

Green Hill Solar Farm

EN010170

Environmental Statement

Chapter 19: Arboriculture

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Issue Sheet

Report Prepared for: Green Hill Solar Farm
DCO Submission

Report Title: 19: Arboriculture

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19 Arboriculture

19.1 Introduction

- 19.1.1 This chapter presents the findings of the Environmental Impact Assessment (EIA) concerning the potential arboricultural impacts of the Scheme during the construction, operation and maintenance, and decommissioning phases. For the purposes of this chapter, arboriculture includes trees, groups of trees and woodlands which are collectively referred to throughout as 'arboricultural features'. Hedgerows are considered separately in **Chapter 9: Ecology and Biodiversity [EN010170/APP/GH6.2.9]** in this Environmental Statement (ES).
- 19.1.2 The following aspects will be considered within the arboriculture assessment process:
- The baseline arboricultural conditions within the Study Area;
 - Embedded mitigation for arboricultural features;
 - Assessment of likely significant effects on arboricultural features and any additional mitigation required; and
 - Assessment of potential residual likely significant effects once any additional mitigation measures have been employed.
- 19.1.3 Whilst this chapter presents the potential significant arboricultural effects of the Scheme, it is recognised that trees have multiple interconnected values such as ecological and landscape value. The ecological and landscape effects of tree loss may be inferred in this report but are formally assessed within the respective chapters being **Chapter 9: Ecology and Biodiversity [EN010170/APP/GH6.2.9]** and **Chapter 8: Landscape and Visual Impact [EN010170/APP/GH6.2.8]** of this ES.
- 19.1.4 For project description details, please refer to **Chapter 4: Scheme Description [EN010170/APP/GH6.2.4]** of this ES.
- 19.1.5 This chapter have been prepared by Lanpro (see Statement of Competence **[EN010170/APP/GH6.3.1.1]**).

Appendices and Figures

- 19.1.6 This chapter is supported by the following appendices:
- ES Appendix 19.2 Arboricultural Impact Assessment and Outline Arboricultural Method Statement **[EN010170/APP/GH6.3.19.2]**.
- 19.1.7 This chapter is supported by the following tables:
- **Table 19.1 Relevant Scoping Opinion Comments**
 - **Table 19.2: Statutory Consultation Comments**
 - **Table 19.3: Definitions of Ancient Tree, Veteran Tree and Ancient Woodland**
 - **Table 19.4: Desk Study Sources of Information**
 - **Table 19.5: Sources of Information for Assessment of Impacts**



- **Table 19.6: Criteria for Sensitivity/Value of Arboricultural Feature**
- **Table 19.7: Criteria for Determining Magnitude of Impact**
- **Table 19.8: Significance of Effect**
- **Table 19.9: Summary of Desk Study Results**
- **Table 19.10: Summary of Tree Survey Results**
- **Table 19.11: Likely Tree Removals and Effects for All Trees along the Cable Route Corridor**
- **Table 19.12: Likely Canopy/Root Impacts and Effects on All Trees along the Cable Route Corridor**
- **Table 19.13: Impacts to Ancient Woodlands during Operational Phase**
- **Table 19.14 Summary of Residual Effects for Arboriculture**

19.2 Consultation

Scoping Opinion

- 19.2.1 An EIA Scoping Report was submitted to the Planning Inspectorate (PINS) in July 2024 (Ref 19.1), with a formal request for a Scoping Opinion. PINS subsequently issued the Scoping Opinion on 30th August 2024.

