrock within the search areas are classified as a Secondary A aquifer. This type of aquifer is defined as an aquifer *supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.*

8.3.32 There are historical water wells indicated within the Cable Route and Site Access Search areas. Information on PWS will be sought from the local authority and EA during consultation.

8.3.33 Some of these water wells are associated with Source Protection Zones (SPZs). These are defined by the Environment Agency as (SPZs) around large and public potable groundwater abstraction sites. Information on active groundwater abstractions will be sought from the local authority and EA during consultation.

8.3.34 The search areas for the Cable Routes and Site Access are partly within Coal Mining Reporting Areas indicated on the Mining Remediation Authority Map Viewer.

8.3.35 The England Peat Map online mapping indicates the Rochdale Cable Corridor Search Area crosses peat over Heptonstall Moor, Blackshaw Head and is present over much of the route corridor between Backup and Rochdale (Option 2) and Warland and Rochdale (Option 1). Much of the peatland for these route options appears to have been heavily managed by grazing, quarrying and burning. The western area of the Bradford West Corridor (Option 2) lies partially within peat while Option 1 is indicated to lie in deeper peat to the south. Peatland has similar features to the turbine area, with artificial drainage, gullying and managed moorland.

Surface hydrology and site drainage – Turbine Area

8.3.36 Online EA information (Humber River Basin District | Catchment Data Explorer) indicates the Turbine Area lies within the EA Aire and Calder management catchment of the Humber River Basin District and within the Calder Upper Operational Catchment.

- With the exception of a small portion of the far west of the Turbine Area, the entire area is located within the Hebden Water catchment, which drains to the

River Calder at Hebden Bridge, and contains a number of sub-catchments and public water supply reservoirs:

- A very minor area in the far west of the Turbine Area drains west to Thursden Brook and on to the River Brun through Burnley.
- The rest of the west of the Turbine Area drains to the south via a dense network of tributaries to Graining Water which joins with Alcomden Water south of the Turbine Area boundary to form Hebden Water which feeds into the Calder River.
- The central area of the Turbine Area has fewer surface watercourses and contains the three Walshaw reservoirs which are all linked and discharge to the Alcomden Water.
- The eastern end of the Turbine Area lies within the catchment of the Crimsworth Dean Beck which flows southwards towards Hebden to join Hebden Water 1km upstream of Hebden Bridge.

8.3.37 The EA designated surface water bodies within the Turbine Area are; Graining Water (GB104027062840), the Alcomden Water (GB104027062850), Crimson Dean Beck (GB104027062820) and Hebden Water (GB104027062731).

8.3.38 A series of three reservoirs (Walshaw Dean Reservoirs) were completed in 1913 to provide water to the town of Halifax and are Yorkshire Water assets. These features are not included within the Turbine Area, but are surrounded by it on all sides. The reservoirs are designated as water bodies by the EA: Walshaw Dean Lower (GB30430594), Middle (GB30430575), and Upper reservoir (GB30430563). Widdop reservoir, another water supply reservoir, lies just south of the Turbine Area.

8.3.39 The Turbine Area is drained by hundreds of kilometres of gullies formed by erosion and artificial drains cut to improve (dry) the land. A subset of these surface drainage features has been restored under the Walshaw Moor Estate Catchment Restoration Plan.

8.3.40 All currently identified watercourses are shown in Figure 8-1 which has been based on the Ordnance Survey's OpenMap Local dataset and WFD Waterbodies.

Surface hydrology and site drainage – Cable Corridor Search Areas and Site Access Search Areas

8.3.41 The current cable route and access options within the Cable Corridor and Site Access Search Areas cross several watercourses across their length.

Flood Risk – Turbine Area

Fluvial Flood Risk

8.3.42 The EA's Flood map for Planning (Figure 8-2) shows that the majority of the Turbine Area is located within Flood Zone 1 indicating a low probability of flooding from fluvial and tidal sources. The few areas of Flood Zone 2 and 3 (medium and high risk respectively) located within the Turbine Area are associated with the locations of reservoirs in the centre of the Turbine Area and some of the ordinary watercourses.

8.3.43 There are no flood defences, as identified by EA mapping, located within the Turbine Area.

8.3.44 There are a number of ordinary watercourses present within the Turbine Area and therefore the risk of flooding from fluvial sources may be obscured due to the lack of detailed fluvial modelling undertaken in the area. Given the size of the watercourses and the nature of the location (upland areas where the source of many watercourses are located), flood risk associated with the unmodelled ordinary watercourses will be assessed as a pluvial source, using the EA's Risk of Flooding from Surface Water dataset.

8.3.45 Overall, it is anticipated that the risk of flooding within the Turbine Area from fluvial and tidal sources is considered to be low due to its location and altitude.

Pluvial Flood Risk

8.3.46 The EA's surface water mapping (Figure 8-3) indicates that the majority of the Turbine Area is located within an area at a very low risk of flooding from pluvial sources. However as anticipated, due to the substantial changes in topography across the area, there are a significant number of surface water flow routes present. These areas range from low to high risk.

8.3.47 The majority of the surface water flow routes follow identified watercourses. Given the nature of the Turbine Area and its terrain, it is anticipated that those routes not associated with identified watercourses follow the routes of ditches/rivulets, small watercourses or valleys/local topography. As previously mentioned, the EA's surface water mapping has been used as a proxy for the potential fluvial risk associated with the unmodelled ordinary watercourses that flow through the Turbine Area.

8.3.48 Surface water flood depths across the Turbine Area are generally expected to be below 200mm during the low risk scenario (1 in 1,000 year return period), with some areas expected to reach up to 300mm. As mentioned, surface water flooding across the Turbine Area is shown to be associated with flow routes rather than isolated

areas of ponding. Therefore, it is anticipated that localised areas of surface water flooding are unlikely.

8.3.49 Overall, the general risk of flooding from pluvial sources is considered to be low.

Reservoir Flood Risk

8.3.50 The EA's risk of flooding from reservoirs map shows that the majority of the Turbine Area is located outside the reservoir flood risk extent. The areas located within the reservoir flood risk extent are associated with the existing reservoirs and areas immediately surrounding and downstream of them as shown in Figure 8-4. Reservoirs are generally maintained to a high standard of safety and are inspected regularly. As such, the chance of failure is considered to be extremely low.

Groundwater Flood Risk

8.3.51 Mapping within the SFRA Volume 2 shows that the majority of the Turbine Area is likely between a 0-25% susceptibility to groundwater flooding. There is a single area in the west where a 25-50% susceptibility to groundwater flooding is identified but due to the level of detail in the mapping, it is difficult to determine whether this is located within the Turbine Area.

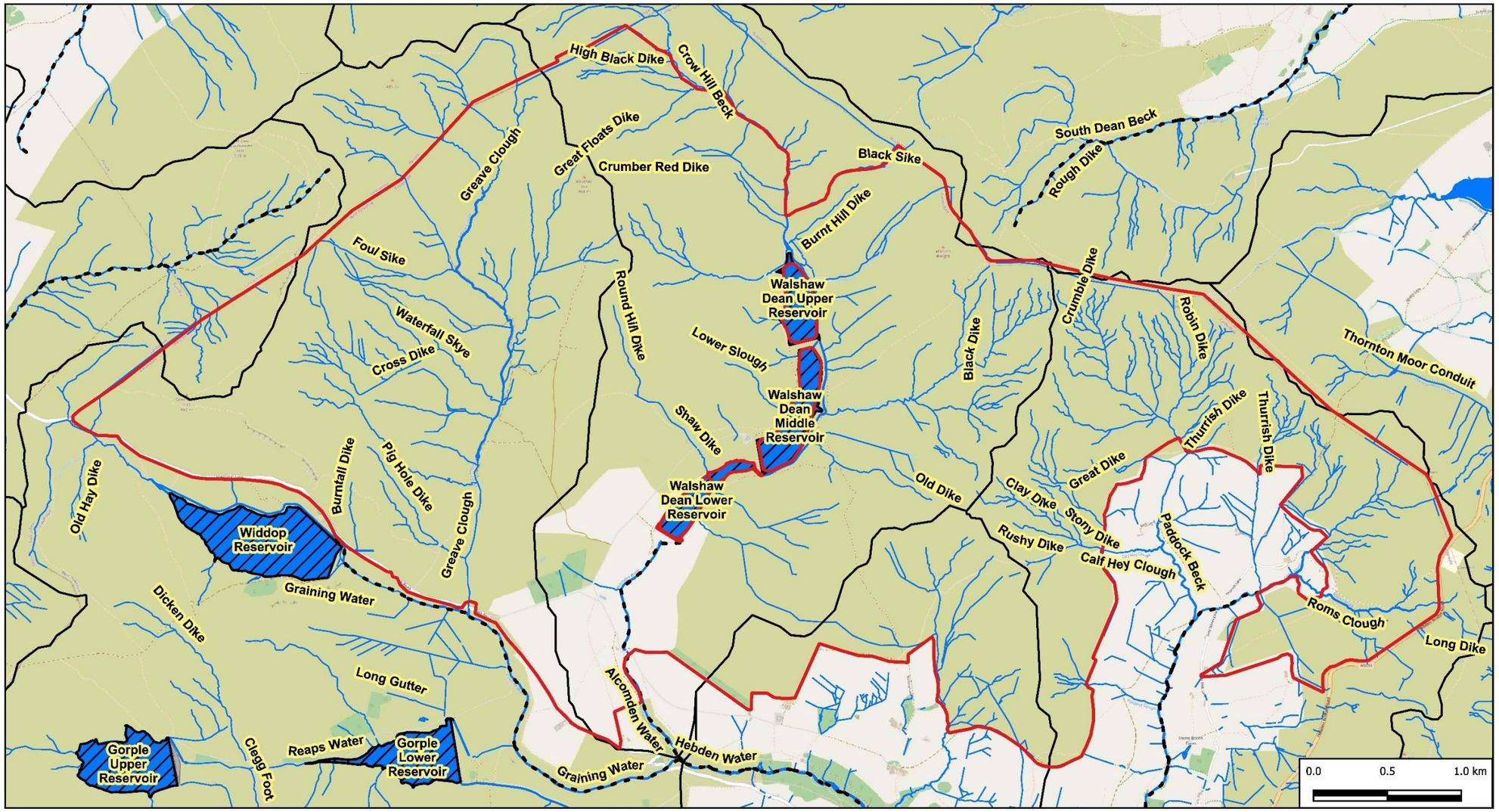
Sewer Flood Risk

8.3.52 The vast majority of the Turbine Area is entirely greenfield in nature and therefore there is not anticipated to be any formal below ground surface water drainage network in place to drain the Turbine Area. Therefore, the risk of flooding from sewers is considered to be low.

Water Supply Infrastructure

8.3.53 Walshaw Dean Upper, Middle and Lower Reservoirs are located in the centre of the Turbine Area, and Widdop, Gorple Upper and Gorple Lower Reservoirs are located to the southwest, beyond the boundary. The reservoirs are owned and operated by Yorkshire Water, who will be consulted to understand the extents and locations of their water supply infrastructure.

Figure 8-1: Watercourses and surface water features



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

Revision History

Rev	Date	By	Detail
01	25.06.2025	LOG	For information

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Legend

- Turbine Area
- Ordinary Watercourses

WFD Operational Surface Water Catchments

- WFD River Water Bodies Cycle 3
- WFD Lake Water Bodies Cycle 3
- WFD River Water Body Catchments Cycle 3

Project/Location

Calderdale Windfarm

Drawing title

Watercourses and Surface Water Features

Drawing status

FOR INFORMATION

Date	Drawn	Checked
25.06.25	ST	SM

Client

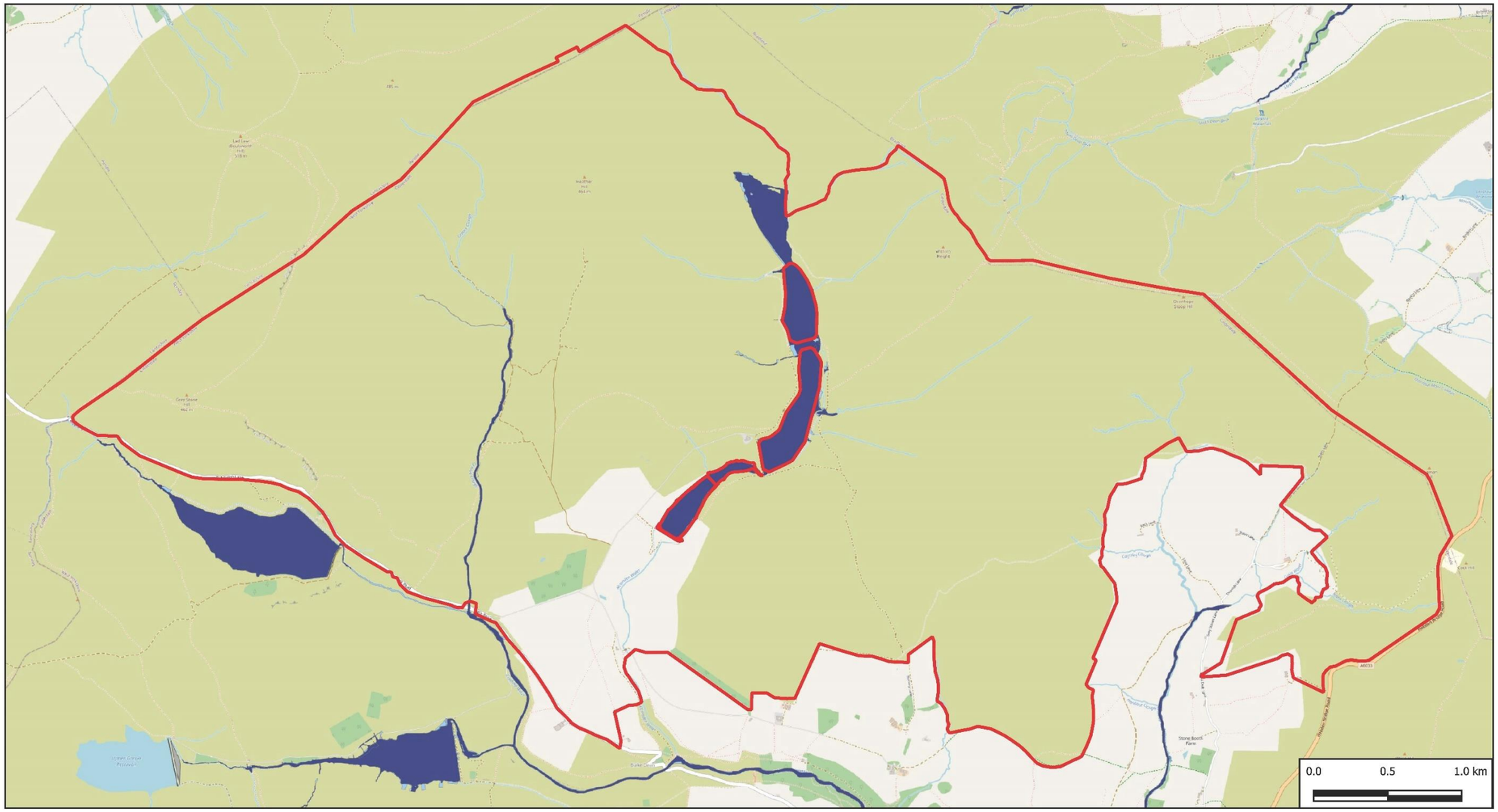
Calderdale energy park

Consultant

Logika GROUP

Drawing number	Revision
Figure 8-1	01

Figure 8-2: Flood Map for Planning – Flood zones



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

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Revision History

Rev	Date	By	Detail
01	25.06.2025	LOG	For information

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Legend

- Turbine Area
- Flood Zone 1
- Flood Zone 2
- Flood Zone 3

Project/Location

Calderdale Windfarm

Drawing title

Flood Map for Planning - Flood Zones

Drawing status

FOR INFORMATION

Date	Drawn	Checked
25.06.25	ST	SM

Client

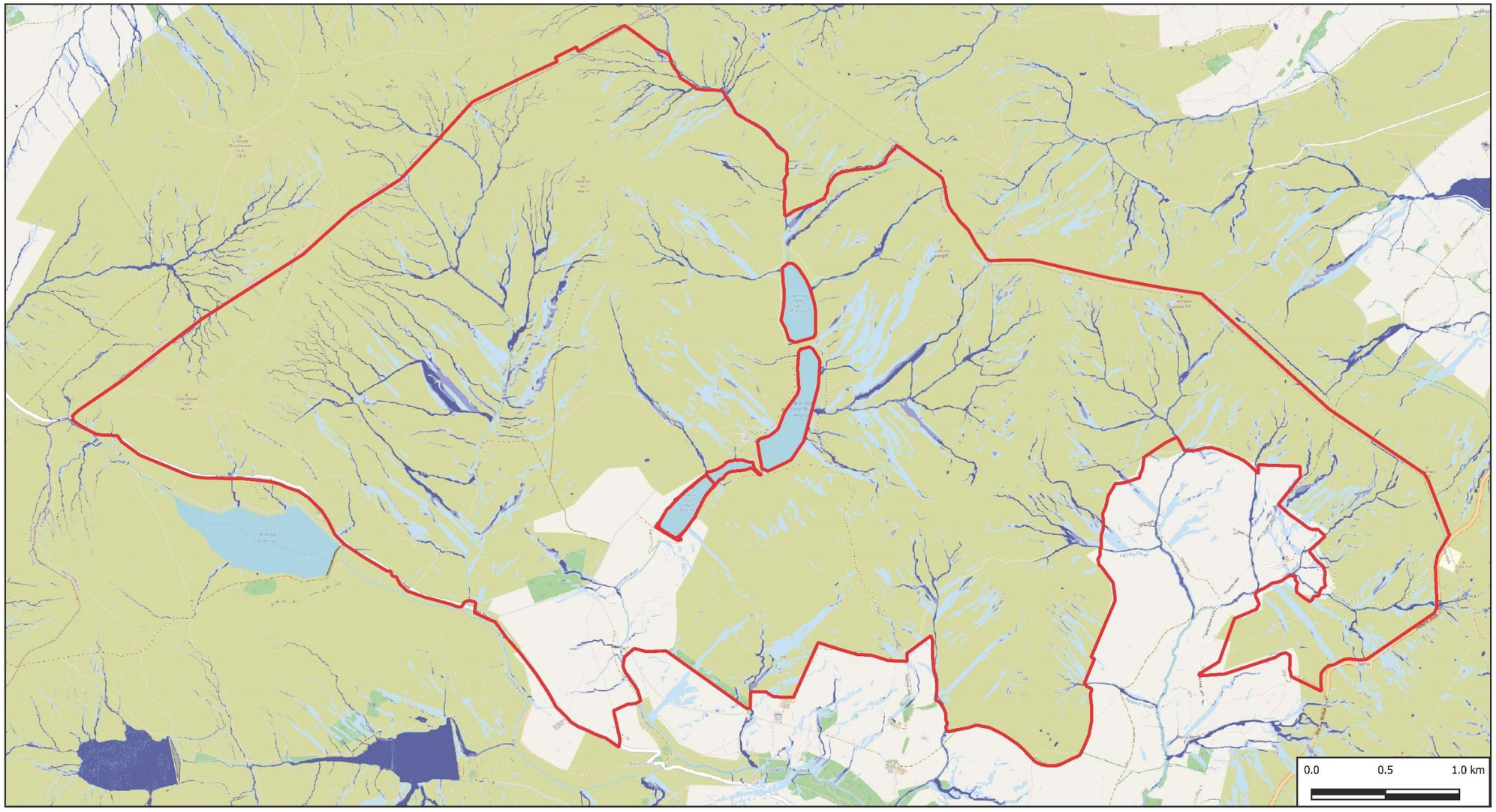
Calderdale energy park

Consultant

Logika GROUP

Drawing number	Revision
Figure 8-2	01

Figure 8-3: Risk of Flooding from Surface Water (RoFSW) – Present Day



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

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Revision History

Rev	Date	By	Detail
01	25.06.2025	LOG	For information

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Legend

- Turbine Area
- Ordinary Watercourse
- RoFSW Low Risk
- RoFSW Medium Risk
- RoFSW High Risk

Project/Location

Calderdale Windfarm

Drawing title

Risk of Flooding from Surface Water (RoFSW) - Present Day

Drawing status

FOR INFORMATION

Date	Drawn	Checked
25.06.25	ST	SM

Client

Calderdale energy park

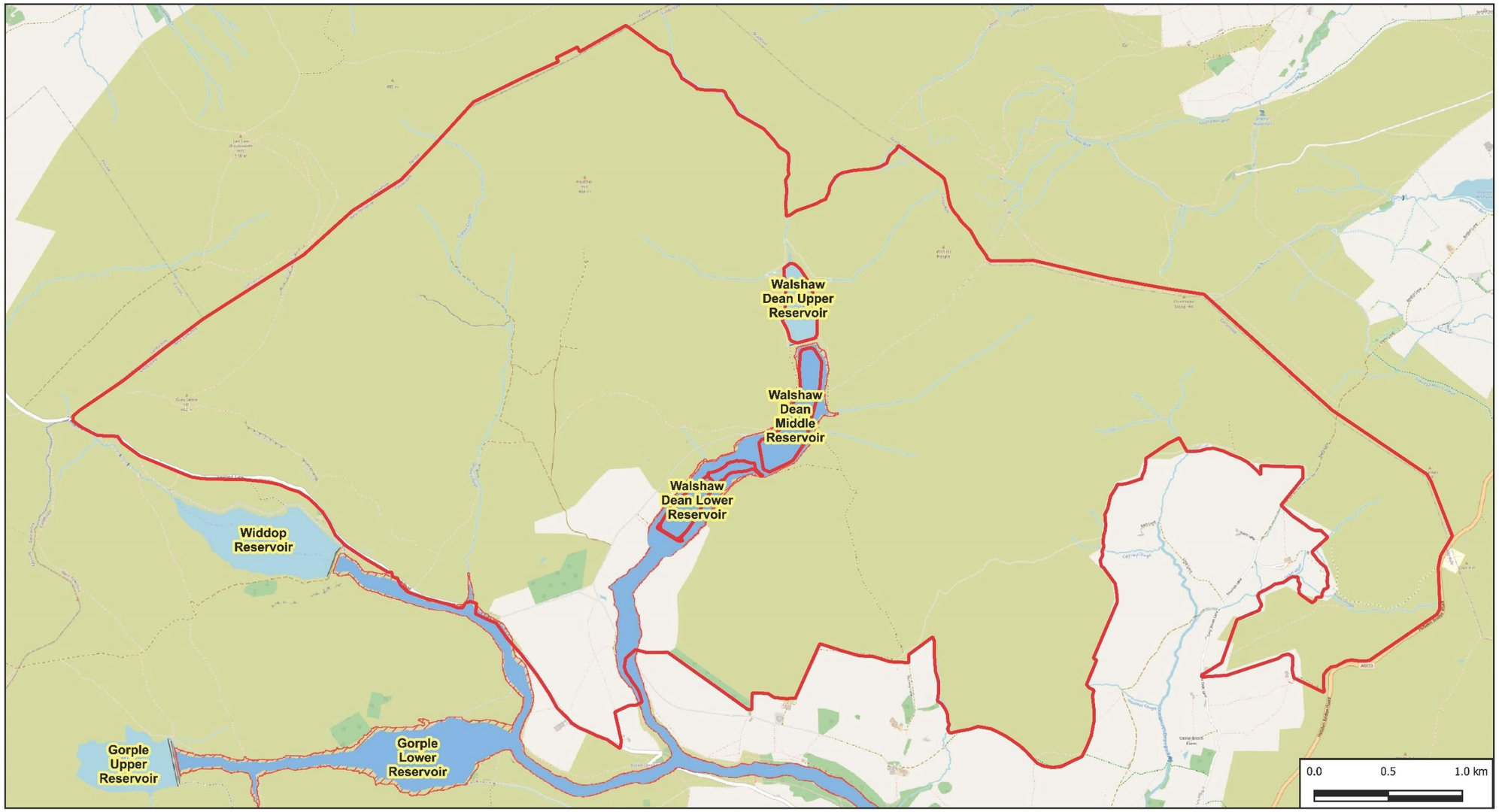
Consultant

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Drawing number Figure 8-3

Revision 01

Figure 8-4: Risk of Flooding from Reservoirs



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

Revision History

Rev	Date	By	Detail
01	25.06.2025	LOG	For information

Copyright of Logika Group. Figured dimensions shall be taken in preference to scaling. The contractor shall check all dimensions on site before commencing work.

Legend

- Turbine Area
- Reservoir Flood Extent - Dry Day Scenario
- Reservoir Flood Extent - Wet Day Scenario

Project/Location

Calderdale Windfarm

Drawing title

Risk of Flooding from Reservoirs

Drawing status

FOR INFORMATION

Date	Drawn	Checked
25.06.25	ST	SM

Client

Calderdale energy park

Consultant

Logika GROUP

Drawing number Figure 8-4

Revision 01

Flood Risk – Cable Corridor Search Areas

8.3.54 The Cable Corridor Search Areas cross a number of watercourses. The majority of the Cable Corridor Search Areas are located within Flood Zone 1, areas of Flood Zones 2 and 3 are present across its extent.

8.3.55 The majority of the Cable Corridor Search Areas are located within an area at a very low risk of surface water flooding. Some areas of the Cable Corridor Search Areas cross areas of high, medium and low pluvial flood risk.

8.3.56 The majority of the Cable Corridor Search Areas are located outside of the reservoir flood risk extent. Some localised areas of the Cable Corridor Search Areas are located within the reservoir flood risk extent, however reservoirs are generally maintained to a high standard and the risk of flooding from these features are highly unlikely.

8.3.57 The Cable Corridor Search Areas cross multiple council boundaries and mapping shows that risk of groundwater emergence is split between 'areas susceptible to groundwater flooding' and 'groundwater flood risk relating to groundwater levels beneath the surface'. As the Cable Corridor Search Areas cross large distances, they naturally also cross 'areas susceptible to groundwater flooding ranging from 0% to greater than 75%'. Furthermore, they also cross areas where 'groundwater levels are greater than 5m below the surface to areas where groundwater levels are between 0.025m and 0.5m below the surface'.

8.3.58 It is highly likely that the Cable Corridor Search Areas cross or be located nearby to sewerage and water supply infrastructure. Therefore, where appropriate, water companies will be consulted to understand the extent and locations of their sewerage and water supply infrastructure.

Flood Risk – Site Access Search Areas

8.3.59 The Site Access Search Areas cross a number of watercourses. The majority of the Site Access Search Areas are located within Flood Zone 1, areas of Flood Zones 2 and 3 are present across its extent.

8.3.60 The majority of the Site Access Search Areas are located within an area at a very low risk of surface water flooding. Some areas of the Site Access Search Areas cross areas of high, medium and low pluvial flood risk.

8.3.61 The majority of the Site Access Search Areas are located outside of the reservoir flood risk extent. Some areas of the Site Access Search Areas are located within the reservoir flood risk extent, however reservoirs are generally maintained to a high standard and the risk of flooding from these features are highly unlikely.

8.3.62 The Site Access Search Areas cross multiple council boundaries and mapping shows that risk of groundwater emergence is split between 'areas susceptible to groundwater flooding' and 'groundwater flood risk relating to groundwater levels beneath the surface'. As the Site Access Search Areas cross large distances, they naturally also cross 'areas susceptible to groundwater flooding ranging from 0% to greater than 75%'. Furthermore, they cross areas where 'groundwater levels are greater than 5m below the surface to areas where groundwater levels are between 0.025m and 0.5m below the surface'.

8.3.63 It is highly likely that the Site Access Search Areas will cross or contain sewerage and water supply infrastructure. Therefore, where appropriate, water companies will be consulted to understand the extent and locations of their sewerage and water supply infrastructure.

Designated Sites

8.3.64 The Turbine Area lies within the following designated areas:

- South Pennine Moors Site of Special Scientific Interest (SSSI)-Designated for breeding birds, upland moorland, grassland and upland bog (including blanket bog).
- South Pennine Moors Special Area of Conservation (SAC)-Designated for European dry heaths, blanket bogs and old sessile oak woods.
- South Pennine Moors Phase 2 Special Protection Area (SPA)-Classified for birds.

8.3.65 The Cable Corridor Search Areas lie partly within the South Pennine Moors SSSI and SAC and the eastern Site Access Search Area lies partly within the Crimsworth Dean SSSI.

8.3.66 The designations reflect the nationally and regionally important moorland breeding bird assemblage and nationally important breeding population of curlew, internationally important breeding populations of merlin, golden plover and twite; and nationally and internationally important habitats such as blanket bog, wet and dry heath, species rich acid flushes and mires and acid grassland.

Receptors Identified

8.3.67 Following baseline reviews, important receptors have been identified for the Turbine Area as detailed in the following text.

8.3.68 Following selection of the cable route within the Cable Corridor Search Areas and definitive access route within the Site Access Search Areas, a detailed review of

baseline and identification of receptors will be carried out as part of the ES. For this scoping report, a general review of receptors has been carried out and included as follows.

- Deep peat and shallower peaty soils across the Turbine Area and in various areas along and in the vicinity of the Cable Corridor Search Areas and Site Access Search Areas (peatland habitats being considered in **Chapter 7: Biodiversity**).
- South Pennine Moors SSSI and SAC designated for habitat and breeding birds, within the Turbine Area and potentially within and in the vicinity of the Cable Corridor Search Areas.
- Public water supplies potentially hydrologically connected with the Turbine Area including Walshaw lower, middle and upper public water supply reservoirs within the area and reservoirs in the vicinity of the Turbine Area, including Widdop Reservoir to the south.
- Potential private water supplies within the Turbine Area and potentially hydrologically and hydrogeologically connected to the Turbine Area, the Cable Corridor Seach Areas and Site Access Search Areas. These will include any groundwater abstractions from aquifers including classified Secondary A aquifers known to underlie the areas.
- Individuals who are involved in the construction and operation of the Proposed Development in relation to flood risk from all sources.
- Off Site areas, including downstream third-party land / property, in relation to flood risk from all sources.
- Existing named watercourses within the Turbine Area; Graining Water, the Alcomden Water and Crimson Dean Beck (which flow to the Hebden Water) and other unnamed watercourses in and adjacent to the Turbine Area with respect to surface water discharge rates, volume, and quality of runoff; and watercourses within the Cable Corridor Search Areas and Site Access Search Areas.
- Ground Water Dependent Terrestrial Ecosystems (GWDTE) potentially hydrogeologically connected to the Turbine Area and the Cable Corridor Search Areas.

8.4 Environmental Measures

8.4.1 Consideration will be given to opportunities to introduce environmental measures (and mitigation) that will help to avoid or reduce the potential for an adverse significant environmental effect to occur. In accordance with Schedule 4 paragraph 7 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset (where appropriate) likely significant adverse effects. Specific environmental measures relevant to Hydrology, Hydrogeology, Geology and Peat will be identified and will be considered as part of the assessments, i.e. the assessments of likely significant effects will be undertaken with the inclusion of the environmental measures, as these measures will form part of the Proposed Development. At this stage of the project, the following environmental measures are proposed to be implemented and included within the Proposed Development.

Construction

8.4.2 A Flood Risk Assessment (FRA) and Drainage Strategy will be prepared and will contain hydrology and hydrogeology specific embedded environmental mitigation measures forming the basis of the technical assessments for the DCO application and will be used to inform the ES.

8.4.3 There are a number of good practice techniques that will be employed during construction and operation of the Proposed Development. The guidance and good practice literature will be used to further develop these methods in an outline Construction Environmental Management Plan (oCEMP).

8.4.4 A range of environmental measures will be adopted, designed to avoid, minimise and mitigate for the effects during the construction phase. Table 8-2 provides a summary of key measures and mechanisms by which these will be delivered.

Table 8-2: Summary of environmental measures proposed during construction

Aspect/Features	Outline of environmental measure	Delivery mechanism
Levels and scheme design	It is proposed to limit the requirement for cut and fill where possible across the Turbine Area, Cable Corridor Search Areas and Site Access Search Areas. Iterative layout design will	Embedded environmental design measures and delivered through the oCEMP.

Aspect/Features	Outline of environmental measure	Delivery mechanism
	consider hardstanding orientations as well as turbine positioning to minimise cut and fill footprints, access routes will be aligned to minimise overlap with deeper peat deposits or routed over gradients sufficiently shallow to enable floated (non-excavated) construction. Opportunities to reuse infrastructure for dual purposes (reducing the number of footprints) and to reduce the number of temporary hardstanding areas will also be investigated.	
Offsets and crossings	Infrastructure will be designed to minimise the number of watercourse crossings and encroachments within 50m buffer zones around all mapped water features. Suitable offsets will be provided from the top of bank of all watercourses to all construction activities to maintain ecological barriers and to ensure that access for maintenance is provided. Infrastructure works where excavations are >1m in depth will be located at least 250m from any confirmed GWDTEs. Infrastructure works where excavations are >1m in depth will	Embedded environmental design measures and delivered through the oCEMP. Where cable route crossings within the Cable Corridor Seach Areas and Turbine Area occur across watercourses, suitable land drainage consent for ordinary watercourses and/or EA permits for Main Rivers will be obtained to undergo works, and/or through protective provisions.

Aspect/Features	Outline of environmental measure	Delivery mechanism
	be located at least 250m from any confirmed groundwater abstractions for water supply use.	
Temporary drainage measures	Temporary drainage measures will be employed to ensure the existing drainage regime is maintained during construction and that pollution of surface water runoff is managed. Furthermore, the oCEMP will ensure that construction activities will not impede flow routes where possible to ensure that flood risk is not increased elsewhere.	Delivery through the oCEMP and Water Management Plan (WMP) as necessary.
Pollution prevention	Pollution prevention measures will be employed in accordance with good practice guidelines and including when storing and handling polluting substances, to prevent oil and chemical spills.	Delivery through the oCEMP which will provide further details.
Peat Avoidance	Individual turbine layouts will be iterated in response to increasingly resolute peat depth data to allow any identified areas of deeper peat to be avoided where possible, or to prioritise deeper peat for temporary infrastructure (will be reinstated post-construction).	Embedded environmental design measures, Peat surveys and outline Peat Management Plan (oPMP)
Peat re-use and restoration	Where peat must be excavated to enable construction, opportunities will be sought within the Turbine Area boundary to reuse peat in a positive way to support habitat recreation, e.g. through patch	Embedded environmental design measures, such as oPMP and additional mitigation as required for re-use on Site.

Aspect/Features	Outline of environmental measure	Delivery mechanism
	repair of bare ground, restoration of eroded gullies and reinstatement of peat in cutover areas. To compensate for potential impacts on peat hydrology and habitat, peatland restoration opportunities will be identified to improve the quality of peatland undisturbed by the Proposed Development.	
Minimise Peat disturbance	Where appropriate, access roads will be constructed using permeable materials. Where peat is unable to be avoided, floating tracks will be used where possible, and if necessary other appropriate engineering solutions will be adopted.	Embedded environmental design measures and oPMP.

Operation and Maintenance

8.4.5 A range of environmental measures will be adopted, designed to avoid, minimise and mitigate for the effects during the operation and maintenance phase. Table 8-3 provides a summary of key measures and mechanisms by which these will be delivered.

Table 8-3: Summary of environmental measures proposed during operation and maintenance

Aspect/Features	Outline of environmental measure	Delivery mechanism
Surface water flow routes	Where surface water flow routes cannot be avoided, pluvial hydraulic modelling will be undertaken to determine baseline and proposed flow routes. Where proposed access road and	As part of the FRA, a pluvial hydraulic modelling exercise will be undertaken and a report produced, this will be approved by the

Aspect/Features	Outline of environmental measure	Delivery mechanism
	turbine locations cross watercourses, suitable crossing structures will be incorporated.	EA/Lead Local Flood Authority (LLFA) as appropriate.
Surface water run off management	Surface water runoff from new impermeable surfaced areas will be managed to ensure that there is no increase in flood risk elsewhere, and to ensure that the potential for pollutants is appropriately controlled prior to discharge. It is anticipated that surface water runoff will be encouraged to infiltrate wherever possible, to maintain the saturated condition of the adjacent peat. Suitable management and maintenance plans for Sustainable Drainage Systems (SuDS) will be employed to ensure the drainage system operates as designed.	Drainage Strategy produced as part of the DCO, and maintenance as set out within the outline Operational Environmental Management Plan (oOEMP) and SuDS Management and Maintenance Plan.
Offsets	Development will be suitably offset from watercourses to allow sufficient access for maintenance. The watercourse offsets will be discussed and agreed with the EA/LLFA.	Embedded environmental design measures and through the oOEMP.
Pollution prevention	Pollution prevention measures will be employed in accordance with good practice guidelines and including when storing and handling polluting substances, to prevent oil and chemical spills.	Delivery through the oCEMP which will provide further details.
Peat landslide risk	Assessment to inform measures and include general good practice that should be applied across the	Embedded environmental design measures, The oPMP, Peat Landslide Hazard

Aspect/Features	Outline of environmental measure	Delivery mechanism
	site to engender awareness of peat instability and enable early identification of potential displacement and opportunities for mitigation.	and Risk Assessment (PLHRA) and additional mitigation as required.

Decommissioning

8.4.6 Similar to construction, an outline Demolition Environmental Management Plan (oDEMP) will be employed during the decommissioning stage to ensure that the natural drainage regime is maintained and that any potential pollution of surface water runoff is managed. Furthermore, the oDEMP will ensure that deconstruction activities will not impede flow routes where possible to ensure that flood risk is not increased elsewhere.

8.5 Scope of the Assessment

Consultation Undertaken to Date

Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

8.5.1 As discussed in **Chapter 1: Introduction**, under the Town and Country Planning Act 1990, in July 2023, an EIA scoping request was submitted to CMBC, which was a Scoping Report in request for a Scoping Opinion for a proposed wind farm development and associated infrastructure at the Site, including cable connection. Table 8-4 presents the details of the Scoping Opinion received from CMBC relevant to hydrology, hydrogeology, geology and peat and confirms if the opinion is considered within the proposed scope of assessment (as set out below) or if is considered to be scoped out of the technical assessment, with details provided in Table 8-6.

Table 8-4: Calderdale Metropolitan Borough Council Scoping Opinion

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
Lead Local Flood Authority CMBC	A FRA and Drainage Strategy will be sufficient to assess the proposal impacts. Consideration of runoff from hardstanding and access roads will be required to not	A FRA and Drainage Strategy will be produced to accompany the DCO application and will form a technical appendix of the ES Chapter. The LLFA will be

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	increase runoff and impact on the natural flow regime of the peat bog and moorlands. The EIA should consider the impact of the development on the watercourses within the development area and downstream in terms of flow paths and flood risk. It should also detail how these watercourses will be protected from damage including blocking and siltation and any potential areas where watercourse diversion may be required. This will be subject to watercourse consent. There will be an increase in impermeable area due to bases and access roads which will increase the surface water runoff. There are areas of high risk surface water flooding within the development area. This should be assessed in the EIA.	consulted to agree the associated methodologies. The Drainage Strategy will include embedded measures to control and treat surface water runoff from the development. The FRA will include an assessment of all sources of flood risk at the Site, including surface water flooding. The Proposed Development will take into account watercourses. The LLFA will be consulted to agree treatment of the watercourses and agree protective provisions. The FRA will include an assessment of watercourses where interactions with the development occur. The EIA will assess impacts on watercourses from sediment release and identify any areas of elevated risk where additional mitigation may be required.
Slow the Flow (STF)	STF agree that hydrology, geology, and hydrogeology are essential topics to be scoped into the EIA. The assessment needs to include a holistic assessment covering the application area and downstream catchment resources. STF queried the methodology of the FRA and would like to	The assessment study areas will include appropriate buffers as outlined in Table 8-1above. The methodology of the FRA is outlined within this Scoping Chapter, and is to ultimately be agreed with the EA/LLFA. Tracks will be designed to limit interaction with blanket

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	see modelling / assessments of the relative outcomes for different future management options as they affect water retention in the area and impacts drainage basin mechanics downstream. STF will object to the creation of new tracks on blanket bog.	bog, avoid intersecting groundwater flows within the peat and will be floated wherever possible.
The Coal Authority (5 October 2023)	Whilst the site falls within the coalfield, it is located outside the Development High Risk Area. The Coal Authority has no comment to make.	On this basis coal mining activities have been scoped out of the ES.
Environmental Health Services - Pollution Section (E) 30 November 2023	Private water supplies for human consumption The EIA should address the existing private water supplies including boreholes in the area. The development from the construction phase, infrastructure and the end development should not contaminate, interfere or disrupt any of these water sources and distribution works.	The ES will address potential effects on water resources and private and public water supplies including Yorkshire Water public water supply assets. Effects include pollution risks and effects on groundwater and surface water quality. Active private water supplies potentially connected to the development will be identified through further consultation with the EA and local authorities.
Yorkshire Water Services Ltd October 2023	Private and Public Water Supplies Welcomes approach to scope in all hydrology, geology and hydrogeology matters. Several Yorkshire Water assets are within the redline boundary. Assets must be taken into consideration and given appropriate protection:	The ES will address potential effects on water resources and private and public water supplies including Yorkshire Water public water supply assets. Effects include pollution risks and effects on groundwater and surface water quality.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	700mm ductile iron live raw water main; 54 inch live stone raw water main; 84 inch live stone water main; 18 inch cast iron live raw water main. The EIA will address issues of effects on water resources, pollution risks and effects on groundwater and surface water quality at each stage. Welcome the inclusion to these matters. Sensitive receptors should be accurately and accounted for in the ES such as the Walshaw Dean reservoirs (upper, middle, lower) located within site boundary. Several Yorkshire Water water mains are within the Site. Assets must be taken into consideration and given appropriate protection. Sensitive receptors should be accurately and accounted for in the ES, such as the Walshaw Dean reservoirs (upper, middle, lower).	Active private water supplies potentially connected to the development will be identified through further consultation with the EA and local authorities. Sensitive receptors such as the Walshaw Dean Reservoir will be assessed within the technical assessments such as the FRA and Drainage Strategy and accounted for within the oCEMP, oDEMP and oOEMP.
Environment Agency October 2023	The applicant must ensure that the requirement for an FRA is assessed. Any drainage system must not pose a risk to groundwater quality and must not be constructed in ground affected by contamination. Recommend the development protect and enhance the local environment and seek to	An FRA and Drainage Strategy will be produced to accompany the DCO application and will form a technical appendix of the ES Chapter. As set out in **Chapter 7: Biodiversity**, a BNG assessment will be provided. Given the presence of irreplaceable habitats on site, this is expected to include bespoke

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	enhance ecology and provide BNG. Enhancement of biodiversity in the development should be led by a local understanding of ecological networks and should seek to include; • habitat restoration, re-creation and expansion; • improved links between existing sites; • buffering of existing important sites; • new biodiversity features; and • securing management for long term enhancement. Encourage the opening up of culverts, improvements / naturalisation / creation of new watercourses, and the provision of other environmental infrastructure that will benefit wider biodiversity and develop Water Framework Directive (WFD) improvements.	mitigation/compensation and enhancement strategies with any approach to be discussed and agreed with relevant consultees. NVC surveys are ongoing and will be used to inform the BNG assessment. A WFD Screening Assessment will be progressed in consultation with the EA. This will determine whether further assessment is required.
Natural England (26 October 2023)	Peatland hydrology surveys Natural England notes that 9.8 of the Scoping Report (September 2023) states that a hydrological monitoring plan will be produced. We advise that a baseline survey of peatland hydrology is required to inform the assessment, with a commitment to hydrological	Hydrology including hydrological conditions of peat will include assessment of groundwater levels, flow paths and assessment of opportunities to improve hydrological function.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	and vegetation monitoring going forward. Due to limited staff capacity Natural England has been unable to fully advise on the hydrological information required for any planning application for this site and will provide advice in due course. Peat Depth Surveys NE advises that peat depth measurements are provided at least every 200m across peat. Advises that clarification is provided regarding the method of preliminary peat depth survey. Advise that a map showing the actual depth is submitted. These should be compared alongside interpolated depths given using the kriging modelling method. Raw data behind these depths should also be provided. South Pennine Moors Phase 2 Special Protection Area (SPA) The assessment of habitat deterioration and indirect impacts should consider the following potential impacts: Water quality impacts, including potential for increased nutrient and other pollutant inputs. Water supply impacts on SPA bird supporting habitat.	Peat surveys will be carried out as part of the ES and in accordance with published guidance and will be at a higher density than 200m. The ES will present plans of peat depth at all probing locations with higher density in infrastructure areas along with interpolated peat depth across the probing area. The usual approach is the Natural Neighbour interpolation, and this will be compared to the Kriging method for the site. Water quality effects on watercourses will be assessed within the ES, and as part of the drainage strategy and oCEMP. Qualitative assessment of changes to the hydrological regime (quantity and quality) will also be undertaken as part of the assessment. Peat surveys and hydrological surveys will be carried out as part of the ES. NVC surveys will be undertaken as part of the Ecology Chapter of the ES.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	The assessment in the ES should have a suitable level of surveys. Including NVC surveys, peat depth surveys and hydrological surveys. Water Quality planning system plays a key role in determining the location of developments which may give rise to water pollution, and hence planning decisions can have a significant impact on water quality, and land. The assessment should take account of the risks of water pollution and how these can be managed or reduced. A number of water dependent protected nature conservation sites have been identified as failing condition due to elevated nutrient levels and nutrient neutrality is consequently required to enable development to proceed without causing further damage to these sites. The ES needs to take account of any strategic solutions for nutrient neutrality or Diffuse Water Pollution Plans, which may be being developed or implemented to mitigate and address the impacts of elevated nutrient levels. Further information can be obtained from the Local Planning Authority.	

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
Natural England (26 October 2023)	Soils and Agricultural Land Quality - The following issues should be considered and, where appropriate, included as part of the Environmental Statement (ES): • The degree to which soils will be disturbed or damaged as part of the development. • The extent to which agricultural land will be disturbed or lost as part of this development, including whether any best and most versatile (BMV) agricultural land will be impacted. • Where an ALC and soil survey of the land is required, this should normally be at a detailed level, supported by pits dug in each main soil type to confirm the physical characteristics of the full depth of the soil resource, i.e. 1.2 metres. The survey data can inform suitable soil handling methods and appropriate reuse of the soil resource where required (e.g. agricultural reinstatement, habitat creation, landscaping, allotments and public open space). • The ES should set out details of how any adverse impacts on BMV agricultural land can be minimised through site design/masterplan. • The ES should set out details of how any adverse impacts on soils can be avoided or minimised and	The Agricultural Land Classification (ALC) mapping published by Natural England indicates that much of the Turbine Area consists of Grade 5, Very Poor, with some areas of Grade 4, Poor. An outline Soils Management Plan (oSMP) will be provided.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	demonstrate how soils will be sustainably used and managed, including consideration in site design and master planning, and areas for green infrastructure or biodiversity net gain. The aim will be to minimise soil handling and maximise the sustainable use and management of the available soil to achieve successful after-uses and minimise off site impacts.	

Other Consultation Undertaken to Date

8.5.2 An overview of other consultation (beyond the CBC Scoping Opinion) undertaken to date for Hydrology, Hydrogeology, Geology and Peat is provided in Table 8-5.

Table 8-5: Consultation Undertaken to Date

Date	Consultee	Summary
27 May 2025	Environment Agency	Initial meeting held with the Environment Agency to provide an introduction to the scheme. The EA will continue to be consulted as the design evolves, and in particular to agree the scope of assessment in relation to flood risk and WFD Assessment.

Effects Scoped Out of Detailed Assessment

8.5.3 Table 8-6 presents the Hydrology, Hydrogeology, Geology and Peat matters that are unlikely to give rise to significant adverse effects and, therefore, which are proposed to be scoped out of detailed assessment.

Table 8-6: Effects Scoped Out from the Detailed Assessment

Potential Effect (phases scoped out for)	Agreement in CMBC Scoping Opinion	Rationale to be Scoped Out
Tidal Flood Risk (during construction, operation and decommissioning)	Not Raised	The Proposed Development is located inland and is not near any tidal waterbodies.
Changes to flood risk associated with the Cable Route (during operation)	Not Raised	It is anticipated that proposed cable routes, within the Cable Corridor Search Areas and Turbine Area, will cross beneath a number of surface water flood risk areas and watercourses. However, as the cable routes will be buried, they are not anticipated to impact flood risk. Due to the shallow nature of the excavations associated with the cabling, it is anticipated that groundwater flows, if any, surrounding cable route locations will flow as existing or around and therefore remain unaffected.
Effects on groundwater abstractions located over 250m from infrastructure (excavations > 1m depth) associated with the Turbine Area, Cable Corridor Search Area and Site Access Search Area (during construction, operation and decommissioning)	Not Raised	Guidance[142] on private water supplies, indicates that no further assessment is required should construction activities >1m in depth be greater than 250m away from the groundwater abstraction source and therefore any effects are considered unlikely to be significant.
Effects on GWDTEs located over 250m from infrastructure	Not Raised	Guidance[143] on GWDTE indicates that no further assessment is required should construction activities >1m in depth be

[142] Guidance on Assessing the Impacts of Development on Groundwater Abstractions, August 2024, SEPA
[143] Guidance on Assessing the Impacts of Developments on Groundwater Dependent Terrestrial Ecosystems, August 2024, SEPA.

Potential Effect (phases scoped out for)	Agreement in CMBC Scoping Opinion	Rationale to be Scoped Out
excavations >1m (during construction, operation and decommissioning)		greater than 250m away from the GWDTE and therefore any effects are considered not significant.
Erosion and Sedimentation (during operation)	Consideration of the impact on watercourses within the development area scoped out	Operation of the development will have negligible impact on sediment loads and therefore any effects are considered unlikely to be significant.

Likely Significant Effects Scoped into the Detailed Assessment

8.5.4 Table 8-7 presents the Hydrology, Hydrogeology, Geology and Peat matters that are likely to give rise to significant adverse effects and, therefore, which are proposed to be scoped into the detailed assessment.

Table 8-7: Likely Significant Effects Scoped into the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to be Scoped In
Erosion and Sedimentation (construction and decommissioning).	Consideration of the impact on watercourses within the development area scoped in.	Potential for construction of turbine infrastructure and new and existing water crossings to result in increased sediment loads observed in watercourses and waterbodies. Scoped in for the Turbine Area and final defined cable and access routes within the respective Search Areas, including 1km buffer beyond the respective boundaries.
Alteration of Flow, Natural Drainage Patterns/Runoff Volumes and	Consideration of the impact on watercourses and groundwater within	Potential for development of tracks and cable trenches to alter natural drainage by the creation of altered preferential flow pathways.

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to be Scoped In
Rates (construction, operation, decommissioning).	the development area scoped in.	Potential for groundwater levels in peat to be reduced in the immediate vicinity of Turbine Area infrastructure. Potential for groundwater flows supporting GWDTE to be altered. Scoped in for the Turbine Area and final defined access routes within the respective Search Area, including 2km buffer beyond the respective boundaries which maybe up to 5km for watercourses.
Potential pollution events affecting groundwater and surface water quality (construction, operation, decommissioning).	Potential polluting activities scoped in.	Potential for construction activities for turbines and cable trenches to pollute watercourses and groundwater through oil and chemical spills. Potential for existing historical contamination to be disturbed and pollute watercourses and groundwater. Scoped in for the Turbine Area and final defined access routes within the respective Search Areas, including 2km buffer beyond the respective boundaries which maybe up to 5km for watercourses.
Effects on peat: peat instability (construction, operation, decommissioning).	Potential effects on peat scoped in.	Potential for construction activities to result in peat instability with associated effects on terrestrial habitats, aquatic habitats and water supply. Scoped in for the Turbine Area, final defined cable and access routes within the respective Search Areas, including 2km buffer.

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to be Scoped In
Effects on peat: loss of peat / carbon loss (construction, operation, decommissioning).	Potential impact on peat scoped in.	Potential for construction activities to result in loss of peat (peatland habitats considered in **Chapter 7: Biodiversity**). Scoped in for the Turbine Area and final defined cable and access routes within the respective Search Areas.
Risk of flooding from all sources to users of the construction site (construction and decommissioning).	Consideration of flood risk scoped in.	Potential risk of flooding posed to the Proposed Develpoment/ Site users during construction. Scoped in for the Turbine Area and final defined cable and access routes within the respective Search Areas.
Risk of flooding from all sources to off-site areas (construction, operation, decommissioning).	Consideration of flood risk scoped in.	Potential for a change in off-site flood risk. Scoped in for Turbine Area including 1km buffer.
Risk of flooding from all sources to users of the completed development	Consideration of flood risk scoped in	Potential risk of flooding posed to the Proposed Development / users of the Proposed Development. Scoped in for the Turbine Area and final defined access routes within the respective Search Areas.
Foul Drainage		
Potential pollution events affecting groundwater and surface water quality, associated with the generation	Consideration of foul drainage effects scoped in.	Potential for the release of foul discharges to the environment. Scoped in for the Turbine Area, including 1km buffer beyond the respective boundaries.

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to be Scoped In
of foul water onsite (construction, operation, decommissioning)		

8.6 Proposed Approach to the ES Assessment Methodology

Further Baseline Data

8.6.1 In order to inform the assessment, a detailed review of the baseline conditions will be undertaken to ensure that all aspects of the Proposed Development and important receptors are understood, and the effects can be assessed accurately. As well as baseline research, consultation beyond that undertaken will be progressed with the following to ensure that a detailed knowledge of the existing and future Study Area is understood.

- Consultation with the relevant local authorities and the EA to obtain information held on licenced and unlicenced surface water and groundwater abstractions, including private water supplies and discharges to surface water and groundwater.
- Consultation with the relevant local authorities and the EA to obtain information on unlicenced and licenced waste disposal including areas of unknown filled ground.
- GWDTEs will be identified based on habitat mapping and ecological surveys and reviewed by the hydrologists in the field.
- Existing peat depth probing will be supplemented with additional phases of probing across the Turbine Area, Cable Corridor Search Areas and Site Access Search Areas, to support infrastructure placement and route design.
- Further consultation with the EA to obtain all relevant flood risk information associated with the Proposed Development and surrounding area and to agree the scope of assessment in relation to flood risk and WFD Assessment.

- Consultation with CMBC (LLFA) to obtain relevant flood risk information and to discuss the approach to surface water drainage and surface water flood modelling.
- Surface water flood modelling will be undertaken to ensure the baseline scenario is understood and that sufficient environmental embedded mitigation measures are incorporated into the proposed development to ensure that flood risk is not increased off Site.
- At this scoping stage, the technical details of the proposed borrow pits, including their scale, size, number, frequency and precise locations, are not yet available. Similarly, information on the methods of material extraction and the associated on-site infrastructure is still being investigated. The ES will provide the necessary information on the borrow pits, including the anticipated aggregate requirements, extraction methodologies and potential environmental effects. This information will be discussed with the relevant stakeholders to ensure that appropriate assessment is undertaken within the ES once the details are confirmed.
- Cumulative effects will be assessed in line with the methodology set out in **Chapter 3: Approach to EIA**, which accords with the Planning Inspectorate's Advice on Cumulative Effects Assessment. A long list of existing, consented, and proposed developments will be agreed with the relevant local planning authorities prior to undertaking the assessment. The certainty of these developments will be determined using the tiered approach recommended by PINS. For each environmental topic, the potential Zone of Influence (ZoI) of the Proposed Development during construction, operation (including maintenance), and decommissioning will be identified. The outcomes of the cumulative effects assessment will be reported within the Environmental Statement.

Surveys to inform Baseline

8.6.2 Further peat probing will be completed following the initial survey that was carried out as part of the previous works. This will include high-density peat depth surveys undertaken across the infrastructure and along the selected cable route within the Cable Corridor Search Areas, in accordance with the relevant guidance (Guidance on Developments on Peatland: Peatland Survey (2017)). Interim surveys will be undertaken to inform iterative layout design. The design-freeze layout will be subject to detailed survey grids in locations of proposed infrastructure, including earthwork footprints to ensure calculations of peat excavation are sufficiently robust. Probing data will be used to minimise overlap with peat, and where peat cannot be avoided, to site and route infrastructure in areas of lowest impact.

8.6.3 A walkover hydrological survey of the Turbine Area will be carried out to ground truth the existing baseline conditions, including identifying and documenting watercourse crossings (proposed and existing) identification of other water features such as wetlands and springs, undertaking an overview assessment of areas identified as floodplain within the EA Flood Maps and providing a general overview of landscape and land cover of importance to hydrology and soils including geomorphology. Walkover of the cable and access routes will need to be confirmed once the Cable Corridor Search Areas and Site Access Search Areas have been further refined. Flood Maps and providing a general overview of landscape and land cover of importance to hydrology and soils including geomorphology.

8.6.4 A geomorphological walkover will be completed following the completion of a site geomorphological map. This will be used, along with other parameters, to assess the peat landslide risk, assess peatland condition and support identification of peat restoration opportunities.

8.6.5 Private water supply visits will also be undertaken, if required, following consultation with the private water supply owners to verify the source location, the conveyance infrastructure, use, treatment and any other pertinent details.

Assessment of Effects

8.6.6 The assessment will be undertaken using standard EIA methodology with the sensitivity of the receptor, magnitude of the potential effect, and likelihood of the effect being determined and then using the specified matrix to determine the significance of effect on specific receptors.

Determining Receptor Sensitivity

8.6.7 Sensitivity criteria are based on both the ability of a receptor to accommodate the anticipated impact of the likely changes, as well as the importance of the resource under consideration or designated value of the receptor (e.g. a designated area of international or national importance has a higher value and therefore higher sensitivity than other areas of lower status). Evaluation of sensitivity of geology, hydrology and peat requires a considerable degree of judgement, based on defined characteristics and values and professional experience.

8.6.8 The sensitivity criteria used in this assessment is presented in Table 8-8.

Table 8-8 Receptor Sensitivity Criteria

Sensitivity of Environment	Definitions
Very High	• PWS abstraction for human or stock consumption (surface water or groundwater). • Public drinking water supply abstraction (surface water or groundwater). • Surface water classified under the WFD as 'high' (or equivalent older chemical or biological monitoring designation). • Groundwater classified under the WFD as 'good'. • Watercourse designated under the Freshwater Fish Directive or known to have fish spawning grounds. • Groundwater vulnerability High • Internationally or nationally designated sites (e.g., Ramsar, SPA, SAC, SSSI, National Nature Reserves, Marine Nature Reserves). • Habitats listed in Regional Biodiversity Action Plans or Annex I habitats that are groundwater dependent. • Internationally important species sensitive to hydrological change. • >25 % of the infrastructure is located on peat >2m in open terrain or >3m in forestry, densely drained, eroded, or gullied open terrain. • Flood Risk-Essential Infrastructure or Highly Vulnerable development in line with Annex 3 of the NPPF
High	• PWS abstraction not for human or stock consumption (surface water or groundwater). • Public non-drinking water supply abstraction (surface water or groundwater). • Surface water classified under the WFD as 'good' (or equivalent older chemical or biological monitoring designation). • Watercourse known to support important fishery population. • Groundwater vulnerability Medium-High • Sites designated at a regional level. • >25% of infrastructure is located on peat with depth between 1m – 2m in open and undegraded terrain or >2m in forestry, densely drained, eroded or gullied open terrain. • Other water dependent habitats.

Sensitivity of Environment	Definitions
	• Flood Risk- More Vulnerable development in line with Annex 3 of the NPPF • Foul drainage network with insufficient capacity to receive flows from the development, where additional foul flows will lead to flooding / releases to the environment
Medium	• Surface water classified under the WFD as 'moderate' (or equivalent older chemical or biological monitoring designation). • Sites designated at a local level. • >25% of infrastructure located on peat with depth between 0.5m – 1m in open and undegraded terrain or with depth between 1m – 2m in forestry, densely drained, eroded or gullied open terrain. • Groundwater vulnerability Medium • Flood Risk- Less Vulnerable development in line with Annex 3 of the NPPF
Low	• Surface water classified under the WFD as 'poor or bad' (or equivalent older chemical or biological monitoring designation). • Groundwater classified under the WFD as 'poor'. • Groundwater vulnerability Low • >75% of the infrastructure is located on non-peat or peaty/organic rich soils less than <0.5m in depth, or peat <1m in depth that is in forestry, densely drained, eroded or gullied open terrain. • Flood Risk- Water Compatible Development in line with Annex 3 of the NPPF • Foul drainage network with sufficient capacity (current or planned for) to receive flows from the Proposed Development; therefore, not envisaged to result in flooding / releases to the environment

Determining the Magnitude of Impacts

8.6.9 Magnitude of impact or change is the potential effect in relation to the resource that has been quantified using the scale very high, high, medium, or low, and includes the consideration of timing, scale, size, and duration of a potential impact. The magnitude of the impact is a measure of the degree that the potential effect could manifest on the receptors. For example, the interruption of the groundwater supply to a GWDTE will have a high magnitude of effect.

8.6.10 The magnitude of impact criteria is summarised in Table 8-9 below.

Table 8-9: Magnitude of Impact Criteria

Magnitude of Potential Effect	Definitions
Very High	• Impact resulting in loss of feature or use. • Fundamental (long-term or permanent) changes to surface water, groundwater, and geology (in terms of quantity, quality, and morphology). • Excavated peat volume associated with the infrastructure footprint and associated earthworks is >10% of the peat volume across the peat survey area within the Site.
High	• Impact resulting in loss of part (<10%) of feature or use. • Substantial but non-fundamental and short to medium term changes to the surface water, groundwater, and geology (in terms of quantity, quality, and morphology). • Excavated peat volume associated with the infrastructure footprint and associated earthworks is >5% but <10% of the peat volume across the peat survey area within the Site. • Flood Risk - Increase in peak flood level (>100mm)
Medium	• Impact on feature or use. • Detectable but non-fundamental and temporary changes to the surface water, groundwater, and geology (in terms of quantity, quality and morphology). • Excavated peat volume associated with the infrastructure footprint and associated earthworks is >2% and <5% of the peat volume across the peat survey area within the Site. • Flood Risk - Increase in peak flood level (>50mm)
Low	• Impact but of insufficient magnitude to affect feature or use. • No perceptible changes to the surface water, groundwater, and geology (in terms of quantity, quality, and morphology). • Excavated peat volume associated with the infrastructure footprint and associated earthworks is <2% of the peat volume across the peat survey area within the Site. • Flood Risk - Increase in peak flood level (>10mm)

Significance Criteria

8.6.11 The predicted significance of the effect is determined through a standard method of assessment based on professional judgement while considering sensitivity and magnitude of change as detailed in Table 8-10.

8.6.12 The combination of the sensitivity and magnitude of potential effect combine to provide a matrix categorisation of significance (Major, Moderate, and Minor), subject to professional judgement.

8.6.13 Major and Moderate effects are significant in the context of the EIA Regulations. Where the significance of effect is assessed as being moderate or above, additional site-specific mitigation is required.

Table 8-10: Significance of Effect

Magnitude of Potential Effect Criteria	Sensitivity of Environment Definitions			
	Very High	High	Medium	Low
Very High	Major	Major	Moderate	Moderate
High	Major	Moderate	Moderate	Minor
Medium	Moderate	Moderate	Minor	Minor
Low	Minor	Minor	Minor	Minor

Nature of Effect

8.6.14 In addition to determining the significance of the effect, the assessment process also includes a qualitative description regarding the nature of the effect, as outlined in Table 8-11. These terms add information about how the effect will affect receptors. Unless otherwise stated, identified potential effects are considered to be adverse.

Table 8-11 Nature of Effect

Term	Nature of Effect Descriptors
Adverse	An effect which has the potential to decrease receptor value or status relative to baseline conditions.
Beneficial	An effect which has the potential to increase receptor value or status relative to baseline conditions.

Term	Nature of Effect Descriptors
Short-term	Effects that persist only for a short time, e.g. during the construction (or decommissioning) phase only; includes reversible effects.
Medium-term	Effects that may persist until additional mitigation measures have been implemented and become effective.
Long-term	Effects that persist for a much longer time, e.g., for the duration of the operational phase (essentially until the development ceases or is removed/ reinstated); includes effects which are permanent (irreversible) or which may decline over longer timescales.
Temporary	A reversible effect where recovery is possible and for which effects will persist only for a short or medium-term.
Frequent	Refers to a recurring effect that occurs repeatedly; in some cases a lower level of impact may occur with sufficient frequency to reduce the ability of a receptor to recover effectively.

Technical Assessment

Peat Assessment

8.6.15 A PLHRA will be undertaken according to Scottish Government (2017) best practice guidance. This will assess the natural and construction-related likelihood of peat instability across the Site, identify key receptors, calculate risk and provide appropriate mitigation measures to reduce risks to acceptable levels (if identified).

8.6.16 An oPMP will be prepared which will estimate the total volume of peat (and soil) likely to be excavated during construction, and identify appropriate reuses for peat, including reinstatement of temporary infrastructure, and restoration of peatland degraded by past management pressures and nature processes.

Flood Risk Assessment and Drainage Strategy

8.6.17 As part of the DCO application, a Flood Risk Assessment (FRA) and an accompanying Drainage Strategy will be prepared which will take account of the above baseline research, consultation and analysis.

8.6.18 The principles of the assessment will be agreed with the EA and LLFA. Flood risk and drainage constraints and opportunities will be incorporated into the masterplan. The scope of the FRA and Drainage Strategy will include the following:

- Consideration of the likely significant effects of flooding to the Proposed Development and identification of any necessary mitigation measures.

- Residual risks after implementation of any necessary mitigation measures, allowing for the future impacts of climate change.
- Consideration of any effects on the flow of groundwater and underlying peat beneath the Site.
- SuDS appropriate for inclusion within the proposed development.

8.6.19 The FRA will also be supported by the surface water overland flow modelling study, which will form the main component of the assessment of surface water flood risk.

8.6.20 The FRA and Drainage Strategy (including the supporting modelling study) will be used to determine and conclude the impacts that the potential effects will have on the receptors identified.

Water Framework Directive (WFD) Assessment

8.6.21 To inform the DCO application and EIA, a WFD Screening Assessment will be progressed in consultation with the EA. This will form the initial stage of assessment of the potential impacts on water bodies and will determine whether further assessment is required.

Assumptions, Limitations and Uncertainties

- Consideration of topography has been based on EA 1m LiDAR (2022).
- The assessment will cover the hydrology, hydrogeology, geology and peat aspects of the Turbine Area and cable routes and access routes within the Cable Corridor and Access Route Search Areas and near vicinity. No assessment of mineral soil slope stability, geotechnical risk or contamination will be carried out as part of the assessment, although a Phase 1 Contamination Land Report will be undertaken by the wider team to inform the engineering design.
- Floods are natural occurrences and the risk they pose are wide ranging. With regards to flood risk specifically, this study is primarily concerned with the risk to people and property from nearby fluvial watercourses, as well as flooding from other sources including surface water (pluvial) flooding, groundwater flooding, foul water and flooding from artificial sources.
- Hydraulic models are a simplified representation of reality and are based on a series of estimates and assumptions. Datasets supplied by the EA will be used to inform the FRA and surface water modelling will be undertaken in accordance with EA guidelines.