**Table 19.1 Relevant Scoping Opinion Comments**

Consultee and Date	Comment	How has the comment been addressed	Location of response in chapter
The Planning Inspectorate 30th August 2024	<p>Scoping Opinion ID 3.15.1 - <i>"It is proposed by the Applicant that [impacts to trees in Sites A-G and the BESS site during construction, operation and decommissioning] is scoped out given that embedded mitigation would be included within the design of the Proposed Development and further mitigation contained in the OCEMP.</i></p> <p><i>It is explained that a desk-based assessment found that there are no existing records of ancient and veteran trees or Tree Preservation Orders or Conservation Areas within Sites A-G, the BESS site or the Cable Route Search Area. The Inspectorate notes that para 20.3.6 identifies that tree surveys on Sites A-E (excluding A.2) have so far recorded 16 veteran trees, one of which is also ancient, and that tree surveys on the BESS site and Sites A.2 and G are ongoing.</i></p> <p><i>The Inspectorate agrees that significant effects are unlikely to occur on the basis that embedded mitigation to avoid impacts would be</i></p>	<p>This ES Chapter scopes out arboricultural impacts across Sites A-G and the Green Hill BESS (except for effects on ancient and veteran trees and ancient woodlands as per below advice in Scoping Opinion ID 3.15.3). Impacts to non-veteran trees at the Sites (such as from the Scheme design or Permanent Access Points), whilst not included in this Chapter, are included in Appendix 19.2 Arboricultural Impact Assessment and Outline Arboricultural Method Statement [EN010170/APP/GH6.3.19.2].</p> <p>The ES describes the embedded mitigation which has been relied upon to avoid significant effects and explains how this has been secured.</p>	<p>Paragraph 19.4.23 for details of arboricultural features scoped into this chapter.</p> <p>Section 19.7 detailing embedded mitigation of this chapter.</p>



Consultee and Date	Comment	How has the comment been addressed	Location of response in chapter
	<i>included within the design of the Proposed Development and further measures would be contained within the OCEMP. Therefore, the Inspectorate agrees to scope out impacts to trees within Sites A-G and the BESS site out for all phases. However, the ES should describe the mitigation which has been relied upon to avoid significant effects and explain how this has been secured."</i>		
	<p>Scoping Opinion ID 3.15.2 – “<i>The Inspectorate notes and welcomes that a Preliminary Arboricultural Impact Assessment setting out the potential effects and an Outline Arboricultural Method Statement containing proposed mitigation and compensatory planting measures (incorporated within the OCEMP) will be submitted with the DCO application. Para 20.6.3 also states that compensatory measures will be secured in a Landscape and Ecology Mitigation and Enhancement Plan.</i></p> <p><i>Explicit cross-reference should be made from the ES to the location of the relevant information contained in the above documents.</i></p>	<p>An Arboricultural Impact Assessment and Outline Arboricultural Method Statement has been produced as an Appendix to this ES Chapter [EN010170/APP/GH6.3.19.2].</p> <p>Compensatory tree planting has been secured in Landscape and Ecology Mitigation Plans [EN010170/APP/GH6.4.4.10] - [EN010170/APP/GH6.4.4.20]</p> <p>This ES contains cross references to these documents.</p> <p>Given that it is not known exactly how many trees will require removal for the Scheme (a maximum tree removal figure is given) and proposed tree planting is shown indicatively as areas on the Landscape and Ecology Mitigation Plans it is not possible to differentiate enhancement planting from compensatory planting. Differentiation will be</p>	<p>[EN010170/APP/GH6.3.19.2]</p> <p>[EN010170/APP/GH6.4.4.10 - EN010170/APP/GH6.4.4.20]</p>



Consultee and Date	Comment	How has the comment been addressed	Location of response in chapter
	<i>Enhancement measures should be clearly differentiated from mitigation and compensatory measures.”</i>	possible during detailed design post-DCO consent.	
	<i>Scoping Opinion ID 3.15.3 – “The Inspectorate notes that there are areas of ancient woodland adjacent to parts of the site. Effects on ancient and veteran trees should be addressed in the ES, where there is potential for likely significant effects to occur and suitable mitigation measures proposed as necessary and secured. The approach to survey and assessment should be agreed with the relevant consultation bodies. The Applicant’s attention is drawn to the comments made by the Forestry Commission, in relation to the protection of trees, contained in Appendix 2 of this Opinion.”</i>	Effects on ancient woodlands and ancient and veteran trees by the Scheme have been assessed in this ES Chapter. Consultation with relevant consultation bodies was undertaken via Statutory Consultation. Reference to the Forestry Commission’s comments and advice has been included in the ES Chapter.	Section 19.8 of this Chapter describes effects to ancient woodlands, ancient and veteran trees. Table 19.2: Statutory Consultation Comments of this chapter. Table 19.2: Statutory Consultation Comments and 19.3.20 of this chapter.
The Planning Inspectorate, Scoping Opinion The Forestry Commission – 22nd August 2024	<i>“We note there are several areas of Ancient Woodland directly adjacent to some of the site areas and the cable search areas, including Sywell Wood, Horn Wood, Threeshire Wood, Nunn Wood and Cold Oak Copse... We also note that 16 veteran trees and 1 ancient tree</i>	This ES Chapter includes references to Sywell Wood, Horn Wood, Three Shires Wood and Nun Wood. Cold Oak Copse is not included in this ES Chapter as it is outside the 50m Zone of Influence for arboricultural impacts (the wood is approximately 290m from the Order Limits).	Table 19.9: Summary of Desk Study Results of this chapter.



Consultee and Date	Comment	How has the comment been addressed	Location of response in chapter
	<i>have been identified within the proposed site area.”</i>		
	<p><i>“Section 5.4.32 of EN-1 – The Overarching National Policy Statement for Energy states: ‘Applicants should include measures to mitigate fully the direct and indirect effects of development on ancient woodland, ancient and veteran trees or other irreplaceable habitats during both the construction and operational phases.’</i></p> <p><i>Section 5.4.53 goes on to state: ‘The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of any irreplaceable habitats, including ancient woodland, and ancient and veteran trees unless there are wholly exceptional reasons and a suitable compensation strategy exists.’</i></p>	<p>The relevant paragraphs of EN-1 have been considered by this ES Chapter.</p> <p>Measures to mitigate against potential direct and indirect effects on ancient woodland and ancient and veteran trees have been included in this ES Chapter.</p>	<p>Paragraph 19.3.7 of this Chapter.</p> <p>Embedded mitigation provided in Section 19.7 of this Chapter.</p>
	<p><i>“The Standing Advice states that proposals should have a buffer zone of at least 15m from the boundary of ancient woodlands to avoid root damage which can result in loss or deterioration of the woodland. Where assessment shows impacts are likely</i></p>	<p>This ES Chapter explains how a 15m buffer zone around ancient woodlands has been applied for arboriculture and highlights any instances where works may need to be carried out within the buffer zone and what mitigation will be followed to reduce impacts to ancient woodlands.</p>	<p>Sections 19.7 details embedded mitigation for ancient woodlands and Section 19.8 details potential impacts to ancient woodlands.</p>



Consultee and Date	Comment	How has the comment been addressed	Location of response in chapter
	<i>to extend beyond this distance, you're likely to need a larger buffer zone."</i>		
	<i>"Fragmentation is one of the greatest threats to lowland mixed deciduous woodland. Woodlands can suffer loss or deterioration from nearby development through damage to soils, roots and vegetation and changes to drainage and air pollution from an increase in traffic or dust, particularly during the construction phase of a development."</i>	No fragmentation of ancient woodlands is proposed in this ES Chapter. Mitigation measures to prevent deterioration of woodland soils, roots and vegetation is provided across all phases of the Scheme, including the construction phase.	Section 19.7 details the embedded mitigation for ancient woodlands.
	<i>"For any woodland within the development boundary, land required for temporary use or land where rights are required for the diversion of utilities, the Root Protection Zone must be taken into consideration. The Root Protection Zone (as specified in British Standard 5837) is there to protect the roots of trees, which often spread out further than the tree canopy. Protection measures include taking care not to cut tree roots (e.g., by trenching) or causing soil compaction around trees (e.g.,</i>	This ES Chapter explains how Root Protection Zones (referred to in this Chapter as Root Protection Areas (RPAs)) will be protected during construction at the Sites and along the Cable Route Corridor.	Paragraph 19.4.21 of this Chapter explains how RPAs have been applied and considered. Section 19.7 explains embedded mitigation measures to protect RPAs.