- Every effort will be made to obtain all private water supply information, however this will be dependent on the completeness of local authority records and the response from local residents.
- Peat depth probing will be undertaken at required densities and verified by limited coring however peat depth models will out of necessity interpolate across areas where probing frequencies will be up to 100m apart.
- Baseline conditions such as surface water flow and visible groundwater emergence are subject to seasonal variation and may be fully captured during proposed site visits. While observations will be made under varying weather conditions, temporary or ephemeral features may be undetected.
- In the absence of relevant English guidelines in relation to wind farm developments the following guidelines will be adopted as they are considered to be the most established and tested guidance to date:
    - Peatland Survey. Guidance on Developments on Peatland (Scottish Government, Scottish Natural Heritage, SEPA 2017).
    - Peat Landslide Hazard and Risk Assessments: Best Practice Guide for Proposed Electricity Generation Developments (Scottish Government, April 2017).
    - Guidance on Assessing the Impacts of Development Proposals on Groundwater Abstractions and Groundwater Dependent Terrestrial Ecosystems, Land Use Planning System SEPA Guidance Note 31 (Scottish Environmental Protection Agency, 2017).
    - Guidance on Assessing the Impacts of Development on Groundwater Dependent Terrestrial Ecosystems (SEPA 2024).
    - Guidance on Assessing the Impacts of Development on Groundwater Abstractions (SEPA 2024).
    - Guidance on the assessment of peat volumes, reuse of excavated peat and the minimisation of waste (Scottish Renewables & SEPA, 2012).

9 Carbon and Climate Change

9.1 Introduction

9.1.1 This Chapter of the Scoping Report presents the scope of detailed environmental assessment for Carbon and Climate Change, incorporating a Greenhouse Gas (GHG) assessment and Climate Change Resilience and Adaptation (CCRA) assessment for the Proposed Development, where:

9.1.2 A GHG Assessment is an assessment of the Proposed Development's impact on climate change. The GHG Assessment will provide a quantification of the GHG emissions resulting from the construction, operation and decommissioning of the Proposed Development, and an assessment against the net GHG emissions saved by the Proposed Development in providing renewable electricity, which reduces reliance on fossil fuels such as natural gas; and

9.1.3 A CCRA Assessment is an assessment of the impact of future climate change on the Proposed Development. It assesses the ability of the Proposed Development to adapt to and be resilient to potential future changes in climate, such as hotter dryer summers, warmer wetter winters and increased storminess.

9.1.4 Within this Chapter the term Proposed Development is used to describe all elements required to construct and operate the Calderdale Energy Park and associated infrastructure. The term Turbine Area is also used, whereby this is the land on which wind turbines will be constructed. The Proposed Development covers a wider area which also includes the Cable Corridor Search Areas and Accesses. Specifically, this Chapter of the Scoping Report presents the policy and legislative context alongside relevant technical guidance and an overview of the relevant baseline conditions within the Proposed Development. It concludes by setting out the scope of assessment including, with justification, those effects that are proposed to be scoped in or out for assessment and outlines the assessment methodology that will be used to undertake the assessment.

9.1.5 Within this Chapter, the term 'carbon' is used to describe all GHG emissions, i.e. all emissions which might contribute to climate change, the predominant contributor of which is carbon dioxide (CO_2). The term CO_2e is also used, which refers to Carbon Dioxide equivalent, which is the main metric for GHGs.

9.2 Review of Policy, Legislation and Relevant Guidance

9.2.1 Legislation, planning policy and guidance relating to Carbon and Climate Change, and relevant to the Proposed Development, comprises:

Legislation

- Climate Change Act 2008[144] and 2050 Target Amendment Order 2019[145];
- Carbon Budget Order 2021[146]; and
- Energy Act 2023[147].

National Planning Policy

- Overarching National Policy Statement (NPS) for Energy (EN-1) (2023)[148];
- Draft Overarching National Policy Statement for Energy (EN-1) (2025)[149]
- Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (2025)[150];
- National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023)[151];
- Draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (2025)[152]; and
- National Planning Policy Framework (NPPF) (updated February 2025)[153].

[144] HMSO (2008) Climate Change Act 2008.

[145] HMSO (2019) The Climate Change Act 2008 (2050 Target Amendment) Order 2019.

[146] HMSO (2021) The Carbon Budget Order 2021.

[147] HMSO (2023) Energy Act 2023.

[148] Department for Energy Security & Net Zero (2023) Overarching National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf

[149] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements

[150] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements

[151] Department for Energy Security & Net Zero (2023) National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147382/NPS_EN-3.pdf

[152] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements

[153] Ministry of Housing Communities & Local Government (2024) National Planning Policy Framework (December 2024) Updated online February 2025. Available at: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf

Local Planning Policy

- Calderdale Local Plan[154];
- Calderdale Local Area Energy Plan[155];
- Bradford District Local Plan[156];
- Rochdale Local Plan[157];
- Rossendale Local Plan[158];
- Leeds City Council - Core Strategy[159];
- Pendle Borough Council Core Strategy[160]; and
- Burnley's Local Plan 2018 [161].

Guidance

- Planning Practice Guidance for Climate Change[162];
- Institute of Environmental Management and Assessment (IEMA) Guide: Assessing Greenhouse Gas Emissions and Evaluating their Significance[163];
- The Greenhouse Gas Protocol Corporate Accounting and Reporting Standard (GHG Protocol);
- PAS 2080:2023 Carbon Management in Buildings and Infrastructure[164]
- Climate Change Committee (CCC) Net Zero Technical Report[165];

[154] Local Plan | Calderdale Council
[155] Calderdale Local Area Energy Plan (LAEP) Report
[156] Bradford District Local Plan | Bradford Council
[157] Current Local Plan policies and plans | The Local Plan | Rochdale Borough Council
[158] Local Plan – Rossendale Borough Council
[159] Leeds City Council, 2019. Available at: https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/core-strategy-introduction
[160] Pendle Borough Council, 2015. Available at: https://www.pendle.gov.uk/info/20072/planning_policies/275/development_plan_documents/2
[161] Burneley Borough Council Available at: https://burnley.gov.uk/wp-content/uploads/2022/04/Burnleys-Local-Plan-Adopted-Version-Final-With-erratum-28-Sep-2018.pdf
[162] HM Government (2019) Planning Practice Guidance Climate Change. Available: https://www.gov.uk/guidance/climate-change
[163] IEMA (2022) Institute of Environmental Management and Assessment (IEMA) Guide: Assessing Greenhouse Gas Emissions and Evaluating their Significance.
[164] British Standards Institution (2023) PAS 2080:2023 Carbon management in buildings and infrastructure. Available: https://knowledge.bsigroup.com/products/carbon-management-in-buildings-and-infrastructure?version=standard
[165] Climate Change Committee (2019) Net Zero, Technical Report.

- Seventh Carbon Budget: Advice for the UK Government[166];
- IEMA EIA Guide to: Climate Change Resilience and Adaptation[167];
- Royal Institute of Chartered Surveyors (RICS) Whole Life Carbon Assessment for the Built Environment[168];
- UK Climate Projections 2018 ('UKCP18') Key Results Spreadsheet[169];
- UK Climate Projections: Headline Findings[170];
- UK Climate Change Risk Assessment 2022[171]; and
- The Third National Adaptation Programme (NAP3) and the Fourth Strategy for Climate Adaptation Reporting[172].

9.3 Existing Baseline Conditions

9.3.1 This section of the Scoping Chapter for Carbon and Climate Change sets out the known baseline conditions at this (scoping) stage of the Proposed Development. It is noted that further information gathering and assessment is proposed to inform the technical assessment for the Environmental Statement (ES) (see details and scope of the further baseline data below). This will be finalised once the study area has been fully defined (see next section).

Study Area

GHG Assessment

9.3.2 The study area for the GHG assessment is defined by the likely location of emissions sources that contribute to the Proposed Developments' lifecycle footprint. These include all emissions which occur within the Turbine Area, Cable Corridor and Access Search Areas during construction, operation and decommissioning, as well as emissions in the supply chain of materials and components that make up the Proposed Development, which will occur both in the

[166] Climate Change Committee (2025) The Seventh Carbon Budget: Advice for the UK Government. Available: https://www.theccc.org.uk/wp-content/uploads/2025/02/The-Seventh-Carbon-Budget.pdf

[167] IEMA (2020) EIA Guide to: Climate Change Resilience and Adaptation.

[168] RICS (2023) Whole life carbon assessment for the built environment.

[169] Defra, BEIS, Met Office & Environment Agency (2022) UK Climate Projections Key Results Spreadsheet. Available: ukcp18-key-results-2022.xlsx

[170] Defra, BEIS, Met Office & Environment Agency (2022) UK Climate Projections: Headline Findings. Available: ukcp18_headline_findings_v4_aug22.pdf

[171] HMSO (2022) UK Climate Change Risk Assessment 2022.

[172] HM Government (2023) The Third National Adaptation Programme (NAP3) and the Fourth Strategy for Climate Adaptation Reporting. Available: The Third National Adaptation Programme (NAP3) and the Fourth Strategy for Climate Adaptation Reporting

UK and overseas. The considered emissions sources are detailed further in Paragraph 9.5.5.

9.3.3 The emissions associated with construction activities, including soil disturbance, will be considered for all options relevant to Site Access Search Areas and Cable Corridor Search Areas. This will evolve through the design of the Proposed Development and will be refined in the final ES.

CCRA Assessment

9.3.4 The study area for the CCRA assessment, unlike other disciplines, focuses on the impact that climate change will have on the Proposed Development (as opposed to the impact of the Proposed Development on the environment). The study area is, therefore the Proposed Development, split into its constituent parts (receptors).

Relevant Baseline Conditions

GHG Assessment

9.3.5 The Turbine Area comprises predominantly of undulating upland moorland whilst the Cable Corridor Search Areas are occupied by a range of habitats and land uses including upland moorland, lowland agricultural land and woodland. Whilst there will be no baseline GHG footprint from buildings and infrastructure, carbon emissions and removals will occur as a result of the natural habitats (e.g. peatland), moorland management and lowland agricultural activities.

9.3.6 Notwithstanding this, the baseline GHG emissions are likely to be small in the context of the lifecycle emissions for the Proposed Development.

CCRA Assessment

9.3.7 Existing baseline conditions for the CCRA assessment relate to current, and recent historic, climate and meteorological conditions at the Proposed Development. The ES will include data gathered from the Met Office to describe the existing frequency and severity of climate hazards such as flooding, heatwaves and drought[169,170].

Receptors Identified

GHG Assessment

9.3.8 The assessment of GHGs does not include identification of sensitive receptors, as GHG emissions do not directly affect specific locations or receptors but lead to indirect effects by contributing to climate change. Identification of sensitive areas for climate change has been undertaken by the Intergovernmental Panel on Climate

Change (IPCC)[173]. Impacts on specific areas will not be included within the GHG assessment, since the impacts of GHG emissions will affect the global atmosphere and therefore need to be considered in a total context, rather than focus on localised areas.

CCRA Assessment

9.3.9 The key receptors identified for inclusion in the CCRA assessment are:

- Construction staff and workers;
- Staff maintaining the Proposed Development throughout its operational lifetime;
- The Proposed Development and associated infrastructure; and
- Habitats and biodiversity.

9.3.10 IEMA guidance[167] describes that the assessment should consider the susceptibility and vulnerability of the receptors to future climate change. The guidance provides examples of low, moderate and high susceptibility and vulnerability, but is not prescriptive in defining a scale for overall receptor sensitivity, which is determined with professional judgement. For the purposes of the CCRA assessment, all receptors will be considered to be of high sensitivity, which is worst-case.

9.3.11 In addition, the CCRA will include an assessment of In-Combination Climate Change Impacts (ICCI). The receptors for the ICCI assessment will be those considered by other ES technical disciplines, as presented within the respective ES chapters, including (but not limited to) flood risk, air quality, noise etc.

9.4 Environmental Measures

9.4.1 Consideration will be paid to the opportunity to introduce environmental measures (and mitigation) that will help to avoid or reduce the potential for an adverse significant effect to occur. In accordance with Schedule 4(7) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset (where appropriate) likely significant effects. Specific environmental measures relevant to Carbon and Climate Change will be identified and will be considered as part of the assessments (i.e. the assessments of likely significant effects have been undertaken with the inclusion of the environmental measures, as these measures will form part of the Proposed Development). At this stage of the

[173] IPCC (2022) 'AR6 Climate Change 2022: Impacts, Adaptation, and Vulnerability'.

Proposed Development, the following environmental measures will be implemented and included within the Proposed Development.

Construction

9.4.2 It is anticipated that measures to minimise GHG emissions during the construction phase of the Proposed Development will be included within the suite of environmental management plans that will accompany the Development Consent Order (DCO) submission. These include (but are not limited to) the following:

- Outline Construction Environmental Management Plan (oCEMP);
- Outline Carbon Management Plan (oCMP);
- Outline Construction Traffic Management Plan (oCTMP);
- Outline Peat Management Plan (oPMP);
- Outline Employment Skills and Supply Chain Management Plan (oESSCMP); and
- Outline Site Waste Management Plan (oSWMP).

Operation and Maintenance

9.4.3 It is anticipated that measures to minimise GHG emissions during the operational phase of the Proposed Development will be included within the suite of environmental management plans that will accompany the DCO submission. These include (but are not limited to) the following:

- Outline Operational Environmental Management Plan (oOEMP); and
- oCMP, oPMP, oESSCMP and oSWMP.

Decommissioning

9.4.4 It is anticipated that measures to minimise GHG emissions during the decommissioning phase of the Proposed Development will be included within the suite of environmental management plans that will accompany the DCO submission. These include (but are not limited to) the following:

- Outline Decommissioning Environmental Management Plan (oDEMP); and
- oPMP, oESSCMP and oSWMP.

9.5 Scope of the Assessment

Consultation Undertaken to Date

Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

9.5.1 As discussed in **Chapter 1: Introduction**, under the Town and Country Planning Act 1990[174], in July 2023, an EIA scoping request was submitted to CMBC, which was a Scoping Report in request for a Scoping Opinion for a proposed wind farm development and associated infrastructure at the Site, including cable connection. Table 9-1 presents the details of the Scoping Opinion received from CMBC relevant to Carbon and Climate Change and confirms if the opinion is considered within the proposed scope of assessment (as set out below) or if is considered to be scoped out of the technical assessment, with details provided in Table 9-1.

Table 9-1: CMBC Scoping Opinion

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
Natural England	The ES should identify how the development effects the ability of the natural environment to adapt to climate change, including its ability to provide adaption for people. This should include impacts on the vulnerability or resilience of a natural feature as well as impacts on how the environment can accommodate change for both nature and people. The ES should set out the measures that will be adopted to address impacts. The ES should also identify how the development impacts the natural environment's ability to store and sequester greenhouse gases, in relation to climate change mitigation and the natural environment's contribution to achieving net zero by 2050.	A CCRA assessment will be undertaken within the ES. Details are provided for the assessment approach and methodology, which will follow IEMA guidance[167].
CMBC Regeneration and Strategy	The submitted Scoping Report identifies that a Carbon Balance Assessment would form part of an ES and would be undertaken in accordance with the	The GHG assessment will adopt a whole lifecycle approach, considering emissions

[174] UK Government (1990) Town and Country Planning Act 1990. Available: Town and Country Planning Act 1990.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
Planning Services	Scottish Government's Carbon Calculator Tool, as there is no England or UK equivalent. This would quantify the CO_2 emissions savings over the life of the Proposed Development against the release of CO_2 from other energy generation methods as a result of implementing the project. It also reports on the time it takes to pay back any carbon debt and the potential effects of the Proposed Development on climate change in terms of carbon savings produced. Additionally, the ES will assess the impact on the peat on-site and to assess the potential effects in terms of CO_2 emissions against the total potential carbon savings of the proposal. The LPA considers that the use of the Scottish Government's Carbon Calculator Tool is broadly acceptable. However, this does not include methodology for calculating the carbon benefits and carbon impacts of the battery energy storage element of the scheme, the carbon benefits and carbon impacts which land-based PV would entail, and the carbon sequestration that additional tree planting (i.e., above replacement planting) would present (this would depend upon the tree species and forest management proposed). The LPA further considers that assessment of CO_2 production during the fabrication and supply chain phases of development should be calculated to give a robust and full picture of the likely carbon impacts of the proposal. Demonstration of how the proposal would help to deliver the UK's statutory climate change targets on the way to net zero, and the aims of Calderdale's Local Area	within the supply chain of materials that comprise the Proposed Development, as well as emissions from construction activities and operational and decommissioning emissions. Consideration will be given to peatland in the final ES, and the methodology will be consistent with that used for the Hydrology, Hydrogeology, Geology and Peat assessment. Carbon benefits of the Proposed Development including wind turbines, Battery Energy Storage System and other infrastructure will be assessed as described in Paragraph 9.5.13. Consideration will also be made to carbon sequestration through other non-peat habitats restored or enhanced as part of the Proposed Development (Paragraph 9.5.7). A part of the assessment process is contextualisation of the lifecycle GHG emissions, which involves comparison to UK carbon budgets (as

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	Energy Plan (plus any other relevant statutory and non-statutory climate change action plans), should be set out within an ES as part of a Climate Change Statement. More attention needs to be paid to the impact on peat and what damage will be caused, as detailed later in this Scoping response. Peat if wet will absorb carbon. However, if it dries out because of building the wind turbines and associated concrete pads with excavation down to 4m and other on-site infrastructure such as borrow pits, foundations, and underground cable routes etc., it will become a net carbon emitter. Bradford Council note that they consider that an HRA derogation test would be required and that the HRA should be very clear, if imperative reasons of overriding public importance (IROPI) are invoked at Stage 3 that the carbon reduction benefits of the scheme outweigh the adverse effects of carbon release and habitat loss from degraded peat. Notwithstanding the comments made by Bradford Council, as the competent authority, the LPA would need to undertake a HRA Stage 2 Appropriate Assessment before it can determine any further courses of action which may or may not be required. For the avoidance of doubt, the LPA is not pre-determined on this, or any others matters arising from this EIA Scoping or any future considerations under the Town and Country Planning Act 1990 (as amended).	required by EN-1) to demonstrate the Proposed Development's contribution to delivering Net Zero. Relevant consideration to the need for HRA is covered in **Chapter 7: Biodiversity**.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
Heptonstall Parish Council	Initial scoping document fails to determine its effectiveness in reducing carbon emissions vs the destruction of significant areas of peat bog and wildlife habitat loss. The report fails to identify both the embodied carbon of the proposal manufacture, transportation and construction and decommissioning of the project against the carbon capture ability of well maintained peat moorland.	The GHG assessment will adopt a whole lifecycle approach, considering emissions within the supply chain of materials that comprise the Proposed Development, as well as emissions from construction activities and operational emissions. It is anticipated that emissions generated during the decommissioning phase will be net zero, in accordance with the UK's Net Zero target. Consideration will be given to peatland in the final ES, and the methodology will be consistent with that used for the Hydrology, Hydrogeology, Geology and Peat assessment.
CMBC Regeneration and Strategy Climate & Environment Team	Agree that the Scottish Governments Carbon calculator for wind farms on Scottish peatlands is an appropriate tool. Note that the methodology considers a loss of carbon due to backup power generation, but processes no method for calculating; - The carbon benefits and carbon impacts of the battery energy storage element of the scheme. - The carbon benefits and carbon impacts which land-based PV would entail. - The carbon sequestration that additional tree planting would present.	Consideration will be given to peatland in the final ES, and the methodology will be consistent with that used for the Hydrology, Hydrogeology, Geology and Peat assessment. Emissions from all activities associated with construction, operation and decommissioning will

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
		be included in the assessment (Paragraph 9.5.5), as will a quantification of carbon benefits as well as carbon sequestration from habitats restored or enhanced as part of the Proposed Development (Paragraph 9.5.7).
CMBC Spatial Planning	The proposal in its current form would not be compliant with local plan policies. This proposal provides a significant opportunity for Calderdale to transfer to Net Zero and would represent a major change in the landscape of onshore wind. The changes to the NPFF provide an opening for this type of development, but due to the LP does not, there are some fundamental policy issues that must be considered. An LDO noted within the September ministerial statement would be an opportunity for this type of development to come forward, but this must demonstrate the potential benefits far outweighing the negatives. CC1, Climate change - The policy states that development proposals should ensure the following criteria met: using sustainable design and construction methods, meeting national standards as minimum, increasing levels of renewable and low carbon energy generation, through both a range of technologies and domestic, community and commercial scale schemes, whilst taking account of cumulative and environmental impacts; wherever possible energy demand should be met by onsite renewable energy or a low carbon energy distribution network.	Consideration will be given to local policy in the context of the Proposed Development. Demonstrating the Proposed Development complies with relevant national and local policies is part of the assessment of significance following IEMA guidance (Paragraph 9.5.26) and will therefore be presented within the ES.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	These policies are relevant to wind farms, even though not completely relevant. This is of particular importance due to the location of the development. The development will need to ensure great consideration to policy CC1 and avoid significant environmental harm.	
Blacksaw Parish Council	Object to the development due to no justification needed for a large wind farm. No detail of whether the scheme would be carbon negative or positive during the scheme lifetime. Nothing on the basic question of contribution to mitigating climate change. Councillors felt that this was by no means a given in view of the embedded carbon in manufacture, the transport costs, the impact on the peat, the environment, birds, visual impact and so on. Would want to see a very serious Impact Assessment. Bogs are equivalent of rainforest in terms of carbon sequestration. Is this factored into any carbon targets?	A CCRA assessment will be undertaken within the ES. Details are provided for the assessment approach and methodology, which will follow IEMA guidance[167]. A lifecycle GHG footprint will be undertaken for the proposed development, considering emissions generated during the construction, operational and decommissioning phases. Consideration will also be given to local policy in the context of the Proposed Development. Consideration will be given to peatland in the final ES, and the methodology will be consistent with that used for the Hydrology, Hydrogeology, Geology and Peat assessment. The assessment will also quantify the carbon benefits of the

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
		Proposed Development and demonstrate all the measures implemented throughout the lifetime to avoid and reduce GHG emissions and contribute to mitigating climate change. The benefits will weigh the carbon emissions from the Proposed Development (including embedded carbon, transport and peat disturbance) against the GHG emissions saved during its lifetime (Paragraph 9.5.13).
Ban the Burn	Scoping Report does not include any estimate of increased carbon emissions as a result of disturbance to the peat caused by turbine construction, operation and decommissioning.	Consideration will be given to peatland in the final ES, and the methodology will be consistent with that used for the Hydrology, Hydrogeology, Geology and Peat assessment.

Other Consultation Undertaken to Date

9.5.2 No other consultation has been undertaken to date.

Effects Scoped Out from Detailed Assessment

9.5.3 There are no effects for Carbon and Climate Change that are proposed to be scoped out of the ES. Any emissions sources not considered in this Scoping Report that are identified during Preliminary Environmental Information Report (PEIR), consultation or production of the final ES will either be scoped into or scoped out of the final ES. Where sources are scoped out, the rationale will be clearly justified and evidenced. These will either be not relevant or causally linked to the Proposed Development, or will not contribute more than 1% of the lifecycle carbon emissions in isolation and 5% in total, in line with IEMA guidance[163].

Likely Significant Effects Scoped into the Detailed Assessment

GHG Assessment

9.5.4 The Proposed Development will lead to the release of GHG emissions from its construction, operation and decommissioning. As previously discussed, the key GHG emitted will be CO_2; however, the assessment will include quantification of GHG emissions as carbon dioxide equivalent (CO_2e), which includes the contribution of all other GHGs (i.e. gases with a Global Warming Potential (GWP)) that will be released.

9.5.5 The key GHG emissions sources included in the GHG assessment are as follows:

Construction

- The embodied carbon in components and materials used to construct the Proposed Development;
- Emissions associated with traffic generated by the construction of the Proposed Development. This includes transportation of materials and components to the Proposed Development, including shipping from overseas; and
- Emissions associated with fuel and energy consumption for worker accommodation and plant use during construction works.
- Emissions from transport and treatment of construction waste;
- Emissions from water consumed during construction works; and
- Carbon emissions resulting from disturbance of peatland in constructing the Proposed Development.

Operation

- Emissions associated with the operational maintenance, repair, and replacement of the Proposed Development;
- Emissions from operational waste generation;
- Emissions from operational water consumption; and
- Emissions associated with traffic generated by the operation of the Proposed Development.

Decommissioning

- Emissions from energy and fuels consumed in the deconstruction of the Proposed Development at the end of its life;
- Emissions from deconstruction transport; and
- Emissions from transport, reuse, recycling, treatment or disposal of the Proposed Development at the end of its life.

9.5.6 As all carbon emissions have the potential to affect climate change, it is important to assess the effect of the Proposed Development on climate change as a result of carbon emissions from the construction, operational and decommissioning phases together. The GHG assessment will therefore be primarily based on the effects of all construction, operational and decommissioning phase emissions, but will additionally consider the effects in construction, operation and decommissioning separately for completeness. The significance of effects for individual emissions sources will not be considered.

9.5.7 The assessment will include a quantification of carbon benefits of the Proposed Development provided by the generation of renewable energy, as well as any carbon sequestration from the restoration and enhancement of natural habitats on the Proposed Development.

CCRA Assessment

9.5.8 The CCRA assessment will examine potential future climate risks which may affect the Proposed Development including:

- Flooding (pluvial and fluvial);
- Sea level rise;
- Extreme weather;
- Heat waves (inc. wildfires);
- Drought (inc. reduced summer rainfall);
- Chronic increase in average temperatures;
- Increased precipitation; and
- Subsidence or ground movement.

9.5.9 The CCRA assessment will assess the potential impacts and effects during the construction, operation and decommissioning phases.

Proposed Approach to the ES

Assessment Methodology

GHG Assessment

9.5.10 The GHG assessment methodology outlined below is aligned with the requirements of Section 5.3 'Greenhouse Gas Emissions' of the NPS for Energy (EN-1)[148].

Existing and Future Baseline

9.5.11 The baseline for the GHG assessment will be related to the current activities at the Proposed Development. The existing baseline GHG emissions will be established by taking account of the carbon sequestered by natural and semi-natural habitats (including moorland and peatland). The methodology will be consistent with that used for the Hydrology, Hydrogeology, Geology and Peat assessment.

9.5.12 In addition, two alternative baseline scenarios will be considered in the ES, in line with IEMA guidance[163] recommendations. For GHG assessments in the renewable energy sector, it is common practice to consider the baseline emissions associated with the generation of electricity using alternative means of energy, including fossil fuels and natural gas but also nuclear and other renewable energy sources (solar, hydropower etc). Outside renewables, natural gas remains the major contributor to UK electricity in 2024, contributing over 25% of total national electricity.

9.5.13 With this in mind two alternative baseline scenarios will be considered in the ES:

- Alternative Baseline 1 - energy from the Proposed Development will allow the phase out of existing fossil fuel power generation in the UK and the energy generated by the Proposed Development will therefore displace energy generated by use of fossil fuels. It will be assumed that any such fossil fuel power generation retained in operation in the absence of renewable alternatives will be retrofitted with Carbon Capture and Storage (CCS) technology as part of the UK's industrial decarbonisation strategy and unabated operation will cease in the future; and
- Alternative Baseline 2 - alternative technology to the Proposed Development will be built and operated. The focus will be on a new natural gas fired power station operating with CCS technology, as well as comparison to the carbon intensity of other renewable energy schemes including solar and offshore wind to provide context.

Construction

9.5.14 The embodied carbon from construction will be calculated to account for carbon emissions arising from the manufacture and production of construction materials. The assessment of embodied carbon covers "cradle to gate" emissions (i.e. carbon emissions from the extraction of raw materials through to finished construction products). Embodied carbon emissions will be calculated using a range of sources included University of Bath Inventory of Carbon and Energy (ICE), product Environmental Performance Declarations (EPD's), and published lifecycle assessment reports and research where relevant.

9.5.15 Carbon emissions from electricity and fuel use during construction will be estimated based on predicted construction phase electricity consumption and fuel usage, using the latest available carbon emissions factors published by the Department for Energy Security and Net Zero (DESNZ)[175].

9.5.16 Carbon emissions from road transport during construction will be calculated using carbon factors for transport modes derived from the Department for Transport's (DfT's) WebTAG data book[176].

9.5.17 Emissions from waste generated and water consumed during construction of the Proposed Development will be calculated using available data on the quantum of waste and water and published emissions factors from a recognised database (e.g. DESNZ[176], Climatiq, EcoInvent, etc.).

9.5.18 Emissions from soil and peatland disturbance from construction activities will be included in the GHG assessment and will be consistent with the methodology outlined in the Hydrology, Hydrogeology, Geology and Peat assessment.

Operation and Maintenance

9.5.19 Carbon emissions from road transport during operation will be calculated using carbon factors for transport modes derived from DfT's WebTAG data book[176].

9.5.20 Carbon emissions associated with the repair, maintenance and replacement of components of the Proposed Development during its operational lifetime will be calculated using the same data and resources used to calculate embodied carbon, taking account of the anticipated lifetime and replacement frequency of key components of the Proposed Development.

[175] DESNZ (2025) Greenhouse gas reporting: conversion factors 2025. Available: https://www.gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2025

[176] DfT (2025) TAG data book May 2025 v2.01. Available: https://www.gov.uk/government/publications/tag-data-book

9.5.21 Carbon emissions savings from the electricity generated by the Proposed Development will be calculated through comparison to the current carbon intensity of fossil fuel power generation with CCS. This comparison is relevant as the electricity generated by the Proposed Development will replace energy from fossil fuel combustion as part of the transition to net zero. Carbon emissions factors for fossil fuel generation with CCS will be obtained from the latest UK Government energy fuel mix disclosure tables[177] and adjusted to account for CCS using the latest published data on carbon capture rates for such systems. The predicted annual and lifetime energy generation of the Proposed Development will be used to calculate the potential avoided carbon emissions.

9.5.22 Carbon emissions from waste and water will be assessed using data available on waste generation and water usage, and emissions factors obtained from DESNZ or other appropriate published databases (e.g. Climatiq, EcoInvent).

9.5.23 Any carbon sequestered by managed peatland at the Turbine Area will be assessed using a methodology consistent with the Hydrology, Hydrogeology, Geology and Peat assessment.

Decommissioning

9.5.24 Carbon emissions from deconstruction of the Proposed Development will be calculated for deconstruction site activities (fuel and energy use), decommissioning transport (including export of waste and staff travel), waste recycling, treatment and disposal, and water consumption.

9.5.25 Emissions will be calculated using data on the duration of decommissioning works, estimated staff numbers and energy and fuel requirements, mass of materials and components exported from the Proposed Development and water consumption. Representative emissions factors will be developed, taking account of the expected decarbonisation of energy, transport, waste treatment and water supply and treatment by the year of decommissioning.

Assessment of Significance

9.5.26 The approach to defining likely significant effects will be carried out in three steps, in accordance with IEMA guidance[163]:

- The first step is to compare the Proposed Development's carbon emissions throughout its lifetime to the baseline carbon emissions to determine whether there is a net increase or decrease in carbon emissions as a result of the Proposed Development;

[177] DESNZ (2025) Fuel mix disclosure table. Available: Fuel mix disclosure data table - GOV.UK

- The second step is to compare the calculated change in emissions to local and national carbon emissions for context (principally national carbon budgets in accordance with EN-1 requirements); and
- The third step applies expert judgment on the significance of those emissions taking into account the changes in emissions, their contribution to relevant carbon budgets, their consistency with relevant policy, and an evaluation of the environmental measures proposed to avoid, reduce and compensate carbon emissions.

9.5.27 The level of significance will be taken using the criteria as defined in IEMA guidance[163] in combination with professional judgement.

CCRA Assessment

9.5.28 The CCRA assessment methodology outlined below is aligned with the requirements of Section 4.10 'Climate Change Adaptation and Resilience' of the NPS for Energy (EN-1)[148].

9.5.29 The assessment of CCRA of the Proposed Development to future changes in climate will be undertaken in accordance with the methodology described in IEMA guidance[167].

9.5.30 The CCRA assessment will establish potential climate risks and consider the significance of that risk through an assessment of likelihood and consequence, taking into account embedded design measures adopted by the Proposed Development.

9.5.31 Future meteorological conditions will be obtained from the Met Office climate projections for the UK (UKCP18)[169,170] to identify likely future changes in local climate. The assessment will set out the measures incorporated into the design of the Proposed Development that will ensure the Proposed Development is resilient to future climate risks such as increased extreme weather events and warmer summer temperatures.

9.5.32 A systematic risk assessment of conditions listed in Paragraph 9.5.8 will be undertaken during the design of the Proposed Development to identify the impact of expected extreme weather conditions arising from climate change on the Proposed Development, during the construction phase, over its operational lifetime and during decommissioning.

9.5.33 As a further step, the CCRA assessment will identify additional mitigation (as required) to address any significant effects and concludes on the residual risks.

Assessment of Significance

9.5.34 The assessment of significance takes embedded mitigation adopted by the Proposed Development into account.

In-Combination Climate Change Impact Assessment

9.5.35 As part of the CCRA assessment piece, an In-Combination Climate Change Impact (ICCI) assessment will also be undertaken and presented within the ES. This will assess the extent to which potential future climate change alters the environmental effects assessed by other EIA disciplines such as (but not limited to) flood risk, air quality, and noise and vibration.

Cumulative Effects

9.5.36 Cumulative effects will be assessed in line with the methodology set out in **Chapter 3: Approach to EIA**, which accords with the Planning Inspectorate's Advice on Cumulative Effects Assessment. A long list of existing, consented, and proposed developments will be agreed with the relevant local planning authorities prior to undertaking the assessment. The certainty of these developments will be determined using the tiered approach recommended by the Planning Inspectorate. For each environmental topic, the potential Zone of Influence (ZoI) of the Proposed Development during construction, operation (including maintenance), and decommissioning will be identified. The outcomes of the cumulative effects assessment will be reported within the Environmental Statement.

Assumptions, Limitations and Uncertainties

GHG Assessment

9.5.37 The precise Cable Corridor and Accesses are not yet defined, with search areas included to encompass these; the activities and associated emissions will be refined within the final ES chapter.

9.5.38 The GHG assessment will consider and help develop mitigation and carbon management measures delivered as part of the Proposed Development. These will be set out in relevant management plans and documents (see Section 9.4). This will include measures to minimise embodied carbon emissions and promote cradle-to-cradle circular economy, as these emissions are likely to represent the largest component of the Proposed Developments lifecycle footprint.

CCRA Assessment

9.5.39 A high emissions scenario (using the Representative Concentration Pathway (RCP) 8.5 projections) will be utilised as this is worst-case and is advised in IEMA guidance[167].

9.5.40 UKCP18 projections for the future period 2060-2079 will be utilised, as this takes account of the anticipated lifetime of the Proposed Development (approximately 35 years).

10 Landscape and Visual

10.1 Introduction

10.1.1 This Chapter of the Scoping Report presents the scope of detailed environmental assessment for Landscape and Visual (Landscape and Visual Impact Assessment (LVIA)) for the Proposed Development. Specifically, this section of the Scoping Report presents the policy and legislative context, the approach to collecting baseline data relevant to this scoping chapter and an overview of the relevant baseline conditions for the Proposed Development and surrounding area. It concludes by setting out the scope of assessment including, with justification, those effects that are proposed to be scoped in or out for detailed assessment and outlines the method that will be used to undertake the detailed environmental assessment.

10.1.2 This chapter of the Scoping Report is supported by the following Figures:

- Figure 10-1: National Character Areas;
- Figure 10-2: Landscape Designations;
- Figure 10-3: Registered Parks and Gardens;
- Figure 10-4: Green Belt;
- Figure 10-5: Visual Receptors;
- Figure 10-6: Blade Tip Zone of Theoretical Visibility (ZTV); and
- Figure 10-7: Hub Height ZTV.

10.2 Review of Policy, Legislation and Relevant Guidance

10.2.1 Legislation, planning policy and guidance relating to Landscape and Visual, and relevant to the Proposed Development comprises:

Legislation

- National Parks and Access to the Countryside Act 1949[178];
- The Hedgerow Regulations 1997;[179]

[178] National Park and Access to the Countryside Act 1949. Available: https://www.legislation.gov.uk/ukpga/Geo6/12-13-14/97
[179] The Hedgerow Regulations 1997. Available: https://www.legislation.gov.uk/uksi/1997/1160/contents

- Countryside and Rights of Way Act 2000 (CRoW)[180]; and
- Levelling-up and Regeneration Act 2023[181].

National Planning Policy

- Overarching National Policy Statement for Energy (EN-1) (2023)[182];
- Draft Overarching National Policy Statement for Energy (EN-1) (2025)[183];
- Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (2025)[184];
- National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023)[185];
- Draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (2025)[186]; and
- National Planning Policy Framework (NPPF) (updated February 2025)[187].

Local Planning Policy

- Calderdale Local Plan 2018/19 to 2032/33 (Calderdale Council, adopted March 2023)[188];

[180] Countryside and Rights of Way Act 2000. Available: https://www.legislation.gov.uk/ukpga/2000/37/contents
[181] Levelling-up and Regeneration Act 2023. Available https://www.legislation.gov.uk/ukpga/2023/55/contents
[182] Department for Energy Security & Net Zero (2023) Overarching National Policy Statement for Energy (EN-1). Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf
[183] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[184] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[185] Department for Energy Security & Net Zero (2023) National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147382/NPS_EN-3.pdf
[186] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[187] Ministry of Housing Communities & Local Government (2024) National Planning Policy Framework (December 2024) Updated online February 2025. Available: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf
[188] Calderdale Council, Calderdale Local Plan, adopted March 2023. Available: https://new.calderdale.gov.uk/planning-and-building-control/planning-policy/local-plan

- Calderdale Placemaking and Design Guide Supplementary Planning Document (Calderdale Council, adopted July 2024)[189];
- Local Plan for the Bradford District: Core Strategy Development Plan Document (City of Bradford Metropolitan District Council, adopted July, 2017)[190];
- Replacement Unitary Development Plan for the Bradford District (City of Bradford Metropolitan District Council, adopted October 2005)[191];
- Aire Valley Leeds Area Action Plan, Leeds Local Plan Development Plan Document (Leeds City Council, adopted November 2017)[192];
- Core Strategy (as amended by the Core Strategy Selective Review) (Leeds City Council, adopted November 2014, amendments adopted September 2019[193];
- Leeds Unitary Development Plan (Review 2006) (Leeds City Council, adopted July 2006)[194];
- Local Development Scheme 2025 to 2028 (Leeds City Council, March 2005)[195];
- Rochdale Core Strategy (Rochdale Borough Council, adopted October 2016, publication date February 2017)[196];
- Rochdale Borough Unitary Development Plan (Rochdale Metropolitan Borough Council, adopted June 2006)[197];

[189] Calderdale Council, Calderdale Placemaking and Design Guide Supplementary Planning Document, adopted March 2023. Available: https://calderdale-consult.objective.co.uk/kse/event/38082
[190] City of Bradford Metropolitan District Council, Core Strategy Development Plan Document, adopted July 2017. Available: https://bradford.gov.uk/planning-and-building-control/planning-policy/core-strategy-dpd/
[191]City of Bradford Metropolitan District Council Replacement Unitary Development Plan for the Bradford District, adopted October 2005. Available: https://www.bradford.gov.uk/planning-and-building-control/planning-policy/replacement-unitary-development-plan/
[192] Leeds City Council, Aire Valley Leeds Area Action Plan, Leeds Development Plan Document, adopted November 2017. Available: https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/aire-valley-area-action-plan
[193] Leeds City Council, Core Strategy (as amended by the Core Strategy Selective Review) (Leeds City Council, adopted November 2014, amendments adopted September 2019
[194] Leeds City Council, Leeds Unitary Development Plan Review 2006, adopted July 2006. Available: https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/unitary-development-plan
[195] Leeds City Council (March 2005) Local Development Scheme 2025 to 2028. Available: https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/local-development-scheme#introduction
[196] Rochdale Borough Council, Rochdale Core Strategy, adopted October 2016, publication date February 2017. Available: https://www.rochdale.gov.uk/local-planning-policy/core-strategy-local-plan
[197] Rochdale Metropolitan Borough Council, Rochdale Borough Unitary Development Plan, adopted June 2006. Available: https://www.rochdale.gov.uk/downloads/file/559/rochdale-borough-unitary-development-plan

- Rossendale Local Plan 2019 to 2036 (Rossendale Borough Council, adopted December 2021[198]);
- Pendle Borough Council Core Strategy (adopted December 2015)[199]; and
- Burnley's Local Plan 2018 [200].

10.2.2 The documents listed above relate to the expected footprint of the Proposed Development, including the Cable Corridor Search Areas to the Point of Connection. Local planning policy documents for the study area will be reviewed further during the preparation of the LVIA. This will be influenced by the predicted Zone of Theoretical Visibility (ZTV) for the Proposed Development. Key documents likely to be reviewed comprise those applicable to the nationally designated landscapes within the Study Area, described from paragraph 10.3.11 below.

National Guidance

- Guidelines for Landscape and Visual Impact Assessment, Third Edition, (GLVIA3), Landscape Institute and the Institute of Environmental Management and Assessment (2013)[201];
- An Approach to Landscape Character Assessment, Natural England (2014)[202];
- Landscape Character Assessment, Guidance for England and Scotland, The Countryside Agency and Scottish Natural Heritage (SNH) (2002 Edition)[203];
- Visual Representation of Development Proposals, Landscape Institute Technical Guidance Note 06/19 (July 2019)[204];
- Residential Visual Amenity Assessment (RVAA), Landscape Institute Technical Guidance Note 2/19 (March 2019)[205];

[198] Rossendale Borough Council, Rossendale Local Plan 2019 to 2036, adopted December 2021. Available: https://www.rossendale.gov.uk/local-plan/adopted-local-plan
[199] Pendle Borough Council, 2015. Available at: https://www.pendle.gov.uk/info/20072/planning_policies/275/development_plan_documents/2
[200] Burnley Borough Council Available at: https://burnley.gov.uk/wp- content/uploads/2022/04/Burnleys-Local-Plan-Adopted-Version-Final-With-erratum-28-Sep-2018.pdf
[201] Landscape Institute and the Institute of Environmental Management and Assessment (2013), Guidelines for Landscape and Visual Impact Assessment. Third Edition. (GLVIA3). Not available online
[202] Natural England (2014) An Approach to Landscape Character Assessment. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/691184/landscape-character-assessment.pdf
[203] Countryside Agency and SNH (2002), Landscape Character Assessment: Guidance for England and Scotland. Available: https://digital.nls.uk/pubs/e-monographs/2020/216649977.23.pdf
[204] Landscape Institute (2019) Visual Representation of Development Proposals – Technical Guidance Note 06/19. Available: https://www.landscapeinstitute.org/visualisation/
[205] Landscape Institute (2019), Residential Visual Amenity Assessment (RVAA) – Technical Guidance Note 02/19. Available: https://www.landscapeinstitute.org/technical-resource/rvaa/

- Assessing landscape value outside national designations), Landscape Institute Technical Guidance Note - TGN 02/21 (2021)[206];
- Siting and Designing Wind farms in the Landscape Version 3a, SNH (February 2017)[207];
- Assessing the Cumulative Landscape and Visual Impact of Onshore Wind Energy Developments, SNH, (2021)[208];
- Visual Representation of Wind farms - Good Practice Guidance, Version 2.2, SNH (February 2017)[209];
- Guidance on Aviation Lighting Impact Assessment, NatureScot (November 2024)[210];
- Planning Practice Guidance, Design: Process and Tools, Ministry of Housing, Communities and Local Government, Ministry of Housing, Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities (March 2014, updated October 2019)[211];
- Planning Policy Guidance, Natural Environment, Ministry of Housing, Communities and Local Government, Ministry of Housing, Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities (January 2016, updated June 2025)[212];
- Planning Policy Guidance, Renewable and Low Carbon Energy, Ministry of Housing, Communities and Local Government, Ministry of Housing,

[206] Landscape Institute (2021), Assessing Landscape Value Outside National Designations – Technical Guidance Note 02/21. Available: https://landscapewpstorage01.blob.core.windows.net/www-landscapeinstitute-org/2021/05/tgn-02-21-assessing-landscape-value-outside-national-designations.pdf
[207] Scottish Natural Heritage (now NatureScot) (February 2017) Siting and Designing Wind farms in the Landscape Version 3a. Available: https://www.nature.scot/sites/default/files/2017-11/Siting%20and%20designing%20windfarms%20in%20the%20landscape%20-%20version%203a.pdf
[208] Scottish Natural Heritage (now NatureScot)(2021) Assessing the Cumulative Landscape and Visual Impact of Onshore Wind Energy Developments. Available: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments
[209] Scottish Natural Heritage (now NatureScot)(February 2017) Visual Representation of Wind farms - Good Practice Guidance, Version 2.2. Available: https://www.nature.scot/doc/visual-representation-wind-farms-guidance
[210] NatureScot (November 2024) Guidance on Aviation Lighting Impact Assessment. Available: https://www.nature.scot/doc/guidance-aviation-lighting-impact-assessment
[211] Ministry of Housing, Communities and Local Government, Ministry of Housing, Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities (March 2014, updated October 2019) Planning Practice Guidance, Design: Process and Tools. Available: https://www.gov.uk/guidance/design
[212] Ministry of Housing, Communities and Local Government, Ministry of Housing, Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities (January 2016, updated June 2025) Planning Policy Guidance, Natural Environment. Available: https://www.gov.uk/guidance/natural-environment

Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities (June 2015, updated August 2023)[213]; and

- Climate People Places Value, Deign Principles for National Infrastructure, National Infrastructure Commission Design Group[214].

10.2.3 Several guidance documents referenced above have been published by NatureScot, formerly SNH. These are proposed to be used where there is no comparable guidance in England and it represents the most up to date guidance relevant to the LVIA.

10.3 Existing Baseline Conditions

10.3.1 This section of the Scoping Chapter for Landscape and Visual sets out the known baseline conditions at this (scoping) stage of the Proposed Development. It is noted that further surveys and assessment is proposed to inform the technical assessment for the ES (see details and scope of the further baseline data below under Section 10.6).

Study Area

10.3.2 The proposed turbines will be up to 200 m to blade tip height. Consequently, in accordance with SNH guidance (February 2017)[215], which is the key guidance for wind farm development that recommends study area sizes, a 45km radius from the Turbine Area is proposed. This is considered to be a suitable Study Area to assess the likely significant landscape and visual effects that will arise from the proposed wind turbines. It is proposed that the assessment of effects on landscape character will be within 15km, but this will be reviewed as the assessment progresses, nationally designated landscapes beyond 15km will be included in the assessment. This 45km radius study area also includes the full extent of the Cable Corridor Search Area. The assessment of the cable connection will concentrate on a 1km buffer either side of the proposed route, with the key consideration being the effects arising from the construction phase. A residential visual amenity assessment (RVAA) will also be undertaken within an area extending to 2km from the proposed wind turbines.

[213] Ministry of Housing, Communities and Local Government, Ministry of Housing, Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities (June 2015, updated August 2023) Planning Policy Guidance, Renewable and Low Carbon Energy. Available: https://www.gov.uk/guidance/renewable-and-low-carbon-energy

[214] National Infrastructure Commission Design Group, Climate People Places Value, Deign Principles for National Infrastructure. Available: https://majorprojects.org/wp-content/uploads/2024/10/NIC-Design-Principles.pdf

[215] Scottish Natural Heritage (now NatureScot)(February 2017) Visual Representation of Wind farms - Good Practice Guidance, Version 2.2. Available: https://www.nature.scot/doc/visual-representation-wind-farms-guidance

Approach to the Collection of Baseline Data for Scoping

10.3.3 Baseline data was collected using the following sources of data, as well as project specific surveys:

- Desktop review of the landscape and visual related policy context for the Proposed Development and surrounding context, including national and local authority landscape designations;
- Desktop review of landscape character information relevant to the Proposed Development and surrounding context;
- Review of Ordnance Survey mapping and aerial imagery;
- Computer generated indicative Zone of Theoretical Visibility (ZTV) maps for the proposed wind turbines (blade tip Figure 10-6, and hub height Figure 10-7); and
- Initial field survey work within the Turbine Area itself and local context. This initial field survey work has informed the proposed viewpoint selection for the LVIA.

Relevant Baseline Conditions

Landscape Character

10.3.4 Landscape character information will be informed by the Landscape Character Assessments published by local authorities within the Study Area, with the 45km Study Area including the Cable Corridor Search Areas and Site Access Search Areas. The relevant character areas will be verified on site, and refined where considered appropriate, particularly in close proximity to the Proposed Development.

10.3.5 The most widespread changes resulting from the Proposed Development will relate to the wind turbines. At a national level, the Turbine Area lies entirely within National Character Area (NCA) 36: Southern Pennines (National Character Area Profile – 36: Southern Pennines, Natural England, 2014). The context of the Turbine Area in relation to NCAs is shown in Figure 10-1.

. The key characteristics of this NCA are identified as comprising:

- *"Large-scale, open, sweeping landscape with high flat-topped hills providing extensive views, cut into by narrow valleys with wooded sides.*
- *Mosaics of moorland vegetation on the plateaux, including blanket bog and heathland, supporting internationally important habitats and assemblages of upland birds, invertebrates and breeding waders.*

- *Enclosed upland pastures and hay meadows enclosed by drystone walls on the hillsides, and narrow valleys with dense gritstone settlements in the valleys, with steep slopes often densely wooded, providing strong contrast with open moorlands.*
- *Many reservoirs on the moors, supplying drinking water to adjacent towns, wintering and breeding habitats for birds and high quality recreation experiences.*
- *Medieval villages and smallholdings on the higher shelves of land above the valleys, with small fields and a dense network of lanes and paths.*
- *Local stone buildings, with stone flags on roofs, bring a high degree of homogeneity to towns, villages, hamlets and farmsteads.*
- *Rich time depth, from prehistoric features such as carved rocks, to medieval boundary stones, old mineral extraction sites and more recently, mills, factories and non-conformist chapels.*
- *Historic packhorse routes traversing the moorlands, with more recent road, rail and canal routes located along valleys.*
- *Prominent features, including Stoodley Pike, Darwen Jubilee Tower, Rivington Pike, wind farms and communications masts, visible from afar."*

10.3.6 Based on review of the Calderdale District Landscape Character Assessment, the Turbine Area is predominately within the High Moorland Plateaux Landscape Character Type (LCT), South Pennine Moors Landscape Character Area (LCA). This LCA comprises a series of elevated moors, forming a large scale sweeping plateau. The underlying geology comprises Millstone Grit, which creates distinctive physical features such as weathered tors. The plateau is incised by numerous small-scale stream valleys, which drain into reservoirs, including Walshaw Dean and Widdop Reservoirs, or adjacent valleys. Land cover is predominately open moorland, largely rough grassland, with some areas of enclosed pasture on lower slopes. The mosaic of upland habitats is of ecological value, much of the area is designated as a Special Area of Conservation (SAC), Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI). It is largely an unenclosed landscape, with occasional gritstone walls and post and wire fences. Woodland cover is sparse, although there are occasional areas of coniferous plantation and small mixed woodlands. It is a relatively remote and isolated landscape, and settlement and infrastructure is sparse, with settlement comprising dispersed farmsteads, largely in lower lying, more sheltered parts of the LCA. There are multiple footpaths and bridleways crossing the LCA, including long distance routes

including the Pennine Way and Pennine Bridleway. It is an archaeological landscape, with remains dating from various historic time periods and includes features such as the Grade II Stoodley Pike Monument. The landscape also has literary connections with the Brontë sisters.

10.3.7 The southern fringes of the Turbine Area overlap with the Moorland Fringe LCT (Calder Terrace LCA) and Wooded Rural Valleys LCT (Hebden Dale and Crimsworth Dean LCA). Overall, a relatively small part of the Turbine Area lies within these LCTs. They comprise the steeply sloping fringes to the moorland plateau, transitioning to the incised river valley system to the south. Calder Terrace LCA comprises an upland landscape, dissected by valleys of the River Calder and its tributaries. There is varied pattern of pasture fields, enclosed by gritstone walls, with moorland on higher ground. Woodland cover is limited, typically found in blocks associated with reservoirs and along streams. There is a dispersed settlement pattern with farmsteads and occasional villages, connected by a network of minor roads. The Hebden Dale and Crimsworth Dean LCA comprises a visually enclosed, relatively secluded landscape. It has steep slopes and narrow valley floors. Broadleaved woodland cover, including areas of ancient woodland contribute to the sense of enclosure. In addition, there are small-scale fields along the valley sides. These are predominately used for pasture and enclosed by gritstone walls. Settlement in the upper sections of the valleys is sparse, increasing in the vicinity of Hebden Bridge.

10.3.8 The Landscape Capacity Study for Wind Energy Developments in the South Pennines identifies that the High Moorland Plateaux LCA is typically high sensitivity. It identifies that this sensitivity reduces to high-medium in the western part of the LCA, with the sensitivity assessment suggesting that this is associated with occurrence of the LCT in the vicinity of Scout Moor, particularly due to the changes associated with existing wind farm development, quarrying and other urban fringe pressures. This study identifies 12 capacity areas, with the Turbine Area lying almost entirely within Area 5 South Pennine Moors, which relates to the north western and western parts of Calderdale, extending west and south into neighbouring local authority areas. The assessment for Area 5 identifies capacity for three large wind farms with large turbines and one small group of large turbines, although this includes existing wind farms of Coal Clough, Ovenden Moor, Crook Hill and Reaps Moss.

10.3.9 The LVIA will draw on the content of the published landscape character assessments areas applicable to the Study Area, covering the Turbine Area, Cable Corridor Search Areas and Site Access Search Areas, including:

- Calderdale District Landscape Character Assessment and Review of Special Landscape Areas Designation (LUC for Calderdale District Council, October 2016)[216];
- Landscape Capacity Study for Wind Energy Developments in the South Pennines (Julie Martin Associates for Burnley Borough Council, Bury Metropolitan Borough Council, Calderdale Metropolitan Borough Council, Kirklees Metropolitan Council, Rochdale Metropolitan Borough Council and Rossendale Borough Council, January 2010)[217];
- Landscape Character, Supplementary Planning Document – Local Development Framework for Bradford (City of Bradford Metropolitan District Council, October 2008)[218];
- A Landscape Strategy for Lancashire – Landscape Character Assessment (Lancashire County Council, December 2000)[219];
- Forest of Bowland Area of Outstanding Natural Beauty Landscape Character Assessment (Lancashire County Council, September 2009)[220];
- Pendle Hill Landscape Partnership Landscape Character Assessment (commissioned by Lancashire County Council, undated)[221];
- North Yorkshire and York Landscape Characterisation Project (Chris Blandford Associates for North Yorkshire County Council, May 2011)[222];

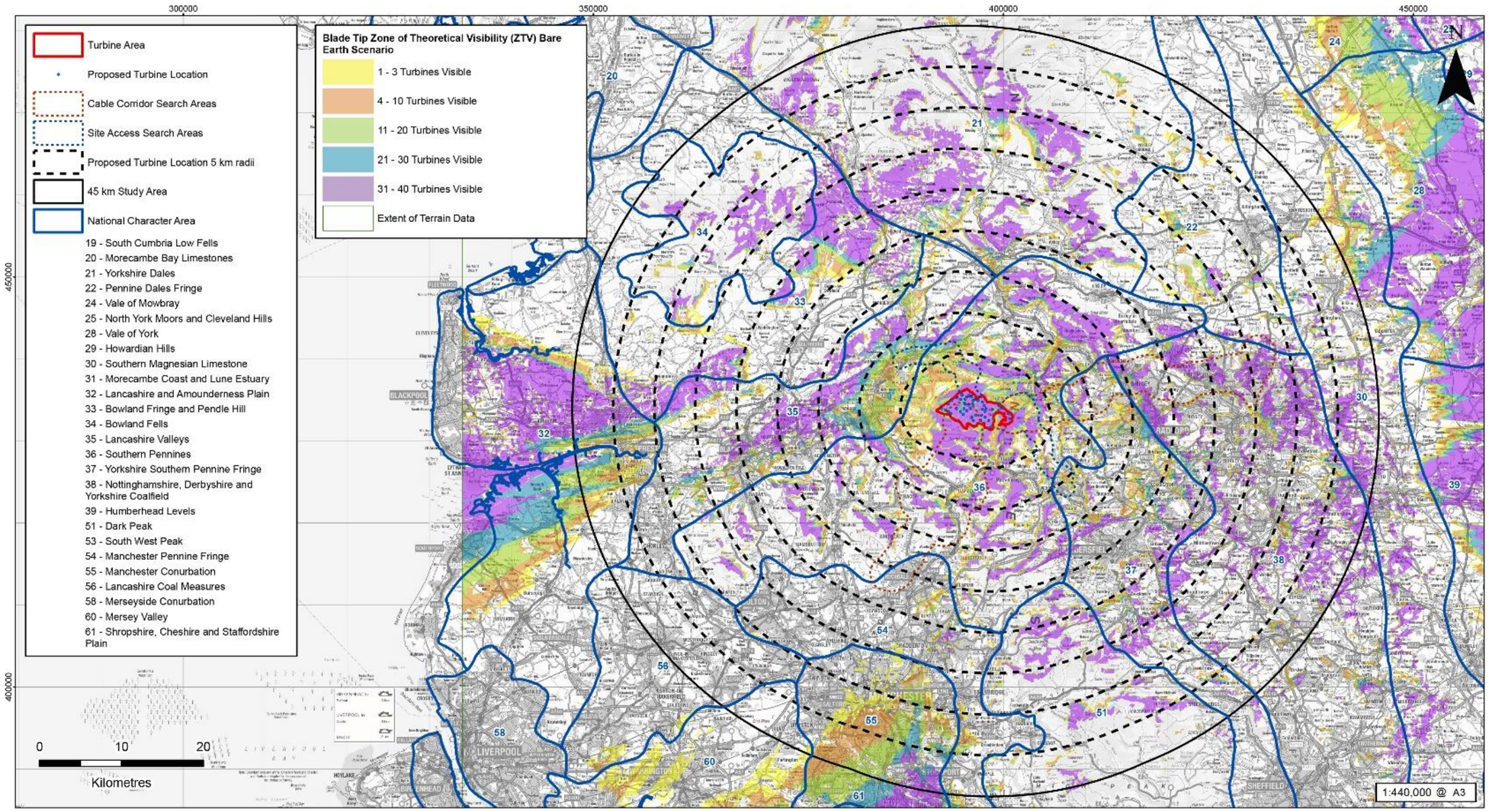
[216]LUC for Calderdale District Council (October 2016) Calderdale District Landscape Character Assessment and Review of Special Landscape Areas Designation. Available: https://new.calderdale.gov.uk/sites/default/files/2023-06/landscape-character-assessment.pdf
[217]Julie Martin Associates for Burnley Borough Council, Bury Metropolitan Borough Council, Calderdale Metropolitan Borough Council, Kirklees Metropolitan Council, Rochdale Metropolitan Borough Council and Rossendale Borough Council (January 2010) Landscape Capacity Study for Wind Energy Developments in the South Pennines. Available: https://www.rochdale.gov.uk/downloads/file/543/landscape-capacity-study-for-wind-energy-developments-in-the-south-pennines
[218]City of Bradford Metropolitan District Council (October 2008) Landscape Character, Supplementary Planning Document – Local Development Framework for Bradford. Available: https://www.bradford.gov.uk/planning-and-building-control/planning-policy/landscape-character-assessment-supplementary-planning-document/
[219]Lancashire County Council (December 2000) A Landscape Strategy for Lancashire – Landscape Character Assessment. Available (https://www.lancashire.gov.uk/council/strategies-policies-plans/environmental/landscape-strategy/
[220]Lancashire County Council (September 2009) Forest of Bowland Area of Outstanding Natural Beauty Landscape Character Assessment. Available: https://www.forestofbowland.com/Landscape-Character-Assessment
[221]Lancashire County Council (undated) Pendle Hill Landscape Partnership Landscape Character Assessment. Available: https://www.pendlehillproject.com/sites/default/files/docs/reports/Pendle%20Hill%20LPS%20Landscape%20Character%20Assessment%20Context.pdf
[222]Chris Blandford Associates for North Yorkshire County Council (May 2011) North Yorkshire and York Landscape Characterisation Project. Available: https://www.northyorks.gov.uk/environment-and-neighbourhoods/conservation/describing-and-understanding-our-landscape

- Yorkshire Dales Landscape Character Assessment (Yorkshire Dales National Park Authority, 2002, updated 2020)[223];
- Yorkshire Dales National Park Authority Design Guide, Appendix D.6 Wind energy (2015)[224].
- Peak District Landscape Character Assessment, online tool[225];
- Peak District National Park Authority Climate Change and Sustainable Building Supplementary Planning Document, Annex 1: Landscape Sensitivity Assessment and Guidance for Wind Turbine Applications (March 2013)[226]; and
- Greater Manchester Landscape Character and Sensitivity Assessment (LUC for Greater Manchester Combined Authority, August 2018)[227].

10.3.10 The LVIA will focus on assessment of the LCAs predicted to have theoretical visibility and potentially incur significant effects. It will include a description of their value, susceptibility to change as well as their overall sensitivity to change. This has the potential to change as the site design process evolves and influences the ZTV and will be reviewed as assessment work for the project progresses.

[223]Yorkshire Dales National Park Authority (2002, updated 2020) Yorkshire Dales Landscape Character Assessment. Available: https://www.yorkshiredales.org.uk/about/landscape/landscape-character-assessment/
[224] Yorkshire Dales National Park Authority (2015) Design Guide. Available: https://www.yorkshiredales.org.uk/wp-content/uploads/sites/13/2019/06/Yorkshire-Dales-Design-Guide.pdf
[225] Peak District Landscape Character Assessment, online tool. Available: https://www.peakdistrict.gov.uk/looking-after/strategies-and-policies/landscape-strategy
[226] Peak District National Park Authority (March 2013) Climate Change and Sustainable Building Supplementary Planning Document. Available: https://www.peakdistrict.gov.uk/planning/policies-and-guides/climate-change-and-sustainable-building
[227]LUC for Greater Manchester Combined Authority Greater Manchester (August 2018) Landscape Character and Sensitivity Assessment. Available: https://www.greatermanchester-ca.gov.uk/media/1727/greater-manchester-landscape-character-and-sensitivity-report.pdf

Figure 10-1: National Character Areas



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

Revision History

Rev	Date	By	Detail
01	19/08/2025	AA	First Issue

Copyright of Logika Group. Figured dimensions shall be taken in preference to scaling. The contractor shall check all dimensions on site before commencing work.

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This Zone of Theoretical Visibility (ZTV) has been generated using ESRI ArcGIS Spatial Analyst extension using the assumptions detailed in the infobox below. The digital terrain model (DTM) used is: OS Terrain 5 dataset (+/-2 m) up to 20km from turbine locations, OS Terrain 50 dataset (+/-10 m) outwith this.

The ZTV view height of 2 m above ground level is recommended by "Visual Representation of Windfarms" NatureScot February 2017 - Version 2.2.

The ZTV is generated from a bare earth terrain and does not account for the screening effect of features within the landscape such as settlements and woodland. The ZTV shows potential theoretical visibility only and is for informing 'on the ground' visual assessment.

Blade tip:	200m	Observer height:	2m
DTM:	OS Terrain 50 DTM	Surface features:	Not included
DTM resolution:	5m	Earth curvature:	Included

Project/Location
Calderdale Energy Park

Drawing title
National Character Areas

Drawing status
Scoping Report

Date	Drawn	Checked
30/07/2025	AA	SM

Client
Calderdale energy park

Consultant
SLR

Drawing number	Revision
Figure 10-1	01

Landscape Designations

10.3.11 Key landscape designations which occur within approximately 45km of the Turbine Area are shown in Figures 10-2, 10-3 and 10-4. The Calderdale Special Landscape Area covers the full extent of the Turbine Area and extends to the south. The eastern part of the Turbine Area also lies within the Liverpool, Manchester and West Yorkshire Green Belt within Calderdale. A number of landscape designations lie within the 45km area surrounding the Turbine Area, including the Yorkshire Dales National Park, the Peak District National Park, Nidderdale National Landscape and the Forest of Bowland National Landscape. Whilst National Landscapes are legally designated Areas of Outstanding Natural Beauty (AONB) they are typically now referred to as National Landscapes and this terminology is used throughout this chapter and on Figure 10-2.

10.3.12 As part of the LVIA, more detailed review of local plans within the agreed Study Area will be undertaken to identify other locally designated landscapes that should be included. A key factor in this process will be reviewing any locally designated landscape in the context of the ZTV as the design and layout of the Proposed Development evolves.

10.3.13 The qualifying elements of the designated landscapes which are within the ZTV and anticipated to incur potentially significant effects will be identified in the LVIA. Where possible this will be drawn from published sources and the LVIA will assess the effects of the Proposed Development against the special qualities of these designated landscapes. This will have regard to likely actual visibility taking account of local landform and vegetation, with the designated areas considered likely to incur effects, included in the assessment.

10.3.14 Table 10-1 provides an overview of key designations within approximately 45km of the Turbine Area. This outlines the potential visibility of the proposed wind turbines, based on the preliminary bare earth ZTVs. It also identifies the distance and direction of the designated landscape from the Turbine Area and whether it is likely to be included in the LVIA. This table concentrates on national level designations, together with local landscape designations within Calderdale District.

Table 10-1: Landscape Designations

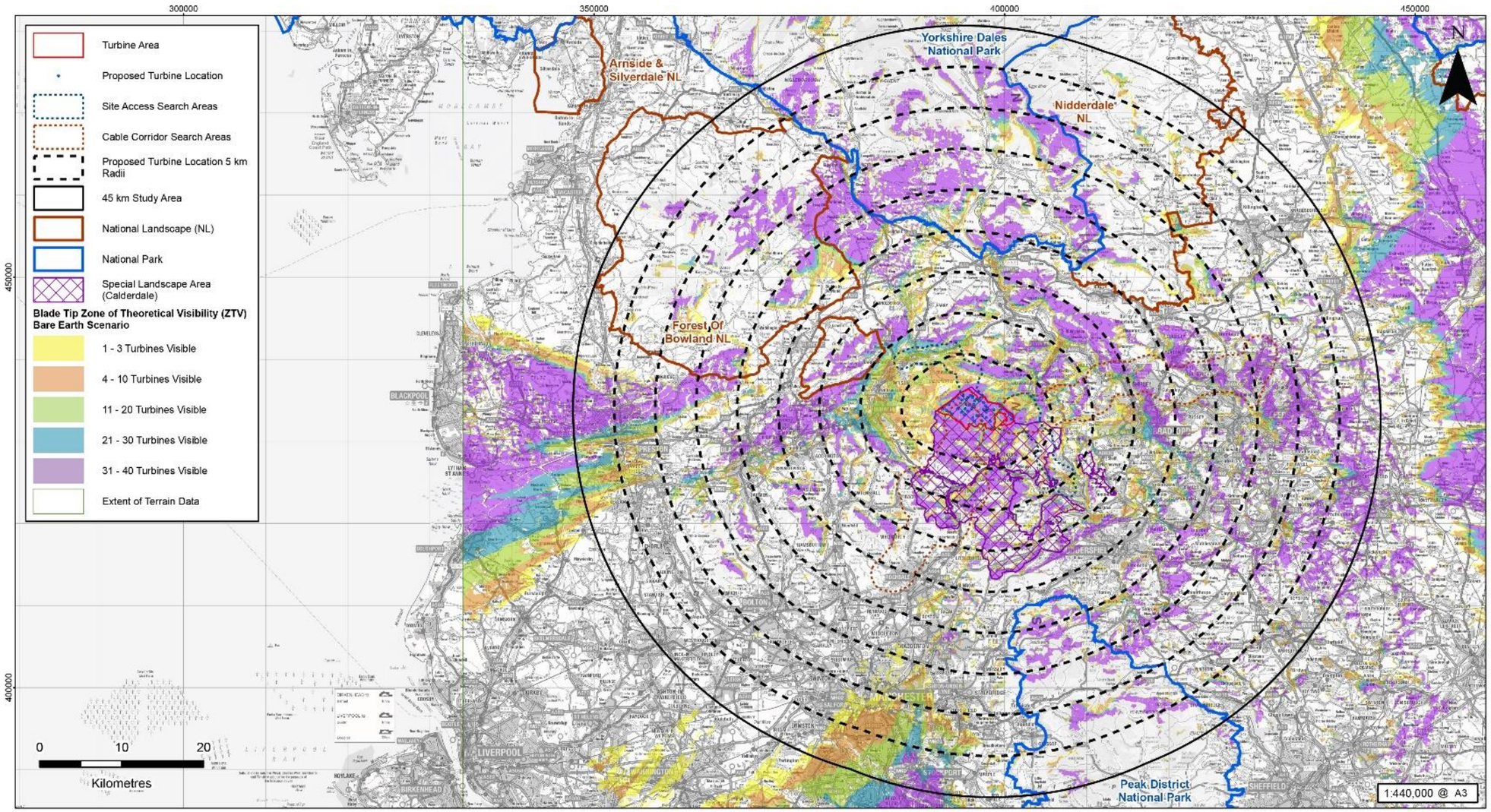
Landscape designation	Potential for visibility of the Proposed Development (based on the ZTV)	Approx. distance and direction from the Proposed Development (km)	Inclusion in the assessment
Yorkshire Dales National Park	Intermittent theoretical visibility is predicted from parts of the National Park, predominantly from summits and higher land including Captain Moor and Embsay Moor.	17km North	Yes – there is the potential for significant effects due to the elevated views obtained from this national designation towards the Proposed Development.
Peak District National Park	Limited theoretical visibility primarily associated with the summits of Black Hill and West Nab.	22km South	Yes – there is the potential for significant effects due to the elevated views obtained from this national designation towards the Proposed Development.
Forest Of Bowland National Landscape	Theoretical visibility is predicted from summits including Pendle Hill.	10km North-west	Yes – there is the potential for significant effects due to the elevated views obtained from this national designation towards the Proposed Development.

Landscape designation	Potential for visibility of the Proposed Development (based on the ZTV)	Approx. distance and direction from the Proposed Development (km)	Inclusion in the assessment
Calderdale Special Landscape Area (SLA)	Theoretical visibility predicted from summits within the SLA (Grey Stone Hill, Heather Hill, Withins Height, etc.) Theoretical visibility will be intermittent within the SLA to the south.	Within Proposed Development Area	Yes – there is the potential for significant effects due to wind turbines being located within the SLA.

10.3.15 In addition to the above, the 45km area surrounding the Turbine Area includes numerous Registered Parks and Gardens. The location of these relative to the Proposed Development is shown on Figure 10-3. These will be reviewed carefully in the context of the ZTV and how this may change in response to design evolution of the Proposed Development. Registered Parks and Gardens are considered to comprise heritage assets rather than landscape designations, therefore effects on these heritage assets and their settings are considered in **Chapter 11: Cultural Heritage**.

10.3.16 Registered Parks and Gardens can also comprise visitor attractions and could be also relevant in relation to potential effects on visual amenity. The Registered Parks and Gardens are located in a mix of rural and urban locations. Potential changes associated with the Proposed Development may be greatest in relation to such designations in more rural locations due to potential visual screening/enclosure resulting from surrounding buildings in urban areas. However, this will be reviewed as the LVIA progresses, with a key consideration being whether the Registered Parks and Gardens lie within the ZTV for the Proposed Development. The approach to assessing potential effects on Registered Parks and Gardens will also take into account the cultural heritage assessment, due to the interaction between the technical disciplines.

Figure 10-2: Landscape Designations



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1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
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Revision History

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01	19/06/2025	AA	First Issue

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The ZTV view height of 2 m above ground level is recommended by "Visual Representation of Windfarms" NatureScot February 2017 - Version 2.2.

The ZTV is generated from a bare earth terrain and does not account for the screening effect of features within the landscape such as settlements and woodland. The ZTV shows potential theoretical visibility only and is for informing 'on the ground' visual assessment.

Blade tip:	200m	Observer height:	2m
DTM:	OS TERR50 DTM	Surface features:	Not included
DTM resolution:	5m	Earth curvature:	Included

Project/Location
Calderdale Energy Park

Drawing title
Landscape Designations

Drawing status
Scoping Report

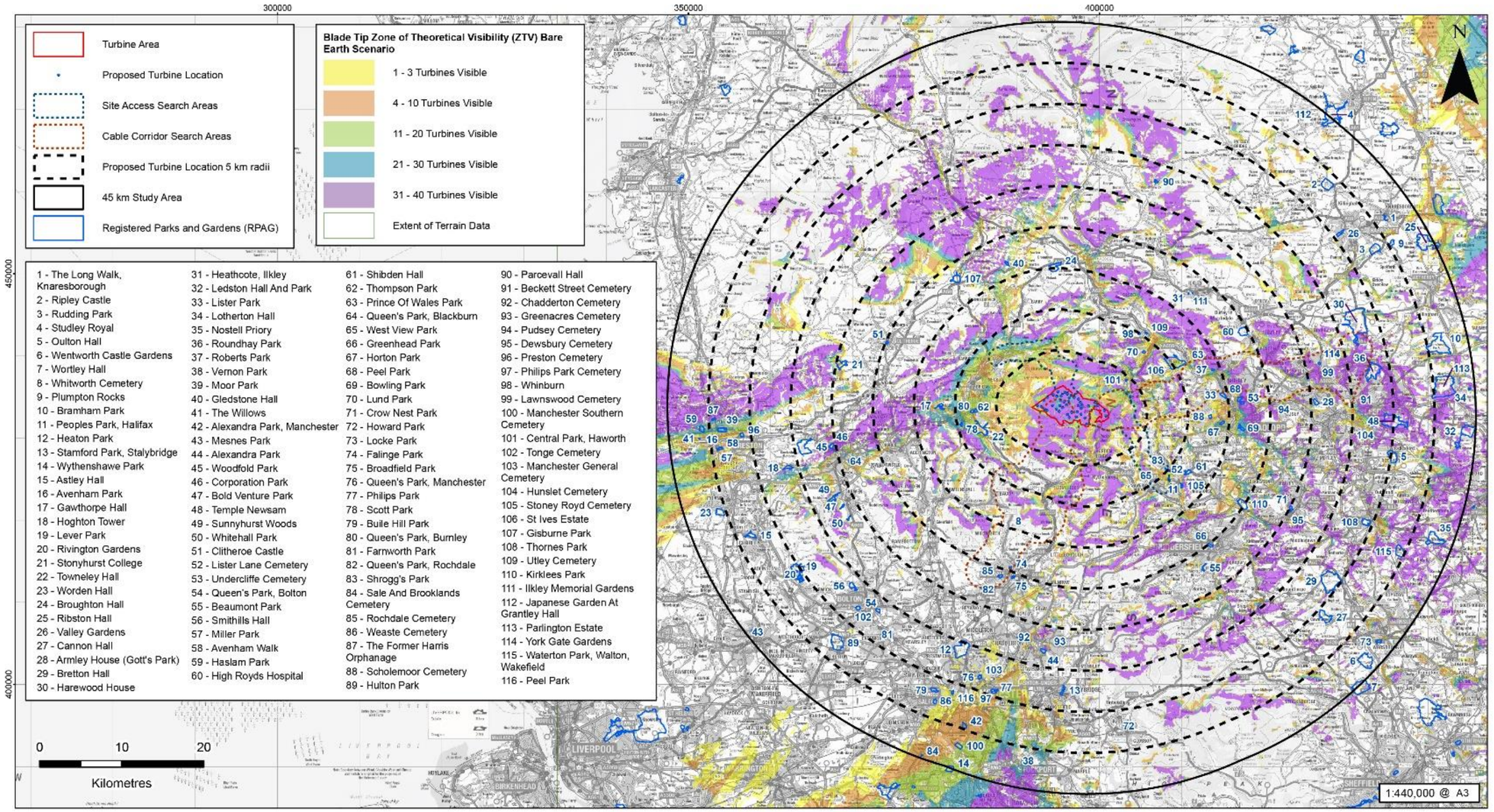
Date	Drawn	Checked
30/07/2025	AA	SM

Client
Calderdale energy park

Consultant
SLR

Drawing number	Revision
Figure 10-2	01

Figure 10-3: Registered Parks and Gardens



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Blade tip:	200m	Observer height:	2m
DTM:	OS TERRAIN DTM	Surface features:	Not included
DTM resolution:	5m	Earth curvature:	Included

Project/Location
Calderdale Energy Park

Drawing title
Registered Parks and Gardens

Drawing status
Scoping Report

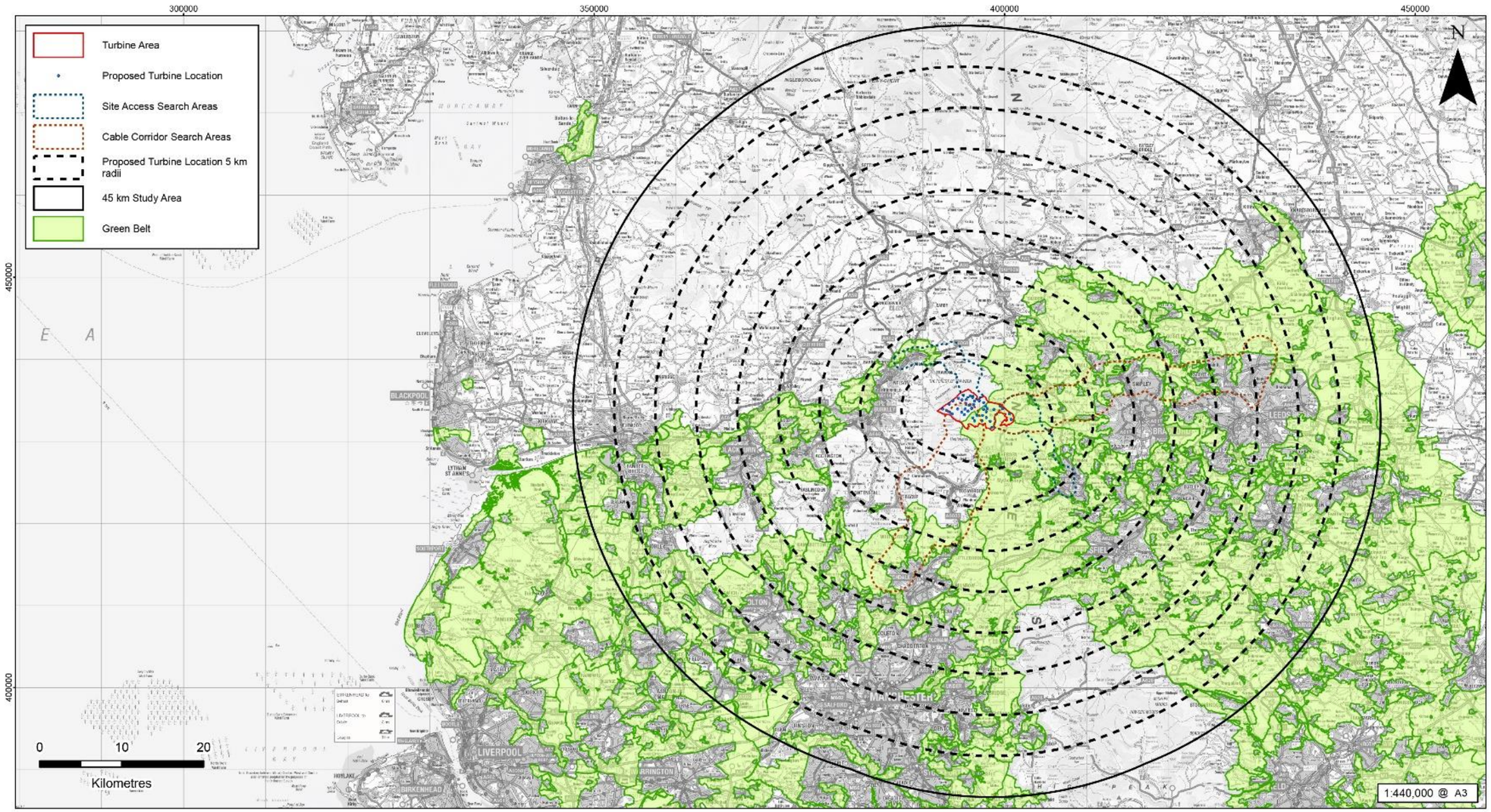
Date	Drawn	Checked
30/07/2025	AA	SM

Client
Calderdale energy park

Consultant
SLR

Drawing number	Revision
Figure 10-3	01

Figure 10-4: Green Belt


300000
350000
400000
450000
450000
400000
Turbine Area
Proposed Turbine Location
Site Access Search Areas
Cable Corridor Search Areas
Proposed Turbine Location 5 km radii
45 km Study Area
Green Belt
N
0
10
20
Kilometres
1:440,000 @ A3
LIVERPOOL
MANCHESTER
BLACKPOOL
LEEDS
BRADFORD
SHIPLEY
BIRKENHEAD
WARRINGTON
SKELMERSDALE
CLITHEROE
NELSON
BURNLEY
ACCRINGTON
SKIPTON
HORTON IN RIBBLESDALE
SETTLE
GISBURN
CLITHEROE
CLEVELEYS
BLACKBURN
ACCRINGTON
NELSON
BURNLEY
COLNE

Visual Receptors

10.3.17 The landscape surrounding the Proposed Development contains a wide range of visual receptors. Figure 10-5 highlights a range of key visual receptors, with others such as settlements and roads forming part of the map backdrop. Key potential visual receptors include residents, users of Public Rights of Way, visitors to local/tourist attractions, users of transport infrastructure including roads and railways.

Settlements

10.3.18 Key considerations are likely to include views from the settled valleys surrounding the Proposed Development with larger settlements such as Hebden Bridge, Oxenhope, Burnley, Colne and Keighley. In addition, there are numerous smaller towns, villages, hamlets and dispersed properties, including some located in more elevated locations surrounding the Turbine Area.

Transport Routes

10.3.19 Key transport routes will be considered in the LVIA. Primary transport routes are typically located within the valleys throughout the surrounding landscape, although there are exceptions to this. The closest primary road is the A6033 between Oxenhope and Hebden Bridge, which lies adjacent to the Turbine Area boundary.

Recreational Receptors

10.3.20 There are numerous Public Rights of Way and areas of Open Access Land within the landscape surrounding the Proposed Development. These include the Pennine Way and Pennine Bridleway National Trails, together with other local waymarked routes such as the Brontë Way and Railway Children Walk. There are also several country parks within 45km of the Turbine Area, such as Penistone Hill Country Park, Ogden Water Country Park, Langroyd Country Park and Wycoller Country Park (each of which is within 10km of the Turbine Area).

Local Attractions and Focal Points

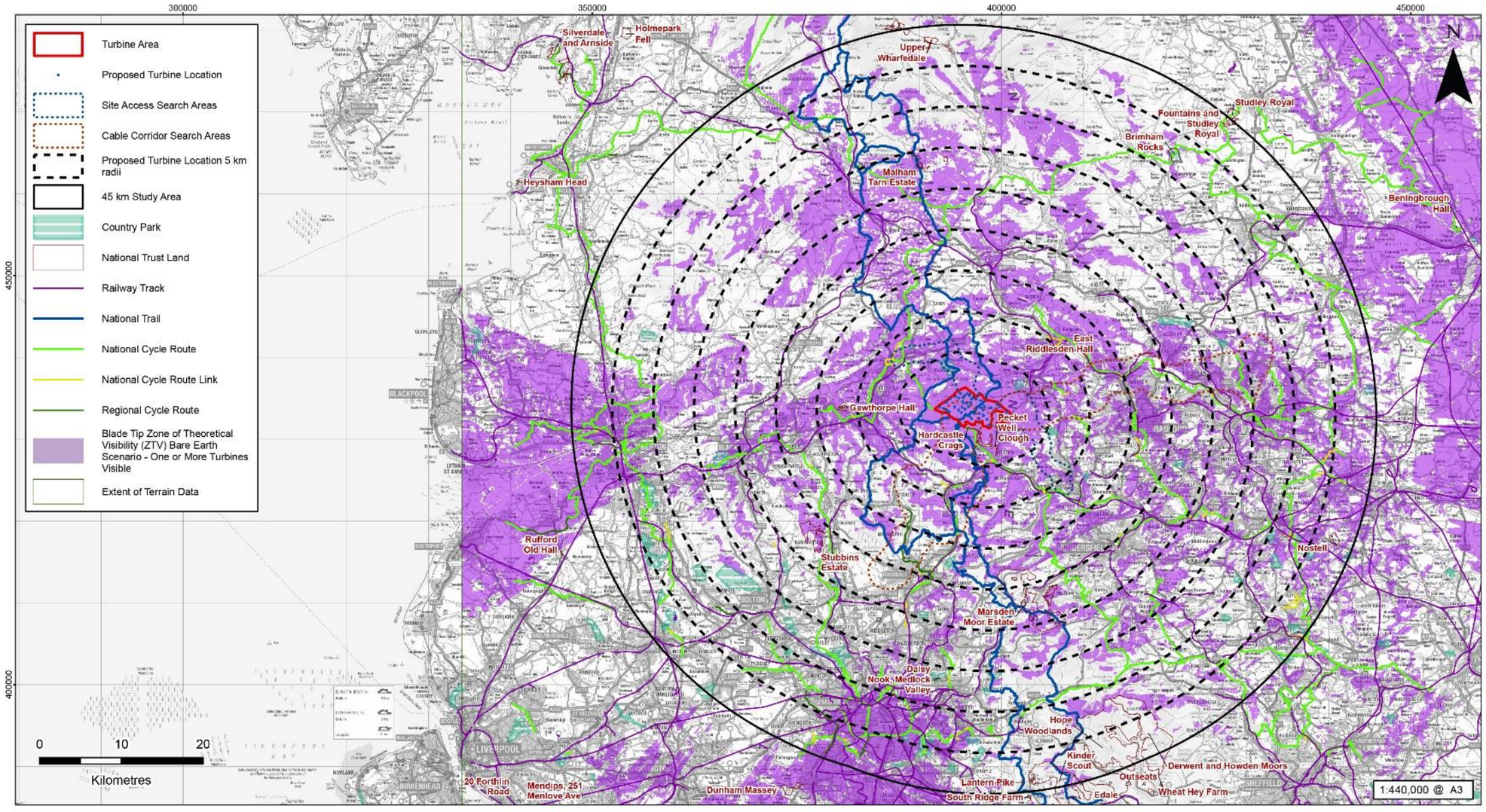
10.3.21 There are a range of cultural associations, tourist attractions and focal points within the local landscape. A key consideration will be the associations with the Brontë sisters, noting there are several specific points of interest in the landscape near the Turbine Area, including Top Witherns and Brontë Waterfalls to the north/north east. Worth Valley Railway as a preserved/heritage railway running between Keighley and Oxenhope lies to the north east of the Turbine Area. There are also multiple focal points in the landscape such as The Atom, the Singing Ringing Tree, Stoodley Pike Monument and Lund's Tower. There are multiple National Trust Properties in the 45km Study Area, with the closest to the Turbine Area being Hardcastle Crags

and Pecket Well Clough within 5km to the south. In addition, the landscapes of the National Parks and National Landscapes are key areas that draw visitors and local residents.

Viewpoint Assessment

10.3.22 Visual receptors within the Study Area will be considered as part of the LVIA. A key part of this will be the viewpoint assessment, which comprises the identification of specific and representative locations for detailed assessment. The viewpoint assessment will include capturing and presentation of viewpoint photography for each location and the preparation of visualisations to illustrate the Proposed Development. The visualisations will comprise a combination of wireline visualisations and photomontages to illustrate the predicted appearance of the Proposed Development in relation to baseline landscape. These visualisations will also show relevant existing (baseline) consented and proposed wind farm developments.

Figure 10-5: Visual Receptors



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Revision History

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The ZTV is generated from a bare earth terrain and does not account for the screening effect of features within the landscape such as settlements and woodland. The ZTV shows potential theoretical visibility only and is for informing 'on the ground' visual assessment.

Blade tip:	200m	Observer height:	2m
DTM:	OS 50/150 DTM	Surface features:	Not included
DTM resolution:	5m	Earth curvature:	Included

Project/Location
Calderdale Energy Park

Drawing title
Visual Receptors

Drawing status
Scoping Report

Date	Drawn	Checked
30/07/2025	AA	SM

Client
Calderdale energy park

Consultant
SLR

Drawing number	Revision
Figure 10-5	01

10.3.23 Initial ZTV analysis has been carried out based on a conceptual, preliminary scoping layout for the Turbine Area, which will be refined as the scheme evolves. This exercise allows the identification of a list of suggested viewpoints that represent potential views from/by key landscape and visual receptors within the 45km area surrounding the Turbine Area. The viewpoints have also been selected to reflect varying distances, directions and elevations relative to the Proposed Development. The initial ZTVs, showing the proposed viewpoint locations are illustrated by Figure 10-6 (blade tip ZTV) and Figure 10-7 (hub height ZTV).

10.3.24 The viewpoints have been selected to represent a range of views and viewer types; including settlements, transport routes, recreational routes, main visitor locations, landscape character areas/landscape character types and landscape designations. The context of views currently experienced by visual receptor locations will be described in the viewpoint assessment. In order to keep the LVIA focused and to ensure a proportionate approach is taken to the scope of the assessment and associated figures it is not feasible to illustrate all relevant receptors within the Study Area in the LVIA and it is important to carefully select viewpoints that provide a representative selection. Stakeholder feedback on the viewpoint selection will be taken into account in defining the scope of the LVIA, including the locations of the viewpoints.

10.3.25 Table 10-2 provides an overview of the proposed viewpoints for the Turbine Area, with these locations illustrated by Figures 10-6 and 10-7. No viewpoints have been selected in relation to the Site Access Search Areas or Cable Corridor Search Area and the requirement for relevant viewpoints will be considered as the design of the Proposed Development evolves.

Table 10-2: Proposed Viewpoint Locations

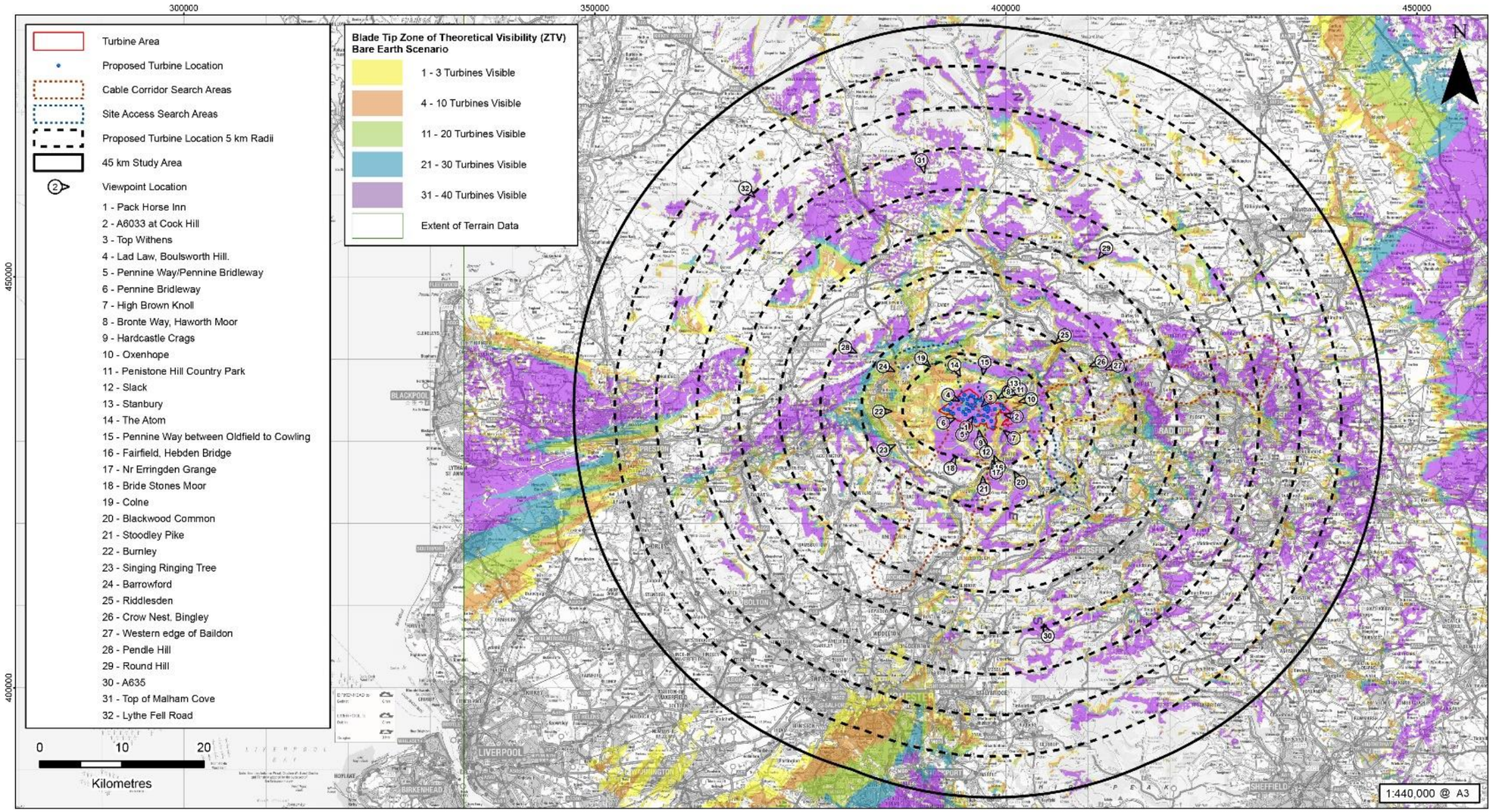
VP	Viewpoint Location	Easting	Northing	Approx distance to Turbine Area	Direction to the Proposed Development	Visual receptor type/rationale for selection in assessment
1	Pack Horse Inn	395157	431691	Adjacent	NNE	Minor road over moor, close to public house and residential properties
2	A6033 at Cock Hill	401326	433013	200m	W	Road users between Hebden Bridge and Oxenhope
3	Top Withens	398111	435348	390m	SW	Pennine Way, literary connections with Emily Bronte, marked as a tourist attraction on OS Map
4	Lad Law, Boulsworth Hill.	392975	435626	880m	ESE	Local summit and permissive footpath
5	Pennine Way/Pennine Bridleway	394684	430823	970m	NNE	National Trail and PRoW
6	Pennine Bridleway	392391	432240	1.1km	ENE	National Trail and PRoW
7	High Brown Knoll	400959	430382	1.6km	NW	Local summit and PRoW
8	Bronte Way, Haworth Moor	400304	436025	1.7km	WSW	PRoW and promoted route - Bronte Way
9	Hardcastle Crags	396934	429798	2km	N	National Trust car park, dispersed farms

VP	Viewpoint Location	Easting	Northing	Approx distance to Turbine Area	Direction to the Proposed Development	Visual receptor type/rationale for selection in assessment
10	Oxenhope	403078	435114	2.2km	WSW	Residential receptors, settlement within c. 2.5 km
11	Penistone Hill Country Park	401756	436274	2.4km	WSW	Country Park, PRoW and promoted route - Millenium Way
12	Slack	397584	428718	2.8km	NNW	Residential receptors, settlement within 5 km
13	Stanbury	400964	437045	2.9km	SW	Residential receptors, settlement within c. 3 km
14	The Atom	393745	439277	3.4km	SSE	Focal point - sculpture in landscape, Wycoller Country Park
15	Pennine Way between Oldfield to Cowling	397417	439613	3.7km	S	National Trail and PRoW
16	Fairfield, Hebden Bridge	399157	426818	4.6km	NNW	Residential receptors, settlement c. 5.5 km
17	Nr Erringden Grange	398812	426214	5.1km	NNW	Dispersed residential properties, PRoW
18	Bride Stones Moor	393248	426730	5.3km	NNE	Landform focal point, PRoW
19	Colne	389671	440130	6.4km	SE	Residential receptors c. 7.5 km

VP	Viewpoint Location	Easting	Northing	Approx distance to Turbine Area	Direction to the Proposed Development	Visual receptor type/rationale for selection in assessment
20	Blackwood Common	401820	425016	7km	NNW	Dispersed residential properties, PRoW
21	Stoodley Pike	397308	424206	7.2km	N	Focal point – monument in landscape, PRoW
22	Burnley	384555	433635	7.3km	E	Residential receptors c. 8 km, public open space near town centre
23	Singing Ringing Tree	385112	428954	8.2km	ENE	Focal point - sculpture in landscape
24	Barrowford	385058	439114	8.7km	ESE	Residential receptors c. 9 km
25	Riddlesden	407151	442914	10.1km	SW	Residential receptors c. 11 km
26	Crow Nest, Bingley	411617	439680	11.8km	WSW	Residential receptors c. 12 km
27	Western edge of Baildon	413605	439200	13.4km	WSW	Residential receptors c. 13 km
28	Pendle Hill	380471	441404	13.7km	ESE	Summit and focal point, Forest of Bowland National Landscape
29	Round Hill	412216	453487	22.5km	SW	PRoW - Nidderdale National Landscape
30	A635	405090	406306	25.9km	NNW	A class road, Open Access Land and PRoW, Peak District National Park

VP	Viewpoint Location	Easting	Northing	Approx distance to Turbine Area	Direction to the Proposed Development	Visual receptor type/rationale for selection in assessment
31	Top of Malham Cove	389718	464191	28.4km	SSE	PRoW, key focal point in Yorkshire Dales National Park
32	Lythe Fell Road	368286	460768	35.8km	SE	Minor road, Forest of Bowland National Landscape

Figure 10-6: Blade Tip Zone of Theoretical Visibility



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Blade tip:	200m	Observer height:	2m
DTM:	OS Terrain 50 DTM	Surface features:	Not included
DTM resolution:	5m	Earth curvature:	Included

Project/Location
Calderdale Energy Park

Drawing title
Blade Tip Zone of Theoretical Visibility

Drawing status
Scoping Report

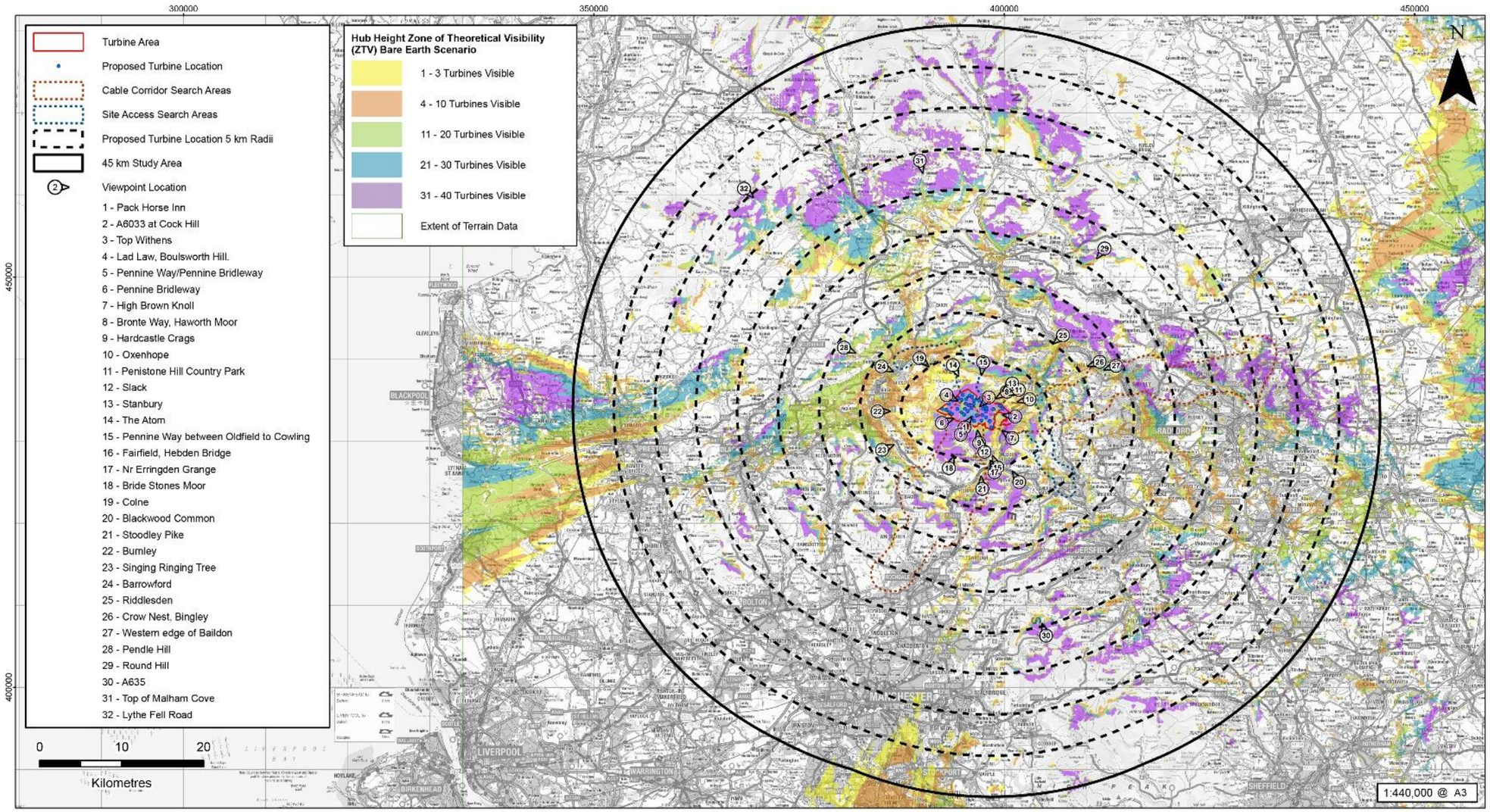
Date	Drawn	Checked
30/07/2025	AA	SM

Client
Calderdale energy park

Consultant
SLR

Drawing number	Revision
Figure 10-6	01

Figure 10-7: Hub Height Zone of Theoretical Visibility



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Hub height:	115m	Observer height:	2m
DTM:	OS TNT50 DTM	Surface features:	Not included
DTM resolution:	5m	Earth curvature:	Included

Project/Location
Calderdale Energy Park

Drawing title
Hub Height Zone of Theoretical Visibility

Drawing status
Scoping Report

Date	Drawn	Checked
30/07/2025	AA	SM

Client
Calderdale energy park

Consultant
SLR

Drawing number	Revision
Figure 10-7	01

Receptors Identified

10.3.26 Potential effects are those which could result from the construction, operation and decommissioning of a wind farm. Table 10-3 describes the typical landscape and visual impacts that can arise from the construction operation and decommissioning of a wind farm. It should be noted that their inclusion does not imply that they will arise, or be significant, in the case of the Proposed Development.

Table 10-3: Potential Elements of the Proposed Development and associated potential effects and receptors

Elements	Potential Effects	Potential Sensitive Receptors
Construction		
• Construction plant; • borrow pit excavation and extraction; • construction of tracks and crane hardstandings (including cut and fill earthworks); • temporary construction facilities (i.e. compounds, fencing); • excavation and laying of turbine foundations; • turbine erection (including tall cranes); and • construction of substation and control rooms. • Cable connection construction (inter array cables and export cables).	• Temporary, short-term physical effects on physical landscape fabric; • permanent effects on physical landscape fabric; • temporary, short-term effects on landscape character; and • temporary, short-term effects on views (including hours of darkness effects).	• Physical landscape features e.g. forestry, ground cover; • landscape character receptors: landscape character types, landscape designations; and • views experienced by different receptors e.g. residents, visitors, road users, walkers (including hours of darkness views).
Operation		
• Turbines; • met mast;	• Temporary, long-term effects on landscape character;	• Physical landscape features e.g. forestry, ground cover;

Elements	Potential Effects	Potential Sensitive Receptors
• Battery Energy Storage System (BESS); • access tracks; • visible aviation lighting; • borrow pits under restoration/restored; and • substation and control rooms.	• temporary, long-term effects on views; • temporary, long-term cumulative effects with other wind farms and other projects considered to relevant to the assessment. • on landscape character and views; and • ongoing permanent effects on physical landscape fabric.	• landscape character receptors: landscape character types, landscape designations; and • views experienced by different receptors e.g. residents, visitors, road users, walkers (including hours of darkness views).
Decommissioning		
• Decommissioning plant; • Decommissioning of tracks and crane hardstands; • temporary decommissioning facilities (i.e. compounds, fencing); • replanting of forestry; • turbine removal; and • decommissioning of substation and control rooms.	• Temporary, short-term physical effects on physical landscape fabric; • permanent effects on physical landscape fabric; • temporary, short-term effects on landscape character; and • temporary, short-term effects on views (including hours of darkness effects).	• Physical landscape features; • landscape character receptors: landscape character types, landscape designations; and • views experienced by different receptors e.g. residents, visitors, road users, walkers (including hours of darkness views).

10.4 Environmental Measures

10.4.1 Consideration will be paid to the opportunity to introduce environmental measures (and mitigation) that will help to avoid or reduce the potential for an adverse significant effect to occur. In accordance with Schedule 4(7) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset (where appropriate) likely significant effects. Specific environmental measures relevant to Landscape and Visual will be identified and will be considered

as part of the assessments (i.e. the assessments of likely significant effects have been undertaken with the inclusion of the environmental measures, as these measures will form part of the Proposed Development).

10.4.2 The nature of landscape and visual effects means that landscape and visual mitigation is embedded into the design of the Proposed Development. The layout design of the Proposed Development is a vital part of the EIA process and is the stage where the biggest contribution can be made to mitigate potential landscape and visual effects, creating a wind farm which is appropriate for the existing landscape character and visual features of an area. Landscape and visual objectives will be given a high priority in the design of the Proposed Development from an early stage, while ensuring that environmental constraints and technical and economic factors are also given due consideration.

10.4.3 Where likely or potentially significant adverse effects are identified through the assessment, the design will be reviewed to consider if further mitigation can reasonably be embedded into the Proposed Development.

10.4.4 The design of the Proposed Development has undergone preliminary design iteration to date and it is envisaged that landscape and visual considerations will influence the design development process as this progresses. Further analysis of the landscape Turbine Area, Cable Corridor Search Areas and Site Access Search Areas, and surrounding area, will be undertaken as part of the design process and different layouts or turbine options will be examined from key design viewpoints by two experienced landscape architects. The focus of this process will be to assess the number, size and layout of the proposed turbines in relation to the landform of the Turbine Area and surroundings. Refinement and iteration of the proposed layout will also take account of other environmental baseline data and technical considerations.

10.4.5 Following completion of the main baseline landscape and visual assessment, design objectives will be refined and used to evaluate further layout iterations where appropriate. Again, this process will also take account of other environmental and technical considerations. The design optimisation and iteration process from initial feasibility through to the final design will be reported and illustrated in the Environmental Statement.

Construction

10.4.6 Key potential mitigation measures likely to be associated with the construction phase comprise:

- Routing and siting of elements of the Proposed Development to avoid notable landscape features wherever possible;

- Preparation and adoption of an outline Construction, Environmental Management Plan (oCEMP) to reduce potential environmental effects;
- An outline Landscape and Ecology Management Plan (oLEMP) will be prepared which will set out short term and long-term landscape and ecological objectives for the Proposed Development, including the proposed restoration measures following construction taking account of the surrounding local landscape character;
- Habitat creation, such as woodland planting, to be consistent with the local landscape character;
- Native grass/moorland species to be planted around access tracks to assist in blending the track into the surrounding moorland context; and
- Careful consideration of any planting proposals to complement the local landscape character.

Operation and Maintenance

10.4.7 Key potential mitigation measures likely to be associated with the operation and maintenance phase, pending further consideration as the design evolves, comprise:

- Consideration of the layout of wind turbines, substation and Battery Energy Storage System to reduce landscape and visual effects where possible, including consideration of separation between key receptors and wind turbine locations, and the overall composition of turbines when viewed from locations surrounding the Proposed Development;
- The proposed colour of the upper parts of the turbine would be selected to blend with the predominant colour of the sky and have a semi matte finish to minimise reflectivity; and
- An oLEMP will be prepared, as described above.

Decommissioning

10.4.8 An outline Decommissioning Environmental Management Plan (oDEMP) will be prepared and adopted to reduce potential environmental effects associated with this phase of the Proposed Development.

10.5 Scope of the Assessment

Consultation Undertaken to Date

Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

10.5.1 As discussed in **Chapter 1: Introduction**, under the Town and Country Planning Act 1990, in July 2023, an EIA scoping request was submitted to CMBC, which was a Scoping Report in request for a Scoping Opinion for a proposed wind farm development and associated infrastructure at the Turbine Area, including cable connection. Table 10-4 presents the details of the Scoping Opinion received from CMBC relevant to Landscape and Visual and confirms if the opinion is considered within the proposed scope of assessment (as set out below) or if it is considered to be scoped out of the technical assessment, with details provided in Table 10-5.

Table 10-4: Calderdale Metropolitan Borough Council Scoping Opinion

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment

CMBC– Planning Services	• Identifies the inconsistency between the turbine height used in the scoping report, compared with the proposed maximum blade tip height of 200 m.
	• Identifies the need to consider sequential views along routes and also a number of potential viewpoints. Viewpoints suggested comprise:
	  • Stoodley Pike;
	  • Top Withens;
	  • Brontë Parsonage Museum;
	  • Haworth;
	  • Yorkshire Three Peaks (Pen y Ghent, Ingleborough and Whernside);
	  • Trig points, including Bride Stones Moor, Sheepstones, High Brown Knoll and Lad Law.
	• Suggests that Conservation Areas should be included in the LVIA.
		• The details for the Proposed Development have been refined and this Scoping Report is based on a maximum blade tip height of 200 m.
		• The viewpoint selection has been refined and altered in response to comments received in relation to the previous Scoping Report. All viewpoint locations suggested have not been included at present but will be reviewed in relation to the ZTVs as the design process evolves. It is also expected there will be further

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	• Identifies the need for cumulative effects to the taken into account. • Notes that the Turbine Area lies within the SLA and the associated scenic qualities and distinctive views are taken into account in the LVIA. Landscape sensitivities within neighbouring local authorities are also identified. • Considers that the Proposed Development is likely to have significant effects and all elements of Project should be assessed, in relation to the construction, operational and decommissioning phases. • Identifies the need to set out suitable mitigation measures for the Proposed Development, also suggesting that extensive tree planting as part of the Project could also result in significant effects. • Identifies the potential for adverse effects on surrounding nationally designated landscapes, including the Peak District National Park, Yorkshire Dales National Park, Forest of Bowland National Landscape and Nidderdale National Landscape. The need to consider the special qualities of these landscapes and statutory purpose of the designated landscapes is noted. • Identifies the Turbine Area lies within the Green Belt, and that a Very Special Circumstances case will need to be demonstrated. Notes that the potential effects on the openness of the landscape will need to be considered.	consultation on the viewpoint selection with statutory consultees. • Conservation Areas will inform judgements in relation to receptor sensitivity. However, effects on Conservation Areas will form part of the Heritage Assessment (see **Chapter 11: Cultural Heritage**). • It is intended that the developments that will form part of the cumulative assessment will be agreed with statutory consultees. • The SLA will be considered as part of the LVIA. • The proposed scope of the LVIA is described in this Chapter. • Potential mitigation is described in this chapter and measures to avoid or reduce potential landscape and visual effects will be considered as part of the iterative EIA process.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
		• Potential effects on nationally designated landscape in the surrounding context will be considered as part of the LVIA. • The location of the Proposed Development in relation to the Green Belt will be an important consideration for the Proposed Development.
CMBC– Spatial Planning	• GN4, Landscape - Should consider Special Landscape Area (SLA) and the impact of height, density of development. If in/impacting SLA, proposal will only be supported if it does not impact scenic quality, does not adversely impact opportunities for access and recreation, protect and enhance landscape quality, sense of place and local distinctiveness with enhancing features of landscape, historic, ecological & wildlife. Proposal must keep with natural environment it sits in. Down to applicant to demonstrate that policy criteria is met and quality of natural environment preserved. • GB1, Green Belt - A portion of the proposal falls within the green belt where renewable energy is not one of the appropriate uses. Uses other than ones identified will not be supported unless in very	• The relevant planning policy context will be considered in the LVIA.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	special circumstances demonstrated by applicant. Development should not detract from visual amenity of green belt.	

CMBC – Conservation Officer	• Identifies the LVIA should consider conservation areas which contribute to the landscape character.
	• Consider Stoodley Pike is an important viewpoint which is missing. Also identify There are a number of Trig Points which are targets for walkers etc and could be suitable viewpoint locations, including:
	  • Bride Stones;
	  • Sheepstones;
	  • High Brown Knoll; and
	  • Lad Law.
	• Consider that visualisations should be prepared to reflect the average adult eye-level in clear weather with good visibility. Visualisations of solar arrays should be produced to replicate the sun at a position and time of year which will give maximum 'glint' to the location in question.
		• Conservation Areas will inform judgements in relation to receptor sensitivity. However, effects on Conservation Areas will form part of the Heritage Assessment (see **Chapter 11: Cultural Heritage**).
		• The viewpoint selection has been refined and altered in response to comments received in relation to the previous Scoping Report. All viewpoint locations suggested have not been included at present but will be reviewed in relation to the ZTVs as the design process evolves. It is also expected there will be further consultation on the viewpoint selection with statutory consultees. Visualisations will be prepared in accordance with recognised

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
		guidance. Solar panels no longer form part of the Proposed Development.
Natural England	• The ES should refer to the relevant National Character Areas. The ES should include a full assessment of the potential impacts on the local landscape using landscape assessment technologies. Encourage the use of Landscape Character Assessment (LCA). A landscape and visual impact assessment should also be carried out. Recommends using the methodologies in Guidelines for Landscape and Visual Impact Assessment 2013 ((3rd edition) produced by the Landscape Institute and the Institute of Environmental Assessment and Management. Also advises that the assessment also includes effects on the special qualities of the designated landscape. Recommend that full methodology setting out descriptions of key criteria to be used should be submitted for agreement. Advises of consultation with local authorities within the study area to agree viewpoint locations and the developments to be included within a cumulative assessment. Account should consider local design policies, design codes and guides. The ES should set out measures to be taken to ensure	• The LVIA will refer to the National Character Areas and potential effect on landscape character will form part of the LVIA. • The Guidelines for Landscape and Visual Impact Assessment (2013 (3rd edition), Landscape Institute and the Institute of Environmental Assessment and Management) will form the basis for the approach taken for the LVIA. • Viewpoints are proposed as part of these chapters and agreement from statutory consultees will be sought through the consultation process. • It is intended that the developments that will form part of the cumulative assessment will be agreed with

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	the development will deliver high standards of design and green infrastructure. • National Landscapes - Forest of Bowland and Nidderdale are located within the current 45km study area. Consideration should be given to paragraphs 176 and 177 of the NPPF. Advises to consult relevant AONB partnership or conservation board. For Nidderdale AONB - recommends referring to Harrogate Landscape Character Assessment. • National Parks - Peak District National Park and Yorkshire Dales National Park are located within the current 45km study area. Consideration should be given to paragraph 176 and 177 in the NPPF. The landscape advisor/planner for the National Parks will be best placed to provide detailed advice about the development proposal. Advises to assess the application carefully as to whether the Proposed Development will have a significant impact on or harm those statutory purposes. • Study Area and Zone of Theoretical Visibility (ZTV) - Advise that the scale of the Proposed Development should be confirmed so the scope of the Landscape and Visual Assessment can be agreed. If scale is unknown, the maximum parameter height should be used. The guidance recommends; 45km ZTV distance from nearest turbine	statutory consultees. • Nationally designated landscapes, with consideration of their special qualities will form part of the LVIA. • A 45km study area is proposed for the LVIA. • Areas and routes that provide access to the landscape will be considered as part of the LVIA.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	or outer circle of the wind farm for turbine heights over 150 m (including rotors). 45km ZTV distance from nearest turbine or outer circle of the wind farm for turbine heights of 150 m+ (including rotors). • Heritage Landscapes - The ES should include an assessment of the impact on any land in the area affected by the development which qualifies for condition exemption from capital taxes on the grounds of outstanding scientific, or historic interest. • Connecting people with nature - The ES should consider potential impacts on the Pennine Way and Pennine Bridleway National Trails. The ES should consider potential impacts on access land, common land, public rights of way and the England Coastal Path and coastal access route (where appropriate) - mitigate any adverse impacts. There should be a consideration of measures for people to better access the countryside and opportunities for people to connect with nature. Measures could include reinstating existing footpaths or the creation of new footpaths, cycleways, and bridleways . Access to nature within the development site should also be considered, including the role that natural links have in connecting habitats and providing potential pathways for movements of species. National Trails: Pennine Way and Pennine Way Bridleway	

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	National Trails are located within and in close proximity to the Proposed Development. Advise that the impacts of the Proposed Development on National Trails be assessed, including visual and noise. Consideration should also be given to routes near tracks/roads impacted from the construction phase.	

Bradford Metropolitan District Council (BMDC)	• Identifies landscape character, supplementary Planning Document - Local Development Framework for Bradford should be noted along with relevant policies in the Bradford RUDP and Bradford Core Strategy. Also states that it will be useful to have a capacity study of the wider area.
	• Some important visual receptors not included, further review is required and include;
	  • Lad Law on top of Boulsworth Hill, to the west of the Turbine Area;
	  • High Brown Knoll, to the east of the Turbine Area, Stoodley Pike;
	  • Pennine Way as it goes from Oldfield to Cowling; and
	  • Pennine Way at the high point south of Top Withens.
	• State that they will expect a render of the wireframes and insertion into the photos.
	• Consider it is not clear if there are sensitive urban areas impacted. Visibility from historic areas such as Haworth could be significant.
		• The relevant planning policy context will be considered in the LVIA.
		• The viewpoint selection has been refined and altered in response to comments received in relation to the previous Scoping Report. All viewpoint locations suggested have not been included at present but will be reviewed in relation to the ZTVs as the design process evolves. It is also expected there will be further consultation on the viewpoint selection with statutory consultees. Effects on visual amenity for residents of settlements and urban areas will be

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
		assessed as part of the LVIA.
National Trust	• Identified the need to assess the potential effects of all elements of the Proposed Development. • Sets out that it is difficult to confirm the suitability of the proposed viewpoints and expresses a wish to engage with the Applicant on viewpoint selection. • Identifies the need to consider residential visual amenity for residents of National Trust properties within 2km. • Identified need to comply with Biodiversity Net Gain requirements for the relocation of trees and shrubs.	• All elements of the Proposed Development will be assessed. • The viewpoint selection has been refined and altered in response to comments received in relation to the previous Scoping Report. It is expected there will be further consultation on the viewpoint selection with statutory consultees. • Residential visual amenity will be considered in relation to properties within 2km of the proposed turbines. • Biodiversity Net Gain will the considered as part of the Proposed Development, with further detail provided in **Chapter 7: Biodiversity**.
Council for the Protection of Rural England (CPRE)	• The cumulative impact of the multiple wind farms on moorland surrounding Todmorden and the Upper Calder Valley. Believes area is already oversaturated with wind turbines. Is on South Pennine Moorland SPA phase 2	• It is intended that the developments that will form part of the cumulative assessment will be agreed with

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	and South Pennines SPA Phase 1. • Harm to the Openness of the Green Belt. Suggest the impact of the development on the openness of the landscape be assessed as if it were a Green Belt • Considers the methodology proposed for the LVIA is not universally accepted in capturing the true visual impact of the turbines. States there is no acknowledgement in the documentation of the research conducted by Alan MacDonald and alternative methodologies adopted by The Highland Council. • Considers documentation submitted by the applicant severely underestimates the landscape and visual impact of the development and should be examined very closely.	statutory consultees. • The location of the Proposed Development in relation to the Green Belt will be an important consideration for the Proposed Development. • Visualisations will be prepared in accordance with recognised guidance.
Blackshaw Parish Council	• Considers it will impact Blackshaw Parish visually but no views in the document from this parish, and that relevant viewpoints are required to allow the public to understand potential effects of the Proposed Development.	• The viewpoint selection has been refined and altered in response to comments received in relation to the previous Scoping Report. It is expected there will be further consultation on the viewpoint selection with statutory consultees.
Wadsworth Parish Council	• Concerns stated about the detail provided in relation to solar panels.	• Solar panels no longer form part of

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment

	• The locations suggested for the LVIA are not accepted in their current form, and the locations used in the report to show the views of the wind farm from different locations is also unacceptable. It is suggested more viewpoints should be included in the assessment, including those proposed by Bradford District Council:
	  • Lad Law on top of Boulsworth Hill (West of the Turbine Area);
	  • High Brown Knoll (west of the Turbine Area);
	  • Stoodley Pike;
	  • Pennine Way as it goes from Oldfield to Cowling; and
	  • Pennine Way at the high point south of Top Withens.
	• It is suggested the following locations should also be added to the viewpoint selection:
	  • Ovenden Moor;
	  • Crow Hill north west of Midgley; and
	  • Cock Hill summit, on the A6033 from Hebden Bridge to Howarth.
		the Proposed Development.
		• The viewpoint selection has been refined and altered in response to comments received in relation to the previous Scoping Report. All viewpoint locations suggested have not been included at present but will be reviewed in relation to the ZTVs as the design process evolves. It is also expected there will be further consultation on the viewpoint selection with statutory consultees.

Heptonstall Parish Council	• Concerns raised about the turbine height, including the basis for the ZTV; • Identify that none of the panorama views within the report which are designed to illustrate the visual impact are taken from within the Heptonstall Parish and those that are included are taken from viewpoints which minimises the visual impact.	• The details for the Proposed Development have been refined and this Scoping Report is based on a maximum blade tip height of 200 m. • The viewpoint selection has been refined and altered

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
		in response to comments received in relation to the previous Scoping Report. It is expected there will be further consultation on the viewpoint selection with statutory consultees. • The viewpoints selected include locations within Heptonstall Parish.
The Brontë Society	• Highlights that Top Withens is an iconic landmark and viewpoint locations and visualisations are expected which will include views of the ruin, particularly as approached from Haworth. Also expect future iterations of plans to include the view towards the Proposed Development from Parsons Field and Penistone Hill. • Considers visualisations included in the previous scoping report do not provide an impression of the visual impact that turbines will have positioned so close to the ruin.	• The landmark of Top Withens is acknowledged. Viewpoints are proposed in relation to Top Withens and the route to it. • The viewpoint selection has been refined and altered in response to comments received in relation to the previous Scoping Report. All viewpoint locations suggested have not been included at present but will be reviewed in relation to the ZTVs as the design process evolves. It is also expected there will be further consultation on the viewpoint selection

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
		with statutory consultees and other stakeholders. Visualisations will be prepared in accordance with recognised guidance.

Upper Calderdale Wildlife Network	• Consider the methodology does not include assessment of solar PV which is a component of the proposal.
	• GLVIA states (para 3.2.1) that landscape receptors include *'the constituent elements of the landscape, its specific aesthetic or perceptual qualities and the character in different areas'*. The scoping report addresses landscape character and makes reference to the landscape character studies which should be used, however this should be broadened to ensure that all cultural and literary qualities are thoroughly explored.
	• Consider that the impact of planting 300,000 trees will have on the landscape should be assessed.
	• Consider that the methodology should also consider the following:
	  • sense of openness (slightly different to the planning consideration of openness which relates to the green belt),
	  • sense of openness in a landscape context (ability to see long panoramic views and
		• Solar panels no longer form part of the Proposed Development.
		• Cultural and literary connections will inform landscape value and sensitivity judgements in relation to the Proposed Development;
		• All aspects of the Proposed Development, including planting proposals will influence the assessment judgements.
		• The location of the Proposed Development in relation to the Green Belt will be an important consideration for the Proposed Development.
		• The viewpoint selection has been refined and altered in response to

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment

	experience wide open spaces, clearly meant in the LCT description and also the sense of being in the open countryside with immediate views unimpaired by built development).
	• Consider that a number of important viewpoints are omitted;
	  • Stoodley Pike,
	  • Blackstone Edge,
	  • Lads Law
	  • Boulsworth Hill,
	  • High Brown Knoll above Pecket Well.
	• Consider that the Pennine way, Bronte Way and Pennine Bridleway needs to be considered in relation to cumulative effects. Other linear routes also need to be considered in terms of sequential views from viewpoints on route:
	• A6033 from Hebden Bridge to Oxenhope as a scenic route,
	• Widdop road from Heptonstall to Harle Skye east of Brierfield as a scenic route;
	• Leeds Liverpool canal from around Clayton le Moors east to Barrowford which is an important recreational & tourist corridor; and
	• Three Peaks walk taking in the three highest hills in Yorkshire, Pen y Ghent, Ingleborough and Whernside. Receptors must be fully considered.
	• Identify that photomontage visualisations are needed from most important viewpoints which
		comments received in relation to the previous Scoping Report. All viewpoint locations suggested have not been included at present but will be reviewed in relation to the ZTVs as the design process evolves. It is also expected there will be further consultation on the viewpoint selection with statutory consultees. Effects on linear routes within the Study Area, including sequential effects, will be assessed.
		• It is intended that the developments that will form part of the cumulative assessment will be agreed with statutory consultees.
		• Effects on visual amenity for residents of settlements and urban areas will be assessed as part of the LVIA.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	include selection of close, mid and distant range views. • Consider that cumulative effects could result from previous proposals being reconsidered, which could include proposals above Gorpley Reservoir and land above Todmorden. Also consider there could be proposals to update existing wind farms, which may result in larger turbines being installed. New powerline should be considered if such developments are proposed. • Suggest that townscape assessments should be carried out for urban areas close to proposal turbines, including Haworth, Oxenhope and Trawden.	

Other Consultation Undertaken to Date

10.5.2 No consultation has been undertaken in relation to landscape and visual issues, beyond the 2023 Scoping Report.

Effects Scoped Out from Detailed Assessment

10.5.3 Table 10-5 presents the Landscape and Visual matters that are unlikely to give rise to significant adverse effects and, therefore, which are proposed to be scoped out from detailed assessment.

Table 10-5: Effects Scoped Out from the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped Out
LCTs/LCAs outside the ZTV, or where limited theoretical	No specific previous agreement	If there is no or limited theoretical visibility of the Proposed Development from a particular LCT/LCA it is

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped Out
visibility is predicted, will not be assessed.		expected that no significant effects may arise in respect of this receptor.
Townscape character assessment work will not be undertaken for urban parts of the Study Area	No specific previous agreement	The Proposed Development is not located within an urban area and it is unlikely that it will have a significant effect on the character of such areas as the visibility is likely to be limited by buildings. Smaller settlements such as villages and hamlets form an integral part of the LCTs/LCAs in which they are located. Effects on the residents of settlements will be assessed where relevant.
Effects arising from the underground cable connection during the operation of the Proposed Development.	No specific previous agreement	Once the construction phase is complete and the land within the Cable Corridor restored, it is unlikely that there will be significant effects on landscape and visual receptors.
Effects arising during decommissioning in relation to landscape and visual receptors are likely to be comparable with those arising during construction and will be scoped out of the LVIA.	No specific previous agreement	Such effects are likely to be comparable with those arising during the construction phase and the key activities will comprise the removal of key visible elements of the Proposed Development.

Likely Significant Effects Scoped into the Detailed Assessment

10.5.4 The Proposed Development will have a direct impact on the landscape fabric or physical elements of the landscape due to the removal or alteration to the vegetation and land cover to accommodate the various components of the Proposed Development. The main source of landscape and visual impacts from the Proposed Development will be the appearance of the wind turbines from the surrounding landscape resource and in views obtained by people in the surrounding area. The effect of other elements of the Proposed Development such as the access tracks, substation and other ancillary elements, which may be visible from the surrounding area, will also be assessed.

10.5.5 Table 10-6 presents the Landscape and Visual matters that are likely to give rise to significant adverse effects and, therefore, which are proposed to be scoped into the detailed assessment.

Table 10-6: Likely Significant Effects Scoped into the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
The design of the Proposed Development in relation to the landform of local context.	No specific previous agreement	Key consideration in relation to understanding the potential effects of the Proposed Development and where potential landscape and visual effects could be reduced.
The design of elements of the Proposed Development including access roads, crane hardstandings, substation, battery energy storage system and borrow pits (if borrow pits are applicable) and Cable Corridor Search Areas.	No specific previous agreement	Key consideration in relation to understanding the potential effects of the Proposed Development and where potential landscape and visual effects could be reduced.

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
Effects of the Proposed Development on the key characteristics of landscape character areas located within the Study Area, with a likely focus on landscapes within approximately 15km of the Turbine Area, plus the Cable Corridor Search Areas and a 1km buffer where applicable.	No specific previous agreement	Integral to understanding the likely significant effects of the Proposed Development.
Effects upon the special qualities of the national and local landscape designations within the Study Area.	No specific previous agreement	Integral to understanding the likely significant effects of the Proposed Development.
Effects on views and visual amenity of residents of the nearby settlements such as Oakworth, Haworth, Oxenhope, Hebden Bridge,	No specific previous agreement	Integral to understanding the likely significant effects of the Proposed Development.

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
Burnley, Nelson and Colne, note this is not an exhaustive list of settlements to be assessed.		
Residential properties within approximately 2km of the turbines will be the subject of a Residential Visual Amenity Assessment (RVAA) which will be included in a Technical Appendix of the EIA Report.	No specific previous agreement	Follows the approach set out in Landscape Institute Technical Guidance Note 2/19, RVAA.
Effects on views from public roads such as the A6068 (M65 – A629), the A6033 (Littleborough – Hebden Bridge) and the A646 (Halifax – Burnley) including sequential and cumulative effects.	No specific previous agreement	Integral to understanding the likely significant effects of the Proposed Development.
Effects upon views seen by recreational receptors including	No specific previous agreement	Integral to understanding the likely significant effects of the Proposed Development.

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
National Cycle Routes (for example, Route 66, 68 and 69), National Trails (including Pennine Bridleway and Pennine Way) Long Distance Paths (e.g. Calder/Aire Link, Brontë Way and Pendle Way) local Public Rights of Way (PRoW), Open Access Land and summits within the Study Area.		
Recreational visitors to attractions and visitors to outdoor pursuits within the Study Area.	No specific previous agreement	Integral to understanding the likely significant effects of the Proposed Development.
Night time effects resulting from aviation lighting.	Not applicable in previous scoping report	Integral to understanding the likely significant effects of the Proposed Development.

10.6 Proposed Approach to the ES Assessment Methodology

Further Baseline Data

Desk Study

10.6.1 The assessment is initiated through a desk study of the Study Area. This study identifies landscape and visual receptors that may need to be considered in the landscape and visual assessment (including, for example, landscape-related planning designations, landscape character classification, proposed wind farms (and other projects relevant to the cumulative assessment), routes such as roads, railway lines, National Cycle Routes, National Trails and long-distance walking routes, and settlements).

10.6.2 The desk study also utilises Geographic Information System (GIS) and Resoft Wind farm software to explore the potential visibility of the Proposed Development. The resultant ZTV diagrams and wirelines provide an indication of which landscape and visual receptors are likely to be key in the assessment.

Field Survey

10.6.3 Field surveys are carried out throughout the Study Area, although the focus is on the areas shown on the ZTV to gain theoretical visibility of the Proposed Development. The baseline field survey has four broad stages:

- A preliminary familiarisation around the Study Area in order to visit the aspects of the landscape and visual resource that have been identified through the desk study and verify their existence and importance. Important features and characteristics that have not become apparent through the desk study are also identified, and particularly sensitive receptors are noted in order to inform the design process.
- Visits to the Turbine Area, Cable Corridor Search Areas and Site Access Search Areas, in order to inform the design and layout of the Proposed Development and to identify the most suitable areas for development in landscape and visual terms, along with any constraints that may restrict the developable area.
- Further field survey around the Study Area, concurrent with the design process for the Proposed Development, to identify those receptors that are likely to be particularly important in the assessment and inform the layout design, possible turbine height, and the extent of the Proposed Development.

- The identification of representative viewpoints, and route assessments, to include in the landscape and visual assessment, including a wide range of receptors, landscape character, and directions and distances from the Proposed Development.

Consultation

10.6.4 Consultation will be carried out with Natural England and key local planning authorities. The detail of this consultation will depend on the refinement of the Cable Corridor Search Areas. The consultation will also include consideration of other matters including the daytime and hours of darkness viewpoints to be included in the LVIA and cumulative wind farms (and other relevant projects) to be included in the cumulative assessment.

10.6.5 The LVIA is intended to determine the likely significant effects that the Proposed Development will have on the landscape and visual resource. Four categories of potential effects on the landscape and visual resource are considered:

- physical effects on landscape elements;
- effects on landscape character;
- effects on views (including night-time effects of visible aviation lighting on wind turbines); and
- cumulative effects.

Assessment of Potential Effects

Physical Effects on Landscape Elements

10.6.6 Physical effects are restricted to the area within the footprint of the Proposed Development and are the direct effects on the existing fabric of the landscape, such as the removal of, alteration to, or reinstatement of ground cover. This category of effects is made up of landscape elements, which are the components of the landscape, such as moorland, which may be directly and physically affected by the Proposed Development.

Effects on Landscape Character

10.6.7 Landscape character is the distinct and recognisable pattern of elements that occurs consistently in a particular type of landscape, and the way that this pattern is perceived. Effects on landscape character arise either through the introduction of new elements that physically alter this pattern of elements, or through visibility of the Proposed Development, which may alter the way in which the pattern of elements is perceived. This category of effects is made up of landscape character

receptors, which fall into two groups: LCTs and landscape-related designated areas.

Effects on Views

10.6.8 The assessment of effects on views is an assessment of how the introduction of the Proposed Development will affect views throughout the Study Area. The assessment of effects on views is carried out in three parts:

- an assessment of the effects that the Proposed Development will have on a series of viewpoints;
- an assessment of the effects that the Proposed Development will have on views from principal visual receptors, which include relevant settlements and routes throughout the Study Area; and
- an assessment of the potential night-time effects of visible aviation lighting.

Cumulative Effects

10.6.9 Cumulative effects arise where the study areas for two or more projects overlap so that both developments are experienced at proximity where they may have a greater incremental effect, or where developments may combine to have a sequential effect, irrespective of overlap in study areas. While it expected that the cumulative assessment on landscape and visual receptors will concentrate on other wind farm developments, other types of projects will be considered for inclusion in the LVIA where appropriate.