Consultee and Date	Comment	How has the comment been addressed	Location of response in chapter
	<i>through vehicle movements or stacking heavy equipment) or contamination from poisons (e.g., site stored fuel or chemicals) and fencing off these areas to prevent unintended incursions into the root protection zone.”</i>		
	<i>“It is expected that there will be a thorough assessment of any loss of all trees and woodlands within the project boundary and the development of mitigation measures to minimise any risk of net deforestation because of the scheme.”</i>	This ES Chapter references an arboricultural impact assessment of possible tree losses from the Scheme.	Arboricultural Impact Assessment and Outline Arboricultural Method Statement [EN010170/APP/GH6.3.19.2]
	<i>“Hedgerows, individual trees and woodlands within a development site should also be considered in terms of their overall connectivity between woodlands affected by the development. Perhaps with the creation of some larger woodland blocks and hedgerow/hedgerow trees possibly between the existing woodland blocks on site, to ensure maximum gains to increase habitat connectivity and benefit biodiversity across the whole site, not solely in</i>	Potential impacts to the connectivity of woodlands through tree or hedgerow loss required for the Scheme are considered in the ecology chapter.	Chapter 9: Ecology and Biodiversity [EN010170/APP/GH6.2.9].



Consultee and Date	Comment	How has the comment been addressed	Location of response in chapter
	<i>specific areas or just to be used as screening.”</i>		
The Planning Inspectorate, Scoping Opinion Bedford Borough Council – 21st August 2024	Paragraph 20.2 <i>“It is noted that the statement regarding Root Protection Areas and canopy spread of recorded trees (scattered woodland and woodland blocks) is welcomed. It is nevertheless suggested that a similar approach is set out for recorded / retained low hedgerows and treed hedgerows within and framing individual Sites.”</i>	Arboricultural surveying and recording of RPAs and canopy spreads for hedgerows is not included in this ES Chapter as it is not necessary due to the embedded mitigation for hedgerows in the Ecology and Biodiversity Chapter. This embedded mitigation states that construction activities will not take place within 15m of all hedgerows. RPAs and canopy spreads for hedgerows would not exceed this 15m ecological buffer and therefore an arboricultural survey of hedgerows was not considered necessary.	Chapter 9: Ecology and Biodiversity [EN010170/APP/GH6.2.9].
	<i>“Possible effects to trees from the operation of the Scheme include tree pruning to maintain permanent access routes, visibility splays, parking areas and compounds as well as any pruning to reduce shading to solar panels’. This statement needs clarification as elsewhere in the Applicant’s Scoping Report they reference setbacks and / or corridors to protect the existing low hedgerows, treed hedgerows, scattered woodland, woodland blocks, Ancient Woodlands, and designated protected landscapes. As read against 20.6.1 Mitigation (‘avoid</i>	Possible effects to retained trees during operation of the Scheme has been assessed, together with appropriate mitigation recommendations in this ES Chapter.	Section 19.7 details the embedded mitigation during operation. Paragraph 19.8.8 of this chapter details the potential arboricultural impacts during operation of the Scheme.