10.6.10 Cumulative effects will be assessed in line with the methodology set out in **Chapter 3: Approach to EIA**, which accords with the Planning Inspectorate's Advice on Cumulative Effects Assessment. A long list of existing, consented, and proposed developments will be agreed with the relevant local planning authorities prior to undertaking the assessment. The certainty of these developments will be determined using the tiered approach recommended by PINS. For each environmental topic, the potential Zone of Influence (ZoI) of the Proposed Development during construction, operation (including maintenance), and decommissioning will be identified. The outcomes of the cumulative effects assessment will be reported within the Environmental Statement.

10.6.11 The most comprehensive guidance regarding the cumulative landscape and visual assessment for wind farms is published by NatureScot[228]. The objective of the cumulative assessment is described in NatureScot guidance as to *"…describe,*

[228] Scottish Natural Heritage (now NatureScot)(2021) Assessing the Cumulative Landscape and Visual Impact of Onshore Wind Energy Developments. Available: https://www.nature.scot/doc/guidance-assessing-cumulative-landscape-and-visual-impact-onshore-wind-energy-developments

visually represent and assess the ways in which a proposed wind farm would have additional impacts when considered with other consented or proposed wind farms. It should identify the significant cumulative impacts arising from the proposed wind farm".

10.6.12 The outcome of the assessment is the identification of any significant cumulative effects that may arise from the addition of the Proposed Development to the cumulative situation, in accordance with the NatureScot guidance, which states that cumulative assessment should *"focus on the likely significant impacts and those which are likely to influence the outcome of the consenting process".*

10.6.13 In relation to the significance of cumulative landscape effects, GLVIA3 notes (paragraph 7.28) that *"the most significant cumulative landscape effects are likely to be those that would give rise to changes in the landscape character of the study area of such an extent as to have major effects on its key characteristics and even, in some cases, to transform it into a different landscape type. This may be the case where the project being considered itself tips the balance through its additional effects"*.

10.6.14 GLVIA3 (paragraph 7.38) goes on to state the following in relation to the significance of cumulative visual effects:

10.6.15 "Higher levels of significance may arise from cumulative visual effects related to:

- *developments that are in closer proximity to the main project and are clearly visible together in views from the elected viewpoints;*
- *developments that are highly inter-visible, with overlapping ZTVs – even though the individual developments may be at some distance from the main project and from individual viewpoints, and when viewed individually not particularly significant, the overall combined cumulative effect on a viewer at a particular viewpoint may be more significant."*

10.6.16 In some situations, it is relevant to consider the *"combined effects of all the past, present and future proposals together with the new project"* as noted in paragraph 7.18 of GLVIA3. This type of cumulative effect is described in GLVIA3 (paragraph 7.17) as *"incremental change as a result of successive individual developments such that the combined landscape and/or visual effect is significant even though the individual effects may not be".*

10.6.17 It should be noted that if the Proposed Development itself is assessed to have a significant effect, it does not necessarily follow that the cumulative effect will also be significant.

10.6.18 The assessment of cumulative effects in the LVIA will describe the effects arising from the addition of the Proposed Development to a range of cumulative scenarios, including operational, under construction, consented and application stage projects. The cumulative scenarios to be assessed will be identified in accordance with the approach set out in **Chapter 3: Approach to EIA**. Scoping stage developments are not usually included in the assessment due to the uncertainty of their layout and design, and the potential for considerable changes to be made between scoping stage and submission. Natural England and key local planning authorities will be consulted over the final list of projects to be considered in the cumulative assessment.

10.6.19 The cumulative assessment will include supporting graphics such as cumulative ZTVs and cumulative wirelines.

Significance of Effects

10.6.20 The objective of the assessment of the Proposed Development is to predict its likely significant effects on the landscape and visual resource. The EIA Regulations require that the direct and indirect significant effects of the Proposed Development are identified, described and assessed, and therefore the LVIA effects are assessed to be either significant or not significant.

10.6.21 As described in best practice guidance, the significance of effects is assessed through a combination of two considerations; the sensitivity of the landscape or visual receptor and the magnitude of change that will result from the addition of the Proposed Development. While this methodology is not reliant on the use of a matrix to arrive at the conclusion of a significant or not significant effect, a matrix is included in Table 10-7 to illustrate how combinations of sensitivity and magnitude of change ratings can give rise to significant effects. The matrix also gives an understanding of the threshold at which significant effects may arise.

Table 10-7: Illustrative Significance Matrix

Sensitivity	Magnitude of Change						
		High	Medium-High	Medium	Medium-Low	Low	Negligible
	High	Major (Significant)	Major (Significant)	Major/ moderate (Significant)	Moderate (Significant/ Not Significant)	Moderate/ minor (Not Significant)	Minor (Not Significant)
	Medium-High	Major (Significant)	Major/ moderate (Significant)	Major/ Moderate (Significant)	Moderate (Significant/	Moderate/ minor (Not Significant)	Minor (Not Significant)

	Magnitude of Change						
					Not Significant)		
	Medium	Major/ moderate (Significant)	Major/ Moderate (Significant)	Moderate (Significant/ Not Significant)	Moderate/ minor (Not Significant)	Minor (Not Significant)	Minor (Not Significant)
	Medium-Low	Moderate (Significant/ Not Significant)	Moderate (Significant/ Not Significant)	Moderate (Significant/ Not Significant)	Minor (Not Significant)	Minor (Not Significant)	Negligible (Not Significant)
	Low	Moderate (Significant/ Not Significant)	Moderate/ minor (Not Significant)	Minor (Not Significant)	Minor (Not Significant)	Negligible (Not Significant)	Negligible (Not Significant)

10.6.22 In accordance with GLVIA3, experienced professional judgement is applied to the assessment of all effects and reasoned justification is presented in respect of the findings of each case.

10.6.23 A significant effect occurs where the Proposed Development will provide one of the defining influences on a landscape element, landscape character receptor or view. A not significant effect occurs where the effect of the Proposed Development is not material, and the baseline characteristics of the landscape element, landscape character receptor, view or visual receptor continue to provide the definitive influence.

Sensitivity

10.6.24 Sensitivity is an expression of the ability of a landscape receptor or view to accommodate the Proposed Development and is determined through a combination of the value of the receptor and its susceptibility to the Proposed Development.

10.6.25 Levels of sensitivity (high, medium, and low) are applied in order that the judgement used in the process of assessment is apparent. Intermediate levels (medium-high and medium-low) may also be applied where the particular combination of value and susceptibility results in an intermediate definition.

Magnitude of Change

10.6.26 Magnitude of change is an expression of the extent of the effect on landscape and visual receptors that will result from the introduction of the Proposed Development.

The magnitude of change is assessed in terms of a number of variables, including the size and scale of the impact and the extent of the affected area.

10.6.27 Levels of magnitude of change (high, medium, low, and negligible) are applied in order that the judgement used in the process of assessment is apparent. Intermediate levels (medium-high and medium-low) may also be applied where the particular combination of variables results in an intermediate definition.

Nature of Effects

10.6.28 The 'nature of effects' relates to whether the effects of the Proposed Development are beneficial or adverse. The landscape and visual effects of wind farms are difficult to categorise in either of these brackets as, unlike other disciplines, there are no definitive criteria by which effects can be measured as being categorically positive or negative.

10.6.29 The LVIA will adopt a precautionary approach, which assumes that significant landscape and visual effects will be weighed on the negative side of the planning balance, although positive or neutral effects may arise in certain situations.

Assessment of 'Hours of Darkness' Visual Effects

10.6.30 The Civil Aviation Authority (CAA) requires that 'en-route obstacles' at or above 150 m above ground level are lit with visible lighting to assist their detection by aircraft. As the proposed turbines will be up to 200 m tip height, there will be a requirement for some or all of these turbines to display visible red lights at night and an hours of darkness assessment of effects will therefore be required. The lights will be placed on the nacelles (and potentially the towers) of the turbines.

10.6.31 The assessment of turbine lighting will be undertaken based on Guidance on Aviation Lighting Impact Assessment (NatureScot, November 2024). It is intended this will determine the likely effects that the Proposed Development will have on the visual resource e.g., it is an assessment of the effects of visible aviation lighting on views experienced by people during hours of darkness.

10.6.32 The assessment of hours of darkness effects will be informed by a ZTV of the turbine lights and night-time visualisations from up to five viewpoints, to be agreed with Natural England and key local authorities within the study area (based on the extent of the ZTV), that illustrate the proposed lighting effects. These viewpoints will represent locations from where people are most likely to experience the Proposed Development at night. It is anticipated the night time specific viewpoints will be selected following refinement of the design of the Proposed Development to ensure they are relevant to the assessment.

10.6.33 A hub height ZTV (approximately 119m) of the scoping layout is shown on Figure 10-7. This gives an impression of where there will be theoretical visibility of nacelle lighting on the turbines in the scoping layout.

Residential Visual Amenity Assessment

10.6.34 A Residential Visual Amenity Assessment (RVAA) will be carried out in accordance with Landscape Institute Technical Guidance Note 2/19. In accordance with the guidance, this will include an assessment of effects on the views gained by residential properties that lie within a 2km radius of the nearest turbine in the Proposed Development. This will not form part of the LVIA and will be presented as a separate appendix.

Visualisations

10.6.35 Visualisations will be produced for the Proposed Development. These will be prepared in accordance with Visual Representation of Development Proposals (Landscape Institute Technical Guidance Note 06/19 (July 2019)). If alternative approaches to the preparation of visualisations are required these could be discussed as part of the consultation process with statutory consultees.

Construction

10.6.36 The assessment of construction phase effects will concentrate on the direct, physical effects of the Proposed Development. Field survey work will include the Turbine Area, together with the Site Access Search Areas and Cable Corridor Search Areas. Key considerations will comprise the potential loss of landscape features and elements and mitigation that could be implemented.

Operation and Maintenance

10.6.37 The assessment of landscape and visual effects associated with the operational and maintenance phase will concentrate on the Turbine Area. Potential effects on landscape and visual receptors throughout the 45km study area will be assessed. Key effects being considered in relation to this phase will comprise:

- Potential effects on the perception of landscape character;
- Potential effects on landscape designations, including their special qualities;
- Potential effects on views and visual amenity, including the assessment of viewpoints selected to represent visual receptors throughout the study area;
- Residential visual amenity assessment for the closest residential properties to the Turbine Area; and

- Assessment of the potential visual effect resulting from the aviation lighting requirements.

Decommissioning

10.6.38 It is proposed that decommissioning is scoped out of the LVIA. The effects associated with this phase are anticipated to be less than those associated with the construction phase. In addition, this phase will result in the reversal of the landscape and visual effects resulting from the Proposed Development.

Assumptions, Limitations and Uncertainties

10.6.39 Key assumptions, limitations and uncertainties at this stage relate to the design information that is available for the Proposed Development. The proposed assessment scope is based on the current 41 wind turbine layout, Site Access Search Areas and Cable Corridor Search Areas. However, evolution of this layout through the design process could influence aspects of the assessment scope e.g. potential viewpoints that we have identified may cease to be relevant if the ZTV for the wind turbines changes.

10.6.40 As the detail of the proposed grid connection evolves and becomes more refined there could be implications for the scope of the LVIA. For instance, if the cable route requires the removal of notable landscape features or elements, or above ground infrastructure is required at the point of connection, specific localised assessments may be required.

11 Cultural Heritage

11.1 Introduction

11.1.1 This Chapter of the Scoping Report presents the scope of detailed environmental assessment for Cultural Heritage for the Proposed Development. Specifically, the following section of the Scoping Report presents the policy and legislative context, the approach to collecting baseline data relevant to this scoping chapter and an overview of the relevant baseline conditions within the Site and surrounding area. It concludes by setting out the scope of assessment including, with justification, those effects that are proposed to be scoped in or out for detailed assessment and concludes by outlining the method that will be used to undertake the detailed environmental assessment.

11.1.2 This chapter of the Scoping Report is supported by the following Figures:

- Figures 11-1 and 11-2: Designated heritage assets; and
- Figure 11-3: Non-designated heritage assets and findspots within 5km of the Turbine Area.

11.2 Review of Policy, Legislation and Relevant Guidance

11.2.1 Legislation, planning policy and guidance relating to Cultural Heritage, and relevant to the Proposed Development comprises:

Legislation

- Ancient Monuments and Archaeological Areas Act 1979;
- Burial Act 1857;
- Hedgerows Regulations 1997;
- Historic Buildings and Ancient Monuments Act 1953;
- National Heritage Act 1980, amended 1983 & 1997, 2002;
- Protection of Military Remains Act 1986;
- Planning (Listed Buildings and Conservation Areas) Act, 1990; and
- Treasure Act 1996.

National Planning Policy

- Overarching National Policy Statement (NPS) for Energy (EN-1) (2023)[229];
- Draft Overarching National Policy Statement for Energy (EN-1) (2025)[230];
- Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (2025)[231] ;
- National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023)[232];
- Draft National Policy Statement for electricity networks infrastructure (EN-5) (2025)[233]; and
- National Planning Policy Framework (NPPF) (updated February 2025)[234].

Local Planning Policy

11.2.2 The Turbine Area is situated within the administrative boundary of Calderdale Metropolitan Borough Council, which adopted the Calderdale Local Plan 2018/19 to 2032/33 in March 2023. Policies relevant to the historic environment comprise:

- HE1 – Historic Environment.

11.2.3 Policies from other local authorities may also be relevant when considered the setting of designated heritage assets and buried archaeological remains within Cable Corridor Search Areas and will include, but are not limited to:

- Bradford Metropolitan District Council 'Core Strategy Development Plan Document (DPD)' adopted on 18 July 2017[235];
    - Policy EN3: Historic Environment; and

[229] Department for Energy Security & Net Zero (2023) Overarching National Policy Statement for Energy (EN-1). Available: EN-1 Overarching National Policy Statement for Energy
[230] Department for Energy Security & Net Zero (2025) Overarching National Policy Statement for Energy (EN-1). Available: Draft: Overarching National Policy Statement for energy (EN-1) (accessible webpage) - GOV.UK
[231] Department for Energy Security & Net Zero (2025) National Policy Statement for Renewable Energy Infrastructure (EN-3). Available: Draft: National Policy Statement for Renewable Energy Infrastructure (EN-3)
[232] Department for Energy Security & Net Zero (2023) National Policy Statement for electricity networks infrastructure (EN-5). Available: Electricity Networks National Policy Statement - EN-5
[233] Department for Energy Security & Net Zero (2025) National Policy Statement for electricity networks infrastructure (EN-5). Available: Planning for new energy infrastructure: revised draft National Policy Statements for energy infrastructure
[234] Ministry of Housing Communities & Local Government (2024) National Planning Policy Framework (December 2024) Updated online February 2025. Available: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf
[235] Available: https://www.bradford.gov.uk/planning-and-building-control/planning-policy/adopted-local-plan/

- Policy EN4: Landscape (which includes section B2 which addresses the importance of cultural associations, historic elements in the landscape and the setting of settlements and heritage assets).

- Pendle Borough Council Local Plan Part 1: Core Strategy adopted on 17th December 2015[236]
  - Policy ENV 1 Protecting and Enhancing Our Natural and Historic Environments.
- Rossendale Borough Council Local Plan 2019 to 2036, adopted December 2021[237];
  - Policy ENV2: Historic Environment.
- North Yorkshire Council, Craven District Council Local Plan 2021 to 2032, adopted November 2019[238];
  - Policy ENV2: Heritage.
- Burnley Borough Council 'Burnley's Local Plan', adopted July 2018[239]
  - Policy HE1: Identifying and Protecting Burnley's Historic Environment;
  - Policy HE2: Designated Heritage Assets: Listed Buildings; Conservation Areas; and Registered Parks and Gardens;
  - Policy HE3: Non-Designated Heritage Assets;
  - Policy HE4: Scheduled Monuments and Archaeological Assets;
  - Rochdale Metropolitan Borough Council, Rochdale Borough Unitary Development Plan 2001-2016[240];
  - Policy BE/9 Conservation of the Built Heritage;

[236] Available at: https://www.pendle.gov.uk/downloads/file/8723/pendle_local_plan_part_1_core_strategy
[237] Available at: https://www.rossendale.gov.uk/downloads/file/17076/rossendale_local_plan_2019_to_2036_-_written_statement
[238] Available at: https://www.northyorks.gov.uk/sites/default/files/fileroot/planning_migrated/planning_policy/Craven_local_plan_appendices_and_policies_map%20-%20na.pdf
[239] Available at: https://burnley.gov.uk/wp-content/uploads/2022/04/Burnleys-Local-Plan-Adopted-Version-Final-With-erratum-28-Sep-2018.pdf
[240] The Unitary Development Plan remains in force until the Allocations Development Plan is adopted. Plan available: Rochdale Unitary Development Plan - June 2006

- Policy BE/10 Development Affecting Archaeological Sites and Ancient Monuments;
- Policy BE/11Protection of Locally Important Buildings and Features of Architectural and Historic Interest;
- Policy BE/12 Demolition of Listed Buildings;
- Policy BE/13 Changes to Use of Listed Buildings;
- Policy BE/14 Alterations and Extensions to Listed Buildings;
- Policy BE/15 New Development Affecting the Setting of a Listed Building;
- Policy BE/16 Demolition of Buildings in Conservation Areas;
- Policy BE/17 New Development Affecting Conservation Areas; and
- Policy BE/18 Changes of Use to Buildings in Conservation Areas.

- Leeds City Council Core Strategy (as amended by the Core Strategy Selective Review 2019) Leeds Local Plan[241]
  - Policy P11: Conservation;
  - Policy ARC1Scheduled Ancient Monuments;
  - Policy ARC4 Preservation of Class I and II Areas;
  - Policy ARC5 Planning Decisions and Class I, II and III Areas;
  - Policy ARC6 Preservation by Record;
  - Policy ARC 7 Historic Landscapes; and
  - Policy ARC 8 Management Agreements.

National Guidance

11.2.4 The following guidance will be used for the cultural heritage assessment:

- Standards and guidance for historic environment desk-based assessment (CIfA 2020)[242];

[241] Available at: Leeds LDF Core Strategy Draft 'Publication' Document
[242] Chartered Institute for Archaeologists (CIfA) 2020. *Standard and guidance for historic environment desk-based assessment*. Available at CIfA Code, regulations and standards & guidance | Chartered Institute for Archaeologists

- Managing Significance in Decision Taking in the Historic Environment: Historic Environment Good Practice in Planning Advice Note 2 (Historic England 2015)[243];
- The Setting of Heritage Assets: Historic Environment Good Practice in Planning Note 3 (Historic England 2017)[244]; and
- Principles of Cultural Heritage Impact Assessment in the UK (Institute for Environmental Management and Assessment 2021)[245].

11.3 Existing Baseline Conditions

11.3.1 This section of the Scoping Chapter for Cultural Heritage sets out the known baseline conditions at this (scoping) stage of the proposed development. It is noted that further surveys and assessment is proposed to inform the technical assessment for the Environmental Statement (see details and scope of the further baseline data below under Section 11.6.

Study Area

11.3.2 The following study areas were used for the purposes of scoping baseline. These study areas were used for the 2023 scoping exercise, and are in line with industry best practice and have regard to the nature of the known evidence base:

- A 5km radius from the centre point of the Turbine Area to provide adequate context to sufficiently assess archaeological remains;
- A 15km buffer around the Turbine Area to capture any designated or non-designated heritage assets likely to be affected by a change in their setting; and
- A 30km buffer around the Turbine Area to capture any very highly designated heritage assets for which there is a potential for an effect (upon their Heritage Significance) through a change in their setting.

11.3.3 The study area includes the Cable Corridor and Site Access Search Areas. However, these areas are still being refined through the options appraisal and therefore the detailed assessment will be included within the next stages of assessment, and within the Environmental Statement (ES). Cultural Heritage data

[243] Historic England 2015. *Managing significance in Decision Taking in the Historic Environment: Historic Environment Good Practice in Planning Advice Note 2.* Available at: Managing Significance in Decision-Taking in the Historic Environment | Historic England
[244] Historic England 2017. *The Setting of Heritage Assets: Historic Environment Good Practice in Planning Note 3*. Available at: The Setting of Heritage Assets | Historic England
[245] Institute for Environmental Management and Assessment 2021. *Principles of Cultural Heritage Impact Assessment in the UK.*

for the Cable Corridor and Access Seach Areas is available where these overlap with the study areas for the Turbine Area.

Approach to the Collection of Baseline Data for Scoping

11.3.4 Baseline data was collected using the following sources of data, as well as project specific surveys:

- The National Heritage List for England (NHLE);
- National heritage datasets including the Archaeological Data Service (ADS), Heritage Gateway, OASIS, PastScape and the National Record of the Historic Environment (NRHE) Excavation Index; and
- Relevant primary and secondary sources held in Wessex Archaeology's own library. Both published and unpublished archaeological reports relating to excavations and observations in the vicinity of the Site were studied.

Relevant Baseline Conditions

11.3.5 Much of the recorded archaeological information within the initial search area for the Turbine Area can be broadly separated into two categories: those relating to prehistoric occupation and those relating to post-medieval farmsteads.

11.3.6 The Turbine Area is located within an area of elevated topography within an undulating landscape characterised by upland areas of heath land/moors and valley bottoms where settlement centres are concentrated.

11.3.7 Prehistoric populations in general, used higher elevations for settlement and funerary activity, with proximity to a water course an important consideration in establishing areas for activity. While the majority of the recorded remains date to the Bronze Age and Iron Age (c.2,200BC - AD 43), a number of lithic scatters have also been recorded. These date to the Mesolithic period (c.10,000BC – 4001BC) when populations were substantially more mobile, moving through the landscape depending on seasonal activity or to access regional resources. These populations left little in the way of permanent settlement evidence with lithic scatters therefore an important component of identifying this type of activity.

11.3.8 In the case of post-medieval farmsteads (c.1540-1900), these are a common feature across the region and as such are very unlikely to be of equivalent significance to designated heritage assets. In almost all cases, only those buildings which are extant are afforded statutory protection in the form of listing. That being said, these buildings and the associated outbuildings, field systems etc. will hold archaeological interest that would help in answering questions relating to farming practices and working conditions.

11.3.9 The Proposed Development, and the area surrounding the settlement at Haworth have a strong association with the literary works of the Brontë sisters. The farmhouse of Top Withens, 600m north of the Turbine Area boundary, is widely accepted as the inspiration for the location of Emily Brontë's Wuthering Heights in the novel of the same name.

11.3.10 Beyond the Turbine Area, the landscape follows similar characteristics with settlements concentrated around watercourses and large areas of agricultural land between. These settlements can broadly date their origins to at least the medieval period, however, it is during the late 18th and 19th centuries they experience significant expansion due to the influx of people looking for work in factories and industrial activities. It is during this period that many of the now listed buildings trace their origins which are generally focused in settlement centres, rather than in the open landscape.

Receptors Identified

Within the Turbine Area

11.3.11 The following receptors have been identified within the Turbine Area.

Listed Buildings:

- Grade II Building - Bridge at Holme Ends Over Alcomden Water (1235132); and
- Grade II Building - Holme Ends Farmhouse and Attached Barn (1265200).

Archaeological Remains:

Table 11-1 Recorded features/finds within the Turbine Area

Reference	Name of asset	Period	Reference	Name of asset	Period
MWY2881	Lithic working site, Cludders Slack B	Palaeolithic	**MWY2357**	Township boundary stone	Post-medieval
MWY14407	Microlith found south of Leeshaw Reservoir	Mesolithic	**MWY2358**	Township Boundary stone	Post-medieval
MWY14411	Flint findspot at Withins Height	Mesolithic	**MWY2359**	Township Boundary stone	Post-medieval

Reference	Name of asset	Period	Reference	Name of asset	Period
MWY2887	Lithic scatters, Staris Hill C	Mesolithic	**MWY2368**	Township boundary stone	Post-medieval
MWY2888	Lithic scatters, Lower Cock Hill B	Mesolithic	**MWY2368**	Township boundary stone	Post-medieval
MWY2925	Mesolithic lithic scatter found at Tang Brink Edge	Mesolithic	**MWY2369**	Township boundary stone	Post-medieval
MWY2955	Lithic scatter found on Burnt Hill and Withens Height	Mesolithic	**MWY2369**	Township boundary stone	Post-medieval
MWY14411	Flint findspot at Withins Height	Mesolithic	**MWY2370**	Township boundary stone	Post-medieval
MWY2887	Lithic scatters, Stairs Hill C	Mesolithic	**MWY2370**	Township boundary stone	Post-medieval
MWY2888	Lithic scatters, Lower Cock Hill B	Mesolithic	**MWY2371**	Township boundary stone	Post-medieval
MWY2925	Mesolithic lithic scatter found at Tang Brink Edge	Mesolithic	**MWY2371**	Township boundary stone	Post-medieval
MWY2955	Lithic scatter found on Burnt Hill and Withens Height	Mesolithic	**MWY2431**	Township Boundary stone	Post-medieval
MWY14008	Bronze Age flint blade found on Burnt Hill	Bronze Age	**MWY3468**	Field boundaries and earthworks at Thurrish, Lane	Post-medieval

Reference	Name of asset	Period	Reference	Name of asset	Period
				Head and White Hole	
MWY14008	Bronze Age flint blade found on Burnt Hill	Bronze Age	**MWY3468**	Field boundaries and earthworks at Thurrish, Lane Head and White Hole	Post-medieval
MWY14486	Flint findspot at Walshaw Dean	Prehistoric	**MWY10254**	Lower Baiting Farmstead	Post-medieval
MWY2432	Boundary stone	Medieval	**MWY10261**	Upper Good Greave Farmstead	Post-medieval
MWY3422	Alcomden Farmstead	Medieval	**MWY10263**	Higher Baiting Farmstead	Post-medieval
MWY3422	Alcomden Farmstead	Medieval	**MWY10264**	New House Farmstead	Post-medieval
MWY3422	Alcomden Farmstead	Medieval	**MWY10265**	Holme House and Holme Tops Farmstead	Post-medieval
MWY3422	Alcomden Farmstead	Medieval	**MWY2354**	Township boundary stone	Post-medieval
MWY3422	Alcomden Farmstead	Medieval	**MWY2355**	Township boundary stone	Post-medieval

Reference	Name of asset	Period	Reference	Name of asset	Period
MWY3434	Upper and Lower Good Greave	Medieval	**MWY2356**	Township boundary stone	Post-medieval
MWY3434	Upper and Lower Good Greave	Medieval	**MWY2357**	Township boundary stone	Post-medieval
MWY3604	Medieval vaccary site and later farmstead at Widdop Reservoir	Medieval	**MWY2368**	Township boundary stone	Post-medieval
MWY2432	Boundary stone	Medieval	**MWY2369**	Township boundary stone	Post-medieval
MWY3422	Alcomden Farmstead	Medieval	**MWY2370**	Township boundary stone	Post-medieval
MWY3434	Upper and Lower Good Greave	Medieval	**MWY2371**	Township boundary stone	Post-medieval
MWY10254	Lower Baiting Farmstead	Post-medieval	**MWY2431**	Township Boundary stone	Post-medieval
MWY10261	Upper Good Greave Farmstead	Post-medieval	**MWY3453**	High Rakes, Wadsworth	Post-medieval
MWY10263	Higher Baiting Farmstead	Post-medieval	**MWY5818**	Holme Ends (South)	Post-medieval
MWY10264	New House Farmstead	Post-medieval	**MWY5819**	Holme Ends (North)	Post-medieval
MWY2353	Oxenhope Stoop, boundary stone	Post-medieval	**PRN6065**	Crow Hill - Jackson's Ridge - Warcop	19th century

Reference	Name of asset	Period	Reference	Name of asset	Period
				Hill, Yorks and Lancs Boundary (One of sixteen recorded under the same reference, all are recorded at individual grid reference locations	
MWY2353	Oxenhope Stoop, boundary stone	Post-medieval	**MWY10270**	Cascade farmstead	19th century
MWY2354	Township boundary stone	Post-medieval	**MWY10270**	Cascade farmstead	19th century
MWY2355	Township boundary stone	Post-medieval	**MWY3452**	Shackleton Knoll	Undated
MWY2356	Township boundary stone	Post-medieval	**MWY6517**	Circular Enclosure overlooking Alcomden Water	Undated

Outside the Turbine Area

Within the 5km Study Area

11.3.12 The following receptors are located outside the Turbine Area and within the 5km Study Area. These comprise 28 Scheduled Monuments, one Grade I Listed Building and 26 Grade II* Listed Buildings (as shown in Table 11-2 and Table 11-3).

Table 11-2 Scheduled Monuments within 5km

Reference	Name of asset	Reference	Name of asset	Reference	Name of asset
1003130	Wycoller Hall	**1009487**	Beadle Hill Romano-British farmstead	**1008919**	Round cairn on Hameldon Pasture
1005098	Wycoller Packhorse Bridge	**1009488**	Two Romano-British farmsteads known as Ring Stones	**1009112**	Ring cairn on Slipper Hill
1005103	The Hall Bridge, Wycoller	**1009495**	Hanging Stone or Watersheddles Cross	**1009113**	Bowl barrow 90m east of Twist Castle
1005104	Bank House Bridge, Wycoller	**1009497**	Twist Castle Romano-British farmstead	**1009114**	Bowl barrow 155m east of Beadle Hill
1005795	The old bridge over the Hebden Water at Hebden Bridge	**1011754**	Wayside cross known as Tinker Cross	**1016948**	Old Church of St Thomas Becket, 210m north east of Daisy Field Farm
1008916	Small stone circle on Delf Hill	**1013814**	Burwains Camp prehistoric defended settlement west of Broad Bank Hill	**1018234**	Enclosed Bronze Age urnfield 440m north west of Rough Bottom on

Reference	Name of asset	Reference	Name of asset	Reference	Name of asset
					Midgeley Moor
1008917	Pike Low bowl barrow and site of beacon, Bonfire Hill	**1013830**	Wayside cross known as Reaps Cross	**1018236**	Cairn known as Millers Grave on Midgley Moor
1008918	Bowl barrow on Hameldon Pasture	**1015096**	Cup marked boundary stone known as Churn Milk Joan on Crow Hill, Midgley Moor, 580m north of Foster Clough Bridge	**1018258**	Late prehistoric enclosed settlement known as Castle Stead Ring

Table 11-3 Grade I and II* listed buildings within the 5km Study Area

Reference	Name of asset	Reference	Name of asset	Reference	Name of asset
1072638	THE GREAT BARN	**1226099**	OLD EDGE	**1243828**	PACK HORSE BRIDGE
1072655	EXTWISTLE HALL AND ATTACHED GARDEN WALL AT SD 875 338	**1226170**	CHURCH OF ST THOMAS A' BECKET	**1243829**	CLAPPER BRIDGE
1072659	BURWAINS	**1226171**	CHURCH OF ST THOMAS	**1243830**	BANK HOUSE BRIDGE
1073327	PIERSON'S FARMHOUSE	**1226441**	WESLEYAN METHODIST CHAPEL	**1265719**	BARN 10 METRES TO NORTH WEST OF GREENWOOD LEE

Reference	Name of asset	Reference	Name of asset	Reference	Name of asset
1073331	REMAINS OF WYCOLLER HALL, INCLUDING BOUNDARY WALL TO RIVER	**1226793**	GREENWOOD LEE	**1279349**	GREAT BURLEES
1205736	HURSTWOOD HALL	**1226935**	AKROYD FARM COTTAGE AKROYD FARMHOUSE	**1279350**	LITTLE BURLEES FARMHOUSE AND ATTACHED BARN
1225892	FIELD HEAD	**1227399**	WAINSGATE BAPTIST CHURCH AND ATTACHED SUNDAY SCHOOL	**1280543**	SPENSER HOUSE
1226080	COLDEN GREAT HOUSE	**1228914**	THE OLD BRIDGE OVER THE HEBDEN WATER	**1280581**	JACKSON'S FARMHOUSE AND COTTAGE ADJOINING JACKSON'S FARMHOUSE AND ATTACHED GARDEN WALL
1283403	CHURCH OF ST MICHAEL AND ALL ANGELS	**1313937**	Ponden Hall	**1313933**	Haworth Parsonage

11.3.13 There are 13 Conservation Areas within 5km of the Turbine Area:

- Heptonstall;
- Nelson Southfield;
- Oxenhope Station Road;
- Oxenhope Lower Town;
- Oxenhope Upper Town;
- Stanbury;
- Hebden Bridge;
- Wycoller;
- Haworth;
- Leeming;
- Oakworth;
- Hurstwood; and
- Worsthorne.

11.3.14 A further 587 Grade II listed buildings fall within 5km of the Turbine Area largely located within the surrounding settlements of Hebden Bridge, Todmorden, Haworth, Burnley and Colne.

11.3.15 One Grade II Registered Park - Central Park Haworth (1001659) lies within 5km of the Turbine Area.

Within the 15km Study Area

11.3.16 The following receptors, which are located outside the 5km Study Area, and within the 15km Study Area have been identified.

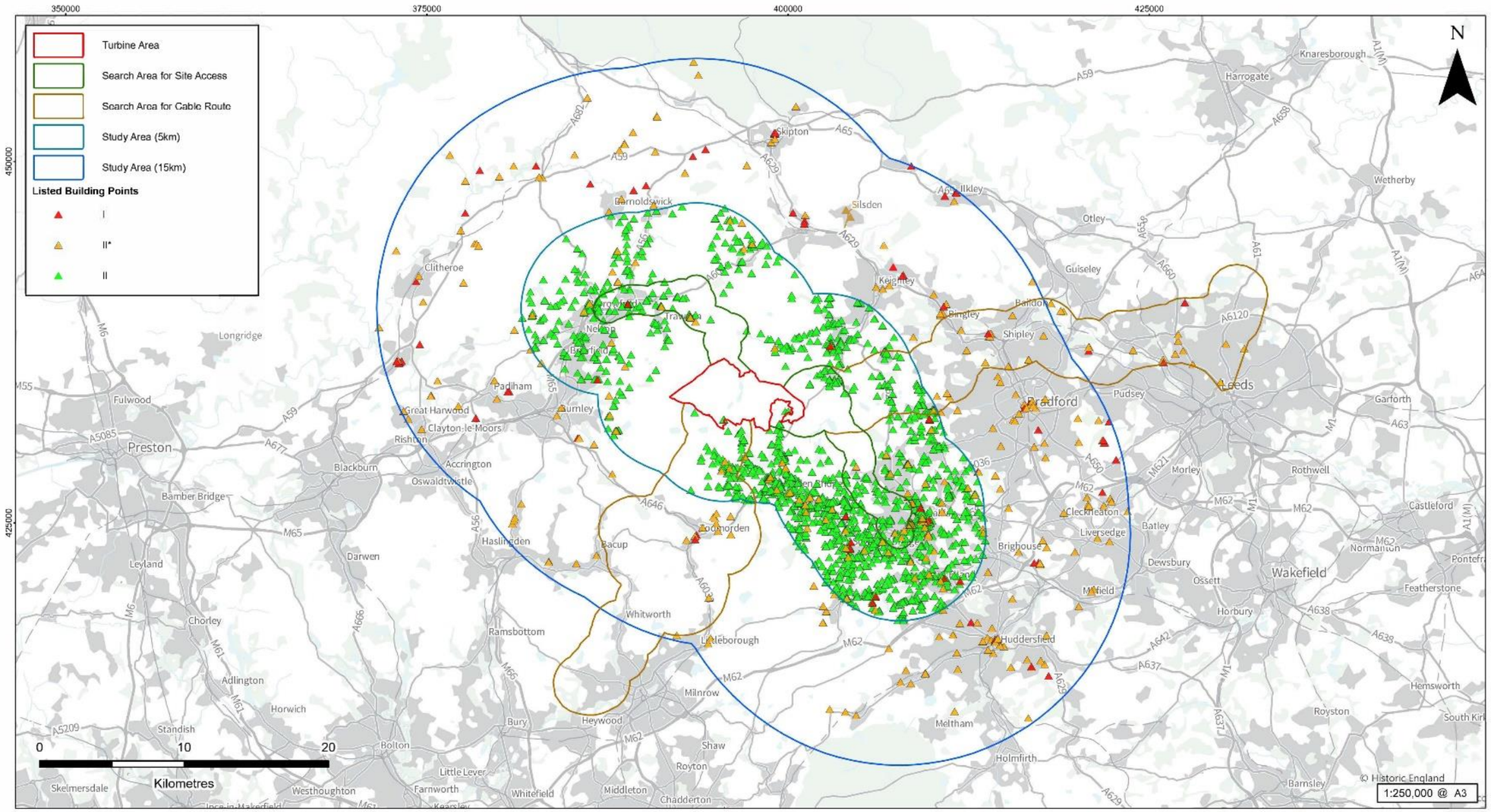
- Saltaire World Heritage Site falls within 15km;
- Thirty-Three Grade I listed buildings fall within 15km, as shown in Table 11-4;
- A further 171 Grade II* listed buildings fall within 15km of the Turbine Area, largely located within the surrounding settlements of Hebden Bridge, Todmorden and Haworth; and
- One Grade II* Registered Park - Peoples Park, Halifax (1000553) is also located within 15km.

Table 11-4 Grade I listed buildings within 15km

Reference	Name of asset	Reference	Name of asset	Reference	Name of asset
1073414	CHURCH OF ST BARTHOLOMEW	**1134490**	WOOD LANE HALL	**1274420**	SHUTTLEWORTH HALL
1073421	CHURCH OF ST MARY LE GILL	**1167634**	CHURCH OF ST MARY	**1276881**	BARKISLAND HALL
1111890	UPPER HEADLEY HALL	**1167718**	KILDWICK BRIDGE	**1277316**	THE HOWROYDE
1132175	CHURCH OF ST ANDREW	**1184393**	CHURCH OF ST MARY	**1283478**	EAST RIDDLESDEN HALL
1132291	CHURCH OF ALL SAINTS	**1184572**	KERSHAW HOUSE	**1313775**	CHURCH OF ST PETER
1132296	BROUGHTON HALL	**1228980**	TODMORDEN TOWN HALL	**1313939**	WEST RIDDLESDEN HALL
1133129	COURTYARD ENTRANCE AND WALLING AT UPPER HEADLEY HALL	**1228988**	THE UNITARIAN CHURCH	**1314027**	CHURCH OF ALL SOULS
1133130	BARN AT UPPER HEADLEY HALL	**1237626**	GAWTHORPE HALL AND SURROUNDING BALUSTRADE	**1314229**	CONGREGATIONAL CHURCH (INCLUDING SALT FAMILY MAUSOLEUM TO SOUTH)
1133765	HIGH BENTLEY	**1237628**	GREAT BARN CIRCA 100 METRES WEST OF	**1314303**	LEEDS AND LIVERPOOL CANAL FIVE RISE LOCKS WITH

Reference	Name of asset	Reference	Name of asset	Reference	Name of asset
			GAWTHORPE HALL		OVERFLOW CHANNEL
1133928	CHURCH OF ST JOHN THE BAPTIST	**1247299**	TOWNELEY HALL	**1316997**	FARNHILL HALL
1134153	BARN APPROXIMATELY 80 METRES TO NORTH-EAST OF EAST RIDDLESDEN HALL	**1273056**	Piece Hall, Westgate, Halifax	**1416482**	Queen Street Mill

Figure 11-1: Designated heritage assets



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

Revision History

Rev	Date	By	Detail
01	31/07/2025	OD	First Issue
02	14/08/2025	JFL	Second issue

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The Historic England Data contained in this material was obtained on 31/07/2025. The most publicly available up to date Historic England Data can be obtained from HistoricEngland.org.uk.

Project/Location
Calderdale Energy Park

Drawing title
Designated heritage assets

Drawing status
Scoping Report

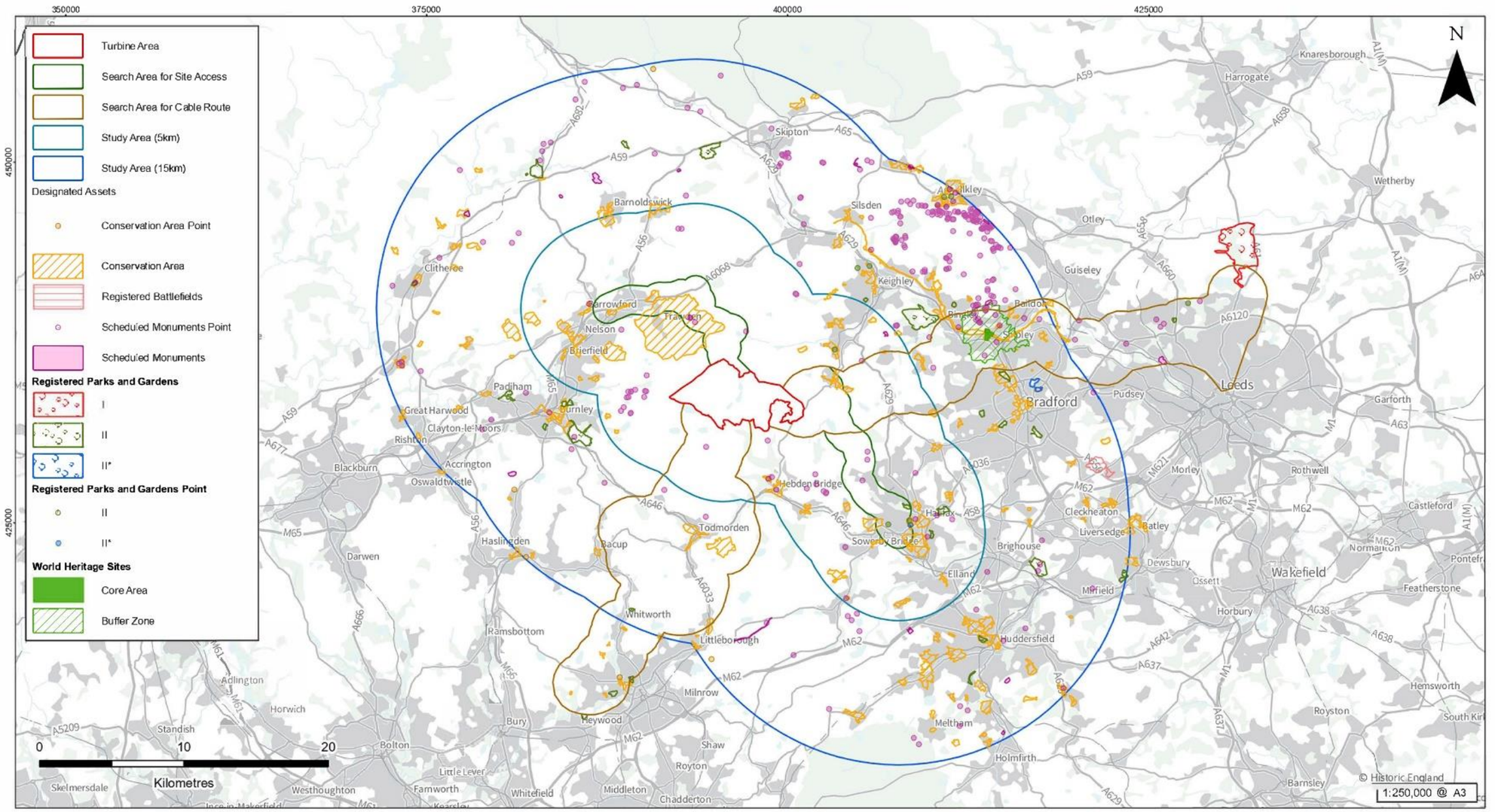
Date	Drawn	Checked
15/08/2025	OD	DL

Client
Calderdale energy park

Consultant

Drawing number	Revision
Figure 11-1	01

Figure 11-2: Designated heritage assets



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

Revision History

Rev	Date	By	Detail
01	31/07/2025	OD	First Issue

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Project/Location
Calderdale Energy Park

Drawing title
Designated heritage assets

Drawing status
Scoping Report

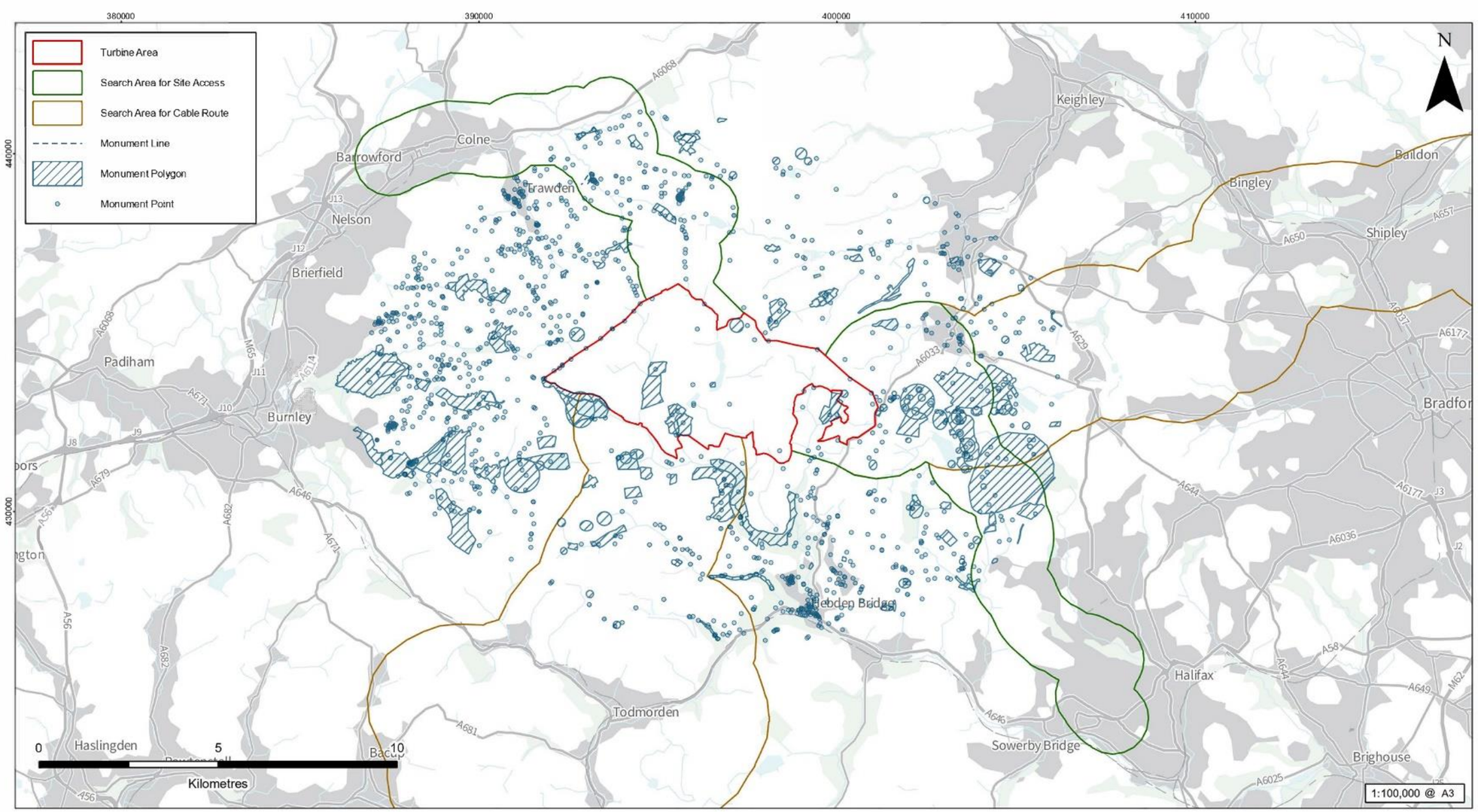
Date	Drawn	Checked
31/07/2025	OD	DL

Client
Calderdale energy park

Consultant

Drawing number	Revision
Figure 11- 2	01

Figure 11-3: Non-designated heritage assets and findspots within 5km of the Turbine Area



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

Revision History

Rev	Date	By	Detail
01	31/07/2025	OD	First Issue

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Project/Location

Calderdale Energy Park

Drawing title

Non-designated heritage assets and findspots within 5km of the Turbine Area

Drawing status

Scoping Report

Date	Drawn	Checked
31/07/2025	OD	DL

Client

Calderdale energy park

Consultant

Drawing number	Revision
Figure 11-3	01

11.4 Environmental Measures

11.4.1 Consideration will be paid to the opportunity to introduce environmental measures (and mitigation) that will help to avoid or reduce the potential for an adverse significant effect to occur. In accordance with Schedule 4(7) of the Town and Country Planning (Environmental Impact Assessment (EIA)) Regulations 2017 the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset (where appropriate) likely significant effects. Specific environmental measures relevant to Cultural Heritage will be identified and will be considered as part of the assessments (i.e., the assessments of likely significant effects have been undertaken with the inclusion of the environmental measures, as these measures will form part of the Proposed Development). At this stage of the proposed development, the following environmental measures will be implemented and included within the Proposed Development.

Construction

11.4.2 The Proposed Development design will seek to avoid significant effects on heritage assets where possible. This will include designing the infrastructure layout to avoid or reduce significant effects on heritage assets. Where effects on buried archaeological remains cannot be avoided they will, in line with standard practice, be mitigated by a programme of archaeological investigation set out in an Archaeological Mitigation Strategy and associated Written Schemes of Investigation. Where effects on historic buildings and structures might occur, consideration will be given to protection, removal and re-siting (either temporary or permanent) where appropriate.

Operation and Maintenance

11.4.3 The Proposed Development design will seek to avoid changes to the setting of heritage assets which might lead to significant effects. Where changes to the setting of a heritage asset cannot be avoided the design will seek to minimise as far as reasonable the scale of the change.

Decommissioning

11.4.4 It is not expected that effects will occur as a result of decommissioning – adverse changes within the settings of heritage assets are expected to be reversed and return to their state prior to the Proposed Development (less any changes resulting from other cumulative developments still in operation). The outline Decommissioning Environment Management Plan (oDEMP) will seek to provide measures so that archaeological remains left in situ during operation and are unlikely to be affected by decommissioning.

11.5 Scope of the Assessment

Consultation Undertaken to Date

Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

11.5.1 As discussed in **Chapter 1: Introduction**, under the Town and Country Planning Act 1990[246], in July 2023, an EIA Scoping Request was submitted to CMBC for a proposed wind farm development and associated infrastructure at the Site, including cable connection. Table 11-5 presents the details of the Scoping Opinion relevant to Cultural Heritage and confirms if the opinion is considered within the proposed scope of assessment (as set out below) or if it is considered to be scoped out of the technical assessment, with details provided in Table 11-7.

Table 11-5 Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
CMBC	Given the site's underlaying blanket peat bog and geology, the proposal is likely to have significant impacts on preserved archaeological remains across the site. Additionally, the proposal's likely impacts on peat hydrology, dewatering and changing drainage patterns could detrimentally impact on any remains across the whole site, not just those in areas to be excavated for turbine foundations, borrow pits, or other infrastructure and roadway foundations. A Palaeo-Environmental Assessment with scientific dating and deposit modelling of the blanket bog would be required to review the significance of any buried deposits and help form mitigation strategies to prevent loss of	A Geoarchaeological Desk Based Assessment will be prepared to support the ES. This will inform an approach to subsequent data collection and mitigation

[246] UK Government (1990) Town and Country Planning Act 1990 [Online] Available at: https://www.legislation.gov.uk/ukpga/1990/8/contents

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	the resource. The deposit modelling would aid in assessing the archaeological potential of the buried deposits across the site. The parameters of this assessment should be defined and agreed in consultation with Historic England and West Yorkshire Archaeology Advisory Services and the results clearly presented in an ES	
CMBC	WYAAS require that the applicant studies the County archaeological research agenda for the Mesolithic and later periods when designing their archaeological studies and surveys according to the strategies outlined in these documents. A modelled and valuated archaeological approach should be undertaken and walkover surveys should be carried out over the whole site to inform an Archaeological Desk-Based Assessment to be included within an ES. The applicant is also advised of a current University of York Mesolithic Study in the vicinity of the site which should be considered in the archaeological assessment design.	An Archaeological Desk-based Assessment will be prepared to support the ES, including the data sources suggested.
CMBC	There are numerous designated and non-designated heritage assets within and in the vicinity of the site. To understand the proposal's likely significant impacts on the significance of these assets and their settings, an ES should contain a Site Walkover/Site Visit	A Settings Assessment will be carried following the structure set out in The Setting of Heritage Assets, Historic Environment Good Practice Advice in Planning 3, prepared by Historic England (hereafter GPA3). This will include a Site

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	Survey to include all views and settings implications of the proposal – provided through a Settings Assessment – of designated and non-designated heritage assets identified across the whole site and within a 5km buffer of the site. The LPA also considers that assessment of all designated heritage assets within 15km of the site should also be scoped in and included in the assessment. Calderdale's topography of linear valleys and high plateaux means that views can be far-reaching and significant when far away, or conversely close views may be curtailed due to the steep valley edges.	Visit Survey. The scope of assessment is set out below in section 11.5.
CMBC	The potential impacts of the construction and likely residual impacts during the operational phase of development should be assessed. The desk-based assessment would need to be enhanced with fuller site-based assessment in a later phase. The results of these assessments should be subsequently fed into a Heritage Impact Assessment which should also consider the cumulative impacts of existing and the proposed development on the identified designated and non-designated heritage assets. The scope and methodologies of the required assessments should be agreed with the relevant heritage bodies including Historic England, Calderdale Conservation, and	The ES Heritage Chapter will assess impacts on heritage assets using a scope and methodologies agreed with the relevant heritage bodies.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	West Yorkshire Archaeology Advisory Services.	
CMBC	Assessment of the contribution setting makes to significance is nuanced and requires careful consideration. It is welcomed that the Scoping Report sets out the intention to employ the methodology of GPA3 (The Setting of Heritage Assets, Cultural Heritage Good Practice Advice in Planning, prepared by Historic England). The study should be careful not to de-scope assets from consideration by employing a broad-brush approach in the early stages to only include those thought to have 'a potential for likely significant effect'	A Settings Assessment will be carried out following the structure set out in GPA3.
CMBC	As most of the heritage impact assessment work is yet to be undertaken, the LPA considers that assessment of the proposal likely significant impacts on designated and non-designated heritage assets during all phases of development should be scoped in, given the likelihood for changing material impacts and the magnitude of those impacts of the significance and settings of the heritage assets during construction, operation, and decommissioning.	See Table 11-7 and Table 11-8 below for impacts scoped in and out
CMBC	The applicant is advised that the LPA does not have a local list. Therefore, assessment	The assessment methodology set out below includes provision for identification of non-designated assets

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	methodology should include the identification of non-designated heritage assets during site walkovers and from desk-based sources, using the professional judgement of the authors of the heritage chapter.	
CMBC	Stoodley Pike is a monumental obelisk built by public subscription in 1814 and was rebuilt in 1856 .It is located on the tip of a high moorland plateau above Todmorden. It is remarkable for its exposed moorland setting and affords views over the glaciated valley with its historic settlements and on towards the upland pastures, historic farmsteads and moorland beyond. Its remote setting contributes to its significance. Stoodley Pike is an icon of Calderdale. The effect of the development on the setting of this listed building should be fully understood.	Changes to the setting of Stoodley Pike will be assessed using the methodology set out in section 11.6 below.
CMBC	The LPA notes that no methodology or suggestions are made in respect of assessing how the proposal would impact upon the heritage significance in relation to the Bronte landscapes and cultural heritage. In general terms, the assessment should cover the visual and heritage impacts of the proposal on the experience and usability of the cultural landscape and its key sites, and its likely economic impacts on local tourism and the international reputation of the area. The LPA notes that some	The proposed approach to assessing the cultural heritage impacts potentially resulting from the proposed development is set out in section 11.6 below. Engagement with relevant stakeholders forms part of this approach.

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	innovation is likely to be required given the unprecedented nature of the proposal in an important cultural landscape such as this. The applicant is, therefore, advised to approach the Bronte Society and Calderdale and adjacent Councils at pre-application stage to understand further the significance of the landscape and to help in establishing a method for comprehensively evaluating potential impacts on the cultural heritage.	

Other Consultation Undertaken to Date

11.5.2 An overview of other consultation (beyond the CMBC Scoping Opinion) undertaken to date for Cultural Heritage, and how this has informed the scope to the assessment is provided in Table 11-6.

Table 11-6 Consultation Undertaken To Date

Date	Consultee	Summary	Consideration within the Scope of Assessment
October 2023	Historic England	The Development has potential to impact a number of designated heritage assets. In line with the NPPF, Historic England (HE) expects the ES to contain an assessment of the likely effects of the development. The development is likely to be visible across a large area and so can impact the significance of the heritage assets. Expect the assessment to	A setting assessment will be carried out. The proposed Study Areas for the assessment will embrace all assets (designated and non-designated) up to 5km from the Turbine Area boundary and high value assets (Grade I and II* listed buildings and Grade I and II* Registered Parks and Gardens) up to 15km from the boundary.

Date	Consultee	Summary	Consideration within the Scope of Assessment
		demonstrate the extent of the proposed study area is of appropriate size to ensure all historical sites have been included and properly assessed. HE expects the ES to consider both designated and non-designated assets and recommend the involvement of the Conservation Officer and archaeological advisors of the local authority. Assessment should be designed to ensure all impacts are fully understood. Section drawings and techniques such as photomontages are useful and should include both fixed and dynamic/kinetic viewpoints. The assessment should take account of potential impacts of activities (construction, servicing and maintenance, and traffic) on heritage assets. The assessment should consider, where appropriate, the likelihood of alterations to drainage patterns Reference should be made in the ES to Historic England 2021: Commercial renewable energy development and the Cultural Heritage Historic England Advice	The assessment will be supported by viewpoint photography and photomontages where appropriate.

Date	Consultee	Summary	Consideration within the Scope of Assessment
		Note 15. Swindon in S11.3.3 to inform & guide the assessment. Statements of Heritage Significance: Analysing Significance in Heritage Assets Historic England Advice Note 12. Swindon in S11.3.3 to inform and guide the assessment.	
October 2023	National Trust (NT)	NT expect an appropriate assessment of impacts on significance arising from the development due to Grade II complex at Hardcastle Crags	Impacts on the significance of the complex at Hardcastle Crags will be appropriately assessed.
October 2023	West Yorkshire Archaeological Advisory Service (WYAAS)	WYAAS are partnering with York University and other archaeological services in a study of Mesolithic Settlement and activity on Pennine Moors. The proposal approach is generally acceptable. The applicant's heritage consultant should study the county archaeological research agenda for the Mesolithic and later periods when designing the archaeological studies. A historian of the Bronte family should be consulted in relation to the families' experience of the landscape and its role in their writing.	The Mesolithic Settlement study is noted and will be used as an information source for the assessment. See response below regarding Bronte family history. A methodology for surveys will be agreed in collaboration with WYAAS

Date	Consultee	Summary	Consideration within the Scope of Assessment
		WYAAS recommend that walkover surveys are carried out over sample areas and not too focused.	
October 2023	The Bronte Society	The Bronte Society has concerns about the scale and the location of the proposed wind farm. Believe the development would have significant effect on the local viewpoint and world-renowned landscape. Top Withens is an iconic landmark and viewpoint locations and visualisations are expected which will include views of the ruin, particularly as approached from Haworth. The Bronte Society also expects future iterations of plans to include the view towards the proposed development from Parsons Field and Penistone Hill. The intangible heritage associated with the Bronte landscape will be a key consideration for this assessment, are there any key locations or walks in the area which need to be included within the assessment? Other key locations are Ponden Hall, the Brontë	The key locations are noted. When assessing the significance of heritage assets, the contribution made by their association with the Bronte family and their literary works, will be commented upon. A methodology for understanding the significance of the Brontes and their literature at a landscape level and assessing the effects on it from the Proposed Development will be agreed with relevant project teams such as Landscape and Socio-economics and external stakeholders as the design develops. This will include engagement with a suitable specialist

Date	Consultee	Summary	Consideration within the Scope of Assessment
		Waterfall, Wycoller and the ruin of Top Withens. Although the boundary may fall within Calderdale, the key Brontë sites and attractions which bring people to the area are situated in the Bradford district.	
October 2023	Bradford Metropolitan Borough Council	The proposed methodology for designated heritage assets is considered acceptable. However, no methodology or suggestions are made in respect of assessing how the proposal would impact upon the intangible heritage significance in relation to the Bronte landscapes and cultural heritage. This is hugely significant, a landscape inseparably connected to literary and cultural heritage of international importance. It draws visitors in substantial numbers from across the globe to the landscape and our District, bringing significant revenue and recognition. The proposal could result in profound harm to this internationally recognised cultural asset. The significance is	See response to Bronte Society.

Date	Consultee	Summary	Consideration within the Scope of Assessment
		such that there has been previous very serious exploration of promoting the landscape including the application site and its immediate surroundings for World Heritage Site status, on the basis of the literary importance. Approach should be made to The Bronte Society to understand further the significance of the landscape and to help in establishing a method for comprehensively evaluating potential effects on the cultural heritage.	

Effects Scoped Out from Detailed Assessment

11.5.3 Table 11-7 presents the Cultural Heritage matters that are unlikely to give rise to significant adverse effects and, therefore, which are proposed to be scoped out from detailed assessment.

Table 11-7 Effects Scoped Out from the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to be Scoped Out
Effects on the settings of heritage assets from the construction of the Turbine Area	Not explicitly covered in scoping opinion	Effects on settings from construction activity, such as plant movement, will be temporary and reversible. Permanent effects are deemed to occur during the operation phase where the completed development form is present within the landscape.

Effects on the settings of heritage assets from the construction or operation of the cable routes	Not explicitly covered in scoping opinion	Effects on settings from construction activity, such as plant movement, will be temporary and reversible. It is not anticipated that the Cable Corridor Search Areas will have an above ground expression substantial enough to result in an effect.
Effects on archaeological remains from the operation of the Proposed development	Not explicitly covered in scoping opinion	No additional effects on buried archaeological remains within the Energy Park or from cable routes will occur during operation as no additional ground disturbance is anticipated.
Effects on heritage assets from the decommissioning of the Proposed Development	Not explicitly covered in scoping opinion	Effects to heritage assets during the decommissioning phase of the Proposed Development are not anticipated. All impacts will have occurred during the construction phase (direct) and operation phase (indirect). This is predicated upon: the assumption that no further land take will be required for decommissioning, and therefore no additional physical disturbance can be caused to any heritage assets through intrusive works; and the understanding that decommissioning will remove all above ground elements of the Proposed Development (with the exception of tracks and hardstanding) and thus return the landscape to its previous state (as it is now) or enhanced landscape state, therefore removing any ongoing effects on heritage assets through a change in setting. Therefore, there will be no likely significant effects on the significance of any heritage assets from the decommissioning process, so this has been scoped out of any further assessment.

Likely Significant Effects Scoped into the Detailed Assessment

11.5.4 Table 11-8 presents the Cultural Heritage matters that are likely to give rise to significant adverse effects and, therefore, which are proposed to be scoped into detailed assessment.

Table 11-8 Likely Significant Effects Scoped into the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
Effects from the construction of the Proposed Development (including cable and access routes) on buried archaeological remains	Yes	Groundworks associated with the construction of the Proposed Development are likely to have an impact on buried archaeological remains. Impacts may be caused by physical disturbance associated with the Proposed Development.
Effects from the operation of the Proposed Development (less the Cable Corridor Search Areas) on the settings of designated and non-designated heritage assets	To be agreed	Setting impacts are deemed to occur during the operation phase where the completed development form is present within the landscape. These impacts are often through a visual alteration, although can be through the alteration of a non-visual relationship which is deemed important to the heritage significance of an asset. It is important to note that the mere presence of a development within the visual range of an asset is not sufficient on its own to have an impact on the heritage significance of an asset. This must be determined in relation to the heritage significance of that asset and how that visual relationship is important to that heritage significance.

11.6 Proposed Approach to the ES

Study Area

11.6.1 The following study areas are proposed to conduct the desk-based elements of Cultural Heritage assessment which have been set out in line with industry best practice and with regard to the nature of the known evidence base. The use of these study areas will be subject to agreement from the relevant stakeholders:

- A 5km buffer from the centre point of the Turbine Area to provide adequate context to sufficiently assess the potential for impacts to archaeological remains (known and unknown) during the construction of the Proposed Development;
- The Cable Corridor and Site Access Search Areas to assess the potential for impacts to archaeological remains (known and unknown) during the construction of the Proposed Development
- A 5km buffer around the Turbine Area and Site Access Search Areas to capture any designated or non-designated heritage assets for which there is a potential for likely significant effects (upon their Heritage Significance) caused by a change in their setting; and
- A 15km buffer around the Turbine Area and Site Access Search Areas to capture any highly designated heritage assets for which there is a potential for likely significant effect (upon their Heritage Significance) through a change in their setting. For this assessment, taking into consideration the nature of the Proposed Development, these asset categories have been deemed to comprise Grade I and Grade II* listed buildings and Grade I and Grade II* registered parks and gardens.

Approach to the Collection of Baseline Data

11.6.2 Baseline data will be collected using the following sources of data, as well as project specific surveys to be agreed with relevant stakeholders:

- The National Heritage List for England (NHLE);
- The West Yorkshire Historic Environment Record (WYHER);
- The Lancashire Historic Environment Record (LHER);
- The North Yorkshire Historic Environment Record (NYHER);
- Records of locally important buildings held by CMBC or within the WYHER, LHER or NYHER;

- Historic maps including those produced by the Ordnance Survey, Tithe Maps, Estate Maps and any others deemed relevant;
- Records of Conservation Areas held by CMBC, Lancashire County Council and Bradford Metropolitan District Council;
- An initial setting assessment walkover survey;
- Open-source LiDAR data and Aerial Photography; and
- University of York Mesolithic Study.

Further Baseline Data

11.6.3 An approach to the collection of field survey data within the proposed development boundaries (including Cable Corridor Search Areas) will be developed in collaboration with relevant stakeholders. The results of any surveys will be presented as appendices to the Environmental Statement.

Criteria for determining sensitivity of receptor

11.6.4 Significance in relation to the value of a heritage asset will be referred to throughout this Scoping Report and the cultural heritage assessment as 'heritage significance'.

11.6.5 The value of a heritage asset is determined through the sum of its interests (archaeological, architectural, artistic or historic), as defined in the NPPF (NPS EN1 and the draft NPS EN3 which defers to PPS5 or its successors, i.e., NPPF) and expanded on in Historic Environment Good Practice Advice in Planning 2 (Historic England 2015).

11.6.6 For the purposes of the cultural heritage assessment, designation status is used as an indicator of heritage significance as these hold an inherent heritage significance, which justify its designation.

11.6.7 This determination is further justified through the legal protection afforded to the designations and their meaning in terms of the application of planning policy.

11.6.8 Using this proxy criteria in addition to national planning policy and guidance and through professional judgment, Table 11-9 below has been amended and adapted to encompass both designated heritage and non-designated heritage assets.

11.6.9 With regard to heritage significance, there is an explicit distinction between that heritage significance and an asset's 'sensitivity to change'. Some assets of the highest designation will not be sensitive to the types of changes proposed, whilst others will be more so. This will be assessed on a case-by-case basis in the assessment text for each asset, as appropriate.