Consultee and Date	Comment	How has the comment been addressed	Location of response in chapter
	<i>buffer zones, canopy spreads and shade patterns of existing trees'), the Applicant's intent requires clarification."</i>		
	<i>"Proposed effects to trees from the decommissioning of the Scheme are anticipated to be negligible given that the Scheme's infrastructure is likely to be removed via pre-established permanent access routes and is therefore unlikely to require any additional tree removal, pruning or root loss'. As noted elsewhere, BBC are not supportive of leaving the underground cables in-situ post decommissioning and consequently their suggested removal may have an effect on existing trees. The ES should address mitigation measures to address this matter should it arise."</i>	This ES Chapter details the potential impacts to trees from decommissioning, including the scenario where underground cables could be removed at the decommissioning stage, together with recommended mitigation.	Section 19.8 of this Chapter details potential impacts to arboricultural features from decommissioning and Section 19.7 details embedded mitigation for decommissioning.
	<i>"In light of the fact that Ancient Woodlands are immediately adjacent to Site G, it is suggested that an assessment of impact on the Ancient Woodlands is included within the Scoping Summary."</i>	Potential arboricultural impacts to ancient woodlands and the mitigation measures are detailed in this ES Chapter.	Potential impacts to ancient woodlands at Site G are included in section 19.8 of this chapter. Embedded mitigation for ancient woodlands is provided in section 19.7.



Consultee and Date	Comment	How has the comment been addressed	Location of response in chapter
The Planning Inspectorate, Scoping Opinion Holcot Parish Council – 20th August 2024	<i>“As regards Impacts on trees in Green Hill A-G and BESS (Chapter 20), the applicant has requested that these potential impacts should be scoped out because of the ‘embedded mitigation of designing the scheme... and further mitigation that will be included within the OCEMP’. (20.7.1-3 and Table 20.4). Whilst we note the intended mitigation, proposed trees will take many years to grow. We consider that the nature and extent of the proposed loss need to be assessed, as well as the proposed mitigation measures.”</i>	This ES Chapter details potential impacts of the Scheme on ancient and veteran trees and ancient woodlands within Green Hill A-G and Green Hill BESS. Potential impacts to non-veteran trees and non-ancient woodlands are not included in this ES Chapter but are included in the Arboricultural Impact Assessment and Outline Arboricultural Method Statement (Document Reference: GH6.3.19.2).	Arboricultural Impact Assessment and Outline Arboricultural Method Statement [EN010170/APP/GH6.3.19.2]
The Planning Inspectorate, Scoping Opinion North Northamptonshire Council– 22nd August 2024	<i>“In respect of arboriculture North Northamptonshire Council offer the following comments. It is noted that a Preliminary Arboricultural Impact Assessment and Outline Arboricultural Method Statement will accompany the DCO submission once the final layout and construction details are available, and all surveys completed. There is also the presence of Ancient Woodland in the North Northamptonshire Council sites vicinity which are ‘irreplaceable</i>	An Arboricultural Impact Assessment and Outline Arboricultural Method Statement [EN010170/APP/GH6.3.19.2] has been produced which is referred to in this ES Chapter.	Arboricultural Impact Assessment and Outline Arboricultural Method Statement [EN010170/APP/GH6.3.19.2]



Consultee and Date	Comment	How has the comment been addressed	Location of response in chapter
	<i>habitats'. The Scoping Summary at Table 20.4 of the Scoping Report is considered reasonable and fair subject to the submission of an Outline Arboricultural Method Statement and a Landscape and Ecological Management Plan to support the DCO submission."</i>		
The Planning Inspectorate, Scoping Opinion West Northamptonshire Council– 22nd August 2024	<i>"Though in general agreement the LPA would advise that it appears hedgerow's have not been included in the assessment. Hedgerows form an important function with regards to landscape, screening of potential development and overall biodiversity and so should be included within the ES."</i>	Hedgerows form part of the Ecology and Biodiversity Chapter of the Environmental Statement (ES). They have been scoped out of the arboriculture chapter given their consideration in the aforementioned chapter.	Chapter 9: Ecology and Biodiversity [EN010170/APP/GH6.2.9].



Statutory Consultation

- 19.2.2 Further consultation in response to formal pre-application engagement was undertaken through the Preliminary Environmental Information Report (PEIR). **Table 19.2** outlines the statutory consultation responses relating to arboriculture and how these have been addressed through the ES.