Table 11-9 Levels of heritage significance

Heritage Significance	Description
High	World Heritage Sites Scheduled Monuments Grade I and II* listed buildings Grade II listed buildings which can be shown to have exceptional qualities in their fabric or historical association Registered Battlefields Grade I and II* Registered Parks and Gardens Non-designated assets of equivalent heritage significance which are potentially nationally important.
Medium	Grade II listed buildings Regionally important archaeologically features and areas (as defined in the HER) Conservation Areas, which are considered regionally important.
Low	Sites and features noted as locally important in the HER, other non-designated features of heritage significance.
Negligible	Assets compromised by poor preservation and/or poor contextual association, or very common archaeological features/buildings of little or no value at local or other scale

11.6.10 While the grading of listed buildings by Historic England implies different levels of heritage significance, as reflected in the table above, all listed buildings are afforded the same level of legal protection.

11.6.11 Table 11-9 nominally sets out heritage significance levels, and professional judgement will be used in determining heritage significance. Where assets are placed in a different category to those set out above, a rationale and justification will be made explicit in the assessment text, where relevant.

Criteria for assessing magnitude of change

11.6.12 Magnitude of change will be assessed through the nature of a predicted impact, which is broken down in Table 11-10.

11.6.13 Direct effects are permanent, as the loss of archaeological assets or historic buildings cannot be replaced or recreated, while damage to archaeological assets cannot be repaired.

11.6.14 Indirect effects can occur through changes in setting (arising from visual intrusion, alteration of townscape etc.) which may cause a reduction in the contribution that setting makes to an asset's heritage significance, so as to diminish that asset's overall heritage significance, and/or affect the ability to experience and appreciate that heritage significance.

Table 11-10 Magnitude of change

Level of change	Description
High	Total loss of or major physical damage to or significant alteration to a site, building or other feature. Extensive change (e.g. loss of dominance, intrusion on key view or sightline) to the setting of a scheduled monument, listed building or other feature registered as nationally important, which may lead to a major reduction in the contribution of that setting to the heritage significance of the asset so that the asset loses heritage significance, and a major reduction in the ability to experience and/or appreciate that heritage significance.
Medium	Damage or alteration to a site, building or other feature. Encroachment on an area considered to have a high archaeological potential. Change in setting (e.g. intrusion on designed sight-lines and vistas) to monuments / buildings and other features, which may lead to a moderate reduction in the contribution of that setting to the heritage significance of the asset. Change/reduction in the ability to experience/appreciate that heritage significance.
Low	Minor damage or alteration to a site, building or other feature. Encroachment on an area where it is considered that low archaeological potential exists. Minor change in setting (e.g. above historic skylines or in designed vistas) of Monuments, Listed Buildings, sites and other features, which may lead to a small reduction in the

Level of change	Description
	contribution the setting makes to the heritage significance of the heritage asset, and limited loss of heritage significance. Limited change in or reduction of the ability to experience or appreciate the heritage significance of an asset.
Negligible	No physical effect. No change in setting with no change in the contribution that setting makes to the heritage significance of the asset. No change in the ability to experience or appreciate the heritage significance of the asset.

Criteria for assessing significance

11.6.15 The predicted significance of effect will be determined through a standard method of assessment based on professional judgement, considering both the heritage significance of the asset and the magnitude of change as detailed in Table 11-11 below.

11.6.16 Major and moderate effects are considered significant in the context of the EIA Regulations while minor and negligible effects are considered not significant.

11.6.17 Effects can be beneficial or adverse and permanent or temporary, where temporary makes reference to effects limited to the construction phase of the Proposed Development.

11.6.18 All effects derived from direct impacts are permanent while those derived from indirect impacts are long term, but fully reversible upon decommissioning.

Table 11-11 Significance of effect

Receptor sensitivity	Magnitude of change			
	High	**Medium**	Low	Negligible
High	Major	Major	Moderate	Negligible
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Minor	Negligible
Negligible	Negligible	Negligible	Negligible	Negligible

Construction

Direct Impacts

11.6.19 Direct construction impacts are those caused by physical disturbance associated with the Proposed Development and generally occur during the construction phase through activities including, but not limited to:

- earthworks and excavations;
- targeted site clearance;
- establishment of compounds, cabling and haul roads;
- construction of foundations;
- fencing;
- landscaping;
- establishment of ecological mitigation areas; and
- general construction activities which require excavation.

Indirect Impacts

11.6.20 Indirect physical effects to buried archaeological remains may occur both within the boundary of the proposed development, or extend to other areas outside of the boundary of the proposed development where archaeological remains are present. These are considered as indirect effects as they arise from activities undertaken at a distance from the remains which are affected. Such effects may include changes to hydrological conditions causing the drying out of previously waterlogged deposits.

Operation and Maintenance

Assessment of effects to heritage significance arising from change within setting

11.6.21 These effects are defined here as those which result in potential change to heritage significance, but do not give rise to physical damage or disturbance of the asset. In this context, these effects will generally arise through change to the settings of heritage assets. Setting is defined in NPS EN-1[247] and NPPF[248] as '*the surroundings in which a heritage asset is experienced. Its extent is not fixed and*

[247] Department for Energy Security and Net Zero, 2023. Overarching National Policy Statement for Energy (EN-1), paragraph 5.9.3, footnote 231.
[248] Department for Levelling Up, Housing and Communities (DLUHC) [December] 2023. National Planning Policy Framework, Annex 2: Glossary

may change as the asset and its surroundings evolve. Elements of setting may make a positive or negative contribution to the significance of an asset, may affect the ability to appreciate that significance, or may be neutral'.

11.6.22 The Historic England guidance, The Setting of Heritage Assets[249], follows this definition and sets out guidelines for considering any effects on the significance of heritage assets arising from change to setting. The guidance accords with the NPSs and NPPF in recognising that effects to significance which are of concern, The guidance specifically states that '*Setting itself is not a heritage asset*' and that '*its importance lies in which it contributes to the significance of the heritage asset or to the ability to appreciate that significance*'.

11.6.23 Assessment of setting is primarily associated with designated heritage assets or non-designated heritage asset of equivalent heritage significance (where such assets are identified). The assessment follows steps 1-4 of the following five step sequential process (Step 5 not being the responsibility of the applicant) set out in Historic England guidance[250]:

- Step 1: Identify which heritage assets and their settings are affected;
- Step 2: Assess the degree to which these settings make a contribution to the significance of the heritage asset(s) or allow significance to be appreciated;
- Step 3: Assess the effects of the Development, whether beneficial or harmful, on that significance or on the ability to appreciate it;
- Step 4: Explore ways to maximise enhancement and avoid or minimise harm; and
- Step 5: Make and document the decisions and monitor the outcomes.

11.6.24 Step 1 will be undertaken using data provided by Zone of Theoretical Visibility (ZTV) modelling to allow assets which will not have a visual connection with the Proposed Development to be sifted out at this stage. A Site visit will be undertaken to assess whether the remaining assets have settings which extend to the boundary of the proposed development noting that simple intervisibility does not necessarily mean that there will be an effect.

11.6.25 A clear statement of the asset's overall heritage significance is required. This will include a statement of the contribution made by the setting of the asset to its heritage significance which may vary from negligible to substantial depending on

[249] Historic England, 2017. The Setting of Heritage Assets, Historic Environment Good Practice Advice in Planning Note 3. (Second Edition). Swindon.
[250] Historic England, 2017. The Setting of Heritage Assets, Historic Environment Good Practice Advice in Planning Note 3. (Second Edition). Swindon.

the asset in question. When assessing the likely effect of the Proposed Development on a heritage asset (or group of assets) it is the impact on the overall heritage significance of the asset which will be assessed. Even where there is a substantial degree of change in the setting of an asset, if the setting makes a negligible contribution to the heritage significance of the asset, the overall effect may be less than significant in EIA terms. Likewise, if there is a slight degree of change in the setting of an asset where setting makes a substantial contribution to its heritage significance, the overall effect may be less than significant in EIA terms. Conversely where there is a substantial degree of change in the setting of an asset where setting makes a substantial contribution to heritage significance an overall effect will occur which may be significant in EIA terms.

11.6.26 In view of the large number of assets within the Study Areas, those within conservation areas may be grouped within their conservation area. Other assets may also be grouped where they are related and share the same setting (for example, historic farmhouses, with associated barns/other structures). Where assets are grouped the group heritage value will be set by the highest value asset in the group.

Bronte landscapes and cultural heritage.

11.6.27 Assessment of the heritage assets whose significance may be affected by changes in their setting as a result of their development; will take into account the contribution made by their association with the literature of the Bronte family. This assessment will follow Historic England guidance.[251]

11.6.28 A methodology for understanding the heritage significance of the Brontes and their literature at a landscape level and assessing the impacts on it from the Proposed Development will be agreed in collaboration with other relevant disciplines such as Landscape and Socio-economics as well as relevant stakeholders as the design develops. This will include engagement with a suitable specialist.

Decommissioning

11.6.29 It is not expected that decommissioning effects will occur. Where changes within the setting of heritage assets have occurred decommissioning will result in the removal of all above ground structures (with the exception of the tracks, hard standing and any landscape enhancements) resulting in a return to baseline conditions or enhanced landscape, thereby removing effects. The Decommissioning Environment Management Plan will contain provisions to seek to achieve no impacts on archaeological remains within the boundary of the proposed

[251] Historic England, 2019. Statements of Heritage Significance; Analysing Significance in Heritage Assets

development which were unaffected by the construction and operation of the Proposed Development.

Cumulative Effects

11.6.30 Cumulative effects will be assessed in line with the methodology set out in **Chapter 3: Approach to EIA**, which accords with the Planning Inspectorate's (PINS) Advice on Cumulative Effects Assessment. A long list of existing, consented, and proposed developments will be agreed with the relevant local planning authorities prior to undertaking the assessment. The certainty of these developments will be determined using the tiered approach recommended by PINS. For each environmental topic, the potential Zone of Influence (ZoI) of the Proposed Development during construction, operation (including maintenance), and decommissioning will be identified. The outcomes of the cumulative effects assessment will be reported within the Environmental Statement.

Assumptions, Limitations and Uncertainties

11.6.31 It has been assumed that impacts on buried archaeological remains may occur anywhere within a Cable Corridor Search Area, either as a result of trenching or surface stripping for compounds, haul roads and laydown areas.

11.6.32 Data used to compile the assessment consists of information derived from a variety of sources. The assumption is made that this data, as well as that derived from other secondary sources, is reasonably accurate.

11.6.33 The Historic Environment Record is not a record of all surviving heritage assets, but a record of the discovery of a wide range of archaeological and historic components of the historic environment. The information held within it is not complete and does not preclude the subsequent discovery of further elements of the historic environment that are, at present, unknown.

12 Access, Traffic and Transport

12.1 Introduction

12.1.1 This Chapter of the Scoping Report presents the scope of detailed environmental assessment for Access, Traffic and Transport for the Proposed Development. Specifically, the following section of the Scoping Report presents the policy and legislative context, the approach to collecting baseline data relevant to this scoping chapter and an overview of the relevant baseline conditions within the Site and surrounding area. It concludes by setting out the scope of assessment including, with justification, those effects that are proposed to be scoped in or out for detailed assessment and concludes by outlining the method that will be used to undertake the detailed environmental assessment.

12.2 Review of Policy, Legislation and Relevant Guidance

12.2.1 Legislation, planning policy and guidance relating to Access, Traffic and Transport, and relevant to the Proposed Development comprises:

National Planning Policy

- Overarching National Policy Statement for Energy (EN-1) (2023)[252];
- Draft Overarching National Policy Statement for Energy (EN-1) (2025)[2];
- National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023)[253] ;
- Draft: National Policy Statement for Renewable Energy Infrastructure (EN-3) (2025)[254]
- Draft National Policy Statement for electricity networks infrastructure (EN-5) (2025)[5]; and
- National Planning Policy Framework (NPPF) (updated February 2025)[255].

[252] Department for Energy Security & Net Zero (2023) Overarching National Policy Statement for Energy (EN-1). Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf
[253] Department for Energy Security & Net Zero (2023) National Policy Statement for Electricity Networks Infrastructure (EN-5). Available: https://www.gov.uk/government/publications/national-policy-statement-for-electricity-networks-infrastructure-en-5
[254] Department for Energy Security & Net Zero (2025) Draft: National Policy Statement for Renewable Energy Infrastructure (EN-3). Available: https://assets.publishing.service.gov.uk/media/6809f0588c1316be7978e7cb/draft-nps-en-3.pdf
[255] Ministry of Housing Communities & Local Government (2024) National Planning Policy Framework (December 2024) Updated online February 2025. Available: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf

Local Transport Planning Policy

- East Lancashire Highways and Transport Masterplan (2014)[256],
- Highways and Transport Strategy 2023- 2025 (2022)[257];
- West Yorkshire Combined Authority "Transport Strategy 2040" (2017)[258]; and
- West Yorkshire Local Transport Plan 2011 - 2026 (2011)[259].

National Guidance

- Design Manual for Roads & Bridges (DMRB)[260];
- Planning Practice Guidance "Travel Plans, Transport Assessments and Statements (2014)"[261];
- Institute of Environmental Assessment (IEA), The Guidelines for the Environmental Assessment of Road Traffic (1993)[262]; and
- Institute of Environmental Management and Assessment (IEMA) Environmental Assessment of Traffic and Movement (2023)[263].

12.3 Proposed Site Access Strategy

12.3.1 Construction access to the Turbine Area is proposed to be taken from the west and east of the site as demonstrated by the Site Access Search Areas, as shown in Figure 4-2.

12.3.2 Currently, access to the west will also provide access for general construction traffic as well as Abnormal Indivisible Load (AIL) traffic associated with the delivery of wind turbine components. Access will be via the M65 and A6068 through to Laneshaw Bridge. To the east of Laneshaw Bridge, loads will depart the A6068 and would proceed south using a new access junction and track. This new track

[256] Lancashire CC (2014) East Lancashire Highways and Transport Masterplan. Available at https://www.lancashire.gov.uk/media/292977/East-Lancs-Masterplan.pdf
[257] Lancashire CC (2022) Highways and Transport Strategy 2023- 2025 available at https://www.lancashire.gov.uk/council/strategies-policies-plans/roads-parking-and-travel/highways-and-transport-strategy-2023-2025/
[258] West Yorkshire Combined Authority (2017) Transport Strategy 20240. Available at https://www.westyorks-ca.gov.uk/media/2379/transport-strategy-2040.pdf
[259] West Yorkshire Local Transport Plan Partnership (2011) West Yorkshire Local Transport Plan 2011 – 2026 available at https://www.wymetro.com/media/1125/20121003ltpappendices.pdf
[260] Department for Transport, et al, accessed 2025, Design Manual for Roads & Bridges
[261] Department for Levelling Up, Housing and Communities, et al, • Planning Practice Guidance "Travel Plans, Transport Assessments and Statements"
[262] Institute of Environmental Assessment (IEA) (1993), The Guidelines for the Environmental Assessment of Road Traffic.
[263] Institute of Environmental Management and Assessment (IEMA) (2023), Environmental Assessment of Traffic and Movement.

will connect to the C682 School Lane / Lancashire Moor Road. Access to the site will be taken from a purpose-built access junction approximately 5km to the southeast of Laneshaw Bridge.

12.3.3 Currently, temporary access to the east will be taken for general construction traffic and construction staff from the A6033.

12.3.4 The Site Access Search Areas will be further refined as the design evolves.

12.4 Existing Baseline Conditions

12.4.1 This section of the Scoping Chapter for Access, Traffic and Transport sets out the known baseline conditions at this (scoping) stage of the project. It is noted that further surveys and assessment is proposed to inform the technical assessment for the Environmental Statement (see details and scope of the further baseline data below under Section 12.7).

Study Area

12.4.2 The proposed study area is based upon the access routes for construction materials and construction staff arriving and departing the Turbine Area (see Figure 4-1 for location of the Turbine Area). The study area will comprise of the following road links:

- M65 between Blackburn and Colne;
- A6068 between the M56 and Cowling;
- C682 between the A6068 and the proposed western site access junction;
- A56 from Huncoat to the M56 (to account for bulk material deliveries on the A56 corridor);
- A56 between Colne and Skipton (to account for bulk material deliveries in the Yorkshire Dales);
- A6063 between Hebden Bridge and Cross Roads;
- A464 between Todmorden and Mytholmroyd; and
- A629 Between Keighley and Cross Roads.

12.4.3 The assessment will consider the effects on transport link users and residents within the study area during the construction phase only.

12.4.4 Construction traffic will include staff and material deliveries to and from the Turbine Area. The greatest concentration will occur at the site access junctions.

Approach to the Collection of Baseline Data for Scoping

12.4.5 A review of The Department for Transport (DfT) Road Traffic Statistics database[264] has been undertaken to review existing data sources. Existing traffic count data for the following links in the study area is available for the following links:

- M65 between Blackburn and Colne; Count sites 38068 (east of Junction 8), 48055 (west of Junction 8) and 38699 (west of Colne);
- A6068 between the M56 and Cowling; Count sites 28783 (Colne);
- A56 from Huncoat to the M56: Count site 38040 (south of Junction 8); and
- A56 between Colne and Skipton: Count site 26561 (south of Kelbrook).

12.4.6 Further traffic data will be required within the study area to form a full view of traffic flows on the study area network.

12.4.7 Accident data for use in the study will be obtained from the online resource crashmap[265] for a five year period to consider trends in accident rates and types.

12.4.8 Onsite Public Rights of Way (PRoW) and those PRoW present on the C682 and A6063 will be recorded and assessed in the study. The Sustrans National Cycle Network route map[266] will be used to determine cycle routes within the study area, the nearest being NCN 68, The Pennine Way connecting Derbyshire and Northumberland.

12.4.9 Ordnance Survey (OS) maps were used to consider other footpaths, bridleways and other transport infrastructure of note in the study area for consideration.

Relevant Baseline Conditions

12.4.10 The M65 is the only trunk road within the study area and is operated by National Highways on behalf of the Department for Transport (DfT). The road is a two lane motorway of modern construction and whilst it is unlikely that the peak of construction traffic will have a significant impact on the motorway, an impact assessment will be undertaken, given the connects from other routes used for construction access.

[264] Department for Transport Road Traffic Database. https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints accessed June 2025
[265] www.crashmap.co.uk accessed June 2025
[266] https://explore.osmaps.com/?lat=53.82131&lon=-2.04857&zoom=10.5292&overlays=os-ncn-layer&style=Standard&type=2d accessed June 2025.

12.4.11 The A6068 is operated by Lancashire County Council (LCC) and is mainly a two lane distributor road. It connects the M56 to West Yorkshire and passes through the town of Colne. The road is subject to 30mph speed limits in residential areas in Colne and Laneshaw Bridge. Construction traffic may have a significant impact on the road users and residents due to its likely higher receptor sensitivity, and it will be included in the assessment.

12.4.12 The C682 is a two lane C class road operated by LCC. The road is sinuous in section as it climbs from the A6068 up towards the Proposed Development. The existing geometry of the road will require alterations in discrete sections to enable access by AIL traffic and these will be fully detailed in a Route Survey Report, that will be appended to the Development Consent Order (DCO) application documents.

12.4.13 The A56 south of the M65 is a two lane dual carriageway providing connections to the M65 from the south. It is unlikely that the peak of construction traffic will have a significant impact on the A56, an impact assessment will be undertaken, given that it may be used for the import of bulk materials used on site.

12.4.14 The A56 to the north of Colne is a two lane distributor road providing connections from Colne to the A59 and Skipton. It is unlikely that the peak of construction traffic will have a significant impact on the A56, an impact assessment will be undertaken, given that it may be used for the import of bulk materials used on site.

12.4.15 The A6033 from connections between Keighley in the north and Hebden Bridge to the south. The road is a two lane local distributor standard road. The road is sinuous in nature in sections and peak period construction traffic may have a significant impact on the road users, depending upon the traffic levels that use the road.

12.4.16 The A464 provides an east – west connection between Lancashire and West Yorkshire, connecting Burnley to Halifax. The road is a two lane local distributor standard road and is subject to 30mph speed limits within urban areas. The road is likely to be used by construction traffic for access and whilst the impact is unlikely to be significant, it has been included at this stage as it provides connections onto the A6033.

12.4.17 The A629 provides connection from Keighley in the north to Halifax. The road passes through several villages in the Worth Valley and is subject to tourist traffic visiting the Keighley & Worth Valley Railway and the Brontë sisters' attractions in the area. Construction traffic flows may include bulk material deliveries and as such, may result in significant impacts.

Receptors Identified

12.4.18 Receptors within the study area will include users of the roads identified within the study area road network and those resident on the same routes. In addition, the settlements of Colne, Laneshaw Bridge, Keighley, Haworth, Oxenhope and Hebden Bridge will be considered as highly sensitive receptors, due to the nature of these settlements, in terms of location, proximity and functions. Further details regarding receptor sensitivities are provided in Table 12-3, Table 12-4 and Table 12-5.

12.4.19 PRoW users within the site will be considered as highly sensitive receptors.

12.5 Environmental Measures

12.5.1 Consideration will be paid to the opportunity to introduce environmental measures (and mitigation) that will help to avoid or reduce the potential for an adverse significant effect to occur. In accordance with Schedule 4(7) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017 the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset (where appropriate) likely significant effects. Specific environmental measures relevant to Access, Traffic and Transport will be identified and will be considered as part of the assessments (i.e. the assessments of likely significant effects have been undertaken with the inclusion of the environmental measures, as these measures will form part of the Proposed Development). At this stage of the project, the following environmental measures will be implemented and included within the Proposed Development.

Construction

12.5.2 During the construction phase, the following embedded measures are proposed:

- Provision of a basic Construction Traffic Management Plan (CTMP), incorporating simple measures such as road cleaning facilities at the Site access and basic warning signage. The plan will also include access routing to be observed by traffic. The CTMP will be a contractual requirement of the Principal Contractor and it is anticipated that it will be secured via the DCO;
- Provision of the road upgrades and new track section on the C682 to enable access for AIL deliveries to the Proposed Development; and
- The use of Staff Travel Plan to promote sustainable travel access to and from the site for staff constructing the Proposed Development. The travel plan will be secured via the DCO.

Operation and Maintenance

12.5.3 The proposed access junctions on the public road network and access track network within the Proposed Development will be well maintained at all times. No further operational phase mitigation is anticipated.

Decommissioning

12.5.4 At decommissioning, a Decommissioning Traffic Management Plan (DTMP) will be prepared to consider the traffic management measures necessary at the time of decommissioning (approximately 35 years from the completion of construction activities).

12.6 Scope of the Assessment

Consultation Undertaken to Date

Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

12.6.1 As discussed in **Chapter 1: Introduction**, under the Town and Country Planning Act 1990[267], in July 2023, an EIA scoping request was submitted to CMBC, which was a Scoping Report in request for a Scoping Opinion for a proposed wind farm development and associated infrastructure at the Site, including cable connection. Table 12-1 presents the details of the Scoping Opinion received from CMBC relevant to Access, Traffic and Transport and confirms if the opinion is considered within the proposed scope of assessment (as set out below) or if is considered to be scoped out of the technical assessment, with details provided in Table 12-2.

Table 12-1 Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

Consultee	Summary of Scoping Opinion Response	Consideration within the DCO Scope of Assessment
National Highways	Consideration of the strategic trunk road network should be made.	Agreed. The M65 is included in the proposed study area.
National Highways	The operational and decommissioning phases can be scoped out of the assessment.	Agreed. Both are proposed to be scoped out.

[267] UK Government (1990) Town and Country Planning Act 1990 [Online] Available at: https://www.legislation.gov.uk/ukpga/1990/8/contents

Consultee	Summary of Scoping Opinion Response	Consideration within the DCO Scope of Assessment
National Highways	National Highways agrees that embedded mitigation can be used in baseline assessments.	Agreed and proposed in the assessment.
National Highways	National Highways requests that the impact assessment use the details contained in DfT Circular 01/2022[268]	Disagree. The criteria for EIA assessment have to be used and are set out in Environmental Assessment of Traffic and Movement (2023).
National Highways	National Highways requires a robust assessment scenario to be assessed.	Agreed. A robust assessment will be undertaken using the peak of construction traffic generation.
National Highways	Details of the AIL access route should be provided along with a justification of the access route.	Agreed.
Blackshaw Parish Council	Concerns relating to construction traffic on parish road network.	Noted. The scoping opinion outlines the proposed access routes. The assessment will outline impacts associated with road improvement works, where required).
Wadsworth Parish Council	Raised concerns about the lack of detail on the proposed access route and requests that the impacts of road improvements are taken into account.	Noted. The scoping opinion outlines the proposed access routes. The assessment will outline impacts associated with road improvement works, where required).

[268] Department for Transport (2013) Circular 01/2022 available at https://www.gov.uk/government/publications/strategic-road-network-and-the-delivery-of-sustainable-development

Consultee	Summary of Scoping Opinion Response	Consideration within the DCO Scope of Assessment
Heptonstall Parish Council	Raised concerns about the lack of detail on the proposed access route, the impact on other road users and bridge weight concerns.	Noted. The scoping opinion outlines the proposed access routes. The assessment will consider the impact on other road users and will note all constraints on the access routes.
CMBC	A detailed review of the access routes for all construction and AIL traffic is required.	Agreed. An AIL Route Survey Report will be provided illustrating access enhancement works to gain safe and efficient access to the development site.
CMBC	A Transport Assessment, Construction Traffic Management Plan and Route Survey Report are required for the construction period.	Agreed. All are proposed to be provided.
CMBC	Bridge assessments may be required to review access for heavy loads.	Noted. The Route Survey Report will include a weight consultation with all relevant road authorities.
CMBC	The operational phase can be scoped out, although commitments to a maintenance schedule will be required.	Noted and agreed.
CMBC	The impacts on PRoW should be accounted for and details of any alterations, closures, new provision should be included.	Noted and agreed.
CMBC	The decommissioning phase should be scoped in.	Disagree. Traffic conditions in the following 35 years (approximately) from construction are

Consultee	Summary of Scoping Opinion Response	Consideration within the DCO Scope of Assessment
		unknown and a meaningful assessment will not be accurate. Instead of an assessment, a commitment to a DTMP is proposed and would be secured by the DCO.

Other Consultation Undertaken to Date

12.6.2 No further formal consultation (beyond the CMBC Scoping Opinion) has been undertaken to date for Access, Traffic and Transport. Non-statutory consultation ran from 29 April to 10 June 2025.

Effects Scoped Out from Detailed Assessment

12.6.3 Table 12-2 presents the Access, Traffic and Transport matters that are unlikely to give rise to significant adverse effects and, therefore, which are proposed to be scoped out from detailed assessment.

Table 12-2: Effects Scoped Out from the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped Out
Operational Phase Transport Impacts	Yes	The operational phase will result in occasional traffic maintaining the wind turbines and associated infrastructure. The traffic associated with this phase (typically up to four van trips per day) will be insufficient to trigger the 30% threshold (see Institute of Environmental Management and Assessment (IEMA) rules) for assessment and as such, it is proposed that this phase can be scoped out of the assessment.

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped Out
Decommissioning Phase Transport Impacts	No	The decommissioning phase would result in fewer traffic movements than the construction phase as elements such as the improved junctions and some access tracks may be retained for future agricultural / land uses. Given that the decommissioning phase would be approximately 35 years on from the submission of the planning documents, it would be impossible to ascertain the future baseline with any degree of certainty. As such, it is proposed to scope out the decommissioning phase. It is however proposed that a commitment for a Decommissioning Traffic Management Plan (DTMP) will be submitted to the host authorities (or the relevant authority at the time of submission) prior to decommissioning to protect the future road authority and to ensure the safe movement of all road users at that time. This would be secured in the DCO.

Likely Significant Effects Scoped Into the ES

12.6.4 During the construction phase a peak of construction traffic will be generated. The assessment will quantify the level of construction traffic and the potential impact with regard to the effects noted below:

- Severance;
- Driver delay;
- Pedestrian delay;
- Non-motorised user amenity;
- Fear & intimidation;
- Road safety;

- Road Safety Audits; and
- Large loads.

12.6.5 In line with good practice, mitigation measures will be detailed where an effect is considered significant.

12.6.6 The following receptors will be considered in the assessment of the construction phase:

- Users of the M65 between Blackburn and Colne;
- Users of the A6068 between the M56 and Cowling;
- Users of the C682 between the A6068 and the proposed western site access junction;
- Users of the A56 from Huncoat to the M56;
- Users of the A56 between Colne and Skipton;
- Users of the A6063 between Hebden Bridge and Cross Roads;
- Users of the A646 between Todmorden and Mytholmroyd;
- Users of the A629 Between Keighley and Cross Roads;
- Residents living alongside the A6068 between the M56 and Cowling;
- Residents living alongside the C682 between the A6068 and the proposed western site access junction;
- Residents living alongside the A56 from Huncoat to the M56;
- Residents living alongside the A56 between Colne and Skipton;
- Residents living alongside the A6063 between Hebden Bridge and Cross Roads;
- Residents living alongside the A644 between Todmorden and Mytholmroyd;
- Residents living alongside the A629 Between Keighley and Cross Roads; and
- Residents of Colne, Laneshaw Bridge, Keighley, Haworth, Oxenhope and Hebden Bridge.

12.6.7 The proposed receptors generally accord with the themes described in the previous CMBC consultation responses (refer to Table 12-1).

12.7 Proposed Approach to the ES

Assessment Methodology

Further Baseline Data

12.7.1 Further baseline data will be obtained for the following road links:

- A6068 at Cowling;
- A6068 at the location of the proposed A6068 – C682 bypass track to the east of Laneshaw Bridge;
- A6068 in Laneshaw Bridge;
- A6068 in Colne (to the east of the A56 junction);
- C682 at the proposed western site access junction;
- A6063 at the proposed eastern access junction;
- A6063 in Hebden Bridge;
- A646 to the west and east of Hebden Bridge;
- A6063 in Haworth.

12.7.2 These surveys will be undertaken via Automatic Traffic Count (ATC) surveys, deployed for a minimum of one week during a neutral month; and measuring classified traffic flows and vehicle speed data by direction.

Construction

12.7.3 The assessment would be undertaken in accordance with the IEMA Environmental Assessment of Traffic and Movement (2023).

12.7.4 This guidance notes two rules to be used as a screening process to identify the appropriate extent of the assessment area and likelihood of effects. These are:

- Rule 1 - Include highway links where traffic flows will increase by more than 30% (or the number of heavy goods vehicles will increase by more than 30%); and
- Rule 2 – Include highway links of high sensitivity where traffic flows have increased by 10% or more.

12.7.5 Where the predicted increase in traffic flow is lower than these thresholds, then the effect is considered insignificant and as such, no further assessments are required.

12.7.6 Where construction traffic flows meet or exceed these thresholds, the significance of traffic and transport effects (including any cumulative development) will be determined by assessing the sensitivity of receptors against the magnitude of change to categorise significance as Major, Moderate, Minor or Negligible.

12.7.7 It is not anticipated that a formal Transport Assessment will be required as these are not generally considered necessary for temporary construction works. A reduced scope Transport Assessment is therefore proposed and will be submitted in support of the DCO application.

12.7.8 Future year baseline traffic flows will be estimated using National Road Traffic Forecast (NRTF) Low Growth assumptions from surveyed and database traffic flow information.

12.7.9 In terms of traffic and transport effects, the receptors are the users of the roads within the study area and the locations through which those roads pass.

12.7.10 The sensitivity of receptors will be undertaken in accordance with the criteria set out in the following summary tables.

Table 12-3: Classification of Receptor Sensitivity

Sensitivity of Receptor	Criteria for Road Users
High	Where the road is a minor rural road, not constructed to accommodate frequent use by HGVs. Includes roads with traffic control signals, waiting and loading restrictions, traffic calming measures.
Medium	Where the road is a local A or B class road, capable of regular use by HGV traffic. Includes roads where there is some traffic calming or traffic management measures.
Low	Where the road is Trunk or A-class, constructed to accommodate significant HGV composition. Includes roads with little or no traffic calming or traffic management measures.
Negligible	Where roads have no adjacent settlements. Includes new strategic trunk roads that would be little affected by additional traffic and suitable for Abnormal Loads and new strategic trunk road junctions capable of accommodating Abnormal Loads.

Table 12-4: Classification of Receptor Sensitivity

Sensitivity of Receptor	Criteria for Residents / Locations
High	Where a location is a large rural settlement containing a high number of community and public services and facilities.
Medium	Where a location is an intermediate sized rural settlement, containing some community or public facilities and services.
Low	Where a location is a small rural settlement, few community or public facilities or services.
Negligible	Where a location includes individual dwellings or scattered settlements with no facilities.

12.7.11 The IEMA Guidelines identify the key effects that are most important when assessing the magnitude of traffic impacts from an individual development. The effects and levels of magnitude are discussed below:

- Severance – the IEMA Guidance advises that, “The Department for Transport has historically set out a range of indicators for determining the significance of severance. Changes in traffic flow of 30%, 60% and 90% are regarded as producing ‘slight’, ‘moderate’ and ‘substantial’ changes in severance respectively. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law. However, caution needs to be observed when applying these thresholds as very low baseline flows are unlikely to experience severance impacts even with high percentage changes in traffic.” (Para 3.16). The Guidelines acknowledge that changes in traffic flows should be used cautiously, stating that “the assessment of severance should pay full regard to specific local conditions, e.g. sensitivity of adjacent land uses, prevalence of vulnerable people, whether or not crossing facilities are provided, traffic signal settings, etc.” (Para 3.17).

- Driver delay – the IEMA Guidelines note that these delays are only likely to be “significant when the traffic on the network surrounding the development is already at, or close to, the capacity of the system” (Para 3.20).

- Pedestrian delay (incorporating delay to all non-motorised users) – the IEMA Guidance advises that "pedestrian delay and severance are closely related effects and can be grouped together. Changes in the volume, composition or speed of traffic may affect the ability of people to cross roads. In general,

increases in traffic levels are likely to lead to greater increases in delay. Delays will also depend on the general level of pedestrian activity, visibility and general physical conditions of the development site." (Para 3.24). Furthermore, the guidance advises that "…it is not considered wise to set down definitive thresholds. Instead it is recommended that the competent traffic and movement expert use their judgement to determine whether pedestrian delay constitutes a significant effect." (Para 3.26).

- Non-motorised user amenity – the IEMA Guidance advises that, "The 1993 Guidelines suggest that a tentative threshold for judging the significance of changes in pedestrian amenity would be where the traffic flow (or HGV component) is halved or doubled. Although these thresholds no longer appear in Department for Transport guidance, they have not been superseded by subsequent changes to guidance and are established through planning case law." (Para 3.30).

- Fear and intimidation – there are no commonly agreed thresholds for estimating levels of fear and intimidation, from known traffic and physical conditions. However, as the impact is considered to be sensitive to traffic flow, changes in traffic flow of 30%, 60% and 90% are regarded as producing minor, moderate and substantial changes respectively in the guidelines. (Para 2.19). As such, this criterion has been used to assess the potential impacts associated with construction activities around fear and intimidation on people in close proximity to the proposed development.

- Road safety – professional judgement would be used to assess the implications of local circumstances, or factors which may elevate or lessen risks of accidents. In line with the IEMA Guidance, those areas of collision clusters would be subject to detailed review.

- Road safety audits – it would be proposed to undertake any necessary Road Safety Audits (RSA) post consent and it is considered that this can be secured via a planning condition.

- Large loads – the movement of the AILs associated with the construction of the Proposed Development will be considered in full, within a separate route survey assessment, which identifies physical mitigation measures required to accommodate the predicted loads. Additional mitigation in terms of addressing potential impacts on sensitive receptors are included as embedded mitigation.

12.7.12 While not specifically identified as more vulnerable road users, cyclists are considered in similar terms to pedestrians.

12.7.13 The significance of effects are determined using the following matrix in Table 12-5. Any effects that are considered Major or Moderate are considered significant.

Table 12-5: Determining the Significance of Effects

Sensitivity of Receptor	Magnitude of Change			
	High	Medium	Low	Negligible
High	Major	Major	Moderate	Minor
Medium	Major	Moderate	Minor	Negligible
Low	Moderate	Minor	Negligible	Negligible
Negligible	Minor	Negligible	Negligible	Negligible

12.7.14 Significant effects will be subject to the provision of mitigation measures, where necessary. All mitigation measures will only be relevant to the construction phase of the Proposed Development.

12.7.15 Turbine component loads will be delivered as Abnormal Indivisible Loads (AIL). Detailed swept path analyses will be undertaken for the main constraint points on the route from the nearest suitable trunk road junction through to the proposed substation access junction to demonstrate that components can be delivered to the Turbine Area and to identify any temporary road works which may be necessary. A Route Survey Report describing the route and the proposed operational management of the deliveries will be submitted in support of the DCO application.

12.7.16 Cumulative assessment of traffic effects from nearby projects that are of a significant scale (and where traffic flows are publicly available) and have been determined will be undertaken. Projects that are in scoping or that do not have a planning determination will not be included in cumulative reviews.

Operation and Maintenance

12.7.17 It is proposed that the operational phase is scoped out of the assessment, as previously agreed with CMBC.

Decommissioning

12.7.18 It is proposed that the decommissioning phase is scoped as detailed in Table 12-2.

Assumptions, Limitations and Uncertainties

12.7.19 The assessment of construction traffic will assume the use of standard construction techniques commensurate for the type of works being undertaken. The final techniques, plant selection and programme are expected to be determined by the

appointed contractor, in consultation with relevant authorities prior to commencement of construction.

13 Noise and Vibration

13.1 Introduction

13.1.1 This Chapter of the Scoping Report presents the scope of the environmental assessment for Noise and Vibration on human receptors for the Proposed Development. Noise effects upon ecological receptors are considered in **Chapter 7: Biodiversity**. Specifically, this section of the Scoping Report presents the policy and legislative context, the approach to collecting baseline data relevant to this scoping chapter and an overview of the relevant baseline conditions within the Site and surrounding area. It concludes by setting out the scope of assessment including, with justification, those effects that are proposed to be scoped in or out for detailed assessment and concludes by outlining the method that will be used to undertake the detailed environmental assessment.

13.2 Review of Policy, Legislation and Relevant Guidance

13.2.1 Legislation, planning policy and guidance relating to Noise and Vibration, and relevant to the Proposed Development comprises:

Legislation

- The Control of Pollution Act 1974[269]
- The Environmental Protection Act 1990[270]

National Planning Policy

- Overarching National Policy Statement for Energy (EN-1) (2023)[271];
- Draft: Overarching National Policy Statement for Energy (EN-1) (2025)[272];
- Draft: National Policy Statement for Renewable Energy Infrastructure (EN-3) (2025)[273]; and

[269] UK Government (1974). Control of Pollution Act 1974. Available at: https://www.legislation.gov.uk/ukpga/1974/40/contents. Date Accessed 21/04/2025.
[270] UK Government (1990). Environmental Protection Act 1990. Available at: https://www.legislation.gov.uk/ukpga/1990/43/contents
[271] Department for Energy Security & Net Zero (2023) Overarching National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf
[272] Department for Energy Security & Net Zero (2025). *DRAFT: Overarching National Policy Statement for Energy (EN1).* [Online] Available at: https://assets.publishing.service.gov.uk/media/68093d68148a9969d2394f59/draft-nps-en-1.pdf (Accessed 25/06/2025)
[273] Department of Energy Security & Net Zero (2025) *DRAFT - National Policy Statement for Renewable Energy Infrastructure (EN3)* [Online] Available at:

- Draft: National Policy Statement for Electricity Networks Infrastructure (EN-5) (2025)[274].
- National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023, updated January 2024)[275];
- National Planning Policy Framework (NPPF) (2024, updated February 2025) [276];

Local Planning Policy

- Calderdale Local Plan 2018/19 - 2032/33 (adopted 2023)[277];
- Burnley's Local Plan 2012 - 2032 (adopted 2018)[278];
- Local Plan for the Bradford District (adopted 2017)[279];
- Pendle Local Plan (adopted 2015)[280];
- Rossendale Local Plan 2019 - 2036 (adopted 2021)[281];
- Rochdale Borough Local Development Plan Core Strategy[282] ; and
- Places for Everyone Joint Development Plan 2022 to 2039 (adopted 2024)[283].

https://assets.publishing.service.gov.uk/media/6809f0588c1316be7978e7cb/draft-nps-en-3.pdf. (Accessed 25/06/2025).

[274] Department for Energy Security & Net Zero (2025) Draft: National Policy Statement for Renewable Energy Infrastructure (EN-3). Available: https://assets.publishing.service.gov.uk/media/6809f0588c1316be7978e7cb/draft-nps-en-3.pdf

[275] Department for Energy Security & Net Zero (March 2023) National Policy Statement for Electricity Networks (EN-5) Available: https://assets.publishing.service.gov.uk/media/64252f852fa848000cec0f53/NPS_EN-5.pdf

[276] Ministry of Housing Communities & Local Government (2024, updated 2025) National Planning Policy Framework (December 2024) [online] Available at: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf (Accessed 25/05/2025)

[277] Calderdale Council (2023) *Calderdale Local Plan 2018/19 - 2032/33* [online] Available at: https://new.calderdale.gov.uk/planning-and-building-control/planning-policy/local-plan (Accessed 25/06/2025)

[278] Burnley Borough Council (2018) Burnley's Local Plan 2012-2032 [online] Available at: https://burnley.gov.uk/planning/planning-policies/burnleys-local-plan/ (Accessed 25/06/2025)

[279] The City of Bradford Metropolitan District Council (2017) *Local Plan for the Bradford District* [online] Available at: https://www.bradford.gov.uk/planning-and-building-control/planning-policy/adopted-local-plan/ (Accessed 25/06/2025)

[280] Pendle Borough Council (2015) Local plan part 1: core strategy [online] Available at: https://www.pendle.gov.uk/info/20072/planning_policies/275/development_plan_documents/2. [Accessed 25/06/2025]

[281] Rossendale Borough Council (2021)*Rossendale Local Plan 2019 to 2036* [online] Available at: https://www.rossendale.gov.uk/downloads/file/17076/rossendale_local_plan_2019_to_2036_-_written_statement. (Accessed 25/06/2025)

[282] Rochdale Borough Council (2017) *Rochdale Core Strategy, Adopted October 2016*. Available at: https://www.rochdale.gov.uk/local-planning-policy

[283] Greater Manchester Combined Authority (2024) *Places for Everyone Joint Development Plan 2022 to 2039* [online] Available at: https://www.greatermanchester-ca.gov.uk/what-we-do/planning-and-housing/strategic-planning/places-for-everyone/pfe-adoption/ (Accessed 25/06/2025)

National Guidance

- British Standard BS 5228-1: 2009+A1:2014 'Code of practice for noise and vibration control on construction and open developments - Noise'[284] ;
- British Standard BS 4142:2014+A1:2019 'Methods for Rating and Assessing Industrial and Commercial Sound'[285];
- ETSU-R-97 'The Assessment and Rating of Noise from Wind Farms' (Noise Working Group (NWG), 1996)[286];
- Institute of Acoustics (IOA) 'A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise' (IOA GPG, 2013)[287] ;
- Planning Practice Guidance (PPG) for Noise (issued 2014, last updated 2019)[288]; and
- PPG for Renewable and Low Carbon Energy (issued 205, last updated 2023)[289].

NOTE: ETSU-R-97 is currently under review and revised guidance to replace ETSU-R-97 will be published in the future. A consultation draft of the revised guidance was released in July 2025, however the draft is subject to change and until such time that the final version of the replacement guidance is issued, ETSUR97 remains relevant. As such, it is proposed that operational wind turbine noise for the Proposed Development is assessed in line with ETSU-R-97 until it is replaced.

Local Guidance

- West Yorkshire Planning Consultation Guidance – Noise & Vibration (May 2016); and
- Leeds City Council Planning Consultation Guidance - Noise and Vibration (December 2019).

[284] British Standard BS 5228-1:2009+A1:2014 'Code of practice for noise and vibration control on construction and open sites' – Part 1: Noise
[285] British Standard BS 4142:2014 + A1:2019 'Methods for Rating and Assessing Industrial and Commercial Sound'
[286] The Working Group on Noise from Wind Turbines (1996). ETSU-R-97 The Assessment and Rating of Noise From Wind Farms. UK: Energy Technology Support Unit
[287] IOA (2013). A Good Practice Guide to the Application of ETSU-R-97 for the Assessment and Rating of Wind Turbine Noise'. UK: Institute of Acoustics.
[288] Ministry of Housing, Communities and Local Government, Ministry of Housing, Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities (2019) *Planning Practice Guidance for Noise* [online] Available at: https://www.gov.uk/guidance/noise--2 (Accessed 25/06/2025)
[289] Ministry of Housing, Communities and Local Government, Ministry of Housing, Communities & Local Government (2018 to 2021) and Department for Levelling Up, Housing and Communities (2023) *Planning Practice Guidance for Renewable and Low Carbon Energy* [online] Available at: https://www.gov.uk/guidance/renewable-and-low-carbon-energy (Accessed 25/06/2025)

13.3 Existing Baseline Conditions

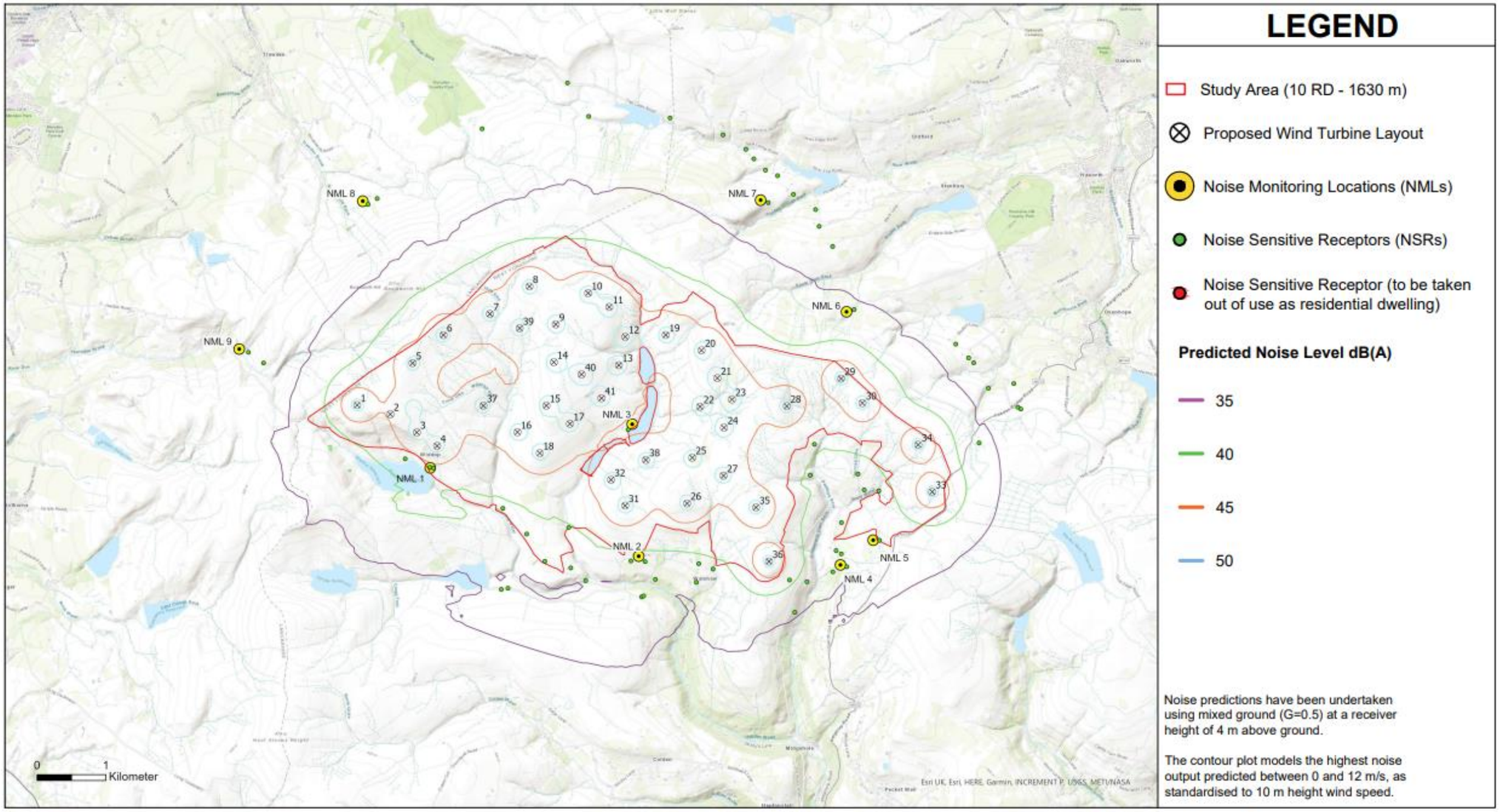
13.3.1 This section of the Scoping Chapter for Noise and Vibration sets out the known baseline conditions at this (scoping) stage of the project.

Study Area

13.3.2 The Turbine Area is located within a rural location, on land currently used as a grouse moor and farmland. There are a number of scattered residential properties around the Turbine Area with the closest occupied properties located to the south and east, as shown on Figure 13-1.

13.3.3 There are a number of operational wind farm developments near to the Turbine Area (shown on Figure 13-2), including Ovenden Moor Wind Farm to the east, and Coal Clough and Todmorden Moor Wind Farms to the south west. No known proposed wind farm developments are located in the immediate area of the Turbine Area.

Figure 13-1: Noise Sensitive Receptors and Noise Monitoring Locations



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

Revision History

Rev	Date	By	Detail
01	09/07/2025	TNEI	Issued for Calderdale Energy Park
02	31/07/2025	TNEI	Client Comments
03	04/08/2025	TNEI	Client Comments
04	19/08/2025	TNEI	Client Comments
05	29/08/2025	TNEI	Client Comments

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Project/Location
Calderdale Energy Park

Drawing title
Noise Sensitive Receptors and Noise Monitoring Locations

Drawing status
PRE PLANNING

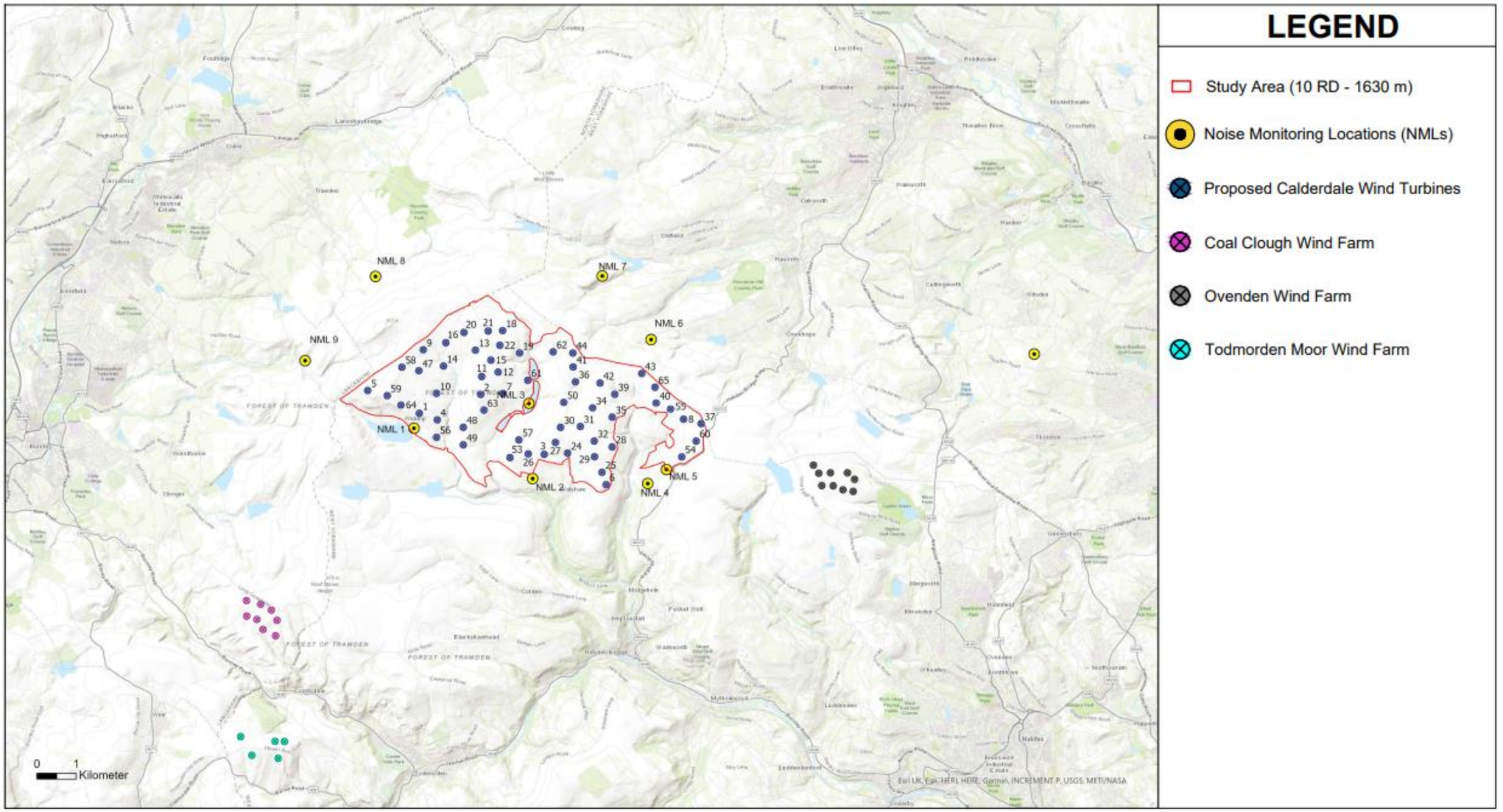
Date	Drawn	Checked
19/08/2025	ST	MT

Client
Calderdale energy park

Consultant
Logika Group

Drawing number	Revision
15809-010	05

Figure 13-2: Cumulative Wind Turbines



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

Revision History

Rev	Date	By	Detail
01	09/07/2025	TNEI	Issued for Calderdale Energy Park
02	29/08/2025	TNEI	Client Comments

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Project/Location
Calderdale Energy Park

Drawing title
Figure 13.2 Cumulative Wind Turbines

Drawing status
PRE PLANNING

Date	Drawn	Checked
09/07/2025	ST	MT

Client
Calderdale energy park

Consultant
Logika Group

Drawing number	Revision
15809-011	02

13.3.4 The study area will capture the Cable Corridor Search Areas and Access Route Search Areas. These search areas are still being refined, and hence at this stage the study area incorporates indicative Search Areas which define the areas that the cable corridor and access route could fall into. Currently four different cable routes are being considered. Based on these options, the cable corridor could also run through the Local Authority areas of: Bradford, Leeds, Rochdale, Rossendale and Burnley. As the design is refined, the Cable Corridor Search Areas will be further defined. The ES will consider the noise and vibration effects from the final options, which will be presented in the Chapter for Noise and Vibration of the ES.

Approach to the Collection of Baseline Data for Scoping

13.3.5 In order to determine noise sensitive receptors for which it was suitable to undertake background noise monitoring for the wind turbine operational noise assessment, preliminary desktop noise modelling was undertaken using EMD windPRO software[290]. An initial indicative wind turbine layout based on the layout presented at the non-statutory consultation was input into the software and, using noise data for a candidate turbine representative of the type that could be installed on the site[291], a noise contour plot was produced (shown on Figure 13-1). The proposed noise contour plot was included in the consultation letters sent to the Environmental Health Departments at Calderdale Metropolitan Borough Council (CMBC), and Pendle Borough, Burnley and Bradford Councils.

13.3.6 The proposed noise contour plot predicted wind turbine noise levels at the Noise Sensitive Receptors (NSRs) surrounding the Turbine Area with predicted turbine noise measured in Decibels (dB(A)[292], L_{90}[293]) decreasing with distance from the Turbine Area. All properties or clusters of properties within the 35 dB(A) contour (see Figure 13-1) were identified and assessed to determine which properties will provide representative background noise data for other properties in the area.

13.3.7 The properties identified for noise monitoring were selected following a detailed review of the area using aerial photography to identify receptors which will be representative of other nearby properties. Where practicable, locations were selected which were subject to minimal influence from other noise sources such as

[290] EMD windPRO is an industry-standard software package which can calculate predicted wind turbine noise levels using the ISO 9613-2 calculation methodology, inclusive of topographical corrections in line with the IOA GPG.
[291] Candidate turbine used for predictions is the Vestas V162 7.2MW with a 119 m hub and 200 m tip.
[292] Decibel. The ratio between the quietest audible sound and the loudest tolerable sound is a million to one in terms of the change in sound pressure. A logarithmic scale is used in noise level measurements because of this wide range. The scale used is the decibel (dB) scale which extends from 0 to 140 decibels (dB) corresponding to the intensity of the sound level.
293 The L_{90} Index represents the noise level exceeded for 90 percent of the measurement period and is used to indicate quieter times during the measurement period. It is often used to measure the background noise level. The $L_{A90,10min}$ is the A-weighted background noise level over a ten minute measurement sample. A-Weighting is a form of frequency weighting designed to account for the sensitivity of the human ear.

local watercourses, operational wind turbines and vegetation. These locations were shared with the Local Planning Authorities as part of the consultation process (see Table 13-1), and responses were received from Environmental Health Officers at Bradford Council and Burnley Council to confirm their agreement. No response was received from CMBC or Pendle Borough Council.

13.3.8 Background noise monitoring was undertaken for the purposes of setting the Total ETSU-R-97 Noise Limits[294]. Data was recorded in continuous ten-minute increments over the period 13th March 2025 to 7th May 2025 at nine Noise Monitoring Locations (NMLs), shown on Figure 13-1 and detailed in Table 13-1. Monitoring was initially proposed at an additional location to the northeast of the Turbine Area, outwith the predicted 35 dB(A) noise contour. This location was included to ensure a conservative approach, and account for any potential design changes that may alter the predicted noise levels in this area. However, access to monitor could not be obtained. Due to the distance from the proposed wind turbines and the low predicted noise level at this location, it was concluded that monitoring in this area was not necessary, and proxy data measured at a nearby location will sufficiently represent this area.

Table 13-1: Noise Monitoring Locations

NML/ Receptor Name	Easting	Northing
NML1 – Adjacent to Widdop Reservoir Lodge	393595	433000
NML2 – New Laithe Farm	396619	431719
NML3 – North east of Reservoir Lodge	396525	433634
NML4 – Chapel	399362	431520
NML5 – Bedlam Farm	400041	431932
NML6 – Harbour Lodge	399637	435263
NML7 – Upper Ponden House	398390	436880
NML8 – Boulsworth Dyke Farm	392615	436865
NML9 – New Bridge End	390821	434723

294 The noise limits, set in accordance with ETSUR97, applicable to all cumulative wind turbine developments in an area.

13.3.9 Concurrent wind speed/direction were recorded using a LiDAR unit which was located within the site (as shown on Figure 13-1).

13.3.10 Wind speed and direction data were collected over the same timescale and averaged over the same ten-minute periods as the noise data to provide the analysis of the measured background noise as a function of wind speed and direction.

13.3.11 Tipping bucket rain gauges were installed at NML2, NML4, and NML8 for the duration of the noise survey to record periods of rainfall, time synchronised to the sound measurements.

13.3.12 The noise data measured for the operational wind turbine noise assessment will also be used to inform the assessment of construction noise and operational noise from the proposed Battery Energy Storage System (BESS) and substation. If required, further measurement surveys will be undertaken to supplement this existing data.

Relevant Baseline Conditions

13.3.13 Analysis of the measured data will be undertaken in accordance with the recommendations in ETSU-R-97 and the IOA GPG to determine the background noise levels for the operational turbine noise assessment. Meteorological data will be screened by TNEI, and where rainfall has occurred the corresponding noise and wind speed datapoints will be excluded from the assessment. The baseline sound levels for the operational noise assessment of the BESS and Substation will be determined using the same dataset, but in accordance with BS 4142.

Receptors Identified

13.3.14 A number of NSRs proximate to the Turbine Area have been identified and are presented on Figure 13-1 and Table 13-1. From these NSRs, the relevant NSRs will be selected for each assessment when assessing potential noise effects from the operation of the proposed wind turbines, BESS and substation, and during the construction of the Proposed Development.

13.4 Environmental Measures

13.4.1 Consideration will be paid to the opportunity to introduce environmental measures (and mitigation) that will help to avoid or reduce the potential for an adverse significant effect to occur. In accordance with Schedule 4(7) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset (where appropriate) likely significant effects. Specific environmental

measures relevant to Noise and Vibration will be identified and will be considered as part of the assessments (i.e. the assessments of likely significant effects have been undertaken with the inclusion of the environmental measures, as these measures will form part of the Proposed Development). At this stage of the project, the following environmental measures will be implemented and included within the Proposed Development.

Construction

13.4.2 It is anticipated that a range of good practice measures will be detailed in an outline Construction Environmental Management Plan (oCEMP) and employed to minimise noise effects.

13.4.3 Good onsite practices, for construction of the Proposed Development will be implemented to minimise the likely effects. Section 8 of BS 5228-1:2009+A1:2014 recommends a number of simple control measures that may be employed on site to minimise construction noise effects.

Operation and Maintenance

13.4.4 The final choice of candidate turbine, along with the choice of electrical plant, may differ from the indicative candidates considered within the noise assessment. To ensure compliance with the noise limits during the operation of the Proposed Development, appropriate noise controls within the outline Operational Environmental Management Plan (oOEMP) will be considered where appropriate. Indicative mitigation measures may include the operation of some wind turbines in alternative 'low noise' operational modes under specific wind conditions.

Decommissioning

13.4.5 Good site practices, as described for the construction phase, will be applied to minimise noise impacts during the decommissioning phase.

13.5 Scope of the Assessment

Consultation Undertaken to Date

Calderdale Council (CMBC) Scoping Opinion

13.5.1 As discussed in **Chapter 1: Introduction**, under the Town and Country Planning Act 1990[295], in July 2023, an EIA scoping request was submitted to CMBC, which was a Scoping Report in request for a Scoping Opinion for a proposed wind farm development and associated infrastructure at the Site, including cable connection. Table 13-2 presents the details of the Scoping Opinion received from CMBC

[295] UK Government (1990) Town and Country Planning Act 1990

relevant to Noise and Vibration and confirms if the opinion is considered within the proposed scope of assessment (as set out below) or if is considered to be scoped out of the technical assessment, with details provided in Table 13-4.

Table 13-2: Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
CMBC	Noise impacts from the proposed turbines, substation, BESS, and other ancillary plant at nearby NSRs, at all stages of the development, should be considered within the noise assessment. The applicable guidance for the assessment of operational wind turbine noise is ETSU-R-97 and the IOA GPG, and BS 4142 for the assessment of the Substation/ BESS and ancillary plant. Reference is also made to the following documents "West Yorkshire Planning Consultation Guidance – Noise & Vibration", and "Procedure for the assessment of low frequency noise complaints – The University of Salford (NANR45)"	Noise impacts from the proposed turbines, substation, BESS, and other ancillary plant at nearby NSRs, at all stages of the development, will be considered within the noise assessment, with the exception of the effects to be scoped out (detailed in Table 13-4). The assessment will use ETSU-R-97 and the IOA GPG for the assessment of operational wind turbine noise, and BS 4142 for the assessment of the Substation/ BESS and ancillary plant. The assessment will also consider the documents "West Yorkshire Planning Consultation Guidance – Noise & Vibration", and "Procedure for the assessment of low frequency noise complaints – The University of Salford (NANR45)".

Other Consultation Undertaken to Date

13.5.2 An overview of other consultation (beyond the CMBC Scoping Opinion) undertaken to date for Noise and Vibration, and how this has informed the scope to the assessment is provided in Table 13-3.

Table 13-3: Consultation Undertaken to Date

Date	Consultee	Summary
February 2025	Bradford Council, Burnley Council, CMBC, Pendle Borough Council	TNEI prepared a detailed consultation letter in February 2025 for the attention of Environmental Health Department at the aforementioned Councils. In the letter, information on proposed noise assessment and noise monitoring locations were detailed. Representatives from each Council's Environmental Health Department were invited to attend the installation of the noise monitoring equipment. Environmental Health Officers from Bradford Council and Pendle Borough Council responded to confirm agreement of the proposed noise monitoring locations (the final noise monitoring locations are detailed in Table 13-1). No responses were received from Calderdale County Council or Burnley Council. An Environmental Health Officer from Bradford County Council attended the installation of equipment at one of the noise monitoring locations (NML6 – Harbour Lodge) located within the Bradford County.

Effects Scoped Out from Detailed Assessment

Infrasound and Low-Frequency Noise

13.5.3 A study, published in 2006 by acoustic consultants Hayes McKenzie on the behalf of the former Department of Trade and Industry (DTI), investigated low frequency

noise from wind farms. This study concluded that there is no evidence of health effects arising from infrasound or low frequency noise generated by wind turbines.

13.5.4 In February 2013, the Environmental Protection Authority of South Australia published the results of a study into in infrasound levels near wind farms. This study measured infrasound levels at urban locations and rural locations with wind turbines close by, and rural locations with no wind turbines in the vicinity. It found that infrasound levels near wind farms are comparable to levels away from wind farms in both urban and rural locations. Infrasound levels were also measured during organised shut downs of the wind farms; the results showed that there was no noticeable difference in infrasound levels whether the turbines were active or inactive.

13.5.5 Bowdler et al., (2009) concluded that:

"...there is no robust evidence that low frequency noise (including 'infrasound') or ground-borne vibration from wind farms generally has adverse effects on wind farm neighbours".

13.5.6 During a planning Appeal (PPA-310-2028, Clydeport Hunterston Terminal Facility, approximately 2.5 km south-west of Fairlie, 9 Jan 2018), the health effects related to low frequency noise associated with wind turbines were considered at length by the appointed Reporter (Mr M Croft). The Reporter considered evidence from Health Protection Scotland and the National Health Service. In addition, he also considered low frequency noise surveys undertaken by the Appellant and the Local Authority both of which demonstrated compliance with planning conditions and did not identify any problems attributable to the turbine operations; some periods with highest levels of low frequency noise were recorded when the turbines were not operating.

13.5.7 The Reporter concluded that:

- The literature reviews by bodies with very significant responsibilities for the health of local people found insufficient evidence to confirm a causal relationship between wind turbine noise and the type of health complaints cited by some local residents.
- The NHS's assessment is that concerns about health impact are not supported by good quality research.
- Although given the opportunity, the Community Council failed to provide evidence that can properly be set against the general tenor of the scientific evidence.

13.5.8 In February 2023, WSP published 'A review of noise guidance for onshore wind turbines' ('WSP BEIS report')[296]. The report, which was subsequently re-issued as version 5 in September 2023, was commissioned by (the former) UK Government Department for Business, Energy & Industrial Strategy (BEIS). The primary aim of the review was to make a recommendation on whether, in view of government policies on noise and Net Zero, and available evidence, the existing guidance requires updating.

13.5.9 Low-frequency noise and infrasound is considered in the WSP BEIS report. The report considered a number of studies which investigated claimed links between adverse health symptoms and infrasound emissions from wind turbines. The report notes on page 116 that:

'It has been demonstrated in controlled experiments, including the involvement of participants self-reporting to be sensitive to wind turbine infrasound, that exposure to infrasound at levels representative of wind turbine immissions at dwellings is not associated with physiological or psychological health effects, whereas the expectation of effects from being exposed to wind turbine infrasound, and positive or negative messages influencing that expectation, can affect health symptom reporting.

Overall, the findings from the existing evidence base indicate that infrasound from wind turbines at typical exposure levels has no direct adverse effects on physical or mental health, and reported symptoms of ill-health are more likely to be psychogenic in origin.

It is expected that further evidence from ongoing studies into wind turbine infrasound effects will emerge soon, in particular from the National Health and Medical Research Council of Australia (NHMRC) studies in Australia. However, based on the existing scientific evidence, it does appear probable that the above findings will not be contradicted by newer evidence.'

13.5.10 Since the publication of the WSP BEIS report, the study that was granted funding by NHMRC was published in the Environmental Health Perspectives (EHP) journal which is published by the United States National Institute of Environmental Health. The study[297] aimed to test the effect of exposure to 72 hours of infrasound (designed to simulate a wind turbine infrasound signature) exposure on human physiology, particularly sleep. The study concluded that:

[296] WSP. A review of noise guidance for onshore wind turbines. [Online] 10 02 2023. Available at: https://www.wsp.com/en-gb/insights/wind-turbine-noise-report.
[297] *The Health Effects of 72 Hours of Simulated Wind Turbine Infrasound: A Double-Blind Randomized Crossover Study in Noise-Sensitive, Healthy Adults.* Available at: https://ehp.niehs.nih.gov/doi/10.1289/EHP10757

'Our findings did not support the idea that infrasound causes WTS[298]. High level, but inaudible, infrasound did not appear to perturb any physiological or psychological measure tested in these study participants.'

13.5.11 It is therefore not considered necessary to carry out specific assessments of low frequency noise and infrasound. It is concluded that they should be scoped out of the EIA.

Amplitude Modulation

13.5.12 In its simplest form, Amplitude Modulation (AM), by definition, is the regular variation in noise level of a given noise source. This variation (the modulation) occurs at a specific frequency, which, in the case of wind turbines, is defined by the rotational speed of the blades, i.e. it occurs at the rate at which the blades pass a fixed point (e.g. the tower), known as Blade Passing Frequency.

13.5.13 A study was carried out in 2007 on behalf of the Department for Business, Enterprise and Regulatory Reform (BERR) by the University of Salford, which investigated the incidence of noise complaints associated with wind farms and whether these were associated with AM. The study defined AM as aerodynamic noise from wind turbines with a greater degree of fluctuation than normal at blade passing frequency. Its aims were to ascertain the prevalence of AM on UK wind farm sites, to try to gain a better understanding of the likely causes, and to establish whether further research into AM is required.

13.5.14 The study concluded that AM had occurred at only a small number (4 of 133) of wind farms in the UK, and only for between 7% and 15% of the time. It also stated that, the causes of AM are not well understood and that prediction of the effect was not currently possible.

13.5.15 This research was updated in 2013 by an in-depth study undertaken by Renewable UK, which has identified that many of the previously suggested causes of AM have little or no association to the occurrence of AM in practice. The generation of AM is based upon the interaction of a number of factors, the combination and contributions of which are unique to each site. With the current state of knowledge, it is not possible to predict whether any particular site is more or less likely to give rise to AM, and the incidence of AM occurring at any particular site remains low, as identified in the University of Salford study. The report includes a sample planning condition to address AM, however that has not yet been validated or endorsed by UK Government.

[298] WTS stands for Wind Turbine Syndrone which is a term for adverse human health effected related to the proximity of wind turbines.

13.5.16 In 2016, the IOA proposed a measurement technique to quantify the level of AM present in any particular sample of wind farm noise. In August 2016 a report written by WSP/Parsons Brinkerhoff was published by the Department of Business, Energy & Industrial Strategy (BEIS, formerly The Department of Energy & Climate Change). The report sought to build on the conclusions of the IOA study in order to define an appropriate assessment method for AM, including a penalty scheme and an outline planning condition.

13.5.17 In November 2017, an article entitled 'A planning condition for wind farms' was published in Vol 42 No 6 of the Acoustics Bulletin magazine. The article was written collaboratively by a number of noise consultants and suggested a noise planning condition which included consideration of AM. The authors noted in the article that:

'Whilst local authorities and developers have waited for a planning condition that could be applied to newly consented wind farms, or to those already consented but with a suspensive condition, the report Wind Turbine AM Review (WTAMR) by WSP/Parsons Brinckerhoff for DECC arguably did not provide that. In addition, there have been a number of comments on WTAMR that we consider should be addressed.'

13.5.18 The article then went on to propose a draft condition but noted that: 'This approach is proposed based on the current state of understanding but may be subject to modification in light of new research and further robust information.' And 'As various people before us have discovered, the derivation of a penalty is not easy. There is not sufficient reliable research to be confident that a penalty system will always provide a fair indication of the impact of AM.'

13.5.19 At the time of writing there has been no official response to those recommendations from the IOA Noise Working Group and, as yet, no endorsement from any Scottish Government Minister or Department. The recommendation to impose a planning condition and the associated penalty scheme is at odds with the advice from the IOA GPG which currently states (paragraph 7.2.1):

'7.2.1 The evidence in relation to "Excess" or "Other" Amplitude Modulation (AM) is still developing. At the time of writing, current practice is not to assign a planning condition to deal with AM.'

13.5.20 The WSP BEIS report discusses AM, and on page 119 states that:

'At present, it seems evident that reliable predictions of AM in the context of development planning and noise assessment guidance are unlikely to be practically feasible in the near future.'

13.5.21 At time of writing there is no agreed methodology which can be used to predict the occurrence of AM or an agreed methodology which can be used to determine whether the effects of AM, should it occur, are likely to be significant. Agreement is sought that amplitude modulation should be scoped out of EIA.

Vibration (Operational)

13.5.22 The Applied and Environmental Geophysics Research Group at Keele University was commissioned by the Ministry of Defence (MOD), the DTI and the British Wind Energy Association (BWEA) to undertake microseismic and infrasound monitoring of LFN and vibrations from wind farms for the purposes of siting wind farms in the vicinity of Eskdalemuir in Scotland. Whilst the testing showed that vibration can be detected several kilometres away from wind turbines, the levels of vibration from wind turbines were so small that only the most sophisticated instrumentation can reveal their presence, and they are almost impossible to detect. Nevertheless, the Renewable Energy Foundation alleged potential adverse health effects and when that story was picked up in the popular press, notably the Scotsman, the report's authors expressed concern over the way in which their work had been misinterpreted and issued a rebuttal statement[299] in August 2005:

'Vibrations at this level and in this frequency range will be available from all kinds of sources such as traffic and background noise – they are not confined to wind turbines. To put the level of vibration into context, they are ground vibrations with amplitudes of about one millionth of a millimetre. There is no possibility of humans sensing the vibration and absolutely no risk to human health.'

13.5.23 It is therefore not considered necessary to carry out specific assessments of operational vibration, and it is concluded that it should be scoped out of the EIA.

13.5.24 Table 13-4 presents the Noise and Vibration matters that are unlikely to give rise to significant adverse effects and, therefore, which are proposed to be scoped out from detailed assessment.

Table 13-4: Effects Scoped Out from the Detailed Assessment

Potential Effect	Agreement in CC Scoping Opinion	Rationale to Scoped Out
Decommissioning Noise	Not explicitly covered in scoping opinion	Activities that occur during the decommissioning of the Proposed Project are unlikely to produce higher noise levels than those produced

[299] Keele University (2012). *Keele University Rejects Renewable Energy Foundation Low Frequency Noise Research Claims.* Available at: http://archive.is/d3WB

Potential Effect	Agreement in CC Scoping Opinion	Rationale to Scoped Out
		during construction and many of the activities will be similar in nature. As such it is considered that if construction noise levels are predicted to be below the threshold levels, then decommissioning noise will also be within the threshold levels. It is therefore appropriate to scope out decommissioning noise from the assessment.
Vibration (Construction and Decommissioning Phases)	Not explicitly covered in scoping opinion	No vibration inducing construction activities, such as piling or compaction will be undertaken in proximity to any sensitive receptors. Therefore, no adverse effects from vibration are likely and an assessment of construction vibration can be scoped out. Nonetheless, vibration limits at residential properties can be adopted, based on the guideline levels presented in BS 5228:209+A1:2014: Part 2 Vibration, and these can be detailed within the CEMP to ensure no adverse vibration effects will occur.
Vibration (Operational Phase)	Not explicitly covered in scoping opinion	Operation of the proposed plant will not generate significant levels of vibration, therefore it is considered appropriate to scope out operational vibration from the assessment.
Infrasound and Low Frequency Noise	Not explicitly covered in scoping opinion	As detailed in the first Scoping report, it is not considered necessary to carry out specific assessments of low frequency noise and infrasound, noting that they should be scoped out.
Amplitude Modulation (AM)	Not explicitly covered in scoping opinion	As detailed in the first Scoping report, currently there is no agreed methodology which can be used to predict the occurrence of AM or an agreed methodology which can be

Potential Effect	Agreement in CC Scoping Opinion	Rationale to Scoped Out
		used to determine whether the effects of AM, should it occur, are likely to be significant. On that basis it is considered therefore that amplitude modulation should be scoped out of the noise assessment.
Cable Corridor Route – Construction Noise	Not explicitly covered in scoping opinion	For the Proposed Grid Connection Route, the amount of required plant is relatively small, typically being based around an excavator for trenching and backfill activities. As such, construction activities in any one location will be limited in duration (e.g. a single day) and adverse noise effects are anticipated to be negligible. As such, general works along the grid corridors should be scoped out of the noise assessment.
Cable Corridor Route – Operational Noise	Not explicitly covered in scoping opinion	Operational of the Grid Connection Route (buried cable) is note anticipated to generate noise, and should be scoped out of the noise assessment.
Traffic Noise - Operational	Not explicitly covered in scoping opinion	Operational noise from road traffic is anticipated to be minimal.

Likely Significant Effects Scoped into the Detailed Assessment

13.5.25 Table 13-5 presents the Noise and Vibration matters that may give rise to significant adverse environmental effects and, therefore, which are proposed to be scoped into the detailed assessment.

Table 13-5: Likely Significant Effects Scoped into the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
Operational Noise from the Wind Farm and	Yes	An assessment of operational noise will be undertaken in order to assess the potential effects during the

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
BESS/Substation		operational phases of the Proposed Development.
Construction Noise from the Proposed Development, including construction traffic, and where applicable, noise associated with any trenchless crossing requirements for the Cable Corridor Route.	Yes	An assessment of construction noise will be undertaken in order to assess the potential effects during the construction phase of the Proposed Development, and where applicable, the Proposed Grid Corridor.

13.6 Proposed Approach to the ES

Assessment Methodology

Further Baseline Data

13.6.1 The need for further surveys will be reviewed once the Search Areas for the access and cable corridors have been refined.

Construction

13.6.2 The construction noise assessment will be undertaken using guidance contained in BS 5228: Part 1 2009+A1:2014 (BS 5228). The prediction of construction noise levels will be undertaken using the calculation methodology presented in ISO 9613-2:2024, together with published noise data for assumed construction plant.

13.6.3 To undertake an assessment of the construction noise impact using relevant data from BS 5228, the following steps will be undertaken:

- Identification of the NSRs near potential construction activities and select representative Construction Noise Assessment Locations (CNALs);
- Identification of the applicable threshold of significant effects from BS 5228;

- Predict the noise levels for various construction noise activities;
- Compare predicted noise levels against the applicable threshold;
- Where necessary, develop suitable mitigation measures to minimise any significant effects during the construction stage; and, if required,
- Assess any residual effects taking into account any identified mitigation measures.

13.6.4 For the Proposed Grid Corridor, the amount of required plant is relatively small, typically being based around an excavator for trenching and backfill activities. As such, construction activities in any one location will be limited in duration and adverse noise effects are anticipated to be negligible. As such, general works along the grid corridors will not be assessed against BS 5228.

13.6.5 However, along the Proposed Grid Corridor at some watercourses, culverts and drain crossings, there may be a requirement for trenchless crossing (such as Horizontal Directional Drilling (HDD)). This type of crossing will require the use of multiple items of plant including pumps, mud recyclers, drilling rigs, and generators. Therefore, for instances where trenchless crossing is required for large crossings, the construction noise levels at any neighbouring noise sensitive receptors will be assessed against BS 5228, and where applicable, appropriate mitigation measures will be proposed.

13.6.6 Cumulative effects will be assessed in line with the methodology set out in **Chapter 3: Approach to EIA**, which accords with the Planning Inspectorate's Advice on Cumulative Effects Assessment. A long list of existing, consented, and proposed developments will be agreed with the relevant local planning authorities prior to undertaking the assessment. The certainty of these developments will be determined using the tiered approach recommended by PINS. For each environmental topic, the potential Zone of Influence (ZoI) of the Proposed Development during construction, operation (including maintenance), and decommissioning will be identified. The outcomes of the cumulative effects assessment will be reported within the Environmental Statement.

Operation and Maintenance

13.6.7 ETSU-R-97 details a methodology for establishing noise limits for proposed wind farm developments and these limits should not be exceeded. ETSU-R-97 states that noise limits should be set relative to existing background noise levels at the nearest receptors and that these limits should reflect the variation in both turbine source noise and background noise with wind speed. Separate noise limits apply for quiet daytime and for night-time periods. Quiet daytime limits are chosen to

protect a property's external amenity, and night-time limits are chosen to prevent sleep disturbance indoors, with windows open.

13.6.8 ETSU-R-97 recommends that wind farm noise for the quiet daytime periods should be limited to 5 dB(A) above the prevailing background or a fixed minimum level within the range 35 - 40 dB $L_{A90,10min}$, whichever is the higher. The precise choice of criterion level within the range 35 – 40 dB(A) depends on a number of factors, including the number of dwellings in the neighbourhood of the wind farm, the effect of noise limits on the number of kWh generated (larger sites tend to suggest a higher figure) and the duration and level of exposure to any noise. These factors will be taken into account and a justification for deriving suitable noise limits will be included in the noise assessment.

13.6.9 An exception to the setting of both the quiet daytime and night-time fixed minimum limit occurs where a property occupier has a financial involvement with the Proposed Development. In that case the fixed minimum limit can be increased to 45 dB $L_{A90,10min}$ or the prevailing background noise L_{A90} plus 5 dB, whichever is the greater for both the quiet daytime and night-time periods.

13.6.10 The noise assessment for the Proposed Development will be undertaken in three stages:

- Determine the 'Total ETSU-R-97 Noise Limits' which are applicable to the operation of all schemes in the area;
- Undertake a cumulative assessment (where required) to determine whether predictions from all cumulative schemes meet the 'Total ETSU-R-97 Noise Limits'; and
- Derive a set of Site-Specific Noise Limits (for the Proposed Development) and undertake predictions to determine whether the Proposed Development can operate within the Site-Specific Noise Limits.

13.6.11 Due to the scale of the Proposed Development, it is proposed that the 'Total ETSU-R-97 Noise Limits' for the assessment will be based on a 40 dB fixed lower noise limit during the daytime period and a 43 dB fixed lower noise limit during the night-time period.

13.6.12 The guidance contained in the IOA GPG[300] will be used to establish suitable Site-Specific Noise Limits which fully take account of the proportion of the Total ETSU-

[300] As noted in Section 14.3., ETSUR97 is currently under review and is due to be replaced at a point in the future. As the IOA GPG specifically relates to ETSUR97, there is the potential that the IOA GPG, or elements of it, may be superseded as part of this process. However, as it is unknown when the revised guidance may be issued, it is proposed that the operational wind turbine noise assessment be undertaken in line with both ETSUR97 and the IOA GPG.

R-97 Noise Limits which has been allocated too, and can realistically be used by, existing operational and consented wind farms in the area. It is proposed that the 'Site-Specific Noise Limits' for the assessment will be based on a 40 dB fixed lower noise limit during the daytime period and a 43 dB fixed lower noise limit during the night-time period.

13.6.13 The Turbine Area is located entirely within Calderdale, however it borders the Local Authority districts of Bradford, Pendle, and Burnley. Detailed consultation will be undertaken with the Environmental Health Departments at all four Councils on the overall assessment methodology. As the design is refined and the cable corridors become clear, consultation will be undertaken with any other Councils that will interface with the cable route.

13.6.14 The noise assessment will include predictions of likely wind turbine noise levels across a range of wind speeds to demonstrate compliance with the Total ETSU-R-97 and Site-Specific Noise Limits. Cumulative effects will be assessed in line with the methodology set out in **Chapter 3: Approach to EIA**, which accords with the Planning Inspectorate's Advice on Cumulative Effects Assessment. A long list of existing, consented, and proposed developments will be agreed with the relevant local planning authorities prior to undertaking the assessment. The certainty of these developments will be determined using the tiered approach recommended by PINS. For each environmental topic, the potential ZoI of the Proposed Development during construction, operation (including maintenance), and decommissioning will be identified. The outcomes of the cumulative effects assessment will be reported within the Environmental Statement. This assessment will be undertaken in accordance with ETSU-R-97 and the IOA GPG.

13.6.15 In respect to operational noise from non-wind sources, such as battery energy storage sites, BS 4142:2014+A1:2019 'Methods for Rating and Assessing Industrial and Commercial Sound' is the appropriate methodology for the assessment of environmental noise from proposed new developments or activities.

13.6.16 Therefore, an operational noise assessment of the BESS, Substation, and other Ancillary Plant will be undertaken in line with BS 4142:2014+A1:2019.

Decommissioning

13.6.17 Activities that occur during the decommissioning of the Proposed Development are unlikely to produce higher noise levels than those produced during the construction and many of the activities will be similar in nature. As such it is assumed that if construction noise levels are predicted to be below the threshold levels, then decommissioning noise will also be within the threshold levels. Therefore, as per

Table 13-4, specific assessment of decommissioning noise will be scoped out of assessment.

Assumptions, Limitations and Uncertainties

13.6.18 An indicative layout and candidate turbine have been used to inform this Scoping Report, including predicted noise levels and the identification of noise sensitive receptors, and it is anticipated that these could differ from the candidate turbine and layout submitted with the DCO application. Additionally, the design of the substation, BESS and cable route(s) considered in this Scoping Report are also indicative and will be subject to change.

14 Air Quality

14.1 Introduction

14.1.1 This Chapter of the Scoping Report presents the scope of detailed environmental assessment for Air Quality effects upon human receptors for the Proposed Development. Air quality effects upon ecological receptors are considered in **Chapter 7: Biodiversity**. Specifically, this chapter of the Scoping Report presents the policy and legislative context, the approach to collecting baseline data relevant to this scoping chapter and an overview of the relevant baseline conditions within the Site and surrounding area. It concludes by setting out the scope of assessment including, with justification, those effects that are proposed to be scoped in or out for detailed assessment and concludes by outlining the method that will be used to undertake the detailed environmental assessment.

14.2 Review of Policy, Legislation and Relevant Guidance

14.2.1 Legislation, planning policy and guidance relating to Air Quality, and relevant to the Proposed Development comprises:

Legislation

- Environment Act 2021 – gave the Government the power to set long-term, legally binding environmental targets. These include the Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 (SI 2023 No. 96) sets two new targets for future concentrations of $PM_{2.5}$.
- Air Quality (England) Regulations (2000) and the Air Quality (England) (Amendment) Regulations (2002) – prescribes the objectives for use by local authorities.
- Air Quality Standards Regulations (2010) – implements EU Directive 2008/50/EC into UK law
- EU Directive 2008/50/EC on ambient air quality and cleaner air for Europe - sets limit values for NO_2, PM_{10} and $PM_{2.5}$, and is implemented in UK law through the Air Quality Standards Regulations (2010)

National Planning Policy

- Overarching National Policy Statement for Energy (EN-1) (2023)[301] – identifies the situations in which mitigation would be required;
- Draft Overarching National Policy Statement for Energy (EN-1) (2025)[302];
- National Policy Statement for Renewable Energy Infrastructure (EN-3) (2023)[303] – identifies the required approach to air quality assessment and a requirement to consider the $PM_{2.5}$ targets, although it does not include reference to on-shore wind;
- Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (2025)[304] – includes on-shore wind and does not identify any specific impacts on air quality;
- National Policy Statement for electricity networks infrastructure (EN-5) (2023)[305] – does not make any specific reference to air quality or dust impacts;
- Draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (2025)[306]; and
- National Planning Policy Framework (NPPF) (updated February 2025)[307] – sets out how planning policies should prevent unacceptable risks from pollution and ensure that new development is appropriate for its location.

Local Policy

14.2.2 The following documents set out local planning policy with respect to air quality;

- The Calderdale Local Plan 2018/19 – 2032/33 was adopted in 2023[308]

[301] Department for Energy Security & Net Zero (2023) Overarching National Policy Statement for Energy (EN-1). Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf
[302] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[303] Department for Energy Security & Net Zero (2023) National Policy Statement for Renewable Energy Infrastructure (EN-3). Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147382/NPS_EN-3.pdf
[304] DESNZ (2025) National Policy Statement for Renewable Energy Infrastructure (EN-3)
[305] DESNZ (2023) National Policy Statement for Electricity Network (EN-5)
[306] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[307] Ministry of Housing Communities & Local Government (2024) National Planning Policy Framework (December 2024) Updated online February 2025. Available: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf
[308] https://new.calderdale.gov.uk/planning-and-building-control/planning-policy/local-plan

- Rochdale Core Strategy (adopted October 2016)[309]
- City of Bradford MDC adopted Local Plan (2017) and Bradford District Local Plan 2020 (Regulation 18) (2021)
- West Yorkshire Combined Authority "Transport Strategy 2040" (2017)
- Leeds City Council - Core Strategy (as amended by the Core Strategy Selective Review 2019) (adopted 2019)[310]
- Local Plan for the Bradford District – Core Strategy Development Plan Document (adopted 2017)[311]
- Pendle Borough Council Core Strategy (adopted December 2015)[312]
- Rossendale Local Plan 2019 - 2036[313]
- Burnley's Local Plan 2018 [314]

National Guidance

- Institute of Air Quality Management (IAQM) Guidance on the Assessment of Dust from Demolition and Construction (2024)[315] – provides a suggested approach to assess and mitigate air quality impacts of construction
- Environmental Protection UK (EPUK) and the Institute of Air Quality Management Guidance on Land-Use Planning & Development Control: Planning For Air Quality[316] - provides guidance on the assessment and mitigation of air quality impacts of developments

[309] Rochdale Borough Council, 2016. Available at: https://www.rochdale.gov.uk/downloads/download/266/core-strategy
[310] Leeds City Council, 2019. Available at: https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/core-strategy-introduction
[311] City of Bradford Metropolitan District Council, 2017. Available at: https://www.bradford.gov.uk/planning-and-building-control/planning-policy/core-strategy-dpd/
[312] Pendle Borough Council, 2015. Available at: https://www.pendle.gov.uk/info/20072/planning_policies/275/development_plan_documents/2
[313] Rossendale Borough Council Available at: https://www.rossendale.gov.uk/local-plan/adopted-local-plan
[314] Burneley Borough Council Available at: https://burnley.gov.uk/wp-content/uploads/2022/04/Burnleys-Local-Plan-Adopted-Version-Final-With-erratum-28-Sep-2018.pdf
[315] IAQM (2024) Guidance on the Assessment of Dust from Demolition and Construction v2.2, Available: http://iaqm.co.uk/guidance/
[316] Moorcroft and Barrowcliffe et al (2017) *Land-Use Planning & Development Control: Planning For Air Quality v1.2*, IAQM, London, Available: http://iaqm.co.uk/guidance/ .

Local Guidance

- West Yorkshire Air Quality & Emissions Technical Planning Guidance (West Yorkshire Guidance)[317] – sets out requirements for air quality assessments and mitigation

14.3 Existing Baseline Conditions

14.3.1 This section of the Scoping Chapter for Air Quality sets out the known baseline conditions at this (scoping) stage of the Proposed Development. It is noted that further surveys and assessment are proposed to inform the technical assessment for the Environmental Statement (ES) (see details and scope of the further baseline data below under Section 14.6).

Study Area

14.3.2 The study area for the consideration of existing baseline air quality conditions encompasses the Turbine Area, the Cable Corridor Search Areas, Site Access Search Areas and human receptors alongside roads that could be used by construction traffic near to the Proposed Development.

14.3.3 The extent of the study area for the consideration of construction traffic effects will be defined as locations where construction traffic flows are expected to exceed screening criteria set out by the Environmental Protection UK and Institute of Air Quality Management guidance document on Planning for Air Quality[318]. Where these criteria of 100 heavy duty vehicles (HDV)/500 light duty vehicles (LDV) (25 HDV/100 LDV in Air Quality Management Areas (AQMAs)) are exceeded and sensitive human receptors are present, detailed air quality modelling will be carried out.

14.3.4 The study area for the consideration of construction dust from ground, excavation and profiling works upon human health will extend 250m from the Turbine Area, Cable Corridor Search Areas; and 50m either side of routes extending 200m from the exit points of these areas. The study area for consideration of emissions from plant and machinery will also extend 250m from the Turbine Area and Cable Corridor Search Areas.

Approach to the Collection of Baseline Data for Scoping

14.3.5 Baseline data was collected using the following sources:

[317] West Yorkshire Low Emissions Group (nd) Air Quality & Emissions Technical Planning Guidance https://new.calderdale.gov.uk/sites/default/files/2023-08/Air-Quality-Emissions-Planning-Technical-Guide.pdf
[318] air-quality-planning-guidance.pdf

- information on existing air quality has been obtained by collating the results of monitoring carried out by the local authority in the last 5 years. This covers both the study area and nearby monitoring sites in nearby AQMAs, the latter being used to provide context for the assessment on the sensitivity of the area to changes in air quality; and
- whether or not there are any exceedances of the annual mean limit value for nitrogen dioxide, PM_{10} and $PM_{2.5}$ in the study area has been identified using Defra's Compliance data[319].

Relevant Baseline Conditions

Delivery Vehicles, Plant and Machinery

14.3.6 Calderdale Metropolitan Borough Council (CMBC) has declared eight AQMAs due to exceedances of the annual mean nitrogen dioxide (NO_2) objective. These are all to the south of the Proposed Development and are summarised in Table 14-1, locations are shown in Figure 14-1. Further afield there are also AQMAs in Bradford Metropolitan District Council (BMDC), Rochdale Metropolitan Borough Council (RMBC). Pendle Borough Council (PBC), Leeds City Council (LCC) and Kirklees Council (KC). As shown in Table 14-1, the annual mean NO_2 objective has been complied with for a number of years at the Luddenfoot and Stump Cross AQMAs and CMBC intends to revoke these AQMAs[320]. Elsewhere, exceedances of the objective in 2023 were only measured in BMDC Manningham Lane AQMA 2 and Shipley AQMA 4, and KC Eastborough AQMA 5. These are 6km, 7km and 19km from the Proposed Development respectively. Any of these locations likely to be affected by vehicles accessing the Site at volumes that exceed the screening criteria set out in 14.3.2 during the construction phase will be identified in the ES.

14.3.7 The closest AQMA to the Proposed Development where exceedances of the objective are still being measured is Hebden Bridge. Outside the AQMAs NO_2 concentrations will be well below the objectives.

Table 14-1: AQMAs [a]

Local Authority	AQMA	Maximum concentration 2023 (µg/m^3)	No. years compliance with Air Quality Objective (2024)
CMBC	No. 1 Salterhebble	44.6	0

[319] https://uk-air.defra.gov.uk/data/compliance-map/
[320] Calderdale Council (2024). 2023 Air Quality Annual Status Report

Local Authority	AQMA	Maximum concentration 2023 (µg/m^3)	No. years compliance with Air Quality Objective (2024)
CMBC	No.2 Sowerby Bridge	41.8	0
CMBC	No.3 Hebden Bridge	41.1	0
CMBC	No.4 Luddendenfoot	34.6	5
CMBC	No.5 Stump Cross	34.0	6
CMBC	No.6 Brighouse	41.9	0
CMBC	No.7 Hipperholme	39.2	2
CMBC	No.8 New Bank	40.6	0
BMDC	Mayo Avenue/Mancheste r Road (Order 1)	35.2	5
BMDC	Manningham Lane (Order 2)	44.2	0
BMDC	Thornton Road (Order 3)	29.3	5
BMDC	Shipley Airdale Road (Order 4)	46.9	0
RMBC	Part of Greater Manchester AQMA	32.6	4
KC	AQMA 1 Bradley	29.1	5
KC	AQMA 3 Ainley Top	21.6	5
KC	AQMA 4 Birkenshaw	23.6	5
KC	AQMA 5 Eastborough	40.1	0
KC	AQMA 6 Edgerton	34.0	5

Local Authority	AQMA	Maximum concentration 2023 (µg/m^3)	No. years compliance with Air Quality Objective (2024)
KC	AQMA 7 Liversedge	38.0	1
KC	AQMA 8 Outlane	30.2	4
KC	AQMA 9 Huddersfield Town Centre	37.9	1
KC	AQMA 10 Thornton Lodge	35.9	5
PBC	Colne AQMA	26.4	6
LCC	The Normans	31.1 (2022)	4 (to 2023)
LCC	Caspar Apartments	27.9 (2022)	>5 (to 2023)
Objective		40.0	

[a] Information taken from Annual Status Reports[320] [321] [322] [323] [324] [325].

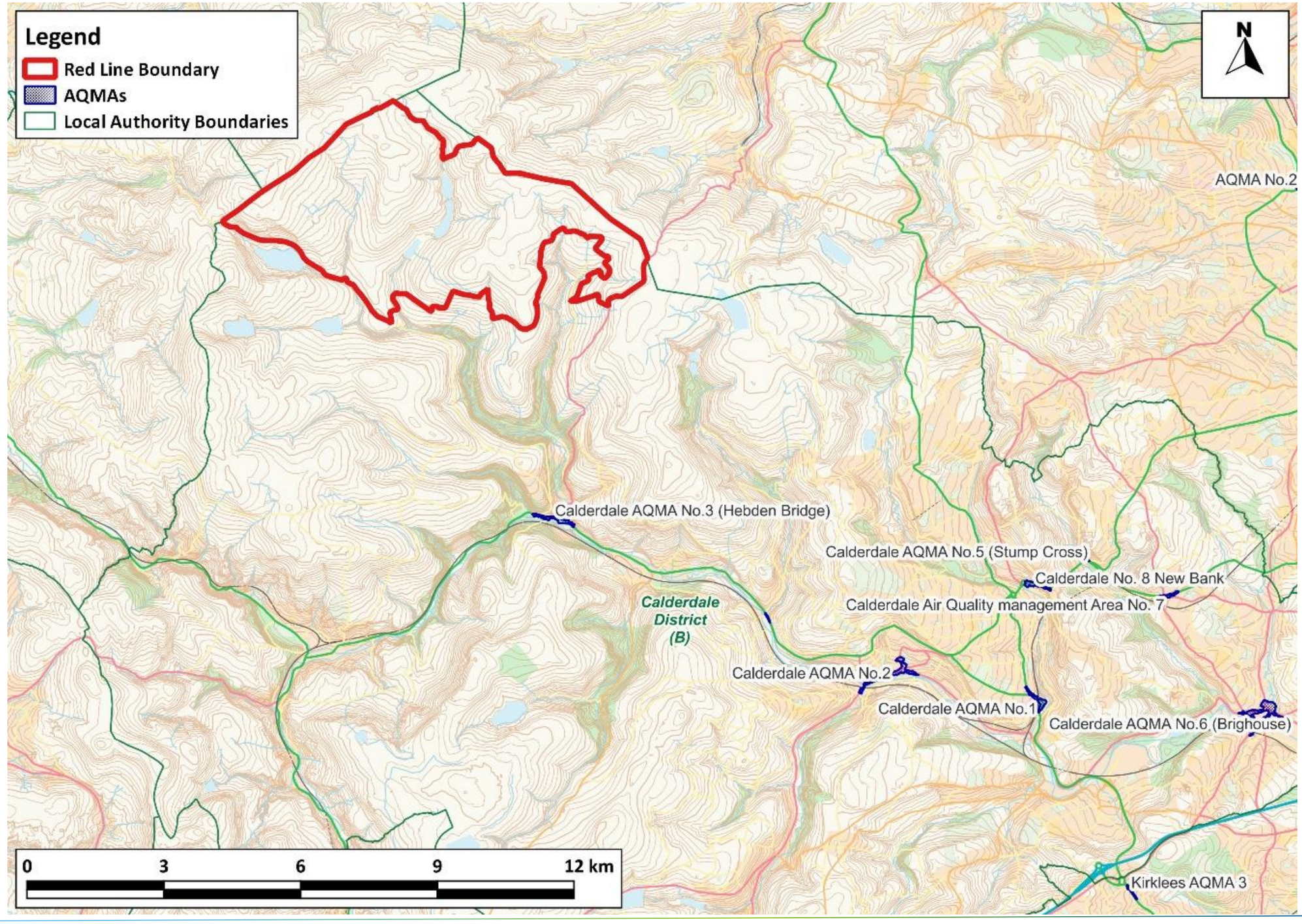
14.3.8 CMBC measures PM_{10} and $PM_{2.5}$ concentrations at a single location in Sowerby Bridge. Measured concentrations between 2019 and 2023 were below the annual mean and 24-hour objectives[320].

14.3.9 KC has declared an AQMA for 24-hour PM_{10} concentrations at Scouthill (AQMA 2), however, it has been agreed with Defra that this will be revoked as the objective is no longer being exceeded[321].

14.3.10 Defra compliance data has not identified any exceedances of the limit values in the Turbine Area, the Cable Corridor Search Areas or Access Corridors. A single monitoring site was identified as exceeding the limited value in 2023 alongside the A6035 in the centre of Keighley in the BMDC area.

[321] KBC 2024 2023 Annual Air Quality Status Report https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/kirklees-annual-status-report-2024.pdf
[322] BMDC (2024) 2023 Annual Air Quality Status Report https://www.bradford.gov.uk/media/iqxjhjk0/2024-air-quality-annual-status-report.pdf
[323] GMCA (2024) 2023 Annual Air Quality Status Report https://downloads.ctfassets.net/tlpgbvy1k6h2/3XAEIZRea7W64L3A61H8R7/7a092aac00f18413a78ac611418526fe/ASR_2024_reporting_on_2023_Air_Quality_Final.pdf
[324] Pendle Borough Council (2024) Air Quality Annual Status Report
[325] Leeds City Council (2023) Air Quality Annual Status Report

Figure 14-1 Closest AQMAs to the Turbine Area (see Table 14-1 for AQMAs around the Cable Corridor Search Areas and Site Access Search Areas)



Dust creation from ground, excavation and profiling works

14.3.11 No existing dust sources in the study area for ground, excavation and profiling works have been identified.

Human Receptors Identified

14.3.12 The relevant human receptors are identified in Table 14-2. Ecological receptors are considered in **Chapter 7: Biodiversity**.

Table 14-2: Human Receptors for Air Quality Effects

Phase	Effect	Receptors
Construction	Dust and particulate matter creation from ground, excavation and profiling works, and plant and machinery (Non-Road Mobile Machinery (NRMM)) emissions	Small number of isolated properties within 250m of the Turbine Area. Rochdale Cable Corridor Seach Areas, include residential properties and other sensitive receptors in Todmorden, Walsden, Whitworth and Rochdale. This includes Shade Primary School, Walsden St Peters School, Tonacliffe Primary School, Norden Community Primary School and Caldershaw Primary School. Bradford West Cable Corridor Search Areas, include residential properties and other sensitive receptors in Denholme and Thornton. Includes Keelham Primary School. The Cable Corridor Search Area extending to Leeds will include Shipley, Calverley and into Leeds.
Construction	Delivery Vehicle emissions	Residential properties alongside routes used by construction traffic. Properties in Hebden Bridge AQMA, where exceedances of the objective were measured in 2003 will be most sensitive to any increases in traffic.
Operation	No emissions to air and thus no anticipated effects – traffic generation would be insignificant and no	None

Phase	Effect	Receptors
	emissions to air from operation of the turbines.	
Decommissioning	Dust and particulate matter creation from ground, excavation and profiling works, and delivery vehicle, plant and machinery emissions	Same as the construction phase

14.4 Environmental Measures

14.4.1 Consideration will be paid to the opportunity to introduce environmental measures (and mitigation) that will help to avoid or reduce the potential for an adverse significant effect to occur. In accordance with Schedule 4(7) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset (where appropriate) likely significant effects. Specific environmental measures relevant to Air Quality will be identified and will be considered as part of the assessments (i.e. the assessments of likely significant effects have been undertaken with the inclusion of the environmental measures, as these measures will form part of the Proposed Development). At this stage of the Proposed Development, the following environmental measures will be implemented and included within the Proposed Development.

Construction

14.4.2 It is anticipated that standard measures to minimise dust and NRMM emissions during the construction phase will be set out in a Outline Construction Environment Management Plan (oCEMP). Measures will be consistent with the Greater London Authority's SPG on the Control of Dust and Emissions During Construction and

Demolition[326] [327], while intended for London, this approach is a requirement of the West Yorkshire Guidance[317].

Operation and Maintenance

14.4.3 In according with fire risk management a cooling system, will form part of the Battery Energy Storage System (BESS), which is designed to regulate temperatures to safe conditions to minimise the risk of fire. In addition, a Outline BESS safety management plan will be developed to further minimise the risk of hydrogen fluoride (HF) emissions in the event of a fire. It is not anticipated that any further measures will be necessary during the operational phase.

Decommissioning

14.4.4 Measures to minimise emissions during the decommissioning phase will be set out in an Outline Decommissioning Environmental Management Plan (oDEMP), which will include the same considerations as set out for the oCEMP in paragraph 14.4.2.

14.5 Scope of the Assessment

Consultation Undertaken to Date

Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

14.5.1 As discussed in **Chapter 1: Introduction**, under the Town and Country Planning Act 1990, in July 2023, an EIA scoping request was submitted to CMBC, which was a Scoping Report in request for a Scoping Opinion for a proposed wind farm development and associated infrastructure at the Site, including cable connection. Table 14-3 presents the details of the Scoping Opinion received from CMBC relevant to Air Quality and confirms if the opinion is considered within the proposed scope of assessment (as set out below) or if is considered to be scoped out of the technical assessment, with details provided in Table 14-4.

[326] GLA (2014) The Control of Dust and Emissions from Construction and Demolition SPG, Available: https://www.london.gov.uk/programmes-strategies/planning/implementing-london-plan/london-plan-guidance-and-spgs/control-dust-and#:~:text=The%20aim%20of%20this%20supplementary,for%20non%2Droad%20mobile%20machinery.
[327] https://www.london.gov.uk/sites/default/files/2024-07/Control-of-Dust-Practice-Note.pdf

Table 14-3 Calderdale Metropolitan Borough Council Scoping Opinion

Consultee	Summary of Scoping Opinion Response	Consideration within the Development Consent Order (DCO) Scope of Assessment
CMBC Scoping Response	• Air quality should be scoped in for the construction and decommissioning phases of development for large delivery vehicles and plant and machinery, and dust creation from ground, excavation, and profiling works; • An Air Quality Impact Assessment should be undertaken in accordance with the guidance contained in the West Yorkshire Low Emissions Strategy and Air Quality & Emissions Technical Planning Guidance (or equivalent guidance). • Air quality during the operational phase can be scoped out due to the likely much less intensive use of the site. • An oCEMP should be included as part of the application.	Dust creation from ground, excavation, and profiling works will not be included in the scope of the EIA. A Construction Dust Risk Assessment will be prepared as a Technical Appendix to the EIA. This will identify the risk of dust impacts to human and ecological receptors and the mitigation measures required to ensure that impacts are not significant in accordance with IAQM and West Yorkshire guidance[315 317]. Air quality effects for the construction phase of development for large delivery vehicles will be scoped in. Decommissioning phase scoped out due to anticipated reduction in vehicle emissions in future.
CMBC Spatial Planning	• In relation to Policy EN1, Pollution Control – Noted that the "*proposal does not reasonably cause or expect to expose individuals to pollution*"	Operational phase effects scoped out of EIA

Consultee	Summary of Scoping Opinion Response	Consideration within the Development Consent Order (DCO) Scope of Assessment
CMBC Environmental Health Services – Pollution Section	• "*Air quality should be included in EIA. Assessments must be in accordance with the guidance contained in the West Yorkshire Low Emissions Strategy and Air Quality & Emissions Technical Planning Guidance (or relevant), although the end development will not applicable, the description of construction phase impacts should be considered.*"	West Yorkshire Low Emissions Strategy and Air Quality & Emissions Technical Planning Guidance will be followed Operational effects scoped out of the EIA Air quality effects for the construction phase of development for large delivery vehicles will be scoped in. Dust creation from ground, excavation, and profiling works will not be included in the scope of the EIA. A Construction Dust Risk Assessment will be prepared as a Technical Appendix to the EIA.

Other Consultation Undertaken to Date

14.5.2 No other consultation has been undertaken to date. Once further details of the Proposed Development are available, including traffic routes, discussions on the technical detail of the assessment will be held with Environmental Health departments of the local authorities identified in paragraph 14.3.6. This will include agreeing the development classification in accordance with the West Yorkshire Guidance[317] which determines the level of mitigation required.

Effects Scoped Out from Detailed Assessment

14.5.3 Table 14-4 presents the Air Quality matters that are unlikely to give rise to significant adverse effects and, therefore, which are proposed to be scoped out from detailed assessment.

Table 14-4 Effects Scoped Out from the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped Out
Dust and particulate matter creation from ground, excavation and profiling works during construction	No	Mitigation measures set out in the oCEMP will ensure that any dust impacts upon human and ecological receptors will be not significant and therefore will not be scoped in to the EIA. A Construction Dust Risk Assessment will be prepared as a Technical Appendix to the EIA. This will identify the risk of dust impacts to human and ecological receptors and the mitigation measures required to ensure that effects are not significant in accordance with IAQM[328] and West Yorkshire guidance[329]. The IAQM guidance is clear that, "*with the implementation of effective site-specific mitigation measures the environmental effect will not be significant.*"[315]
Construction phase plant and machinery (NRMM) air quality effects	No	The IAQM guidance[315] states: "*Experience of assessing the exhaust emissions from on-site plant (also known as non-road mobile machinery or NRMM) and site traffic suggests that they are unlikely to make a significant impact on local air quality, and in the vast majority of cases they will not need to be quantitatively assessed. For site plant and on-site traffic, consideration should be given to the number of plant/vehicles and their operating hours and locations to assess whether a significant effect is likely to occur*". The amount of NRMM to be used is relatively small (<10 units at any location at the same time) and the site

[328] IAQM (2024) Guidance on the Assessment of Dust from Demolition and Construction v2.2, Available: http://iaqm.co.uk/guidance/
[329] West Yorkshire Low Emissions Group (nd) Air Quality & Emissions Technical Planning Guidance https://new.calderdale.gov.uk/sites/default/files/2023-08/Air-Quality-Emissions-Planning-Technical-Guide.pdf

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped Out
		is large, with only a small number of sensitive receptors near to the Proposed Development. Any effects from cable corridor options within the Cable Corridor Search Areas, are likely to be short-term. NRMM emissions will mostly occur away from sensitive properties. The site layout will take account of the location of sensitive receptors, and the distance between NRMM and sensitive properties will be maximised, as far as possible. All vehicles and plant will be switched off when not in use. In addition, the West Yorkshire Guidance[317] requires that all NRMM adhere with London Best Practice Guidance, which currently requires all to meet Stage IV emissions standards to ensure that older engines with higher NOX and PM emissions are not used[327]. It is judged that there is no risk of significant effects as a result of on-site machinery emissions.
Operational phase traffic air quality effects	Yes	Traffic generated during the operational phase will be limited to a small number of maintenance visits, and therefore no likely significant effects. CMBC confirmed in TCPA Scoping Opinion that this approach would be acceptable.
Operational phase wind turbine air quality effects	Yes	The wind turbines and associated infrastructure will not cause any emissions to air and thus there will be no likely significant air quality effects.
Operational phase BESS fire HF effects	Not explicitly mentioned	In according with fire risk management a cooling system, will form part of the BESS, which is designed to regulate temperatures to safe conditions to minimise the risk of fire. An Unplanned Atmospheric Emissions from BESS

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped Out
		Report will be undertaken and submitted as part of the DCO Application which will consider the potential emissions and impact to air quality in the event of a fire.
Dust and particulate matter creation from ground, excavation and profiling works during decommissioning	No	As described for the construction phase effects, with the mitigation measures set out in the ODEMP the effects will be not significant and are thus scoped out of the EIA.
Decommissioning phase delivery vehicles, plant and machinery (NRMM) air quality effects	No	By the time decommissioning is carried out vehicle, plant and machinery emissions are expected to be much lower that at present due to improvements in vehicle technology and progression towards net zero carbon emissions driving an increase in electrically powered plant, in preference to combustion engines. Therefore, no likely significant effects on air quality are anticipated.

Likely Significant Effects Scoped into the Detailed Assessment

14.5.4 Table 14-5 presents the Air Quality matters that are likely to give rise to significant adverse effects and, therefore, which are proposed to be scoped into the detailed assessment.

Table 14-5: Likely Significant Effects Scoped into the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
Construction phase delivery vehicles air quality effects	Yes	Traffic may use routes through AQMAs where measured concentrations exceeded the annual mean nitrogen dioxide objective in 2023.

14.6 Proposed Approach to the ES

Assessment Methodology

Further Baseline Data

14.6.1 No further baseline data needs to be collected to support the assessment. The ES will incorporate the most recent publicly available air quality data.

Construction

14.6.2 The assessment methodology will follow that set out in the Institute of Air Quality Management's Guidance on the Assessment of Dust from Demolition and Construction[315], in accordance with the West Yorkshire Guidance[317]. It will identify the potential for dust to be generated and the sensitivity of the surrounding area and will combine these to determine the risk of dust impacts without appropriate mitigation. This information will then be used to determine the appropriate level of mitigation required to ensure that there are no significant effects. The assessment will take into account the cumulative effect with any other construction sites within 250m of relevant receptors.

14.6.3 Cumulative effects will then be assessed in line with the methodology set out in **Chapter 3: Approach to EIA**, which accords with the Planning Inspectorate's Advice on Cumulative Effects Assessment. A long list of existing, consented, and proposed developments will be agreed with the relevant local planning authorities prior to undertaking the assessment. The certainty of these developments will be determined using the tiered approach recommended by PINS. For each environmental topic, the potential Zone of Influence (ZoI) of the Proposed Development during construction, operation (including maintenance), and decommissioning will be identified. The outcomes of the cumulative effects assessment will be reported within the Environmental Statement.

14.6.4 Traffic generation during the construction phase will initially be screened against the criteria set out in the Environmental Protection UK and Institute of Air Quality Management guidance document on Planning for Air Quality[316]. Where necessary, roadside pollutant concentrations, and the impacts of the development-generated traffic, will be predicted using the ADMS-Roads dispersion model. The model will be verified against local monitoring data.

14.6.5 Impacts will be predicted at a number of locations alongside routes used to access the proposed development in order to determine effects. Receptors will be selected to represent worst-case exposure. These will be at the roadside façade of properties along the local road network where the development-generated traffic increases will be greatest, and at locations where concentrations are expected to

be highest, such as near to junctions and within AQMAs. Specific receptors cannot be selected at this stage as their selection will depend upon the changes in traffic flows predicted in the traffic data upon which the assessment will be based, which are not yet available.

14.6.6 The model will be used to predict existing baseline pollutant concentrations and the likely concentrations in the year of peak construction, both without and with the development. Traffic data will include any relevant cumulative developments, as identified in **Chapter 12: Access, Traffic and Transport**.

Operation and Maintenance

14.6.7 No air quality effects of operation and maintenance are scoped into the ES.

Decommissioning

14.6.8 No air quality effects of decommissioning are scoped into the ES, as vehicle, plant and machinery emissions are expected to be much lower that at present due to improvements in vehicle technology and progression towards net zero carbon emissions driving an increase in electrically powered plant, in preference to combustion engines. Dust and particulate matter creation from ground, excavation and profiling works during decommissioning will be controlled by mitigation measures as set out in the oDEMP to ensure that there are no significant effects.

Assumptions, Limitations and Uncertainties

14.6.9 The suggested scope set out above is based on the following assumptions:

- Impacts upon ecological receptors will be assessed in the **Chapter 7: Biodiversity**;
- There will be no emergency generators that will require testing during the operation phase;
- Emissions from the vehicle, plant and machinery fleet will have reduced by the decommissioning phase; and
- The BESS will be within 1km of dwellings.

15 Socio-Economics and Tourism

15.1 Introduction

15.1.1 This Chapter of the Scoping Report presents the scope of detailed environmental assessment for socio-economics and tourism for the Proposed Development. Specifically, this section of the Scoping Report presents the planning and policy context, the approach to collecting baseline data relevant to this scoping chapter and an overview of the relevant baseline conditions within the Site and surrounding area. It concludes by setting out the scope of assessment including, with justification, those effects that are proposed to be scoped in or out for detailed assessment and concludes by outlining the method that will be used to undertake the detailed environmental assessment.

15.2 Review of Policy, Legislation and Relevant Guidance

15.2.1 There is no legislation specific to socio-economics and tourism assessments of proposed onshore wind developments. The relevant planning and policy context comprises:

National Planning Policy

- Overarching National Policy Statement for Energy (EN-1) (2023)[330];
- Draft: Overarching National Policy Statement for Energy (EN-1) (2025)[331];
- Draft: National Policy Statement for Renewable Energy Infrastructure (EN-3) (2025)[332] ;
- National Policy Statement for Electricity Networks Infrastructure (EN-5)(2023)[333];

[330] Department for Energy Security & Net Zero (2023) Overarching National Policy Statement for Energy (EN-1). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf

[331] Department for Energy Security & Net Zero (April 2025) Draft: Overarching National Policy Statement for Energy (EN-1). Available: https://assets.publishing.service.gov.uk/media/68093d68148a9969d2394f59/draft-nps-en-1.pdf

[332] Department for Energy Security & Net Zero (2025) Draft: National Policy Statement for Renewable Energy Infrastructure (EN-3). Available: https://assets.publishing.service.gov.uk/media/6809f0588c1316be7978e7cb/draft-nps-en-3.pdf

[333] Department for Energy Security & Net Zero (March 2023) National Policy Statement for Electricity Networks (EN-5) Available: https://assets.publishing.service.gov.uk/media/64252f852fa848000cec0f53/NPS_EN-5.pdf

- Draft: National Policy Statement for Electricity Networks Infrastructure (EN-5)[334] (2025); and
- National Planning Policy Framework (NPPF) (updated February 2025)[335].

Local Planning Policy

- Calderdale Local Plan 2018/19 to 2032/33[336]; and
- Other local plans relevant to export Cable Corridor Search Areas and Site Access Search Areas.

Relevant National Policy Context

- Clean Power 2030 Action Plan: A new era of clean electricity (updated April 2025)[337];
- HM Government Plan for Change (2024)[338];
- The UK's Modern Industrial Strategy (2025)[339];
- Clean Energy Industries Sector Plan (2025)[340].

Relevant Regional and Local Policy Context

- The West Yorkshire Plan 2040[341];
- Hull and East Yorkshire Economic Strategy (2024)[342];

[334] Department for Energy Security & Net Zero (April 2025) Draft National Policy Statement for Electricity Networks (EN-5) Available: https://assets.publishing.service.gov.uk/media/681dda13c66deec8488f7e66/draft-nps-en-5-electricity-networks-infrastruture.pdf
[335] Ministry of Housing Communities & Local Government (2024) National Planning Policy Framework (December 2024) Updated online February 2025. Available: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf
[336] Calderdale Council (2023) Calderdale Local Plan 2018/19- 2032/33: Written Statement.
[337] Department for Energy Security and Net Zero (2024) Clean Power 2030 Action Plan: A new era of clean electricity. Updated online April 2025. Available: https://assets.publishing.service.gov.uk/media/677bc80399c93b7286a396d6/clean-power-2030-action-plan-main-report.pdf
[338] UK Government (2024) Plan for Change: Milestones for Mission Led Government. Available: https://assets.publishing.service.gov.uk/media/6751af4719e0c816d18d1df3/Plan_for_Change.pdf
[339] UK Government (2025) The UK's Modern Industrial Strategy: Clean Energy Industries Sector Plan. Available: https://assets.publishing.service.gov.uk/media/68595e56db8e139f95652dc6/industrial_strategy_policy_paper.pdf
[340] UK Government (2025) The UK's Modern Industrial Strategy: Clean Energy Industries Sector Plan. Available: https://assets.publishing.service.gov.uk/media/68587856b46781eacfd71de4/industrial_strategy_clean_energy_industries_sector_plan.pdf
[341] West Yorkshire Combined Authority (2024) West Yorkshire Local Growth Plan. Available: https://www.westyorks-ca.gov.uk/media/10561/west_yorkshire_plan.pdf
[342] Hull and East Yorkshire Combined Authority (2024) Hull and East Yorkshire MCA Economic Strategy Framework. Available:

- Inclusive Economic Strategy for Calderdale (2024)[343]; and
- Calderdale Visitor Economy Strategy 2024-2029 (2024)[344]
- Leeds City Council Core Strategy 2017-2033[345].

15.3 Existing Baseline Conditions

15.3.1 This section of the scoping report for socio-economics and tourism sets out the known baseline conditions at this (scoping) stage of the Proposed Development. It is noted that further analysis and assessment is proposed to inform the technical assessment for the Environmental Statement (see details and scope of the further baseline data below under Section 15.8).

Study Area

15.3.2 The Proposed Development is in the administrative boundary of Calderdale Metropolitan Borough Council (CMBC). The baseline description will consider the following study areas:

- Calderdale, as defined by the local authority boundary;
- Yorkshire and the Humber (which includes CMBC and other local authority areas relevant to Site Access Search Areas and export Cable Corridor Search Areas); and
- the UK.

15.3.3 The economic impacts will be quantified for all three study areas and key tourism assets will be identified in the vicinity of the Proposed Development.

Approach to the Collection of Baseline Data for Scoping

15.3.4 Baseline data was collected using the following sources of data:

- ONS, (2024). Mid 2023 Population estimates for local authorities;
- ONS, (2020). Population Projections for local authorities (2018-based);

https://www.hullandeastyorkshire.gov.uk/downloads/file/11/hull-and-east-yorkshire-mca-economic-strategy-framework

[343] Calderdale Council (2024), Inclusive Economic Strategy for Calderdale (2024). Available: https://new.calderdale.gov.uk/communities/inclusive-economy-strategy

[344] Calderdale Council (2024), Calderdale Visitor Economy Strategy 2024-2029. Available: https://new.calderdale.gov.uk/leisure/tourism/visitor-economy-strategy

[345] Leeds City Council (2019). Core Strategy (as amended by the Core Strategy Selective Review 2019) Leeds Local Plan

- ONS, (2025). Business Register and Employment Survey 2023;
- ONS, (2025). Annual Population Survey – data for Jan 2024 to Dec 2024;
- ONS, (2025). Annual Survey of Hours and Earnings – Resident Analysis 2024; and
- ONS, (2025) Sub-regional Fuel Poverty England 2023.

15.3.5 The approach to data collection for the Relevant Baseline Conditions involves gathering data at a national and subnational level in order to gain an understanding of the local and regional economy surrounding the Proposed Development.

Relevant Baseline Conditions

Population Estimates

15.3.6 In 2023, it was estimated that the population of Calderdale was 208,735, equivalent to 3.7% of the population of Yorkshire and the Humber (5,594,125). The population of Yorkshire and the Humber accounted for approximately 8.2% of the total population of the UK.

15.3.7 The population structure of Calderdale is similar to that of Yorkshire and the Humber and the UK, with 61.4% of the population of working age population, as shown in Table 15-1.

Table 15-1: Population Estimates, 2023

Age Range	Calderdale	Yorkshire and the Humber	UK
Total	**208,735**	**5,594,125**	**68,265,209**
0-15	19.1%	18.5%	18.3%
16-64	61.4%	62.3%	62.8%
65+	19.5%	19.3%	18.9%

Source: ONS (2024) Mid 2023 Population estimates for local authorities

Population Projections

15.3.8 Over the period between 2023 and 2043, the population of Calderdale is projected to increase by 4.2% to 217,548, while the population of Yorkshire and the Humber is projected to increase by 5.3% to 5.9 million. These are lower than the UK population projection of 10.7%.

15.3.9 The proportion of Calderdale residents aged 16-64 years old is projected to decrease to 57.5% by 2043, as shown in Table 15-2, which will result in around 3,000 fewer people in the workforce. This contrasts with the UK as a whole, with a projected increase in the working age population of more than 9%.

Table 15-2: Population Projections, 2023-2043

Age Range	Calderdale		Yorkshire and the Humber		UK	
	2023	**2043**	**2023**	**2043**	**2023**	**2043**
Total	**208,735**	**217,548**	**5,594,125**	**5,890,408**	**68,265,209**	**75,585,236**
0-15	19.1%	17.3%	18.5%	17.5%	18.3%	15.2%
16-64	61.4%	57.5%	62.3%	58.8%	62.8%	62.2%
65+	19.5%	25.2%	19.3%	23.7%	18.9%	22.6%

Source: ONS (2024) Mid 2023 Population estimates for local authorities; ONS (2020) Population Projections for local authorities (2018-based)

Industrial Structure

15.3.10 The sector that contributes the highest share of employment in Calderdale is the wholesale and retail trade (16.5% compared to 14.7% in Yorkshire and the Humber and 13.7% in the UK, Table 15-3.

15.3.11 Other notable features include a high proportion of employment in manufacturing (13.3%), compared to Yorkshire and the Humber (10.6%) and the UK (7.5%). This reflects the presence of local manufacturers including Nestlé, Siddall and Hilton, as well as small and medium sized companies.

15.3.12 Calderdale also includes a high proportion of employment in administrative and support services (11.2%) and financial and insurance activities (7.4%), compared to Yorkshire and the Humber (8.2% and 2.8%) and the UK (8.5% and 3.3%). This can be attributed to large employers such as Halifax, a bank, and Covea, an insurer.

15.3.13 The share of employment in construction (5.3%) is similar to Yorkshire and the Humber and the UK (both 4.9%).

Table 15-3: Industrial Structure, 2023

Industry	Calderdale	Yorkshire and the Humber	UK
Wholesale and retail trade	16.5%	14.7%	13.7%
Manufacturing	13.3%	10.6%	7.5%
Administrative and support service activities	11.2%	8.2%	8.5%
Human health and social work activities	11.2%	14.0%	13.7%
Education	8.5%	9.2%	8.4%
Financial and insurance activities	7.4%	2.8%	3.3%
Accommodation and food service activities	6.9%	7.6%	7.9%
Construction	5.3%	4.9%	4.9%
Professional, scientific and technical	5.0%	7.1%	9.2%
Public administration, defence, social security	3.2%	4.7%	4.6%
Transportation and storage	2.9%	5.8%	4.9%
Other service activities	2.1%	1.6%	2.0%
Information and communication	1.7%	2.6%	4.4%
Arts, entertainment and recreation	1.7%	2.2%	2.6%
Real estate activities	1.6%	1.6%	2.0%
Agriculture, forestry and fishing	0.9%	1.4%	1.4%
Water, sewerage, waste management	0.4%	0.7%	0.7%
Mining and quarrying	0.2%	0.1%	0.1%
Electricity, gas, steam, air conditioning supply	0.0%	0.3%	0.4%

Source: ONS (2025) Business Register and Employment Survey 2023

Economic Activity

15.3.14 In 2024, the economic activity rate in Calderdale was 72.1%, compared to lower Yorkshire and the Humber (76.0%) and the UK as a whole (78.5%).

15.3.15 Median wages in Calderdale (£30,078) were higher than Yorkshire and the Humber (£29,901) but lower than the UK average (£31,602) in the UK.

Table 15-4: Economic Activity Rates and Wages, 2024

	Calderdale	Yorkshire and the Humber	UK
Economically Active (%)	72.1%	76.0%	78.5%
Median Annual Gross Wage (residents)	£30,078	£29,901	£31,602

Source: ONS (2025), Annual Population Survey – data for Jan 2024 to Dec 2024; ONS (2025), Annual Survey of Hours and Earnings – Resident Analysis 2024

Fuel Poverty

15.3.16 A household is considered to be in fuel poverty if the total fuel cost, necessary to maintain an adequate heating regime, exceeds 10% of the given household adjusted net income.

15.3.17 In 2023, 15.2% of households in Calderdale were considered to be living in fuel poverty, equivalent to 14,218 households. This was a higher proportion than Yorkshire and the Humber (14.7%) and the English average (11.4%), as shown in Table 15-5.

Table 15-5: Households in Fuel Poverty, 2023

	Calderdale	Yorkshire and the Humber	England
All Households	93,872	2,420,220	24,568,372
Number of households in fuel poverty	14,218	354,972	2,801,647
Proportion of households fuel poor	15.2%	14.7%	11.4%

Source: ONS (2025), Sub-regional Fuel Poverty England 2023

Tourism and Recreation

Tourism Sector

15.3.18 In 2023, there were 2.3 million people employed in tourism-related sectors[346] in England (8.1% of total employment), including 0.2 million in Yorkshire and the Humber (also 8.1% of total employment). In Calderdale, the proportion was marginally lower, at 7.4% (employment of around 7,000). These figures indicate that tourism in Calderdale is no more important to the local economy than is the case for Yorkshire and the Humber and England as a whole.

Drivers of Tourism and Key Attractions

15.3.19 The main goal of CMBC's Visitor Economy Strategy 2024-2029[347] is to "attract more and longer visits to boost the local economy and create more jobs".

15.3.20 The Visitor Economy Strategy identifies eight themes in the Calderdale tourism product:

- "Active: Our Pennine areas offer sustainable activities for visitors and locals. Walking, cycling, riding and climbing and our waterways have recreational and boating opportunities;
- LGBTQ+: A strong reputation as an LGBTQ+ destination – largely built on the Hebden Bridge area's bohemian vibe and the profile of Anne Lister;
- Discovery: A strong theme – The Piece Hall, Shibden Hall & Anne Lister, Bankfield Museum, Calderdale Industrial Museum, Heptonstall Museum, Halifax Minster, Dean Clough Mill and the surrounding area;
- Performance and Events: Live performance and events are a strong motivation. The Piece Hall supported by Square Chapel Arts, several theatres. music venues, Brighouse 1940's events, Hebden Bridge Vintage Weekend;
- Film and screen: Our film and screen success in recent years has generated interest in Calderdale and boosted visits, particularly related to Happy Valley locations;
- Family: Notably Eureka! which has a regional pull but there are several smaller attractions / events and Calderdale Industrial Museum;
- Social: Eating out and/or a night out. Hebden Bridge is a destination for social tourism and Halifax's night time economy has a pull beyond Calderdale; and

[346] ONS (2025), Business Register and Employment Survey 2023.
[347] Calderdale Council (2024), Calderdale Visitor Economy Strategy 2024-2029.

- Easy weekend: Our location and distinctive landscape and heritage and the surrounding areas, bring short breakers looking for easy relaxation. Nature and outdoors, health and wellbeing."

15.3.21 Although the Visitor Economy Strategy, makes no reference to the Brontes, it is noted that the Proposed Development is located a few km from Haworth and Oxenhope which are the heart of Bronte Country. The novels of the Brontes were inspired by the surrounding moorland including the Bronte Waterfalls and Bronte Bridge and their former home has become the Bronte Parsonage Museum, which welcomes over 70,000 visitors each year.

Receptors Identified

15.3.22 There are number of receptors that have been identified. These will apply to development and construction and to operations and maintenance phases and include:

- the economy of Calderdale;
- the economy of Yorkshire and the Humber;
- the UK economy;
- the Calderdale tourism economy, in particular the tourism assets relevant to the eight themes in the Calderdale tourism product; and
- the local communities in the vicinity of the Proposed Development.

15.4 Environmental Measures

15.4.1 Consideration will be paid to the opportunity to introduce environmental measures (and mitigation) that will help to avoid or reduce the potential for an adverse significant effect to occur. In accordance with Schedule 4(7) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset (where appropriate) likely significant effects. Specific environmental measures relevant to socio-economics and tourism will be identified and will be considered as part of the assessments (i.e. the assessments of likely significant effects have been undertaken with the inclusion of the environmental measures, as these measures will form part of the Proposed Development). There will be opportunities to maximise socio-economic and tourism benefits (see Section 15.7).

15.5 Scope of the Assessment

Consultation Undertaken to Date

Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

15.5.1 As discussed in **Chapter 1: Introduction**, under the Town and Country Planning Act 1990[348], in July 2023, an EIA scoping request was submitted to CMBC, which was a Scoping Report in request for a Scoping Opinion for a proposed wind farm development and associated infrastructure at the Site, including cable connection. Table 15-6 presents the details of the Scoping Opinion received from CMBC relevant to socio-economics and tourism and confirms if the opinion is considered within the proposed scope of assessment (as set out below) or if it is considered to be scoped out of the technical assessment, with details provided in Table 15-6.

15.5.2 Similarly, Table 15-7 summarises other Consultation Responses relevant to socio-economics and tourism and confirms whether they will be considered within the proposed scope of assessment (as set out below) or if they are considered to be scoped out of the technical assessment.

Table 15-6: Calderdale Metropolitan Borough Council Scoping Opinion

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
CMBC	A tourism and recreation assessment is required to demonstrate how the proposal would impact on the local economy during each phase of development and whether there would be any lasting reputational impacts arising from the proposal. The assessment should look at the local economy of the surrounding towns and villages, as well as the impacts on the economies of Calderdale and surrounding affected Local Authority areas, particularly Bradford and its relationship with the Bronte cultural landscape, Yorkshire and the Humber, and the UK. Impacts on the usability and desirability of national trails which cross and run in the vicinity of the	A tourism assessment will be included and will consider the impact of the Proposed Development on tourism assets including Bronte Country and the national trails which cross and run in the vicinity of the site, including the Pennine Way.

[348] UK Government (1990) Town and Country Planning Act 1990

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
	site, including the Pennine Way, should also be included in the assessment.	
	The socio-economic impact assessment scope should not be limited to the proposal's impacts within Calderdale, but also within adjacent Local Authority areas affected by it. Furthermore, the scope of the assessment should not be limited to construction and operational phases but should also include decommissioning and site restoration given the likely socio-economic impacts of this phase approximately 35 years' after construction. The socio-economic assessment should also include assessment of the direct and indirect impacts of the proposal on fuel poverty and the cost of living, the health impacts of people living and working in and around the site during each phase of development, and consideration of shared/community ownership of the infrastructure assets.	The socio-economic assessment will consider impacts in Calderdale and in the wider Yorkshire and the Humber region (which includes adjacent Local Authority areas). It is proposed that the decommissioning phase is scoped out of the socio-economics assessment, as described in Section 15.9. The assessment will consider impacts on communities, including fuel poverty and community empowerment.
	CMBC's Climate and Environment Team highlighted the potential of community ownership and community benefit funds to deliver significant benefits.	The assessment will consider impacts on the local economy that could be supported by any community funding and/or shared ownership proposals.

Table 15-7: Other Consultation Responses

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
National Trust	We welcome that the role of the tourism sector in Calderdale's economy, with consideration of attractions and recreation assets such as trails, in the immediate vicinity of the proposed development and the impacts on tourism is scoped into the EIA. There is no information provided on timeline for construction and there is likely to be a significant period when recreational users may be deterred from visiting the area. We would want to understand what mitigation could be provided in these circumstances. Temporary impacts both during construction and in the operation phase need to be scoped into the EIA.	A tourism assessment will be included and will consider the impact of the Proposed Development on tourism assets during the construction and operational phases, including whether any mitigation may be necessary.
Wadsworth Parish Council	Whilst the current approach is reasonable, there needs to be an immediate acceptance of the global importance of Bronte Country near Haworth.	A tourism assessment will be included and will consider the impact of the Proposed Development on tourism assets including Bronte Country.
Upper Calderdale Wildlife Network	Consideration of how wildlife tourism could be impacted. Consideration on potential impacts on tourism should include impacts on the Pennine Bridle Way and Pennine Way.	A tourism assessment will be included and will consider the impact of the Proposed Development on tourism assets including the role of wildlife tourism and national trails.

15.6 Proposed Approach to the ES

Assessment Methodology

Further Baseline Data

15.6.1 The analysis of socio-economics and tourism baseline conditions set out in this scoping report will be updated to take account of data available at the time of preparing the Environmental Statement.

Economic Effects (Development and Construction and Operation and Maintenance)

15.6.2 In order to assess the magnitude of socio-economic effects, the level of activity/employment supported during the development and construction and operation and maintenance phases will be estimated. The method to assess the socio-economic effects will be based on industry best practice.

15.6.3 An economic impact analysis will be undertaken using the methodology developed by BiGGAR Economics, which has been used to assess over 150 onshore wind farms across the UK, and builds on case study evidence from across the UK. The assessment will consider potential direct and indirect socio-economic effects of each of the elements of the Proposed Development.

15.6.4 Government and industry reports will be used to determine the expected capital and operational expenditure associated with the Proposed Development, as well as the breakdown of expenditure by different contracts (e.g. turbine, balance of plant). An assumption will then be made based on the share of each type of contract that can be secured in Calderdale, in Yorkshire and the Humber and the UK. This increase in turnover will then be used to estimate the economic impact associated with the Proposed Development in each study area.

Tourism Effects

15.6.5 In order to assess effects on tourism, the features that make the local area distinctive and attractive to visitors (such as the themes in the Calderdale tourism product identified in the Visitor Economy Strategy 2024-2029[349]) will be identified. The potential impact of the Proposed Development on those key features will then be assessed.

Cumulative Effects

15.6.6 Cumulative effects will be assessed in line with the methodology set out in **Chapter 3: Approach to EIA**, which accords with the Planning Inspectorate's Advice on

[349] Calderdale Council (2024), Calderdale Visitor Economy Strategy 2024-2029.

Cumulative Effects Assessment. A long list of existing, consented, and proposed developments will be agreed with the relevant local planning authorities prior to undertaking the assessment. The certainty of these developments will be determined using the tiered approach recommended by PINS. For each environmental topic, the potential Zone of Influence (ZoI) of the Proposed Development during construction, operation (including maintenance), and decommissioning will be identified. The outcomes of the cumulative effects assessment will be reported within the Environmental Statement.

Assessment of Effects

15.6.7 If an effects assessment is required, this will be based on assessing the sensitivity of an economy/tourism asset to change and then assessing the potential magnitude of change associated with the Proposed Development.

15.6.8 The sensitivity of an economy is linked to how it absorbs change. To consider the sensitivity of an economy, or a sector within that economy, it is necessary to consider both the resilience and agility of the economy. There are several factors that contribute to an assessment of resilience and agility including the scale of the economy, the diversity of sectors in the economy, the level of economic activity, the level of skills and education and the level of economic potential from utilising capital (natural, human, social, economic). The criteria for assessing the sensitivity of an economy are set out in Table 15-8.

Table 15-8: Definition of Terms Relating to the Sensitivity of the Receptor - Economics

Sensitivity Level	Definition
High	A highly (major) sensitive economy will not be able to absorb changes without fundamentally altering its present character or value. Factors that would contribute to an economy being considered of high sensitivity include: - the economy is particularly reliant on a single sector; - the number of jobs in the economy has been declining over multiple years; and - the share of people with no qualifications is significantly above the average for the wider national economy.
Medium	An economy with medium sensitivity has a moderate capacity to absorb changes without fundamentally altering its present character or value, however it would be less resilient than the wider economy. Factors that would contribute to an economy being considered of medium sensitivity include:

Sensitivity Level	Definition
	- the economy is particularly reliant on a small number of sectors; - the number of jobs in the economy has grown less than the wider national economy; and - the share of people with no qualifications is above the average for the wider national economy
Low	A low (minor) sensitive economy is tolerant of changes without fundamentally altering its present character or value. Factors that would contribute to an economy being considered of low sensitivity include: - most sectors of the economy are well represented; - the number of jobs in the economy has grown in line with the wider national economy; and - the level of educational attainment is in line with the wider national economy
Negligible	An economy with negligible sensitivity is very agile and will be able to accommodate changes without affecting its character or overall value. Factors that would contribute to an economy having negligible sensitivity include: - the economy is well balanced between sectors; - the number of jobs in the economy has grown at a quicker rate than the wider national economy; and - the share of people with no qualifications is below average for the wider national economy.

15.6.9 The sensitivity of a tourism asset is determined by how reactive visitors, or users, of this asset are to a change in the environment. The sensitivity of these assets will also depend on the ability of the asset to react to any change. Assets that provide a fixed offering, such as a monument or nature-based attraction, will be, other things remaining equal, more sensitive to change than, for example, a tourism business than can make changes what it offers to visitors. The criteria for assessing the sensitivity of tourism assets of an economy are set out in Table 15-9.

Table 15-9: Definition of Terms Relating to the Sensitivity of the Receptor – Tourism Assets

Sensitivity Level	Definition
High	A tourism asset with a high sensitivity will not be able to tolerate or adapt to impacts as these will result in a fundamental change

Sensitivity Level	Definition
	in visitor behaviour. Factors that will contribute to a tourism asset being considered of high sensitivity include: - being dependent on a single environmental condition to attract or accommodate visitors; and - being unable to adapt or adjust in response to changes in visitor behaviour.
Medium	A tourism asset with a medium sensitivity will have limited capacity to tolerate or adapt to impacts as these will result in a moderate change in visitor behaviour. Factors that will contribute to a tourism asset being considered of medium sensitivity include: - being influenced by a single environmental condition to attract or accommodate visitors; and - having a limited ability to adapt or adjust in response to changes in visitor behaviour.
Low	A tourism asset with a low sensitivity will have the ability to tolerate or adapt to impacts as these will result in an incidental change in visitor behaviour. Factors that will contribute to a tourism asset being considered of low sensitivity include: - environmental conditions have a minor influence on the ability of the asset to attract or accommodate visitors; and - being able to adapt or adjust the asset in response to changes in visitor behaviour.
Negligible	A tourism asset with a negligible sensitivity will be resistant to changes in environmental factors. Factors that will contribute to a tourism asset being considered of negligible sensitivity include: - environmental conditions have a negligible influence on the ability of the asset to attract or accommodate visitors; and - having substantial ability to adapt or adjust the asset in response to changes in visitor behaviour.

15.6.10 The criteria for defining economic impact magnitude are outlined in Table 15-10. Each considers the spatial extent, duration, frequency and reversibility of impact when determining the magnitude. Between 2000 and 2023, the average level of Gross Domestic Product (GDP) per capita growth in the UK was 1% per annum[350]. The magnitude of any change in an economy should be considered within this context and in relation to changes in the levels of economic activity.

[350] International Monetary Fund (2025), GDP and GPD per capita (UK), 2000 - 2023

Table 15-10: Definition of Terms Relating to the Magnitude of Economic Impacts

Magnitude Level	Definition
High	An impact will be considered to have a high magnitude if it was equivalent to all the typical economic growth per capita. Specifically, for a sector in the socio-economics study areas: - peak annual GVA impact is greater than, or equal to, 1% of the economy or sector; or - peak employment supported is greater than, or equal to, 1% of the total number of jobs in that area or sector.
Medium	An impact will be considered to have a medium magnitude if it was equivalent to half of the typical economic growth per capita. Specifically: - peak annual GVA impact is greater than, or equal to, 0.5% of the economy or sector; or - peak employment supported is greater than, or equal to, 0.5% of the total number of jobs in that area or sector
Low	An impact will be considered to have a low magnitude if it was equivalent to a quarter of the typical economic growth per capita. Specifically, for each study area: - peak annual GVA impact is greater than, or equal to, 0.25% of the economy or sector; or - peak employment supported is greater than, or equal to, 0.25% of the total number of jobs in that area or sector.
Negligible	An impact will be considered to have a negligible magnitude if it was equivalent to less than a quarter of the typical economic growth per capita. Therefore, for each study area: - peak annual GVA impact is less than 0.25% of the economy or sector; or - peak employment supported is less than 0.25% of the total number of jobs in that area or sector.

15.6.11 The impacts considered in relation to tourism assets are changes to visitor or user behaviour and outcomes. Any environmental impact on these receptors will therefore be assessed against how it will change behaviour compared to the current baseline of visitor or user behaviour of the receptor (Table 15-11).

Table 15-11: Definition of Terms Relating to the Magnitude of Tourism Effects

Magnitude Level	Definition
High	The impact on a tourism asset will be considered of high magnitude if it is predicted to experience a major change in the behaviour of visitors or users.
Medium	The impact on a tourism asset will be considered of medium magnitude if it is predicted to experience a moderate change in the behaviour of visitors or users.
Low	The impact on a tourism asset will be considered of low magnitude if it is predicted to experience a minor change in the behaviour of visitors.
Negligible	The impact on a tourism asset wil be considered of negligible magnitude if it is predicted to experience an undetectable change in the behaviour of visitors.

15.6.12 When sensitivity and magnitude are combined (Table 15-12), the significance of effect will be assessed. Major and moderate effects will be considered significant in the context of the EIA Regulations.

Table 15-12: Determining the Significance of Effects

	Magnitude			
Sensitivity	Negligible	Low	Medium	High
Negligible	Negligible	Negligible or Minor	Negligible or Minor	Minor
Low	Negligible or Minor	Negligible or Minor	Minor	Minor or Moderate
Medium	Negligible or Minor	Minor	Moderate	Moderate or Major
High	Minor	Minor or Moderate	Moderate or Major	Major

15.7 Proposed Mitigation and Enhancement

15.7.1 Proposed mitigation measures will depend on the findings of the assessment. However, there will be opportunities to maximise socio-economic and tourism benefits.

15.7.2 During the assessment, consideration will be given to maximising the net socio-economic benefits of the Proposed Development. This is planned to be done with reference to the guidance published by Scottish Renewables[351]. Whilst this guidance has been developed in Scotland, it provides a reference point for best practice maximising benefits that can be applied in Calderdale and the wider Yorkshire and the Humber region.

15.7.3 The guidance recommends considering four themes: developing the onshore wind supply chain, developing skills, the empowerment of communities and balancing development with environmental protection and enhancement. To assess whether the Proposed Development benefits of a project have been maximised the Scottish Renewables guidance recommends that it is important to consider whether the approach is: place-based, innovative, collaborative, transparent, flexible and deliverable. Each of these features will be considered in the design of proposed mitigation and enhancements.

15.7.4 Proposed mitigation and enhancements identified will be set out in an Outline Employment, Skills and Supply Chain Management Plan submitted with the DCO Application.

15.8 Potential effects

15.8.1 The potential socio-economic effects on the identified study areas will include:

- temporary effects due to expenditure during the development and construction phase (including short-term employment opportunities and Gross Value Added (GVA));
- permanent effects due to expenditure associated with the operation and maintenance of the Proposed Development (including long-term employment opportunities and GVA);
- temporary and permanent effects on the tourism economy (including demand for temporary accommodation); and
- permanent effects on the local economy that could be supported by any community funding and/or shared ownership proposals during the operational phase of the development.

15.8.2 The research finds no evidence of a link between onshore wind energy developments and the tourism sector. The scale of development of onshore wind

[351] Scottish Renewables (2025), Maximising Net Socio-Economic Benefit of Renewable Energy Guidance and Reporting Framework. Available: https://www.scottishrenewables.com/assets/000/004/592/2025.03.18_Maximising_Net_Socio-Economic_Benefit_Reporting_Framework_original.pdf?1742308718

is greater in Scotland than any other nation of the UK and thus, the evidence base for the relationship between onshore wind and tourism is weighted toward Scottish examples.

15.8.3 The most recent research has not found a link between tourism employment, visitor numbers and onshore wind development. A 2021 study[352] included 44 case studies in Scotland and found no evidence of a link between wind farm development and employment in Scotland as a whole, in local authority areas or in the vicinity of these wind farms (15 km radius). Similar results were found in other earlier studies for specific areas in England, such as North Devon and Northumberland.[353]

15.8.4 Nevertheless, the tourism sector is an important contributor to the economy, and so there is merit in considering whether the Proposed Development will have any effect on the tourism economy. The socio-economic and tourism chapter of the Environmental Statement will consider the potential effects that the Proposed Development could have on tourism assets.

15.9 Matters Scoped out of EIA Assessment

15.9.1 It is proposed that the decommissioning phase should be scoped out of the socio-economic and tourism assessment. The works required during decommissioning, and their associated socio-economic and tourism consequences, will be less than during the development and construction phase. Moreover, it is standard practice in socio-economic analysis to discount future costs and benefits to their present values, typically using a discount rate of 3.5%. This means that the value of the costs and benefits of the decommissioning works will have a present value that is substantially lower than development and construction phase works and so will be expected to be negligible in environmental impact assessment terms.

[352] BiGGAR Economics (2021), Wind Farms & Tourism Trends in Scotland: Evidence from 44 Wind Farms. Available: https://biggareconomics.co.uk/wp-content/uploads/2021/11/BiGGAR-Economics-Wind-Farms-and-Tourism-2021.pdf

[353] Mordue, T., Moss, O., and Johnston, L. (2020) The impacts of onshore windfarms on a UK rural tourism landscape: objective evidence, local opposition, and national politics. Project Report. Northumberland County Council.

16 Human Health

16.1 Introduction

16.1.1 This Chapter of the Scoping Report presents the scope of detailed environmental assessment for Human Health for the Proposed Development. Specifically, this section of the Scoping Report presents the policy and legislative context, the approach to collecting baseline data relevant to this scoping chapter and an overview of the relevant baseline conditions within the Site and surrounding area. It concludes by setting out the scope of assessment including, with justification, those effects that are proposed to be scoped in or out for detailed assessment and concludes by outlining the method that will be used to undertake the detailed environmental assessment.

16.2 Review of Policy, Legislation and Relevant Guidance

16.2.1 Legislation, planning policy and guidance relating to Human Health, and relevant to the Proposed Development comprises:

Legislation

- Health and Safety at Work Act 1974
- Health and Care Act 2022
- Fit for the future: 10 Year Health Plan for England (Published July 2025)
- Other legislation found in other aspect chapters, such as the Environmental Act 2021, will be considered where necessary

National Planning Policy

- Overarching National Policy Statement for Energy (EN-1) (2023)[354] – Section 4.4 sets out the assessment principles for health.
- Draft Overarching National Policy Statement for Energy (EN-1) (2025)[355]
- Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (2025)[356];

[354] https://www.gov.uk/government/publications/overarching-national-policy-statement-for-energy-en-1
[355] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[356] https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements/draft-national-policy-statement-for-renewable-energy-infrastructure-en-3-accessible-webpage

- National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023)[357];
- Draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (2025)[358] provides the framework for decisions on nationally significant infrastructure projects related to electricity networks; and
- National Planning Policy Framework (NPPF) (updated February 2025)[359] Paragraph 96c states that decisions should aim to enable and support healthy lifestyles, especially where this would address identified local health and well-being needs. Paragraph 98b states that decisions should take into account and support the delivery of local strategies to improve health, social and cultural well-being for all sections of the community.

Local Planning Policy

- The Calderdale Local Plan 2018/19 – 2032/33 was adopted in 2023[360]. The policies and land allocations in the Local Plan enable the delivery of employment land to support new and existing businesses, economic growth and job creation up to 2033. Section 15 of the Local Plan sets out guidance for planning for Health and Wellbeing.
- The Calderdale Joint Strategic Needs Assessment (JSNA)[361] identifies the priorities for action to improve health and wellbeing and reduce health inequalities within the borough. To achieve the aim of enabling everyone to live a larger life, a priority goal has been set for each life stage. The JSNA was used to develop the Calderdale Health and Wellbeing Strategy 2022-2027[362], which sets out these specific goals.
- Leeds City Council - Core Strategy (as amended by the Core Strategy Selective Review 2019) (adopted 2019)[363]

[357] Department for Energy Security & Net Zero (2023) National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147382/NPS_EN-3.pdf
[358] https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements/draft-national-policy-statement-for-electricity-networks-infrastructure-en-5-accessible-webpage
[359] Ministry of Housing Communities & Local Government (2024) National Planning Policy Framework (December 2024) Updated online February 2025. Available: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf
[360] https://new.calderdale.gov.uk/planning-and-building-control/planning-policy/local-plan
[361] Calderdale Borough Council (living web document) Joint Strategic Needs Assessment. Available at https://new.calderdale.gov.uk/health-and-social-care/jsna
[362] Calderdale Borough Council (2022) Health and Wellbeing Strategy 2022-2027. Available at https://new.calderdale.gov.uk/sites/default/files/2023-07/Health-and-wellbeing-strategy-2022-2027.pdf
[363] Leeds City Council, 2019. Available at: https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/core-strategy-introduction

- Rochdale Core Strategy (adopted October 2016) [364]
- Local Plan for the Bradford District – Core Strategy Development Plan Document (adopted 2017)[365]
- Pendle Borough Council Core Strategy (adopted December 2015)[366]
- Rossendale Local Plan 2019 - 2036[367]
- Burnley's Local Plan 2018 [368]

National Guidance

- Planning Practice Guidance (2024)[369] – Provides further guidance on promoting health and safe communities and mentions health impact assessments as a useful tool to use where there are expected to be significant impacts. Several Guidance are relevant for this assessment, namely: Air Quality[370], Climate Change[371], Environmental Impact Assessment[372], Flood Risk and Coastal Change[373], Healthy and Safe Communities[374], Land affected by Contamination[375], Natural Environment[376], Noise[377], Open space, sports and recreation facilities, public rights of way and local green space[378], Renewable and Low Carbon Energy[379], and Travel Plans, Transport Assessments and Statements[380].
- IEMA Determining Significance for Human Health In Environmental Impact Assessment (2022)[381] – Provides guidance on consideration of health as a topic within an EIA.

[364] Rochdale Borough Council, 2016. Available at: https://www.rochdale.gov.uk/downloads/download/266/core-strategy
[365] City of Bradford Metropolitan District Council, 2017. Available at: https://www.bradford.gov.uk/planning-and-building-control/planning-policy/core-strategy-dpd/
[366] Pendle Borough Council, 2015. Available at: https://www.pendle.gov.uk/info/20072/planning_policies/275/development_plan_documents/2
[367] Rossendale Borough Council Available at: https://www.rossendale.gov.uk/local-plan/adopted-local-plan
[368] Burnley Borough Council Available at: https://burnley.gov.uk/wp-content/uploads/2022/04/Burnleys-Local-Plan-Adopted-Version-Final-With-erratum-28-Sep-2018.pdf
[369] Ministry of Housing, Communities & Local Government, (2024), Planning Practice Guidance
[370] https://www.gov.uk/guidance/air-quality--3
[371] https://www.gov.uk/guidance/climate-change
[372] https://www.gov.uk/guidance/environmental-impact-assessment
[373] https://www.gov.uk/guidance/flood-risk-and-coastal-change
[374] https://www.gov.uk/guidance/health-and-wellbeing
[375] https://www.gov.uk/guidance/land-affected-by-contamination
[376] https://www.gov.uk/guidance/natural-environment
[377] https://www.gov.uk/guidance/noise--2
[378] https://www.gov.uk/guidance/open-space-sports-and-recreation-facilities-public-rights-of-way-and-local-green-space
[379] https://www.gov.uk/guidance/renewable-and-low-carbon-energy
[380] https://www.gov.uk/guidance/travel-plans-transport-assessments-and-statements
[381] Pyper, R., Waples, H., Beard, C., Barratt, T., Hardy, K., Turton, P., Netherton, A., McDonald, J., Buroni, A., Bhatt, A., Phelan, E., Scott, I., Fisher, T., Christian, G., Ekermawi, R., Devine, K., McClenaghan, R.,

- IEMA Effective Scoping of Human Health in Environmental Impact Assessment (2022)[382] – Provides guidance on proportionate scoping of Human Health within an EIA.

Local Guidance

- The Turbine Area falls within Calderdale Borough Council, which in turn lies within the West Yorkshire Combined Authority area. Neither Calderdale Borough Council nor West Yorkshire Combined Authority have specific local HIA guidance.
- Section 15 of the Calderdale Local Plan[383] sets out guidance for planning for Health and Wellbeing.

16.3 Existing Baseline Conditions

16.3.1 This section of the Scoping Chapter for Human Health sets out the known baseline conditions at this stage of the project. It is noted that further data and evidence collation is proposed to inform the technical assessment for the Environmental Statement (see details and scope of the further baseline data below). This will be finalised once the study area has been fully defined (see next section).

Study Area

16.3.2 The Turbine Area is located in Calderdale, West Yorkshire, near the border with Bradford. It is north of Hebden Bridge, to the southeast is Halifax and to the west is Burnley. The Turbine Area is currently used as a grouse moor and farmland. The locale is predominantly peatland with boggy areas but there are sections of agricultural and forested areas. The agricultural areas are classed as Grade 5 (very poor).

16.3.3 The study area will include the Cable Corridor Search Areas. These areas are still being refined, and hence at this stage the study area incorporates indicative Cable Corridor Search Areas which define the areas that the cable corridor could fall into. Currently four different cable routes are being considered. Based on these options, the cable corridor could also run through the Local Authority areas of: Bradford, Leeds, Rochdale, Rossendale and Burnley. As the design is refined, the Cable Corridor Search Areas will be further defined within each topic assessment, and

Fenech, B., Dunne, A., Hodgson, G., Purdy, J., Cave, B. (2022) IEMA Guide: Determining Significance for Human Health in Environmental Impact Assessment.

[382] Pyper, R., Lamming, M., Beard, C., Waples, H., Birley, M., Buroni, A., Douglas, M., Turton, P., Hardy, K., Netherton, A., McClenaghan, R., Barratt, T., Bhatt, A., Fenech, B., Dunne, A., Hodgson, G., Gibson, G., Purdy, J., Cave, B. (2022) IEMA Guide: Effective Scoping of Human Health in Environmental Impact Assessment.

[383] Calderdale Borough Council (2023) Calderdale Local Plan Written Statement. Available at : https://calderdale-consult.objective.co.uk/kse/event/37273/section/s1662117434213#s1662117434213

therefore the Health Impact Assessment (HIA) in the ES will take these assessments into account for impacts on Human Health.

16.3.4 The study area will include the Search Areas for Site Access. This expands the Local Authorities covered by the study area to also include Pendle Local Authority area.

16.3.5 The study area for health will be determined by reference to the study areas for other key disciplines. A key issue in terms of health will be the Landscape and Visual effect of the Development. The **Chapter 10: Landscape and Visual**, applying relevant guidance, suggests a 45km radius will be a suitable study area. For other health determinants such as noise and air pollution, their study area (i.e. that which may have effects), will be smaller and hence within the 45km radius. Therefore, the maximum extent of the study area will be dictated by the LVIA and be a 45km radius from the Turbine Area. It should be noted that the economic effects may be wider than 45kms in terms of employment, but it is considered that any specific positive or negative health effects will occur within a 45km radius of the Turbine Area.

16.3.6 In addition, the study area will encompass the Cable Corridor Search Areas and Access Corridors, including receptors alongside roads that could be used by construction traffic as well as a 2km buffer zone alongside the cable corridor. Any health effects from noise, air quality, hydrology, hydrogeology, etc, will be contained in this area.

Approach to the Collection of Baseline Data for Scoping

16.3.7 For the purposes of the scoping report, baseline health conditions have been established by referencing public health data for Calderdale (location of the Turbine Area) and Bradford, Rochdale, Burnley, Rossendale, Leeds and Pendle (areas in which Cable Corridor Search Areas and Search Area for Site Access lie) by the Office for Health Improvement and Disparities (OHID). Reference is also made to the Calderdale Joint Strategic Needs Assessment and Health and Wellbeing Strategy, given this is the location of the Turbine Area.

16.3.8 Baseline data was collected using the following sources of data: Fingertips Health Profiles[384]. No project specific surveys have been undertaken. The baseline data will be refined for the PEIR.

[384] https://fingertips.phe.org.uk/profile/health-profiles

Relevant Baseline Conditions

16.3.9 Relevant health indicators for Calderdale, Bradford, Rochdale, Leeds, Burnley, Rossendale, Pendle and England as a comparator, are set out in Table 16-1 below using the latest OHID public health data[385].

16.3.10 The health of people in each Local Authority area is varied compared with the England average. It shows that life expectancy is lower across all areas than in England overall. Of particular note is a higher than national average deprivation score across all areas, which indicates a greater risk of health related issues.

16.3.11 Relevant demographic and behavioural indicators for the relevant Local Authority areas and England as a comparator, are also provided in Table 16-2 below. This highlights that the majority of the Local Authority areas (all except Leeds) have a higher proportion of younger population, with a higher percentage of people under 18 than in England overall. This vulnerable group may be at greater risk of health-related issues. Socio-economic indicators for ill-health risk in children like children in low income families are also more prevalent in all relevant Local Authorities than for the England average.

Table 16-1 Health indicators (from Fingertips database)

Indicator	Calderdale	Bradford	Rochdale	Leeds	Burnley	Rossendale	Pendle	England
Male life expectancy (years)	78.1	77.0	77.7	78.6	77.7	77.5	77.6	79.3
Female life expectancy (years)	82.5	81.5	81.2	82.5	80.2	81.2	81.7	83.2
Under 75 Mortality rate from cardiovascular diseases (per 100,000 people)	74.3	116.1	99.8	77.8	119.7	97.4	107	77.4

[385] From Local Authority Health Profile published in 2018 Fingertips | Department of Health and Social Care

Emergency hospital admissions for intentional self-harm (per 100,000)	106.6	90.3	120.3	88.0	142.4	82.2	80.9	117.0
Children in absolute low income families	18.8%	31.2%	28.0%	17.9%	30.7%	19.1%	35.8%	15.6%
Deprivation Score (IMD 2019)	26.4	34.7	34.4	27.3	37.8	24.1	30.7	21.7

Table 16-2 Demographic and behavioural indicators (based on data published in 2018)

Indicator	Calderdale	Bradford	Rochdale	Leeds	Burnley	Rossendale	Pendle	England
Percentage of population under 18	22.0	25.2	24.5	21.0	22.9	21.5	24.0	21.3
Percentage of population aged 65+	18.1	15.4	16.5	15.7	18.1	19.5	18.5	17.9
Smoking prevalence aged 18+ (percentage)	17.1	14.4	21.4	11.1	n.d.	21.8	12.9	14.9
Excess Weight in	62.5	69.7	72.2	63.9	70.4	70.1	68.4	61.3

adults aged 18+ (percentage)								

n.d. = No data available.

16.3.12 Calderdale Council has a Joint Strategic Needs Assessment (JNSA)[386] which identifies the priorities for action to improve health and wellbeing and reduce health inequalities. The JSNA covers different life stages (starting well, developing well, living and working well and ageing well), as well as providing the 'building blocks of good health'. This latter section includes a number of relevant topics including air quality, flooding, safer active travel and the health benefits of access to natural environments[387]. These issues will be incorporated into the health chapter of the Environmental Statement.

16.3.13 The Calderdale Health and Wellbeing Strategy for 2022-2027[388] incorporates key goals for each of the different life stages outlined in the JSNA, as well as the commitments of the Calderdale Health and wellbeing board partner organisations, communities and residents.

Receptors Identified

16.3.14 Key receptors to be considered will cover local residents and workers. Specifically identified in the assessment will be the vulnerable or priority groups identified through the baseline analysis, as well as the general population in the aforementioned study areas. The Effective Scoping of Human Health in EIA[389] outlines that '*Relevant population groups for each scoped in wider determinant of health should consider both geographic populations and vulnerable sub populations'*. Sub populations with vulnerability as listed as

- Young age
- Older age
- Income or unemployment
- Health status (ie those with existing poor physical or mental health)
- Social disadvantage

[386] https://new.calderdale.gov.uk/health-and-social-care/jsna
[387] https://new.calderdale.gov.uk/health-and-social-care/jsna/building-blocks-of-good-health
[388] https://new.calderdale.gov.uk/sites/default/files/2023-07/Health-and-wellbeing-strategy-2022-2027.pdf
[389] https://www.iema.net/media/s35fughe/iema-eia-guide-to-effective-scoping-of-human-health-nov-2022.pdf

- Access or geographic factors (ie relevant subgroups experiencing barriers in access to services, amenities or facilities).

16.3.15 In addition, Public Right of Way (PROW) users, including people travelling along the Pennine Way and Pennine Bridleway National Trails will be considered.

16.3.16 These groups will be considered sensitive receptors for the purpose of the assessment. The assessment will also draw on receptors identified in the technical assessments of other ES chapters as appropriate.

16.4 Environmental Measures

16.4.1 Consideration will be paid to the opportunity to introduce environmental measures (and mitigation) that will help to avoid or reduce the potential for an adverse significant effect to occur. In accordance with Schedule 4(7) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset (where appropriate) likely significant effects. Specific environmental measures relevant to Human Health will be identified and will be considered as part of the assessments (i.e. the assessments of likely significant effects have been undertaken with the inclusion of the environmental measures, as these measures will form part of the Proposed Development). At this stage of the project, the following environmental measures will be implemented and included within the Proposed Development.

Construction

16.4.2 An outline Construction Environment Management Plan (oCEMP) will document the measures to minimise the environmental impacts of the construction phase, including those relevant to health (i.e. minimising air quality, visual and noise impacts). An oCEMP will be submitted as part of the DCO Application.

16.4.3 A Construction Traffic Management Plan (CTMP) will document how risks from construction traffic will be minimised (including environmental risks) which in turn will reduce health effects from traffic. An outline CTMP will be submitted as part of the DCO Application.

16.4.4 An outline Employment Skills and Supply Chain Management Plan (oESSMP) will be developed to maximise opportunities to promote economic benefits in relation with skills, supply chains, and employment in the local region, which is required to deliver the entirety of the Proposed Development. This should maximise any health benefits from economic benefits to the area, through maximising additional employment skills within the local population.

16.4.5 An outline Public Right of Way Management Plan (oPROWMP) will consider how to operate, in terms of managing both user safety and accessibility on PRoW and proposed Permissive Paths, during the construction, operation and decommissioning of the Proposed Development.

Operation and Maintenance

16.4.6 An outline Landscape and Ecology Management Plan (oLEMP) will also be developed to ensure measures which minimise the impacts of the development on landscape, which should reduce health effects of any landscape changes. An oLEMP will be submitted as part of the DCO Application.

16.4.7 An outline Operational Environmental Management Plan (oOEMP) will be developed to minimise environmental impact of the operational phase, including those relevant to health (i.e. minimising air quality, visual and noise impacts). An oOEMP will be submitted as part of the DCO Application.

Decommissioning

16.4.8 An outline Decommissioning Environmental Management Plan (oDEMP) will be developed to minimise environmental impact of the decommissioning phase, including those relevant to health (i.e. minimising air quality, visual and noise impacts). An oDEMP will be submitted as part of the DCO Application.

16.5 Scope of the Assessment

Consultation Undertaken to Date

Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

16.5.1 As discussed in **Chapter 1: Introduction**, under the Town and Country Planning Act 1990[390], in July 2023, an EIA scoping request was submitted to CMBC, which was a Scoping Report in request for a Scoping Opinion for a proposed wind farm development and associated infrastructure at the Site, including cable connection. Human Health was not directly included in the Scoping Report, nor Scoping Opinion, although the determinants of health effects have been included, and have been taken into account within this chapter. For example, CMBC commented that noise should be scoped in, including the potential impacts on health and wellbeing of local residents and other users of the site. Likewise, the scoping opinion included that a socio-economic assessment should include the health impacts of people living and working in and around the site. The Other Environmental Matters Chapter also included details on other potential health determinants for consideration.

[390] UK Government (1990) Town and Country Planning Act 1990 [Online] Available at: https://www.legislation.gov.uk/ukpga/1990/8/contents

Effects Scoped Out from Detailed Assessment

16.5.2 Table 16-3, which is based on the health determinants listed in the IEMA Guidance on Effective Scoping of Human Health in EIA[391] presents the Human Health matters that are unlikely to give rise to significant adverse effects and, therefore, are proposed to be scoped out from detailed assessment.

16.5.3 Table 16-3 considers potential effects during the construction and operation phase. It is proposed that potential effects during the decommissioning phase are scoped out of the assessment, in line with the scoping of the supporting chapters which have all scoped out consideration of effects during decommissioning (i.e. air quality, access, traffic and transport, biodiversity, heritage, noise, landscape and visual, and socio-economic), other than the health determinants for flood risk and water quality which are scoped in (which is in line with the **Chapter 8: Hydrology, Hydrogeology, Geology and Peat**).

Table 16-3 Effects Scoped Out from the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped Out
Health related behaviours – risk taking behaviours	Health not covered directly in the scoping opinion, so no specific previous agreement	During all phases, all people based on the Site will be professional workers and all contractors and operators on site will have strict health and safety protocols enforced. These policies and practices can cover issues including alcohol, cigarettes, non-prescribed drugs, problem gambling and communicable illness.
Health related behaviours – diet and nutrition (including access to health affordable food)	Health not covered directly in the scoping opinion, so no specific previous agreement	The proposal will result in the long-term reduction in agricultural land in the Turbine Area, but this land is in poor soil classification. There may be some effects related to the Cable Corridor and Site Access Search Areas but which will be short-term and temporary. Hence it is highly unlikely to affect the availability and affordability of food locally and hence this determinant is scoped out.

[391] https://www.iema.net/media/s35fughe/iema-eia-guide-to-effective-scoping-of-human-health-nov-2022.pdf

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped Out
Social environment - Relocation	Health not covered directly in the scoping opinion, so no specific previous agreement	The Proposed Development does not currently involve any widespread population displacement or relocation and hence this potential effect is screened out. Should this change, the Health Chapter will cover the health effects of any relocation scheme.
Social environment - Community safety	Health not covered directly in the scoping opinion, so no specific previous agreement	All contractors and operators on Site will enforce strict health and safety protocols and working practices to minimise injury risk for both the workforce and the general public, as well as policies on modern slavery and discrimination. Risks and associated proposed mitigation will be reported in the ES where appropriate. Safe working practices will be secured through a CEMP (an oCEMP will be submitted as part of the DCO application). The potential for widespread actual or perceived crime that could affect population health is considered unlikely.
Economic Environment – Regeneration	Health not covered directly in the scoping opinion, so no specific previous agreement	The Proposed Development does not involve the demolition or rebuilding of any deprived neighbourhoods.
Bio-physical environment - Land quality and use	Health not covered directly in the scoping opinion, so no specific previous agreement	The Proposed Development will involve excavation works during the construction phase at both the Turbine Area and within the Cable Corridor Search Areas. An Agricultural Land Assessment has been scoped out of the ES. Although the construction and operational phase will take some agricultural land out of use it is, however, considered unlikely that this

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped Out
		will have any significant effects on health, particularly as it is low grade agricultural land within the Turbine Area.
Bio-physical environment - Air quality (operation)	Although the scoping opinion does not cover health specifically, this approach is consistent with the scoping opinion in terms of air quality.	Traffic and dust emissions, which could affect air quality, have been scoped out during the operational phase. As such, health effects from air quality are also scoped out during the operational phase.
Institutional and built environment - Built environment	Health not covered directly in the scoping opinion, so no specific previous agreement	The location of the Turbine Area is within a rural setting, and it does not impact on the fabric of buildings where people live and work. As reflected in the IEMA Guidance on scoping tor health for EIA, it is not relevant for risk taking behaviours or unhealthy lifestyles. There is no change to utilities for local communities or social infrastructure, It is therefore considered that quality of the built environment can be scoped out.

Likely Significant Effects Scoped into the Detailed Assessment

16.5.4 Table 16-4 presents the Human Health matters that are likely to give rise to significant adverse effects and, therefore, are proposed to be scoped into the detailed assessment.

Table 16-4 Likely Significant Effects Scoped into the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
Health related behaviours - Physical activity (including	Health not covered directly in the scoping opinion, so no specific	Currently, construction works may temporarily disrupt use of public rights of way (PROW) during construction, and therefore opportunities for physical

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
opportunities for access by walking and cycling)	previous agreement	activity. Any potential physical impacts will be assessed in the Transport and Access chapter with mitigation measures secured to minimise disruption (see **Chapter 12: Access Traffic and Transport**). The Landscape and Visual chapter will also consider the impact on landscape amenity and suggested mitigation which could minimise adverse impacts on how these recreational routes are enjoyed and behavioural use in the operating phase. The Health chapter will report on the assessment of the effect of any changes to the PROWs on the ability for the receptors to undertake physical activity during the construction and operational phase, and the Health chapter will cross-reference to the Transport and Access and the Landscape and Visual chapters where appropriate.
Social environment - Access and connections to local public and key services and facilities	Although the scoping opinion does not cover health specifically, this approach is consistent with the scoping opinion in terms of transport.	Any potential temporary disruptions to access routes during the construction phase will be assessed in the Transport and Access chapter and the Health chapter will cross-reference where appropriate. During the operational phase, any access to public services will also be assessed in the Transport and Access chapter. The Health chapter will report on the assessment of the effect in health terms of any changes to how vulnerable groups access and connect to local services during the construction and operational phase.
Social environment - Transport	Although the scoping opinion does not cover	Construction works may temporarily disrupt use of public rights of way and roads through cable laying or

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
modes, access and connections, as well as links between communities	health specifically, this approach is consistent with the scoping opinion in terms of transport.	movements by heavy goods vehicles. Any potential disturbance and safety impacts will be assessed and reported in the Transport and Access chapter and the Health chapter will cross-reference where appropriate. The Health chapter will set out the effect in health terms of any changes to how members of the local population and vulnerable groups access and connect to other settlements and communities. During operation the Proposed Development is considered unlikely to directly affect transport modes, access and connections, therefore only construction phase effects are scoped in.
Social environment - Access and connections to the natural environment, open space, leisure and play	Although the scoping opinion does not cover health specifically, this approach is consistent with the scoping opinion in terms of transport.	Any potential temporary disruptions to access routes during the construction phase will be assessed in the Transport and Access chapter and cross-referenced where appropriate. The Health chapter will report on the assessment of the impact in health terms of any changes to how vulnerable groups access and connect to the natural environment, open access space, leisure and play opportunities. The location of the Proposed Development is open access land. Hence during operation the development will reduce access to an area of land, although it is uncertain whether this land is important for access to open space, leisure and play. The impact on landscape amenity and associated enjoyment will be considered in the Landscape and Visual chapter with mitigation measures secured to minimise effects.

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
Social environment - Community identity, culture, resilience and influence	Although the scoping opinion does not cover health specifically, this approach is consistent with the scoping opinion in terms of landscape effects.	The key change in terms of community identity, culture, resilience and influence will be the visual landscape of the area, which will be considered in the Landscape and Visual chapter with mitigation measures secured to minimise effects. The additional effect on the setting of the Bronte countryside, which is being assessed in the Heritage and Socio-Economic chapters, will also be drawn upon. The Health chapter will cross-reference to the Landscape and Visual chapter, and the Heritage chapter, where appropriate. Another key issue is the sense of control within the community and how this can affect anxieties and mental health. Public participation can help mitigate stress and anxiety caused by development, increasing the total welfare (including reducing anxieties) of different interest groups in a community and enabling infrastructure which is more acceptable to communities. The Health chapter will report on the assessment of the impact on mental wellbeing of the receptors, and the preparation of the Development Consent Order application will be informed by an extensive programme of community engagement.
Social environment – social participation, interaction and support	Health not covered directly in the scoping opinion, so no specific previous agreement	The key change will be the visual landscape of the area, which will be considered in the Landscape and Visual chapter with mitigation measures secured to minimise impacts. The additional effect on the setting of the Bronte countryside, which is being assessed in the Heritage and Socio-Economic chapters, will also be drawn upon. This

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
		may impact on opportunities for volunteering and social enterprise and/or opportunities for community participation and interaction and/or community meeting places. The Proposed Development is unlikely to affect social support and social networks; and the ability to provide family support. Hence these elements are scoped out.
Social environment - Housing and access to good quality affordable housing	Health not covered directly in the scoping opinion, so no specific previous agreement	The proposals will not result in widespread the loss or provision of any dwellings – the proposal is considering the acquisition of one building to be taken out of residential use. At this stage it is unclear where the workforce involved in construction or operation of the asset will reside. Hence it is unclear what effect the proposed development may have on housing in the surrounding areas. At this stage it is considered unlikely that the increase in the workforce will impact on housing availability and affordability, but this is not scoped out at this stage.
Economic environment - Employment and income	Although the scoping opinion does not cover health specifically, this approach is consistent with the scoping opinion in terms of socio-economic effects.	The Proposed Development will provide direct and indirect opportunities for employment and higher incomes, which can potentially be particularly beneficial for some vulnerable or priority groups. This will be during all phases of development and outlined in the Socio-Economics chapter, albeit the greatest impacts will be expected during construction. The Health chapter will cross-reference to the Socio-Economics chapter where appropriate. The Health chapter will report on the assessment of the effect

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
		of improving employment opportunities and income on the health of vulnerable groups. The Proposed Development is not expected to significantly affect family structures, roles or relationships, by operating appropriate equal employment policies. The supply chain will also be expected to operate appropriate policies related to equality and health and safety, for both workers and the general population. Working conditions can be appropriately managed through health and safety policies and industry best-practice. As such, these issues will be scoped out.
Economic environment – Education and Training	Health not covered directly in the scoping opinion, so no specific previous agreement	Through all phases of the Proposed Development, there will be opportunities to improve educational and skills attainment of the workforce, and potentially for the public. The Health chapter will report on the assessment of the effect of education and training opportunities on health. Development will not have widespread impact on number of location of dwellings and hence access to local education facilities for residents. Development may have temporary impact on location of place of work for workers involved in construction, and potentially a more permanent effect on a smaller number of workers who will be involved in operation. It is not expected that there will be an effect on schools and educational providers, and these issues will be scoped out.
Economic environment -	Although the scoping opinion	Other local businesses may also benefit during the construction and

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
Local business activity	does not cover health specifically, this approach is consistent with the scoping opinion in terms of socio-economic effects.	operational phases by supplying materials and services. The Socio-Economics chapter will assess the economic effects of the Proposed Development, and the Health chapter will assess the effect in health terms of any changes in business activity. This matter may be scoped out of the Health chapter if the Socio-Economics chapter within the ES indicates no significant change in local business activity. The Health chapter will cross-reference to the Socio-Economics chapter where appropriate.
Economic Environment – Connections to jobs	Health not covered directly in the scoping opinion, so no specific previous agreement	At this stage it is unclear where the workforce involved in construction or operation of the asset will reside. Hence it is unclear what effect the proposed development may have on employment opportunities for local residents, and on travel modes for the expectant workforce. Hence this impact has not been scoped out at this stage.
Bio-physical environment - Climate change mitigation and adaption	Although the scoping opinion does not cover health specifically, this approach is consistent with the scoping opinion in terms of climate change.	The Carbon and Climate Change chapter will set out how the Proposed Development responds to the challenges of climate change which will affect current and future global populations. The Health chapter will cross-reference to the Carbon and Climate Change chapter where appropriate. Embodied carbon and other emissions which can alter the climate are not expected to be of a scale to have a health impact during the construction phase. During the operational phase the renewable energy generated will assist in transitioning towards net zero. The Health chapter will assess how the

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
		contribution towards net zero targets affects the physical and mental health of receptors during the operational phase.
Bio-physical environment - Air quality (construction)	Although the scoping opinion does not cover health specifically, this approach is consistent with the scoping opinion in terms of air quality.	The Air Quality chapter will set out how the Proposed Development will affect local air pollution, including opportunities to contribute to maintaining a good standard of air quality and setting out mitigation measures. The Health chapter will assess the effect of emissions on health of the identified receptors during the construction phase, and will cross-reference to the Air Quality chapter where appropriate.
Bio-physical environment - Noise and vibration	Although the scoping opinion does not cover health specifically, CMBC considered that noise should be included in the ES.	The Noise and Vibration chapter will set out how the Proposed Development affects the existing sound environment and associated impacts during construction, including the proposed grid corridor where applicable, and in operation. The Health chapter will assess the effect of noise on the health of the identified receptors (including mental wellbeing), and will cross-reference to the Noise and Vibration chapter where appropriate. Vibration has been scoped out of the assessment.
Bio-physical environment - Water quality or availability	Health not covered directly in the scoping opinion, although Flood Risk has been scoped in.	The Hydrology, Hydrogeology, Geology & Peat chapter will set out how the Proposed Development affects water resources. Effects on flood risk and water quality have the potential to affect the health of local populations including vulnerable groups. Therefore, these issues have been scoped into the health chapter at all phases of the project including decommissioning.

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
Bio-physical environment – Shadow Flicker	CMBC have indicated in the scoping opinion that a Shadow Flicker Assessment is required.	Although not considered a significant health risk, shadow flicker could potentially increase annoyance. A small percentage of people with epilepsy are sensitive to flashing lights, (although the frequency of flicker from modern turbines is generally below the threshold known to trigger seizures), The Shadow Flicker assessment in the Other Environmental Matters chapter will be cross referenced within the health chapter to ensure health effects of shadow flicker are adequately covered.
Bio-physical environment - Radiation	Health not covered directly in the scoping opinion, so no specific previous agreement	Long-standing exposure limit and health protection guidelines for electric and magnetic fields (EMF), have been developed by the International Commission on Non-Ionizing Radiation Protection and have a high safety margin. The draft National Policy Statement for electricity networks infrastructure (EN-5)[392] refers to the guidelines and asks Applications to show evidence of this compliance as specified in Section 2.10.11. Although the Proposed Development is deemed likely to comply with these guidelines, radiation cannot be scoped out of the assessment at this stage until the assessment is completed.
Institutional and built environment - Wider societal infrastructure and resource	Health not covered directly in the scoping opinion, so no specific previous agreement	The Proposed Development will contribute towards a clean and resilient electricity infrastructure; to generate the energy which society depends on for good population health. A reliable supply of renewable electricity is required in relation to numerous

[392] https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements/draft-national-policy-statement-for-electricity-networks-infrastructure-en-5-accessible-webpage

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
		societal factors such as food production and safety, thermal comfort, healthcare, education, income generation and socialising. As will be outlined throughout the ES, it could provide significant contributions in terms of economic development, climate change mitigation; and protection or enhancement of the natural environment (e.g. biodiversity, access to natural spaces and habitats). The Health chapter will report on the assessment of the effect in health terms of the project's contribution towards wider societal infrastructure and will cross-reference to other ES chapters where appropriate.
Institutional and built environment - Health and social care services	Health not covered directly in the scoping opinion, so no specific previous agreement	The Proposed Development will not result in the major loss or provision of any dwellings and associated population (one dwelling is being considered for acquisition). At this stage it is not clear where the construction and operational workforce will reside, hence it is unclear whether there will be an additional impact on access to healthcare and social care services, either for existing residents or the workforce. Hence, access to health and social care services during operation is not yet scoped out for both construction and operation effects.

16.6 Proposed Approach to the ES

Assessment Methodology

Further Baseline Data

16.6.1 The detailed assessment in the Health Chapter will first establish a baseline position of the health and demographic profile of the local population, local priorities and strategies (e.g. the Calderdale Health and Wellbeing Strategy, JSNA), socio-

economic and environmental conditions and local existing infrastructure. This assessment will build on information included in this scoping chapter.

16.6.2 The best-known definition of health was produced by the World Health Organisation (WHO), which states, "*Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity*" and the meaning in this quote will be used as the basis for the assessment.

16.6.3 When analysing baseline health conditions and assessing the effects on health (including mental wellbeing and health inequalities), the geographical scope of the assessment will be clearly defined. It is likely that the most significant effects will predominantly be felt within visible distance to the Turbine Area, which the Landscape and Visual chapter has assessed to be within a 45km radius, as well as along the cable route, which is still to be defined.

16.6.4 It is acknowledged that some of the Proposed Development effects will be spread over a broader geographical area, for this reason, baseline health data will be presented for an area wider than Calderdale, which will encompass the cable and access route.

16.6.5 Published health data within the public domain will be collated from sources such as the Office for Health Improvement and Disparities (OHID), Office for National Statistics (ONS), the relevant local authorities, the NHS and other recognised sources or through community engagement and liaising with key stakeholders such as the Calderdale and/ or West Yorkshire Public Health team.

16.6.6 The baseline health profile will focus on relevant physical and mental health indicators, socio-economic conditions, including inequalities, which is a key challenge facing Calderdale. It will also consider feedback relating to health and wellbeing matters received through the statutory and non-statutory community engagement process. This process of collating and reviewing relevant baseline data will enable vulnerable or "priority groups" to be identified.

Construction, Operation and Maintenance and Decommissioning

16.6.7 The same approach will be taken across construction, operation and maintenance phases. The detailed assessment will examine the potential effects of the Proposed Development on health outcomes on the identified receptors using an assessment criteria matrix based on the criteria from the IEMA Guidance 'Determining Significance for Human Health in Environmental Impact Assessment'[393]. Only the

[393] Pyper, R., Waples, H., Beard, C., Barratt, T., Hardy, K., Turton, P., Netherton, A., McDonald, J., Buroni, A., Bhatt, A., Phelan, E., Scott, I., Fisher, T., Christian, G., Ekermawi, R., Devine, K., McClenaghan, R., Fenech, B., Dunne, A., Hodgson, G., Purdy, J., Cave, B. (2022) IEMA Guide: Determining Significance for Human Health in Environmental Impact Assessment.

criteria relevant to the wider determinants that are considered to be scoped in from Table 16-4 will be assessed. Both direct and indirect effects will be considered across the construction and operation phases of the Proposed Development. It is proposed that potential impacts during the decommissioning phase are scoped out of the assessment, in line with the scoping of the supporting chapters which have all scoped out consideration of effects during decommissioning

16.6.8 The assessment of health impacts will draw strongly on the other technical assessments and chapters of the ES, in particular: air quality, noise and vibration, landscape and visual, socio-economic, climate change, shadow flicker and transport and access.

16.6.9 Where an effect is identified, the likely duration, location and significance will be highlighted. The health effects will be assessed in the context of the baseline position, as well as the nature and context of the effect, taking account of the sensitivity of the identified receptor (i.e. the existing population and identified vulnerable/ priority groups).

16.6.10 The impacts of the Proposed Development will be identified as 'beneficial', 'neutral' or 'adverse' and defined as follows:

- Beneficial - A positive and/or advantageous impact to a minor, moderate or major magnitude;
- Neutral - No obvious significant effect;
- Adverse - A negative and/or disadvantageous/ detrimental impact to a minor, moderate or major magnitude.

16.6.11 The sensitivity of receptors will be considered on a scale ranging from: very low sensitivity (very high capacity to adapt), low sensitivity (easily adapt to change), moderate sensitivity (limited capacity to adapt) to high sensitivity (do not easily adapt to change). In identifying the sensitivity, factors including the capacity to accept or respond to change and the local position, local needs and vulnerable/ priority groups will be taken into account.

16.6.12 In instances where effects are identified, the following definitions of magnitude will be applied:

- Major - the Proposed Development could be expected to have a substantial impact, either positive or negative, on health.
- Moderate - the Proposed Development could be expected to have notable impact, either positive or negative, on health.

- Minor – the Proposed Development could be expected to have a barely perceptible impact, either positive or negative, on health.
- Negligible – the Proposed Development could be expected to have no discernible impact, either positive or negative, on health.

16.6.13 The effects will then be defined as 'significant' or 'not significant' according to the assessment of magnitude and sensitivity. The impact significance matrix set out in Table 16-5 will be used to determine the significance of each effect. This impact significance matrix aligns with the IEMA Guide to: Determining Significance For Human Health In Environmental Impact Assessment (2022)[381].

Table 16-5 Magnitude and Sensitivity

Magnitude	Sensitivity			
	High	**Moderate**	**Low**	**Very Low**
Major	Major (Significant)	Major – Moderate (Significant)	Moderate - Minor (Significant)	Minor - Negligible
Moderate	Major – Moderate (Significant)	Moderate (Significant)	Minor	Minor - Negligible
Minor	Moderate - Minor (Significant)	Minor	Minor	Negligible
Negligible	Minor - Negligible	Minor - Negligible	Negligible	Negligible

16.6.14 Where an impact is identified, enhancement and mitigation measures will be explored to either enhance or secure a positive impact or mitigate against a negative impact. Mitigation measures can include design or non-design related measures and actions. Monitoring of effects will be secured where appropriate. Where positive or potential positive effects are identified, consideration will be made as to how these can be captured (or more fully harnessed) through the project.

16.6.15 Cumulative effects will be assessed in line with the methodology set out in **Chapter 3: Approach to EI**A, which accords with the Planning Inspectorate's Advice on Cumulative Effects Assessment. A long list of existing, consented, and proposed developments will be agreed with the relevant local planning authorities prior to undertaking the assessment. The certainty of these developments will be determined using the tiered approach recommended by PINS. For each

environmental topic, the potential Zone of Influence (ZoI) of the Proposed Development during construction, operation (including maintenance), and decommissioning will be identified. The outcomes of the cumulative effects assessment will be reported within the Environmental Statement. The assessment will, as part of this process, determine the in-combination (intra-project) effects through further analysis. All identified effects (excluding negligible effects) will be collated for each category of receptor to produce a list of relevant determinants of health and their level of effect. This will provide a narrative of likely interactions and describe the need for any further mitigation necessary.

16.6.16 The priority will be the identification of likely significant effects and describing any further mitigation necessary.

Assumptions, Limitations and Uncertainties

16.6.17 It should be noted that the boundaries of the aforementioned study area may be adjusted for certain receptors depending on:

- The availability of data (e.g. OHID public health data is not available for LSOAs and therefore data from the relevant electoral wards will be utilised);
- To align with other technical assessments within the EIA and DCO application (e.g. Air Quality Assessment or the Noise and Vibration Assessment); or
- Where it would be more appropriate to review alternative boundaries (e.g. capacity of GP facilities may be expanded to nearby Primary Care Networks).

16.6.18 The identified study areas and scale will be highlighted throughout the assessment, along with the relevant data sources, assumptions and limitations. The latest available data will be used; however, it should be noted that many data sources are frequently updated and could be subject to change from the time of drafting or during the DCO process.

16.6.19 Given that the health assessment will rely strongly on the other, specific assessments and chapters of the ES, the health assessment will therefore carry through any assumptions, limitations and uncertainties from those individual assessments.

17 Aviation

17.1 Introduction

17.1.1 This Chapter of the Scoping Report presents the scope of detailed environmental assessment for Aviation for the Proposed Development. Specifically, this section of the Scoping Report presents the policy and legislative context and the approach to collecting baseline data relevant to this scoping chapter. It also provides an overview of the relevant baseline conditions within the Site and surrounding area, based on current knowledge and understanding. It concludes by setting out, with justification, why Aviation is proposed to be scoped into the EIA and outlines further assessment work which will be undertaken to support this.

17.2 Review of Policy, Legislation and Relevant Guidance

17.2.1 Legislation, policy and guidance relating to Aviation, and relevant to the Proposed Development comprises:

International Standards and Recommended Practices

17.2.2 The United Kingdom (UK) is a Contracting State to the Convention on International Civil Aviation. Aviation safety in the UK is regulated in accordance with International Civil Aviation Organisation (ICAO) Standards and Recommended Practices set out in Annexes to the Convention[394], including:

- Annex 2: Rules of the Air;
- Annex 6: Operation of Aircraft;
- Annex 10: Aeronautical Telecommunications;
- Annex 11: Air Traffic Services;
- Annex 14: Aerodromes; and
- Annex 19: Safety Management.

Legislation

17.2.3 Following the departure of the UK from the European Union and the European Aviation Safety Agency, former EU aviation safety legislation has been transposed into UK law as follows. Each of these regulations has associated Acceptable

[394] ICAO Annexes are available from https://store.icao.int/en/annexes [accessed 4 August 2025].

Means of Compliance (AMC), Guidance Material (GM) and Certification Specifications (CS).[395]

- UK Reg (EU) 2018/1139 (the UK Basic Regulation);
- UK Reg (EU) 3922/91 (the UK Technical and Administrative Harmonisation Regulation);
- UK Reg (EU) 965/2012 (Air Operations);
- UK Reg (EU) No 139/2014 (the UK Aerodromes Regulation);
- UK Reg (EU) No 2017/373 (the UK ATM Provision of Services Regulation);
- UK Reg (EU) No 923/2012 (the UK Standardised Rules of the Air Regulation);
- UK Reg (EU) No 1332/2011 (Airborne Collision Avoidance); and
- AUR Performance Based Navigation UK Reg (EU) No 2018/1048 (the UK PBN Regulation).

17.2.4 In addition, the following UK-originated aviation legislation applies:

- The Air Navigation Order 2016 (UK 2016)[396];

17.2.5 Article 222 of the Air Navigation Order (ANO) 2016 requires that all structures with a height of 150 metres (m) or more above ground level are illuminated with aviation obstacle warning lights. Article 222(6) and (7) of the ANO provides for the Civil Aviation Authority (CAA) to grant permission for alternative lighting schemes.

17.2.6 Article 225A of the ANO requires that all structures with a height of 100 m or more above ground level are notified to the CAA at least eight weeks prior to construction to enable pilots to be notified of potential obstruction hazards.

Guidance

- CAA, CAA Policy and Guidelines on Wind Turbines, CAP 764, Sixth Edition (2016);[397]
- CAA, Manual of Air Traffic Services Part 1, CAP 493, Edition 11 (2023);[398]

[395] UK aviation regulations are available at https://regulatorylibrary.caa.co.uk/home/Content/ARL_Home_Page.htm [accessed 4 August 2025].
[396] The Air Navigation Order 2016, UK Statutory Instruments 2016 No. 765, available at https://www.legislation.gov.uk/uksi/2016/765/data.pdf [accessed 4 August 2025].
[397] CAA, CAA Policy and Guidelines on Wind Turbines, CAP 764, Sixth Edition (2016), available at https://www.caa.co.uk/our-work/publications/documents/content/cap-764/ [accessed 4 August 2025].
[398] CAA, Manual of Air Traffic Services Part 1, CAP 493, Edition 11 (2023), available at https://www.caa.co.uk/our-work/publications/documents/content/cap-493/ [accessed 4 August 2025].

- CAA, UK Flight Information Services, CAP 774, Version 4 (2021);[399]
- CAA, Air Traffic Services Safety Requirements, CAP 670, Issue 3 (2019);[400]
- CAA, CAP 785 Volume II: Implementation and Safeguarding of Instrument Flight Procedures (IFPs) in the UK, Second Edition (2022);[401] and
- CAA, Policy Statement: Lighting of Onshore Wind Turbine Generators in the UK with a maximum blade tip height at or in excess of 150m Above Ground Level (2017).[402]

National Planning Policy

17.2.7 The National Policy Statement for Energy (NPS EN-1)[403] advises that:

"All aerodromes, covering civil and military activities, as well as aviation technical sites, meteorological radars and other types of defence interests (both onshore and offshore) can be affected by new energy development.

Collaboration and co-existence between aviation, defence and energy industry stakeholders should be strived for to ensure scenarios such that neither is unduly compromised.

Alongside defence and other infrastructure, energy infrastructure, such as wind turbines, are an established part of the current and expected built energy environment. However, issues such as the cumulative impact, location and increasing geographical spread and height of wind farms, can all potentially have a bearing on aviation safety, defence capabilities and weather warnings and forecasts".

17.2.8 NPS EN-1 further advises that:

- Where the proposed development may affect the performance of civil or military aviation communications, navigation and surveillance (CNS), meteorological

[399] CAA, UK Flight Information Services, CAP 774, Version 4 (2021), available at https://www.caa.co.uk/our-work/publications/documents/content/cap-774/ [accessed 4 August 2025]
[400] CAA, Air Traffic Services Safety Requirements, CAP 670, Issue 3 (2019), available at https://www.caa.co.uk/our-work/publications/documents/content/cap-670/ [accessed 4 August 2025].
[401] CAA, CAP 785 Volume II: Implementation and Safeguarding of Instrument Flight Procedures (IFPs) in the UK, Second Edition (2022), available at https://www.caa.co.uk/our-work/publications/documents/content/cap-785b/ [accessed 4 August 2025].
[402] CAA, Policy Statement: Lighting of Onshore Wind Turbine Generators in the UK with a maximum blade tip height at or in excess of 150m Above Ground Level (2017), available at https://www.caa.co.uk/publication/download/16178 [accessed 4 August 2025].
[403] Department for Energy Security & Net Zero, Overarching National Policy Statement for Energy (EN-1), November 2023, paragraphs 5.5.1 to 5.5.3. Available at https://assets.publishing.service.gov.uk/media/65bbfbdc709fe1000f637052/overarching-nps-for-energy-en1.pdf [accessed 4 August 2025].

radars and/or other defence assets an assessment of potential effects should be set out in the ES;

- The applicant should consult the Ministry of Defence (MoD), Met Office, Civil Aviation Authority (CAA), National Air Traffic Services (NATS) and any aerodrome – licensed or otherwise – likely to be affected by the proposed development in preparing an assessment of the proposal on aviation, meteorological or other defence interests; and
- Any assessment of effects on aviation, meteorological or other defence interests should include potential impacts of the project upon the operation of CNS infrastructure, flight patterns (both civil and military), generation of weather warnings and forecasts, other defence assets (including radar) and aerodrome operational procedures. It should also assess the demonstratable cumulative effects of the project with other relevant projects in relation to aviation, meteorological and defence.

17.2.9 The April 2025 consultation draft of NPS EN-1[1] repeats these provisions[404].

17.2.10 Other relevant NPSs are the following:

- Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (2025)[405];
- National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023)[406];
- Draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (2025)[407]; and

[404] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Energy (EN-1). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[405] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Renewable Energy Infrastructure (EN-3). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[406] Department for Energy Security & Net Zero (2023) National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147382/NPS_EN-3.pdf
[407] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements

- National Planning Policy Framework (NPPF) (updated February 2025)[408].

17.3 Existing Baseline Conditions

17.3.1 This section sets out the known aviation baseline conditions at this (scoping) stage of the Proposed Development.

Study Area

17.3.2 The Study Areas for aviation are as follows:

- a 3km radius from the Turbine Area boundary for non-radar equipped unlicensed aerodromes with a runway length of less than 800m;
- a 10km radius from the Turbine Area boundary for military low flying areas and other aviation facilities;
- a 25km radius from the Turbine Area boundary for secondary surveillance radars (SSRs) and Meteorological Office radars;
- a 30km radius from the Turbine Area boundary for licensed and certificated aerodromes;
- a 65km radius from the Turbine Area boundary for airport primary surveillance radars (PSRs) and IFPs; and
- a 200km radius from the Turbine Area boundary for en route and air defence PSRs.

17.3.3 These distances are derived from recommended consultation distances in CAA guidance CAP 764, amended to ensure that all aviation facilities with the potential to be affected are included.

17.3.4 Cable Corridor Search Areas are not included since underground infrastructure has no potential to generate impacts on aviation.

Approach to the Collection of Baseline Data for Scoping

17.3.5 Baseline data was collected using the following sources of data:

- The United Kingdom Aeronautical Information Publication (UK AIP);

[408] Ministry of Housing Communities & Local Government (2024) National Planning Policy Framework (December 2024) Updated online February 2025. Available at: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf

- The UK Military AIP;
- Published civil and military aeronautical charts; and
- Aviatica in-house databases.

Relevant Baseline Conditions

17.3.6 The Proposed Development is located on high ground up to approximately 1,500 feet above mean sea level (ft amsl) between Bradford and Burnley. Almost all of the Proposed Development is located in uncontrolled airspace[409] extending from ground level up to 3,500 ft amsl, with the Class A controlled airspace of the Manchester[410] Terminal Control Area (TMA) above that level. Aircraft may fly without contact with or clearance from any air traffic control agency in the airspace below 3,500ft but must have a clearance from Manchester Airport or NATS En Route plc (NERL) air traffic control (ATC) to enter and fly within the Manchester TMA airspace above 3,500ft.

17.3.7 To the east and north of the Proposed Development the airspace is uncontrolled up to 3,000ft amsl and Class D controlled airspace under the control of Leeds Bradford Airport ATC above that level.

17.3.8 The Proposed Development is located in a north-south corridor in daytime Low Flying Area (LFA) 8 in the UK Military Low Flying System where uni-directional flow is mandated, with northbound aircraft required to fly in the western half of the corridor and southbound aircraft required to fly in the eastern half. The Proposed Development is within a part of the military night low flying system given the title Allocated Region 3A by the MoD.

Receptors Identified

17.3.9 Rotating wind turbines have the potential to affect PSRs used for ATC by generating false (unwanted) plots on the radar display and reducing the probability of the radar detecting wanted aircraft targets overhead the turbine(s). PSRs used for meteorological forecasting can be affected by wind turbines generating false plots on the radar and by physical blocking of the radar beam by the turbine structures.

17.3.10 PSRs with the potential to detect turbines within the Turbine Area are as follows:

- NATS En Route Great Dun Fell (99km north of the Proposed Development);

[409] Uncontrolled airspace is airspace within which aircraft may fly without requiring a clearance from any air traffic control agency.
[410] Controlled airspace is airspace within which aircraft may only fly if authorised by or notified to the appropriate air traffic control agency.

- NATS En Route Claxby (118km south east of the Proposed Development);
- NATS En Route Clee Hill (158km south of the Proposed Development);
- NATS En Route St Anne's (57km west of the Proposed Development);
- Leeds Bradford Airport (23km east north east of the Proposed Development);
- Manchester Airport (51km south south west of the Proposed Development);
- BAE Systems Warton (51km west of the Proposed Development);
- Royal Air Force (RAF) Leeming (62km north east of the Proposed Development);
- MoD Staxton Wold air defence radar (112km north east of the Proposed Development); and
- Met Office Hameldon Hill weather radar (12km south west of the Proposed Development).

17.3.11 Doppler Very High Frequency Omni-Range (DVOR) aeronautical radio navigation beacons may be affected by wind turbines by bending of the radio signal such that bearing errors are generated in the receiving equipment in aircraft. The NATS En Route Pole Hill DVOR is located approximately 5km south of the Proposed Development.

17.3.12 IFPs are a set of heading and altitude instructions to pilots of aircraft flying under the Instrument Flight Rules (IFR) to enable them to depart and arrive safely at airports without being able to see the ground. IFPs can be affected by tall structures such as wind turbines if the structure is high enough to require raising of any of the specified minimum altitudes in the procedure(s). The Proposed Development is within the assessment area for IFPs at the following airports/airfields:

- Leeds Bradford Airport;
- Manchester Airport;
- Blackpool Airport; and
- BAE Systems Warton.

17.4 Scope of the Assessment

Consultation Undertaken to Date

Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

17.4.1 As discussed in Chapter 1: Introduction, under the Town and Country Planning Act 1990[411], in July 2023, an EIA scoping request was submitted to CMBC, which was a Scoping Report in request for a Scoping Opinion for a proposed wind farm development and associated infrastructure at the Site, including cable connection. Table 17-1 presents the details of the Scoping Opinion relevant to Aviation and confirms if the opinion is considered within the proposed scope of assessment (as set out below) or if is considered to be scoped out of the technical assessment, with details provided in Table 17-3.

Table 17-1: Likely Significant Effects Scoped into the Detailed Assessment

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
Leeds Bradford Airport	Effects on primary surveillance radar	Effects on the Leeds Bradford PSR are within scope of the assessment and will be assessed and reported within the Environmental Statement (ES).
	Effects on instrument flight procedures	Effects on Leeds Bradford IFPs are within scope of the assessment and will be assessed and reported within the ES.
	Evidence of consultation between the developer and the CAA in relation to lighting requirements/schemes	Aviation lighting is within scope of the assessment. Following design freeze a reduced lighting scheme will be designed and submitted

[411] UK Government (1990) Town and Country Planning Act 1990 [Online] Available at: https://www.legislation.gov.uk/ukpga/1990/8/contents

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
		to the CAA for approval.
NATS	Effects on radar and navigation aid infrastructure	Effects on NATS radar and navigation aid infrastructure are within scope of the assessment and will be assessed and reported within the ES.
Civil Aviation Authority	Likely impacts on the radar, monitoring, and other such infrastructure and operational assets.	Proposed to be scoped out since the CAA is no longer a consultee on wind energy proposals other than its role in approving proposals for reduced lighting schemes.
Manchester Airport	Likely impacts on the radar, monitoring, and other such infrastructure and operational assets.	Effects on the Manchester Airport PSR and IFPs are within scope of the assessment and will be assessed and reported within the ES.
Humberside Airport	Likely impacts on the radar, monitoring, and other such infrastructure and operational assets.	Proposed to be scoped out since the Proposed Development is beyond the operational range of the Humberside Airport radar, the airport's area of air traffic control responsibility and the obstacle assessment area for the airport's IFPs.
Defence Infrastructure Organisation	Inclusion of specified aviation lighting.	Effects on military low flying, and associated mitigations such as provision of aviation

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
		lighting, are within scope of the assessment and will be assessed and reported within the ES.
Meteorological Office	Potential effects from the Proposed Development on the Meteorological Office weather radar at Hameldon Hill.	Effects on the Meteorological Office Hameldon Hill radar are within scope of the assessment and will be assessed and reported within the ES.

Other Consultation Undertaken to Date

17.4.2 An overview of other consultation (beyond the CMBC Scoping Opinion) undertaken to date for Aviation, and how this has informed the scope to the assessment is provided in Table 17-2.

Table 17-2: Consultation Undertaken To Date

Date	Consultee	Summary
December 2023 to date	Leeds Bradford Airport	The Applicant has been in discussion with the airport and their Approved Procedure Design Organisation (APDO) on the nature and scale of anticipated radar and IFP impacts and potential means of mitigation.
September 2024 to date	Manchester Airport	The Applicant has been in discussion with the airport and their APDO on the nature and scale of anticipated radar and IFP impacts and potential means of mitigation.
August 2024 to date	NATS En Route plc (NERL)	The Applicant has been in discussion with NERL on the nature and scale of anticipated radar and DVOR impacts and potential means of mitigation, including amendments to turbine size and layout.
September 2024 to date	Blackpool Airport	The Applicant has been in discussion with the airport and their APDO on the nature and

Date	Consultee	Summary
		scale of anticipated IFP impacts and potential means of mitigation.
September 2024 to date	Met Office	The Applicant, supported by technical consultancy QinetiQ, has been in discussion with the Met Office on the nature and scale of anticipated radar impacts and potential means of mitigation, including amendments to turbine size and layout.
22 January 2025	BAE Systems Warton	The Applicant has been in discussion with the aerodrome and their safeguarding authority, Defence Infrastructure Organisation (DIO), on the nature and scale of anticipated radar and IFP impacts and potential means of mitigation. Assessment of the operational impact of any technical impacts on radar and IFPs will be conducted by BAE Systems following submission of the planning application.

Effects Scoped Out from Detailed Assessment

17.4.3 Table 17-3 presents the Aviation matters that are unlikely to give rise to significant adverse effects in any phase of the Proposed Development and therefore are proposed to be scoped out from detailed assessment within the ES.

Table 17-3: Effects Scoped Out from the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scope Out
Effects on non-radar equipped unlicensed aerodromes with a runway length of less than 800m	Issue not raised in CMBC Scoping Opinion	There are no such facilities within the aviation study areas.
Secondary surveillance radars	Issue not raised in CMBC Scoping Opinion	There are no such facilities within the aviation study areas.

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scope Out
Effects on licensed and certificated aerodromes	Issue not raised in CMBC Scoping Opinion	There are no such facilities within the aviation study areas apart from Leeds Bradford Airport. Effects on that airport's PSR and IFPs are within scope of the assessment and will be assessed.
Effects on the RAF Leeming PSR	Issue not raised in CMBC Scoping Opinion	Radar line of sight modelling has demonstrated that the Proposed Development will have no effects on the RAF Leeming PSR.
Effects on the MoD Staxton Wold PSR	Issue not raised in CMBC Scoping Opinion	Radar line of sight modelling has demonstrated that the Proposed Development will have no effects on the MoD Staxton Wold PSR.
Humberside Airport PSR and other operational assets	Not agreed	The Proposed Development is beyond the operational range of the Humberside Airport radar, the airport's area of air traffic control responsibility and the obstacle assessment area for the airport's IFPs.

Assessment Methodology

17.4.4 The aviation assessment will be conducted in accordance with the guidance in CAP 764: CAA Policy and Guidelines on Wind Turbines, adapted to ensure that all aviation assets with the potential to be affected by the Proposed Development are assessed.

17.4.5 The assessment will comprise a desk-based review of the location, technical characteristics and operational activities of aviation interests and operations in the vicinity of the Proposed Development using relevant data sources. The effects of the Proposed Development on aviation and meteorological radars will be assessed using radar line of sight modelling, undertaken using specialist software and digital terrain data with an appropriate resolution.

17.4.6 The CAA requires formal assessment of the effects of Proposed Developments on civil airport IFPs to be conducted by an APDO. The Applicant will commission IFP assessments from the APDOs responsible for Leeds Bradford, Blackpool and

Manchester Airports. IFP assessment for BAE Systems Warton will be conducted through the DIO, which is the safeguarding authority for that aerodrome.

17.4.7 The Applicant will design a reduced lighting scheme for submission to the CAA for approval.

17.4.8 Cumulative effects will be assessed in line with the methodology set out in **Chapter 3: Approach to EIA**, which accords with the Planning Inspectorate's Advice on Cumulative Effects Assessment. A long list of existing, consented, and proposed developments will be agreed with the relevant local planning authorities prior to undertaking the assessment. The certainty of these developments will be determined using the tiered approach recommended by PINS. For each environmental topic, the potential Zone of Influence (ZoI) of the Proposed Development during construction, operation (including maintenance), and decommissioning will be identified. The outcomes of the cumulative effects assessment will be reported within the Environmental Statement.

Assumptions, Limitations and Uncertainties

17.4.9 The assessments carried out in support of this section of the scoping report have used the most up to date publicly available aeronautical information as set out in the publicly available UK AIP AIRAC 09/2025 dated 4 September 2025 and the UK Military AIP AIRAC 08/2025 dated 7 August 2025. It has been assumed that the facilities and procedures set out in those documentary sources will remain unchanged during the determination period for the Proposed Development, however the Applicant will stay abreast of any changes.

18 EIA Other Matters (Shadow Flicker)

18.1 Introduction

18.1.1 This Chapter of the Scoping Report presents the scope of detailed environmental assessment for EIA Other Matters, concentrating on Shadow Flicker, for the Proposed Development. Specifically, this chapter of the Scoping Report presents the policy and legislative context, the approach to collecting baseline data relevant to this scoping chapter and an overview of the relevant baseline conditions within the Site and surrounding area. It concludes by setting out the scope of assessment including, with justification, those effects that are proposed to be scoped in or out for detailed assessment and concludes by outlining the method that will be used to undertake the detailed environmental assessment.

18.1.2 Under certain combinations of geographical position, times of day and year, wind speed and wind direction, the sun may pass behind a wind turbine rotor and cast a shadow over the windows of neighbouring occupied buildings, within a defined distance from the turbine. When the blades rotate and the shadow passes a window, to a person within that room, the shadow appears to flick on and off; this effect is known as 'Shadow Flicker'. It occurs only within buildings where shadows from moving wind turbine blades are cast across a window opening. Narrow windows are affected to a lesser degree than wider windows as the length of time a shadow falls across a narrow window is less.

18.1.3 Shadow Flicker can cause annoyance for people within the rooms that are affected by Shadow Flicker and potentially reduce the enjoyment of these spaces. The principal effects of Shadow Flicker will occur during the operation phase, where the turbine rotor blades would be spinning. These effects could not occur during construction or decommissioning, outside of limited testing periods, and these effects would be the same as those occurring in the operational phase.

18.2 Review of Policy, Legislation and Relevant Guidance

18.2.1 Legislation, planning policy and guidance relating to Shadow Flicker, and relevant to the Proposed Development comprises:

Legislation

18.2.2 There is no legislation for the assessment of Shadow Flicker in the UK and there are no guidelines which quantify what exposure levels would be acceptable. However, there are National and Local Policies that provide guidance, as well as guidance available internationally.

National Planning Policy

- Overarching National Policy Statement for Energy (EN-1) (2023)[412];
- Draft Overarching National Policy Statement for Energy (EN-1) (2025)[413];
- Draft National Policy Statement for Renewable Energy Infrastructure (EN-3) (2025)[414];
- National Policy Statement for Electricity Networks Infrastructure (EN-5) (2023)[415];
- Draft National Policy Statement for Electricity Networks Infrastructure (EN-5) (2025)[416]; and
- National Planning Policy Framework (NPPF) (updated February 2025)417.

Local Planning Policy

18.2.3 The Study Area for the assessment covers five Local Planning Authorities:

- Calderdale Local Plan 2018/19 – 2032/33 (Calderdale Council, 2023)[418];
- Rochdale Core Strategy, Adopted October 2016 (Rochdale Borough Council, 2017)[419]; and

[412] Department for Energy Security & Net Zero (2023) Overarching National Policy Statement for Energy (EN-1). Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147380/NPS_EN-1.pdf
[413] Department for Energy Security & Net Zero (2025) Overarching National policy Statement for Energy (EN-1) (May 2025) Available: https://assets.publishing.service.gov.uk/media/68093d68148a9969d2394f59/draft-nps-en-1.pdf.
[414] Department for Energy Security & Net Zero (2025) National Policy Statement for Renewable Energy Infrastructure (EN-3) DRAFT (May 2025). Available: https://assets.publishing.service.gov.uk/media/6809f0588c1316be7978e7cb/draft-nps-en-3.pdf.
[415] Department for Energy Security & Net Zero (2023) National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1147382/NPS_EN-3.pdf
[416] Department for Energy Security & Net Zero (2025) Draft Overarching National Policy Statement for Electricity Networks Infrastructure (EN-5). Available at: https://www.gov.uk/government/consultations/planning-for-new-energy-infrastructure-2025-revisions-to-national-policy-statements
[417] Ministry of Housing Communities & Local Government (2024) National Planning Policy Framework (December 2024) Updated online February 2025. Available at: https://assets.publishing.service.gov.uk/media/67aafe8f3b41f783cca46251/NPPF_December_2024.pdf
[418] Calderdale Council (2023). *Calderdale Local Plan. Adopted on 22 March 2023*. Available at: https://calderdale.objective.co.uk/portal/planning_services/adt/calderdale_local_plan
[419] Rochdale Borough Council (2017) *Rochdale Core Strategy, Adopted October 2016*. Available at: https://www.rochdale.gov.uk/local-planning-policy

- Local Plan for the Bradford District – Core Strategy Development Plan Document, Adopted July 2017 (City of Bradford Metropolitan District Council, 2017)[420];
- Pendle Borough Council Core Strategy (adopted December 2015)[421];
- Rossendale Local Plan 2019 - 2036[422];
- Burnley's Local Plan 2018 [423]; and
- Leeds City Council - Core Strategy (as amended by the Core Strategy Selective Review 2019) (adopted 2019)[424].

18.2.4 The majority of the Study Area (see Section 18.3.2) is within the boundaries of CMBC, with the northern edge within Bradford Borough Council, and the western edge within Burnley Borough Council, and Pendle Borough Council. No residential or commercial properties were identified within the parts of the Study Area within the boundaries of Burnley Council, Pendle Borough Council or Leeds City Council.

18.2.5 CMBC does not have specific guidance relating to Shadow Flicker in its adopted Local Plan[425].

18.2.6 Bradford Council does not have specific guidance in its adopted Local Plan[426], but states that in policy EN6; Energy *'All proposals for renewable and low carbon generation must include full assessment of the environmental, economic and social impacts and, where assessment shows that potential adverse impacts can be managed, the integration of measures to minimise such impacts. and:*

Assessment of social impacts will include a range of local amenity considerations and whether or not support exists within local communities for proposals. Local amenity considerations will include assessments of noise and Shadow Flicker and the potential for disruption during the construction period'.

[420] City of Bradford Metropolitan District Council (2017) *Local Plan for the Bradford District – Core Strategy Development Plan Document, Adopted 2017*. Available at: https://www.bradford.gov.uk/planning-and-building-control/planning-policy/adopted-local-plan/
[421] Pendle Borough Council, 2015. Available at: https://www.pendle.gov.uk/info/20072/planning_policies/275/development_plan_documents/2
[422] Rossendale Borough Council Available at: https://www.rossendale.gov.uk/local-plan/adopted-local-plan
[423] Burnley Borough Council Available at: https://burnley.gov.uk/wp-content/uploads/2022/04/Burnleys-Local-Plan-Adopted-Version-Final-With-erratum-28-Sep-2018.pdf
[424] Leeds City Council, 2019. Available at: https://www.leeds.gov.uk/planning/planning-policy/adopted-local-plan/core-strategy-introduction
[425] Calderdale Metropolitan Borough Council (2023) Calderdale Local Plan 2018/19 – 2032/2033. Available: https://new.calderdale.gov.uk/sites/default/files/2023-12/Local-Plan-Written-Statement.pdf
[426] Bradford Council (2017) Core Strategy Development Plan Document. Available: https://www.bradford.gov.uk/Documents/planningStrategy/10/Adopted%20core%20strategy//1%20Core%20Strategy%20full%20document.pdf

18.2.7 Pendle Borough Council does not have specific guidance relating to Shadow Flicker in its adopted local plan[427]. However, in its draft Local plan for 2021-2024[428], it states that a Shadow Flicker assessment may be required depending on the scale and location of a proposed wind farm.

18.2.8 Burnley Borough Council provides the following guidance relating to Shadow Flicker in Policy CC3: Wind Energy Development in the Burnley Local Plan[429]: *'1) The Council will support proposals for wind energy development providing:*

c) The development would not result in unacceptable noise or shadow/reflective flicker impacts on local residents and sensitive users of the site or its surroundings e.g. those using public rights of way/bridleways, and would not result in the loss of, or significantly detract from, key views of scenic landmarks or landscape features';

18.2.9 Overall, there is little direct local policy relating to Shadow Flicker available from the four local planning authorities which intersect the Study Area. The available policy from Bradford and Burnley Councils indicates simply that a Shadow Flicker assessment should be undertaken, and that Shadow Flicker arising from a development should not negatively impact sensitive receptors.

National Guidance

- Planning practice guidance for renewable and low carbon energy (2013)[430]; and
- Parsons Brinckerhoff (prepared for the Department of Energy and Climate Change) (2011) Update of UK Shadow Flicker Evidence Base[431].

Local Guidance

18.2.10 CMBC has produced, alongside its Local Plan, two guidance documents relating to wind turbine developments within the council, the Landscape Guidance for Wind Turbines document[432], and the Assessment of Areas of Suitability for Wind

[427] Pendle Borough Council (2015) Core Strategy 2011-2030. Available: https://www.pendle.gov.uk/info/20072/planning_policies/275/development_plan_documents/2
[428] Pendle Borough Council (2024) Pendle Local Plan 4th Edition (2021-2040) publication Draft. Available: https://www.pendle.gov.uk/info/20072/planning_policies/600/local_plan_fourth_edition
[429] Burney Borough Council (2018) Burnley's Local Plan July 2018. Available: https://burnley.gov.uk/planning/planning-policies/burnleys-local-plan/burnleys-local-plan-july-2018/
[430] (Former) Department for Communities and Local Government (2013) Planning practice guidance for renewable and low carbon energy. Available: https://www.gov.uk/guidance/renewable-and-low-carbon-energy
[431] Parsons Brinckerhoff (prepared for the Department of Energy and Climate Change) (2011) Update of UK Shadow Flicker Evidence Base. Available: http://webarchive.nationalarchives.gov.uk/20110405153950/http://www.decc.gov.uk/en/content/cms/what_we_do/uk_supply/energy_mix/renewable/planning/on_off_wind/shadow_flicker/shadow_flicker.aspx
[432] Julie Martin Associates (2013) Landscape Guidance for Wind Turbines up to 60 m heigh in the South and West Pennines. Available: https://www.kirklees.gov.uk/beta/planning-policy/pdf/supportingDocuments/climateChange/Landscape-Guidance-Wind-Turbines.pdf
https://www.calderdale.gov.uk/environment/planning/planning-policy/smaller-turbines.pdf

Development in Calderdale[433] document. The Landscape Guidance for Wind Turbines document contains no reference to Shadow Flicker, however, the Assessment of Areas of Suitability for Wind Development in Calderdale document does state that *'Shadow flicker has not been considered as a constraint in this study as modern turbines are now equipped with the technology to be able to turn off when shadow flicker is predicted to occur.'*

18.2.11 The Renewable and Low Carbon Energy Study[434] commissioned by Pendle Borough Council in 2010 referred to the PPS2 Companion Guide document in its assessment, which states that *'shadow flicker effects have been proven to occur only within ten rotor diameters of a turbine.'*

18.2.12 The available local guidance indicates that Shadow Flicker effects are not expected to occur or be meaningful beyond 10 rotor diameters, and that any effects can be mitigated through the use of a Shadow Flicker Control System.

International Guidance

- States Committee for Pollution Control - Nordrhein-Westfalen Notes on the Identification and Evaluation of the Optical Emissions of Wind Turbines (2002)[435].

18.3 Existing Baseline Conditions

18.3.1 This section of the Scoping er for Shadow Flicker sets out the known baseline conditions at this (scoping) stage of the project. It is noted that further assessment is proposed to inform the technical assessment for the Environmental Statement.

Study Area

18.3.2 The proposed study area for the assessment has been determined following the policy and guidance documents outlined above. The update to the UK Shadow Flicker Evidence Base produced for the (former) Department of Energy and Climate Change (DECC) concludes that an assessment area of 10 rotor diameters, is appropriate for assessing the potential for Shadow Flicker effects. It should be noted that, while the update to policy statement EN-3 is currently a draft, the recommendations made within the document align with this, stating that:

[433] LUC (2017) Assessment of Areas of Suitability for Wind Development in Calderdale. Available: https://new.calderdale.gov.uk/sites/default/files/2023-06/Local-plan-eb-areas-suitability-wind-development_Jan-2017.pdf
[434] Maslen Environmental (2010) Renewable and Low Carbon energy Study. Available: https://www.pendle.gov.uk/egov_downloads/Item_7_South_Pennine_Renewable_and_Low_Carbon_Study_Main_Study.pdf
[435] States Committee for Pollution Control - Nordrhein-Westfalen (2002) Notes on the Identification and Evaluation of the Optical Emissions of Wind Turbines.

'As a general rule, there is unlikely to be a significant impact at distances greater than ten rotor diameters from a turbine'.

18.3.3 The extent to which shadow will be cast as distance increases from the turbines was also considered within the UK Shadow Flicker Evidence Base which quoted text included in the (now superseded) Planning for Renewable Energy – A Companion Guide to PPS22 Office of the Deputy Prime Minister (2004) which stated:

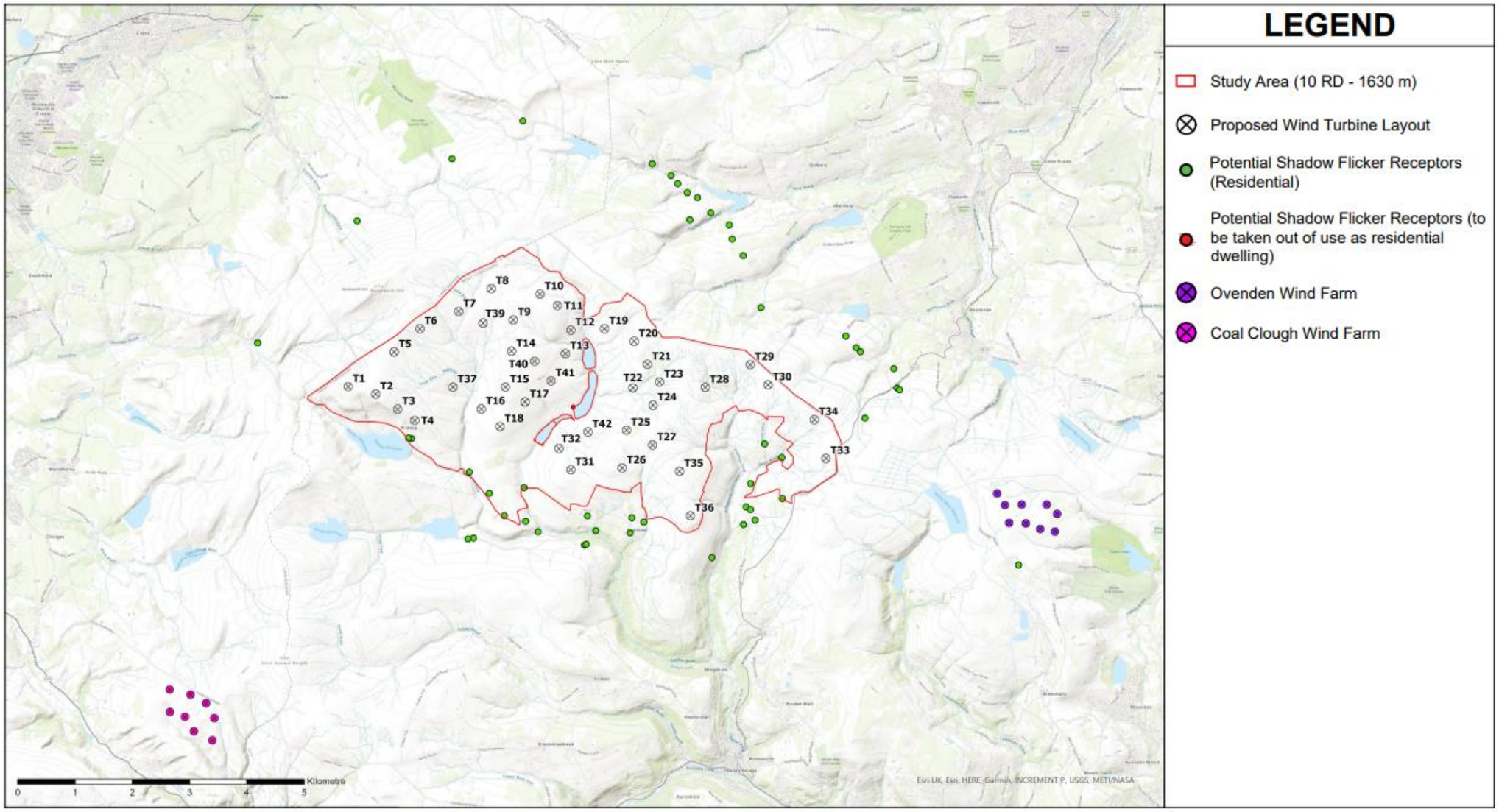
'At distance, the blades do not cover the sun but only partly mask it, substantially weakening the shadow. This effect occurs first with the shadow from the blade tip, the tips being thinner in section than the rest of the blade. The shadows from the tips extend the furthest and so only a very weak effect is observed at distance from the turbines.'

18.3.4 Accordingly, in line with the available guidance, we propose to use a study area that extends to 10 rotor diameters from the proposed wind turbine locations. An indicative study area, based on the scoping layout and a potential candidate turbine with rotor diameter of circa 163 m is presented on Figure 18-1; the study area covers a distance of 1,630 m from the proposed turbines in all directions. It is worth noting that, although draft National Policy Statement EN-3 has not been used to determine the study area, as the 10 rotor diameter study area appears in the draft update, this is likely the direction that the government will consider acceptable when the policy is finalised. The study area will also be further refined by considering only areas where Shadow Flicker is geometrically possible given the path the sun takes through the sky over the course of a year. The study area will be reviewed at a later date once the turbine layout and candidate turbine have been finalised.

18.3.5 The proposed study area covers the predominantly open moorland areas of Stanbury Moor to the north, Middle Moor and Wadsworth Moor to the east, and Widdop Moor, Pot Brinks Moor, and Broad Head Moor to the west. In the centre and south of the study area are several reservoirs, with Walshaw Dean Reservoir occupying the centre of the Study Area (despite being outside the scoping boundary itself), and Widdop reservoir in the south west.

18.3.6 Within the Study Area various residential and commercial properties have been identified (see Figure 18-1). In addition to the residential properties, various footpaths and bridleways cross the study area, the most significant of which is the Pennine way, which runs north to south through the centre of the Study Area along the eastern edge of the Walshaw Dean reservoir. It should be noted that Shadow Flicker is not possible in external locations (i.e. on footpaths) as Shadow Flicker only occurs within buildings when moving shadows are cast across window apertures.

Figure 18-1 Study area



GENERAL NOTES:

1. This drawing is to be read in conjunction with all engineer's, architect's or other relevant drawings and specifications.
2. All dimensions and levels are subject to detailed design.
3. All works to be carried out in compliance with the requirements of the relevant statutory authorities and regulations.

Drawing Notes:

The site boundary is for indicative purposes only and requires confirmation on site.

Revision History

Rev	Date	By	Detail
01	09/07/2025	TNEI	Issued for Calderdale Energy Park
02	31/07/2025	TNEI	Client Comments
03	04/08/2025	TNEI	Client Comments
04	19/08/2025	TNEI	Client Comments
05	29/08/2025	TNEI	Client Comments

Copyright of Logika Group. Figured dimensions shall be taken in preference to scaling. The contractor shall check all dimensions on site before commencing work.

Project/Location
Calderdale Energy Park

Drawing title
Study Area

Drawing status
PRE PLANNING

Date	Drawn	Checked
29/08/2025	ST	MT

Client
Calderdale energy park

Consultant
Logika Group

Drawing number Figure 18.1

Revision 05

Approach to the Collection of Baseline Data for Scoping

18.3.7 A desk-based review of the Study Area was undertaken using a combination of publicly available satellite imagery (Google Earth) and publicly available datasets of wind turbines, identifying potential receptors and existing and proposed wind turbines, of which the results are included below.

Receptors Identified

18.3.8 Of the receptors identified within the Study Area, 48 are residential (as shown on Figure 18-1). These 48 receptors are considered the most sensitive, however commercial buildings may require consideration depending on usage, and further investigation will be undertaken as part of the ES to classify all properties within the Study Area. The majority of the identified residential properties are farmhouses, or cottages associated with farms, and are located along the southern edge of the study area, as well as the northeastern edge.

18.3.9 Buildings identified as inhabitable residential, or commercial properties such as offices or other places of work will be considered sensitive receptors.

Cumulative Wind Turbines

18.3.10 As shadow flicker is an effect resulting from the operation of wind turbines, there is the potential for cumulative effects to occur where other wind turbine developments are located nearby. There are a number of operational wind farm developments near to the Turbine Area (shown on Figure 18-1), including Ovenden Moor Wind Farm to the east, and Coal Clough Wind Farm to the southwest. No proposed wind farm developments are located in the immediate area of the Turbine Area. Based on the distances between the Turbine Area and the identified cumulative developments, it is not anticipated that cumulative Shadow Flicker effects could occur, however this will be reviewed at a later date once the turbine layout has been finalised.

18.4 Environmental Measures

18.4.1 Consideration will be given to the opportunity to introduce environmental measures (and mitigation) that will help to avoid or reduce the potential for an adverse significant effect to occur. In accordance with Schedule 4 (7) of the Town and Country Planning (Environmental Impact Assessment) Regulations 2017, the ES will be based on an EIA mitigation hierarchy which seeks to avoid, prevent, reduce and offset (where appropriate) likely significant effects. Specific environmental measures relevant to Shadow Flicker will be identified and embedded into the assessments (i.e. the assessments of likely significant effects will be undertaken with the inclusion of the environmental measures, as these measures will form part

of the Proposed Development). At this stage of the project, the following environmental measures will be implemented and included within the Proposed Development.

Construction

18.4.2 During the construction period it will not be possible for Shadow Flicker to occur as the turbine blades will not be installed or will not be rotating outside of a limited commissioning period. The potential effects of Shadow Flicker during commissioning testing will be equivalent to those that may occur during the Operational phase and so environmental measures that would cover this period are considered in that context.

Operation and Maintenance

18.4.3 An operational Shadow Flicker Management Strategy will be developed to address potential effects associated with shadow flicker. Further details will be provided within the PEIR or ES as appropriate.

Decommissioning

18.4.4 Similar to the Construction phase, it is not possible for Shadow Flicker to occur during Decommissioning, as the rotation of the turbines will have been halted, and the blades will be removed, thus eliminating the potential for Shadow Flicker. As such, there will be no need for environmental measures during this period.

18.5 Scope of the Assessment

Consultation Undertaken to Date

Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

18.5.1 As discussed in **Chapter 1: Introduction**, under the Town and Country Planning Act 1990[436], in July 2023, an EIA scoping request was submitted to CMBC, which was a Scoping Report in request for a Scoping Opinion for a proposed wind farm development and associated infrastructure at the Site, including cable connection. Table 18-1 presents the details of the Scoping Opinion relevant to Shadow Flicker and confirms if the opinion is considered within the proposed scope of assessment (as set out below) or if is considered to be scoped out of the technical assessment, with details provided in Table 18-2.

[436] UK Government (1990) Town and Country Planning Act 1990 [Online] Available at: https://www.legislation.gov.uk/ukpga/1990/8/contents

Table 18-1: Calderdale Metropolitan Borough Council (CMBC) Scoping Opinion

Consultee	Summary of Scoping Opinion Response	Consideration within the Scope of Assessment
CMBC	CMBC indicated that a Shadow Flicker Assessment would be required as part of an ES given the presence of dwellings within and adjacent to the site boundaries which would likely be significantly detrimentally affected by Shadow Flicker. The response also requested that potential Shadow Flicker impacts from each of the proposed turbines on sensitive receptors, both on site and within a 5 km distance from the site be undertaken. Furthermore, they requested that the assessment should demonstrate the impacts of Shadow Flicker throughout the day as the sun moves across the site which would affect different receptors and different times.	A Shadow Flicker assessment will be undertaken as part of the ES that assesses the potential for Shadow Flicker at sensitive receptors, throughout the day and year. However, the Applicant does not propose to assess the potential for these effects out to 5 km, rather, the Applicant will assess out to 10 rotor diameters (1620 m) as outlined in the available national policy documents outlined above.

Other Consultation Undertaken to Date

18.5.2 No further consultation beyond the consultation with CMBC has been undertaken with regards to Shadow Flicker to date.

Effects Scoped Out from Detailed Assessment

18.5.3 Table 18-2 presents the Shadow Flicker matters that are unlikely to give rise to significant adverse effects and, therefore, which are proposed to be scoped out from detailed assessment.

Table 18-2: Effects Scoped Out from the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to be Scope Out
Shadow Flicker During Construction	Not previously agreed	As described above, Shadow Flicker has no potential to occur during the Construction phase outside of limited testing during commissioning, which is addressed in the Operational phase assessment.
Shadow Flicker During Decommissioning	Not previously agreed	As described above, Shadow Flicker has no potential to occur during the Decommissioning phase
Shadow Flicker effects on people with epilepsy	Not previously agreed	The flickering effect caused by Shadow Flicker also has the potential to induce epileptic seizures through a condition known as photosensitive epilepsy. Around one in one hundred people in the UK have epilepsy although only 3% of those suffer from photosensitive epilepsy. The common frequency at which photosensitive epilepsy might be triggered varies from person to person, though generally it is between 3 and 30 flashes per second (hertz (Hz)); sensitivity under 3 Hz is not common (The National Society for Epilepsy[437]). These effects have been considered as not significant because commercial scale (>1 MW) wind turbines in the UK rotate much slower than the frequency generally considered to trigger photosensitive epilepsy, at between 0.2 and 1.0 Hz.

[437] Epilepsy Society. Photosensitive Epilepsy (2025)Available: https://www.epilepsysociety.org.uk/photosensitive-epilepsy#.Wo1uz6jFLcs .

Likely Significant Effects Scoped into the Detailed Assessment

18.5.4 Table 18-3 presents the Shadow Flicker matters that are likely to give rise to significant adverse effects and, therefore, which are proposed to be scoped into the detailed assessment.

Table 18-3 Likely Significant Effects Scoped into the Detailed Assessment

Potential Effect	Agreement in CMBC Scoping Opinion	Rationale to Scoped In
Shadow Flicker during the Operational phase	Aligns with CMBC response noting the difference in suggested study areas discussed above.	As there are a number of potentially sensitive receptors within the Study Area, there is the potential for Significant Shadow Flicker effects to occur at these receptors. As such, an assessment of all receptors within the Study Area where Shadow Flicker is geometrically possible will be undertaken.

18.6 Proposed Approach to the ES

Assessment Methodology

Further Baseline Data

18.6.1 To undertake the assessment, a detailed review of all properties within the Study Area will be undertaken to refine:

- The number of properties;
- The status of the properties (e.g. derelict, building type, occupier status etc.); and
- The location and dimensions of the properties to be entered into the model.

Construction

18.6.2 No assessment will be conducted for the Construction Phase of the Proposed Development.

Operation and Maintenance

Determining the Magnitude of Impact

18.6.3 No formal guidance is available regarding what levels of Shadow Flicker may be considered acceptable in the UK or how to consider the magnitude of impact. However, guidance and legislation relating to Shadow Flicker is available for other countries around the world.

18.6.4 The guidance document 'Update of UK Shadow Flicker Evidence Base' presents an overview of the assessment methodologies most commonly used in countries that have their own specific legislation or guidance with regards to Shadow Flicker effects. The paper states that nearly all countries base their guidance on the German guidelines 'Guideline for Identification and Evaluation of the Optical Emissions of Wind Turbines'.

18.6.5 The limit values within the German guidelines are 30 minutes per day and 30 days per year. These limits are, however, based on worst-case conditions, i.e. the total theoretical number of hours per year that Shadow Flicker may occur, assuming that the sun is always shining during daylight hours. If it is found that mitigation measures are required, then a further limit value of 8 hours per year is set based on the real case Shadow Flicker, i.e. what is actually occurring and not the theoretical maximum that may occur.

18.6.6 Many countries have adopted the German guideline limits, either directly or with some small adjustments. Australia, Belgium (Walloon region), Brazil, Canada, India, Sweden, and USA all have a worst-case limit of 30 hours a year or 30 minutes a day. The UK has no set limit, however these guideline levels are often adopted for assessment purposes.

18.6.7 For the EIA, the following definitions will be used:

- Any theoretical Shadow Flicker exceeding the 30 hours per year or 30 minutes per day constitutes a large magnitude of impact;
- Any theoretical Shadow Flicker exceeding 20 hours per year or 20 minutes per day, but less than 30 hours per year or 30 minutes per day, constitutes a medium magnitude of impact;
- Any theoretical Shadow Flicker less than 20 hours per year or 20 minutes per day, constitutes a small magnitude of impact; and
- Although Shadow Flicker is possible at distances exceeding 10 rotor diameters from a turbine, any daily or annual duration of Shadow Flicker experienced at these distances is not considered to be problematic. Therefore, any amount of

theoretical Shadow Flicker at receptors exceeding 10 times the rotor diameter of the turbines that comprise the Proposed Development is considered to constitute a negligible magnitude of impact.

18.6.8 Theoretical Shadow Flicker in this context is identical to that from the German guidance and means the 'worst case' Shadow Flicker, in that this is the amount of Shadow Flicker predicted assuming that the sun is always shining, the blades are always spinning, and the turbines are always facing the receptors.

Determining the Level of Effect

18.6.9 The level of effect will be informed by the magnitude of impact due to the Proposed Development, and the evaluation of the sensitivity of the affected receptor. The level of effect has been determined using professional judgement and Table 18-4 has been a tool which will assist with this process.

Table 18-4 Matrix to Support Determining of Effect

		Sensitivity			
		High	**Medium**	**Low**	**Negligible**
Magnitude of Change (or impact)	**Large**	Major	Moderate to Major	Minor to Moderate	Negligible
	Medium	Moderate to Major	Moderate	Minor	Negligible
	Small	Minor to Moderate	Minor	Negligible to Minor	Negligible
	Negligible	Negligible	Negligible	Negligible	Negligible

18.6.10 The following terms will be used to define the level of the effects identified and these can be 'beneficial' or 'adverse':

- Major effect: Where the Proposed Development is likely to cause a considerable change from the baseline conditions and the receptor has limited adaptability, tolerance or recoverability or is of the highest sensitivity;
- Moderate effect: Where the Proposed Development is likely to cause either a considerable change from the baseline conditions at a receptor which has a degree of adaptability, tolerance or recoverability or a less than considerable change at a receptor that has limited adaptability, tolerance or recoverability;
- Minor effect: Where the Proposed Development is likely to cause a small, but noticeable change from the baseline conditions on a receptor which has limited

adaptability, tolerance or recoverability or is of the highest sensitivity; or where the Proposed Development is likely to cause a considerable change from the baseline conditions at a receptor which can adapt, is tolerant of the change and / or can recover from the change; and

- Negligible: Where the Proposed Development is unlikely to cause a noticeable change at a receptor, despite its level of sensitivity or there is a considerable change at a receptor which is not considered sensitive to a change.

18.6.11 The duration of the effect has been assessed as either 'short-term', 'medium-term' or 'long-term'. Short-term is up to 1 year, medium-term is between 1 and 10 years and long-term is greater than 10 years.

Determining Significance

18.6.12 For each effect, a statement will be made as to whether the level of effect is 'Significant' or 'Not Significant'. This determination will be based on professional judgement and / or relevant guidance / legislation, where applicable.

18.6.13 Significance will be concluded for residual effects (i.e. following the identification of secondary mitigation).

18.6.14 No formal guidance is available regarding what levels of Shadow Flicker may be considered acceptable in the UK, and beyond which amenity effects are Significant. Therefore, the German Shadow Flicker guidance has been considered to determine the significance of any effects. For the purposes of this assessment, theoretical Shadow Flicker exceeding 30 hours per year or 30 minutes per day is the threshold for significant. Exceedance of either of these limits is considered to result in an effect that is significant on the amenity of the occupants of a receptor and may require mitigation. For levels of Shadow Flicker below this limit, the effect is considered not significant.

18.6.15 Although the German guidance for Shadow Flicker has been adopted, which references the theoretical worst-case levels of Shadow Flicker, it is important to note that these values should be seen in the context of several mitigating factors that will reduce the levels or perceived effect of Shadow Flicker:

- The sun will not always be shining. During periods of cloud cover, Shadow Flicker will not be possible;
- Screening of the turbines from other buildings, trees, and other obstacles will reduce or eliminate Shadow Flicker in some cases;
- Shadow Flicker effects will be reduced when the turbines are side on to the receptor, both in terms of the duration and intensity of effect;

- Shadow Flicker occurring in the summer may occur very early in the day or very late in the evening when people are asleep or will usually have the curtains drawn, so will not perceive Shadow Flicker;
- The windows included in the model have been estimated using the greenhouse approach. In practice the windows will be smaller and may not face the Project for Assessment; and
- Shadow Flicker in some rooms will likely not be perceived as negatively as in others, such as a garage or bathroom, versus a living room or bedroom.

18.6.16 The potential for Shadow Flicker at the receptors in the Study Area will be assessed by calculating the times and durations that Shadow Flicker may occur at all sensitive receptors that lie within the areas in which it is geometrically possible for Shadow Flicker to occur, given the positions and dimensions of the turbines, as well as the possible locations that the sun can appear in the sky.

18.6.17 This assessment will be undertaken using the WindPRO software package, and will adopt a "Greenhouse" model approach, where the full façade of a receptor is assumed to be sensitive to Shadow Flicker effects (rather than specific window locations). The assessment will calculate Shadow Flicker for a "worst-case" scenario, where the sun is always shining, the turbines, are always spinning, and all turbines all face the assessed receptors head on. The model will also calculate the potential for Shadow Flicker under the "cloud corrected" scenario, where the potential for cloudy skies (and the corresponding elimination of Shadow Flicker) is considered by using historical weather data records.

Decommissioning

18.6.18 No assessment will be conducted for the Decommissioning Phase of the Proposed Development.

Assumptions, Limitations and Uncertainties

18.6.19 The following limitations have been identified:

- The dimensions of each property, as input into the modelling software, will be informed by aerial imagery rather than measured on-site. This is considered a cautious approach, which will offer the greatest level of protection to residents, and which is in line with the way in which Shadow Flicker Control Systems are implemented (based on the building footprint).
- The model will not account for all potential blocking points (e.g. vegetation or other buildings) which may block the view of the turbines meaning that Shadow

Flicker will not be possible. This is a standardised approach and therefore the same will apply for the prediction of weather conditions.

- The final turbine selection (model built) for the Proposed Development will not be known at the point of assessment and therefore a candidate turbine will be used to inform the shadow flicker assessment.

19 Environmental Aspects Scoped Out

19.1.1 There are a number of environmental aspects which, it is proposed, are scoped out of the detailed assessment that will be presented in the ES. This because it is considered that there can be no significant environmental effects occurring to any relevant receptor relating to these aspects. In accordance with PINS Advice Note Seven[20], Table 19-1 sets out each of the aspects that it is proposed are scoped out from detailed assessment, with justification provided on why this is considered to be the case.

Table 19-1 Technical Aspects Scoped Out

Technical Aspect	Justification
Agricultural Land	The Turbine Area is predominantly peatland with boggy areas but there are sections of agricultural and forested areas. The National Planning Policy Framework (NPPF) defines 'Best and Most Versatile' (BMV) agricultural land as Grades 1 and 2 and Subgrade 3a. These classifications refers to land that is most productive, adaptable, and capable of supporting a wide range of agricultural outputs, including food crops and non-food uses such as biomass, fibres, and pharmaceuticals. Grades 3b, 4, and 5 are used to classify land that is of 'Moderate' quality to 'Very Poor' quality. The agricultural classification within the Turbine Area is classed as Grade 5 (Very Poor) and is predominantly used for grazing of livestock and grouse shooting. As such, the Turbine Area will not result in the loss of any BMV agricultural land, and no significant adverse effects are anticipated in this regard. It is acknowledged that the design of the Proposed Development is ongoing, including the identification of cable corridor options within the Cable Corridor Search Areas and any land required for construction, operation, maintenance, and decommissioning. This also includes land for off-site compensation and highways works to accommodate AIL. ALC surveys will be discussed with Natural England and, where required, will take place to determine whether BMV agricultural land is present within the preferred cable corridors going forward. This will inform appropriate mitigation plans which will also be discussed and agreed with Natural England. At this stage, it is considered unlikely that such works will impact BMV agricultural land, as any compensation or mitigation measures will be situated on land with similar characteristics to ensure effectiveness. Any impacts would be considered temporary in nature. This EIA approach is proportionate in-line with the status of the Cable Corridor Search Areas. An Outline Soil Management Plan (oSMP) will be prepared and agreed with Natural England. This plan will outline the procedures for protecting, handling, storing, and restoring soil during

	and after construction. With the implementation of the oSMP, no significant effects on soil quality or BMV land are expected. Agreement is sought that Agricultural Land is scoped out of the EIA.
Land contamination and minerals	The Turbine Area encompasses an extensive central upland area of peat moorland. Habitats in the Turbine Area consist mainly of rotationally burned upland heath managed for grouse with areas of blanket bog and rough grazing (predominantly for sheep). Further details of the different habitats found within the Turbine Area is included within **Chapter 7: Biodiversity**. Site Access Search Areas to the Turbine Area predominantly consist of private tracks, at elevations. The Turbine Area contains a Sandstone Mineral Safeguarding Area in the southern end, adjacent to the north of Widdop Road and south east of Pennine Way, and also within the Turbine Area is a historic landfill site adjacent to the north east of the Walshaw Dean Middle Reservoir. Furthermore, another historic landfill site is adjacent to south of Turbine Area, south of Pennine Way and adjacent to the south of Gorples Reservoir Carpark, and another one is 0.4km south of the Turbine Area, adjacent to the east of Cow Hey Lane. There are no coal mining areas, no permitted waste sites and no local geological sites within the Turbine Area. The nearest local geological sites are adjacent to the south west of Widdop Reservoir, which are located 0.2 km south west of the Turbine Area, and the nearest permitted waste site is Heptonstall, 3.7km south east of the Turbine Area. The design of the Proposed Development is ongoing, including the identification of cable corridor options within the Cable Corridor Search Areas and any associated land requirements for construction, operation, maintenance, and decommissioning. This also encompasses land that may be needed for off-site compensation measures and highways works to facilitate the movement of AIL. Once these options have been further developed, a Phase 1 Contaminated Land Report (CLR) will be prepared and submitted as an appendix to the description of the

	Proposed Development in the ES. The findings will inform the design of the Proposed Development, with appropriate measures incorporated to avoid potential sources of contamination, such as the avoidance of known landfill sites. Groundworks during the construction phase will be managed in accordance with best practice principles, which will be detailed in an outline Construction Environmental Management Plan (oCEMP). With these measures in place, it is considered unlikely that any significant effects will result from existing land contamination, and as such, this topic is proposed to be scoped out of the EIA. Any issues relating to contamination resulting from project activities will be controlled by measures as set out in the outline Soil Resources Management Plan (oSRMP) and the outline Decommissioning Environmental Management Plan (oDEMP) e.g., issues relating to storage and use of fuels and sediment runoff. The outline Site Waste Management Plan will define the measures for handling, storing, transporting and disposing of any contaminated soil (as hazardous waste). The implementation of the mitigation measures set out in these documents will ensure that there will be no likely significant effects. Agreement is sought that Land Contamination and Minerals is scoped out of the EIA.
Risk of major accidents and / or disasters	'Accidents' are considered to be an occurrence resulting from uncontrolled events in the course of construction and operation of a development (e.g. major emission, fire or explosion). 'Disasters' are considered to be naturally occurring extreme weather events or ground related hazard events (e.g. subsidence, landslide, earthquake). Given The nature and type of development, it is considered that the Proposed Development is unlikely to result in any type of major accident/ disaster. The inclusion of the fire risk management cooling system, forming part of the BESS, is designed to regulate temperatures to safe conditions to minimise the risk of fire. A BESS Safety Management Plan will be developed to further minimise associated risks, such as emission to air.

	Therefore, no impact assessment will be undertaken and instead will be considered within separate appendices as part of the DCO application, including an outline Construction Environmental Management Plan (oCEMP), outline Battery Safety Management Plan (oBSMP), outline Operational Environmental Management Plan (oOEMP), as well as a separate Aviation and Radar Technical Assessment and the Peat Landslide Assessment. There is a strict legislative framework that governs construction activities so as to ensure risks are clearly managed to an acceptable level. A variety of guidance, including to ensure pollution prevention, also exists. as a result, an oCEMP will be produced and submitted with the DCO Application detailing the measures that will be implemented to ensure that major accidents are avoided. The Proposed Development will be designed and operated in accordance with all legislative requirements that relate to this type of facility. An oBSMP will be produced, detailing the regulatory guidance reviewed and how these will be responded to, so as to ensure that all safety concerns around the BESS element of the Proposed Development are addressed in so far as is reasonably practicable. During operation, safety processes will be reviewed, and if required, updated to ensure that the operations do not increase the risk or result in a major accident. An oOEMP will be produced, detailing the measures that will be implemented to ensure that major accidents are avoided during operation and maintenance. The Proposed Development has the potential to impact aviation and radar, however the Proposed Development will be designed and operated in accordance with all legislative requirements and a technical solution identified which, where possible, will be agreed with relevant stakeholders. Given there are technical solutions, likely significant effects do not occur. A separate Aviation and Radar ES Chapter will be produced, detailing the regulatory guidance reviewed and how these will be responded to, so as to ensure that all safety concerns around the

	Proposed Development on Aviation and Radar are addressed in so far as is reasonably practicable. Similar to the construction phase, during demolition the latest legislative framework that governs demolition activities will be adhered to ensure risks are clearly managed to an acceptable level. An oDEMP will be produced that sets out the measures which will be implemented to ensure major accidents are avoided. During construction, there is a potential for existing peat deposits to be disturbed and generate a landslide. As detailed in **Chapter 8: Hydrology, Hydrogeology, Geology and Peat** a peat landslide hazard and risk assessment will be undertaken providing details on how the Proposed Development will be constructed and operated, as well as any details relating to mitigation embedded in the design of the development. This will set out the measures which will be implemented to ensure major accidents are avoided. Agreement is sought that Risk of Major Accidents and Disasters is scoped out of the EIA.
Transboundary Effects	Regulation 32 of the EIA Regulations require the consideration of any likely significant effects in the environment of another European Economic Association (EEA) member state. Guidance from PINS on the consideration of transboundary effects is provided online[29]. Due to the nature and location of Proposed Development, it is not anticipated that the Proposed Development has the potential to result in any likely significant effects on the environment of another EEA State. Agreement is sought that Transboundary is scoped out of the EIA.
Materials and Waste	The DCO is seeking time limited consent and the Proposed Development will be operational for up to approximately 35 years, after which time it will be decommissioned. Waste will inevitably be generated as a consequence of the construction, operational (including maintenance) and decommissioning works for the Proposed Development. A Materials and Waste Assessment

	Report and a Waste Strategy will be included as standalone reports within the ES, which will set out the likely effects and commitments to reduce the generation of waste and to divert waste from landfill. This will ensure that waste arisings will be effectively controlled, and that good management practices will be implemented to minimise the generation of waste and maximise the reuse or recycling of waste materials that arise from all phases of the Proposed Development where practicable. The use of sustainably sourced materials will also be considered in the Materials and Waste Assessment Report. Additionally, the Carbon Management Plan will consider embodied carbon in product and material procurement. Agreement is sought that Materials and Waste is scoped out of the EIA.

A1 Appendix A: Scoping Commitments Register

ID	Stage	Primary Topic	Subtopic (if applicable)	Effect (if applicable)	Commitment	Monitoring	Phase	Commitment Securing Mechanism	Delivery and Responsibility
C01	PEIR/Final ES	Construction Environment Management Plan (CEMP)	Biodiversity, Air Quality, GHG, Noise, Hydrology, Hydrogeology, Geology & Peat, Landscape	N/A	An Outline CEMP will be produced as part of the project to support the PEIR and ES and will document the steps taken to minimise the environmental impacts of the construction project (e.g. on Ecology, AQ etc.)	N/A	Design and Construction	Design Parameters	All Teams (including Biodiversity, Landscape and Visual, Noise and Air Quality)
C02	EIA Scoping	BNG	Biodiversity	10% Net Gain	Beyond compensation and mitigation - where necessary, offsite gains may be	Yes	Design, Construction and Post	Design parameters	Ecologists

					required to ensure overall delivery of a minimum 10% net gain for biodiversity - the approach to BNG will be subject to a bespoke approach (due to the presence and potential impacts on irreplaceable habitats).		Construction		
C03	Final ES	Landscape and Ecology Management Plan (oLEMP)	Biodiversity and Landscape, Human Health	Outline landscape and ecology plan	Develop an Outline Landscape and Ecology Plan (oLEMP) to support the Final ES. This will set out short term and long-term landscape and ecological objectives for the site and Proposed Development, including the	Yes	Design, Construction and Post Construction	Design parameters	Ecologists and Landscape

					proposed site restoration measures following construction taking account of the surrounding local landscape character.				
C04	PEIR/Final ES	Outline Operational Environmental Management Plan (if required)	Biodiversity, Hydrology, Hydrogeology, Geology & Peat	Managing the environmental operations to avoid significant effects	Develop an Outline Operational Environmental Managemant Plan, as required, to avoid likely significant effects.	Yes	Design, Operation and Post Construction	Design parameters	Ecologists, Project Design Team, others
C05	PEIR/Final ES	Outline Decommissioning Environmental Management Plan	Biodiversity, Hydrology, Hydrogeology, Geology & Peat, Landscape and Visual	Managing the decommissioning environment to avoid significant effects.	Develop an Outline Decommissioning Environmental Management Plan to avoid likely significant effects.	Yes, at decommissioning	Design and Post Construction	Design parameters	All Teams (including Biodiversity, Landscape and Visual, Geology & Peat)

C06	PEIR/Final ES	Initial Draft Construction Traffic Management Plan (CTMP)	Traffic and Transport, Air Quality, GHG	Planning for no adverse impact construction traffic management	Avoid potential hazards and control the potential risks arising from the use of vehicles in construction, including environmental risks (e.g. AQ) via a CTMP. Measures within the CTMP will include measures such as road cleaning facilities at the Site access and basic warning signage.	N/A	Design and Construction	Design parameters	Traffic and Transport, Principal Contractor
C07	PEIR/Final ES	Initial draft Route Survey Report (RSR)	Traffic and Transport	Planning for low impact route corridors	Plan for low impact route corridors through a RSR.	N/A	Design and Construction	Design parameters	Traffic and Transport
C08	EIA Scoping	Description of Development	Peat and Soils	Reducing impact on peat	Individual turbine layouts will be iterated in response	Phase 1 Peat Probing,	Design and	Design parameters	Project Design

					to increasingly resolute peat depth data to allow any identified areas of deeper peat to be avoided where possible, or to prioritise deeper peat for temporary infrastructure (will be reinstated post-construction). Following the Habitat Regulations Assessment approach opportunities will be sought within the Site boundary to improve the quality of peatland undisturbed by the Proposed Development. Where appropriate,	interim or more detailed peat probing will likely be required.	Construction		Team, Peat Team

					access roads will be constructed using permeable materials.				
C09	EIA Scoping	Description of Development	Biodiversity, Ornithology	Reducing impact on SAC	Following the HRA approach, the most sensitive habitats associated with qualifying features of the SAC and areas of rare fungi will be avoided, where possible, when siting infrastructure.This would be delivered through the implementation of the oLEMP which will detail proposed approached to habitats within the Proposed Development and any offsite areas	N/A	Design, Construction, Operation	Design parameters, management plans	Project Design Team, Biodiversity, Ornithology

					required. A Habitat Management and Monitoring Plan (HMMP) would also be submitted as part of the Biodiversity Net Gain Plan.				
C10	EIA Scoping	Description of Development	Hydrology, FRA	Reducing impact on watercourses	Infrastructure will be designed to minimise the number of watercourse crossings and encroachments into 50m buffer zones around all mapped water features during construction. Where cable route crossings occur across watercourses, suitable land drainage consent for ordinary	N/A	Design and Construction , and operation	Design parameters	Hydrology / FRA Team

					watercourses and/or EA permits for Main Rivers would be obtained to undergo works. Suitable offsets will be provided from the top of bank of all watercourses to all construction activities to maintain ecological barriers and to ensure that access for maintenance is provided. Infrastructure will be located appropriate buffer distances from any confirmed GWDTEs where possible or construction measures will be				

					employed to mitigate for effects.				
C11	PEIR/Final ES	Outline Construction Environmental Management Plan	GHG/Climate Change	Reducing GHG emissions during construction, particularly in supply chain	A Carbon Management Plan will be developed to consider embodied carbon in product and material procurement.	Yes	Construction	Management Plans	Project Design Team/Carbon and Climate/Others
C12	PEIR/Final ES	Outline Operational Environmental Management Plan (if required)	GHG/Climate Change/Health	Reducing GHG emissions during operation, particularly in supply chain for replacements	A Carbon Management Plan will be developed to consider embodied carbon in product and material procurement.	Yes	Post Construction	Management Plans	Project Design Team/Carbon and Climate/Others
C13	Final ES	Outline Soils Management Plan (oSMP)	Geology and Soils	Soil management and restoration	Manage any potential impacts to the soil (and agricultural land) during and on completion of the		Construction, decommissioning and operati	Management Plans	Geology and Soils

					Proposed Development (considering the construction, decommissioning and operational phases).		onal phases		
C14	Final ES	Outline Employment Skills and Supply Chain Management Plan (oESSMP)	Socioeconomics, Human Health	Develop essential skills which would benefit the local population through apprenticeships and workforce training.	Maximise opportunities to promote economic benefits in relation with skills, supply chains, and employment in the local region, which is required to deliver the entirety of the Proposed Development.		Construction, decommissioning and operational phases	Management Plans	Socio-economics, others
C15	Final ES	Outline Site Waste Management Plan (oSWMP)	Waste	Effective waste management by the applicant resulting in	Implement industry good practice measures to manage waste generated by the construction of the		Construction, decommissioning and operati	Management Plans	Waste Team

				carbon and waste reduction.	Proposed Development.		onal phases		
C16	Final ES	Outline Public Right of Way Management Plan (oPROWMP)	Access, Transport and Traffic, Human Health	Ensures user safety and accessibility	Commitment to suitably consider how to operate, in terms of managing both user safety and accessibility on PRoW and proposed Permissive Paths, during the construction, operation and decommissioning of the Proposed Development.		Construction, decommissioning and operational phases	Management Plans	Traffic and Transport
C17	PEIR/Final ES	Outline Peat Management Plan	Peat and Soils	Effective peat management by applicant to result in reduced adverse	A commitment to take into account the approximate predicted volumes of peat that would be excavated during construction, the		Construction, decommissioning and operati	Management Plans	Peat team, Project Design Team/Any Others

				impacts on peat	characteristics of the peat that would be excavated, and the principles of how and where this excavated peat would be stored, reused and managed to avoid adverse impacts to peat management.		onal phases		
C18	PEIR/Final ES	Written Schemes of Investigation	Historic Environment		Outline the methodology for archaeological work, with the primary purpose is to ensure that archaeological remains are identified, recorded, and potentially preserved or mitigated appropriately during development.				

C19	PEIR/Final ES	Archaeological Mitigation Strategy	Historic Environment		Mitgate effects on buried archaeological remains that cannot be avoided by a programme of archaeological investigation				
C20	EIA Scoping	BESS Safety Management Plan	Air Quality	Minimise the risk of fire and associated emissions	A cooling system will form part of the BESS (if BESS is selected), which is designed to regulate temperatures to safe conditions to minimise the risk of fire. In addition, a BESS safety management plan will be developed to further minimise the risk of hydrogen fluoride (HF) emissions in the event of a fire.		Operation and Maintenance	Management Plans	Air Quality team, Project Design Team

C21	PEIR/Final ES	Construction Environment Management Plan (CEMP)	Ornithology	N/A	The CEMP will be proportionate and tailored to Ornithology and biodiversity where applicable, and will include the following: • Identification of 'biodiversity protection zones' and areas; • Inclusion of details for the implementation of methods statements to achieve ornithological outcomes and mitigation measures; • Identification of practical measures and sensitive working practices to avoid construction		Construction, operation an decommissioning phases	Management Plans	Project Design Team, ornithology, biodiversity teams

					related impacts; • The location and timing of sensitive works to avoid harm to ornithological features; • The times during construction when particular specialists are required to be present to oversee works; • Responsible persons and lines of communications; • Defining the role and responsibilities of an Ecological Clerk of Works (ECoW); and • Use of protective barriers and warning signs to avoid and prevent harm to ornithology and biodiversity.				

C22	PEIR/Final ES	CEMP	Ornithology, Biodiversity	Potential impact to nesting birds	Construction work will avoid the peak nesting period (April – May) wherever practicable to minimise impacts on the qualifying breeding bird species of the South Pennine Moors Phase 2 SPA and South Pennine Moors SSSI. This will be prioritised wherever practicable, but if construction work does need to take place during these times (and at any time during the nesting season), then standard good practice appropriate mitigation measures will be put in place.		Construction, operation and decommissioning phases	Management Plans	Project Design Team, ornithology, biodiversity teams

					Any removal of suitable bird nesting habitat (particularly habitat associated with the qualifying breeding bird species of the South Pennine Moors Phase 2 SPA and South Pennine Moors SSSI) to be removed during the nesting season, will first be checked for nests by the ECoW immediately prior to clearance. If nests are found, they will be retained (with a suitable, species-specific buffer from works established) and protected from damage or abandonment until				

					the young have fledged.				
C23	PEIR/Final ES	oLEMP, oOEMP	Ornithology, Biodiversity	Potential impacts resulting from the removal of habitat	operational maintenance will minimise the level of removal of suitable habitat and use existing access routes where possible. Best practice methods will be adopted to minimise the potential for disturbance (e.g., to minimise generation of additional noise, light and vibration).		Operation and Maintenance	Management Plans	Project Design Team, ornithology, biodiversity teams
C24	PEIR/Final ES	oLEMP, oOEMP	Ornithology, Biodiversity	Risk of avian fatalities during operation and maintenance	monitoring of the Site will be undertaken to assess the ongoing impacts of the Proposed	Yes	Operation and Maintenance	Management Plans	Project Design Team, ornithology, biodiversity teams

					Development, as would be secured within the oLEMP and oOEMP. This will include an avian fatality monitoring programme to confirm the accuracy of the Collision Risk Modelling (CRM) predictions that will be made in the assessment.				
C25	EIA Scoping	BNG, draft Habitat Management and Monitoring Plan	Biodiversity	10% Net Gain	A draft Habitat Management and Monitoring Plan (HMMP) would also be submitted alongside the plan.		Operation, maintenance and decommissioning	Management Plans	Project design team, biodiversity team
C26	PEIR/Final ES	Dust management	Biodiversity, Air Quality, GHG,	Impacts to designated sites and	Construction and Decommissioning would be		Construction, operati	Management Plans	Project design team, biodiversity,

			Transport, Hydrology	habitats from dust	undertaken using good practice approaches to minimise the release and movement of dust during construction. This may include measures such as vehicle washing, dust dampening, control mechanisms. Best practice management measures would be applied as described in Institute of Air Quality Management (IAQM) (2014) guidance on the Assessment of Dust from Demolition and		on and maintenance, decommissioning		transport team

					Construction 2014, version 1.1.				
C27	EIA Scoping	Pollution and surface run-off	Biodiversity, Hydrology, FRA	Impacts to watercourses during construction	Construction works would be undertaken using all necessary and practical measures to minimise the release of additional sediment-laden run-off into nearby watercourses and reservoirs. This would be secured through the delivery of the CEMP and a Water Management Plan as necessary, which will be prepared in accordance with the outline CEMP and oPMP and approved		Construction, decommissioning	Management Plans	Project design team, biodiversity, hydrology and hydrogeology team

					by the relevant planning authority				
C28	EIA Scoping	Traffic Management	Biodiversity, Transport and Access	Impacts to sensitive habitats within designated sites from construction vehicle movements	Construction works would be undertaken using a traffic management plan designed to minimise direct impacts/damage to sensitive habitats within the designated site. This would be delivered through the outline CTMP and the CEMP as necessary.		Construction, operation and maintenance, decommissioning	Management Plans	Project design team, biodiversity, transport team
C29	EIA Scoping	Lighting	Biodiversity, Human Health, Transport and Access, Landscape and Visual	Impacts of lighting on nocturnal species	Where necessary, a sensitive lighting strategy would be employed to avoid unnecessary light pollution and avoid/minimise		Construction, operation and maintenance,	Management Plans	Project design team, biodiversity, transport, landscape and visual team

					impacts of lighting on nocturnal species such as bats and otter. The strategy would be developed to avoid and reduce any landscape and visual impacts associated with lighting. Works are not anticipated to be required at night, however access routes and construction compounds may require security lighting. an outline Lighting Strategy will be prepared in accordance with the		decommissioning		

					outline CEMP and approved by relevant planning authority. This strategy will be in-line with aviation safety requirements.				
C30	PEIR/Final ES	Protected Species	Biodiversity	Impacts upon protected species during operation	To avoid, minimise and potentially mitigate impacts on Protected Species during operation, a Protected Species Mitigation and Monitoring Strategy would be developed.		Operation and Maintenance	Management Plans	Project design team, biodiversity
C31	EIA Scoping	Flood Risk	Hydrology, FRA	Impacts associated with flooding	A Flood Risk Assessment (FRA) and Drainage Strategy will contain hydrology and hydrogeology specific embedded environmental		Construction, operation and maintenance, decom	Management Plans	Project design team, hydrology team

					mitigation measures forming the basis of the technical assessments for the DCO application and will be used to inform the ES Chapter. Pluvial modelling will be undertaken to quantifiably prove that there would be no off-site flood risk impact (scope and methodology to be discussed and agreed with LLFA/EA).		missioning		
C32	EIA Scoping	Surface water runoff and SuDS operational management plan	Hydrology, Hydrogeology, Geology and Peat	Potential increase to surface water runoff during operation	Surface water runoff from new impermeable surfaced areas will be managed to ensure that there is no increase in flood		Operation and maintenance	Management Plans	Project design team, hydrology team

					risk elsewhere. Suitable management and maintenance plans for Sustainable Drainage Systems (SuDS) will be employed to ensure the drainage system operates as designed. This will be detailed within the Drainage Strategy as part of the FRA				
C33	PEIR/Final ES	Shadow Flicker	Shadow Flicker, Human Health	Potential impacts to receptors resulting from shadow flicker during operation and maintenance	A shadow flicker control system is the primary way by which shadow flicker arising from the Proposed Development can be mitigated. This will be provided as	Yes	Operation and maintenance	Management Plans	Project design team, shadow flicker team

					part of an operational shadow flicker management strategy.				
C34	EIA Scoping	Construction Traffic Movements	Traffic and Transport	Impacts to sensitive receptors associated with construction vehicle traffic movements	Alongside the provision of a CTMP, measures will also include the provision of road upgrades and new track section on the C682 to enable access for AIL deliveries to the Proposed Development A Staff Travel Plan will promote travel access to and from the site for staff construction of the Proposed Development.		Construction	Management Plans	Project design team, traffic and transport

C35	EIA Scoping	Decommissioning of the Proposed Development	Traffic and Transport	Impacts to sensitive receptors associated with decommissioning vehicle traffic movements	A Decommissioning Traffic Management Plan (DTMP) will be prepared to consider the traffic management measures necessary at the time of decommissioning (circa 35 years from the completion of construction activities).		Decommissioning	Management Plans	Project design team, traffic and transport
C36	PEIR/Final ES	SuDS Management and Maintenance Plan	Hydrology, Hydrogeology, Geology and Peat	Management and maintenance of SuDS to improve sustainable drainage	SuDS Management and Maintenance Plan will be prepared to improve sustainable drainage		Construction, operation and maintenance	Management Plans	Project design team (Tony Gee)

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