Table 19.2: Statutory Consultation Comments

Consultee and Date	Comments	How has this comment been addressed	Location of response in the ES
Bedford Borough Council 18th December 2024	Paragraph 9.4.4 Woodlands: <i>"BBC would like to see minimum 8m buffer zones to all Ancient woodlands and woodlands."</i>	A 15m buffer has been applied to all ancient woodlands. Arboricultural buffers for non-ancient woodlands have been based on the RPAs of the largest tree.	Paragraph 19.4.21 of this chapter.
Lavendon Parish Council December 2024	GF9: The proposed access track to enable access to parcel GF9 is too close to the woodland edge (<10m). An understanding of the methods employed to form tracks in the context of solar farms leads us to conclude that impact in the form of disturbance to wildlife, soil compaction and (potentially) root damage would be difficult to avoid. On this basis, we would like PV arrays to be	A proposed Access Track close to the edge of Three Shires Wood is proposed, details of track construction will be provided post-DCO during detailed design. This ES Chapter and the accompanying ES Appendix 19.2 Arboricultural Impact Assessment and Outline Arboricultural Method Statement [EN010170/APP/GH6.3.19.2] includes embedded mitigation for potential root impacts to edge trees at Three Shires Wood.	Section 19.7 of this chapter provides embedded mitigation for works within RPAs and Section 19.8 provides an assessment of impacts to trees at Three Shires Wood.



Consultee and Date	Comments	How has this comment been addressed	Location of response in the ES
	replaced with a mix of habitats including grassland and scrub, effectively using parcel GF9 as an area for ecological mitigation.		
Forestry Commission 12th December 2024	The comments include reference to standing advice for ancient woodlands and ancient and veteran trees. It reiterates that the Root Protection Areas of veteran trees must be safeguarded and protection measures must be put in place during construction.	The Forestry Commission and Natural England's Standing Advice on ancient woodland and ancient and veteran trees has been included in this ES Chapter. RPAs during construction works have been provided in this ES Chapter.	Paragraph 19.3.19 of this chapter. Section 19.7 describes the embedded mitigation measures to protect RPAs during construction.
North Northamptonshire District Council December 2024	The comments highlight that areas of arboricultural significance are present near the Sites including Sywell Wood, Easton Mawdit Conservation Area and various Tree Preservation Orders.	Sywell Wood, Easton Mawdit Conservation Area and Tree Preservation Orders have been highlighted in this ES Chapter.	Table 19.9: Summary of Desk Study Results of this chapter.



Consultee and Date	Comments	How has this comment been addressed	Location of response in the ES
Natural England 19th December 2024	The comments include reference to standing advice for ancient woodland and ancient and veteran trees.	The Forestry Commission and Natural England's Standing Advice on ancient woodland and ancient and veteran trees has been included in this ES Chapter.	Paragraph 19.3.19 of this chapter.

19.3 Legislation, Planning Policy and Guidance

19.3.1 This section provides an overview of the legislation, planning policy and guidance against which the Scheme will be considered for arboriculture.

Legislation

UK Legislation

Town and Country Planning Act 1990 (Ref 19.22)

19.3.2 Section 198 of the Act empowers local planning authorities to make Tree Preservation Orders (TPOs) where it appears to be "*expedient in the interests of amenity to make provision for the preservation or trees or woodlands in their area*". Pursuant to section 210(1), a TPO present on a tree, group of trees or woodland means that it is an offence to do the following in contravention of the TPO:

- Cut down, uproot or wilfully destroy that tree;
- Top, lop or wilfully damage a tree in a way that is likely to destroy it; or
- Cause or permit such activities.

19.3.1 A TPO does not prevent the management of trees or removal of trees for development. Trees subject to a TPO can be managed (for example branch removal) once an application for consent to carry out those works has been approved by the local planning authority. Similarly, trees subject to a TPO can be worked upon or removed for development (without the need for a tree works application) so far as such work is necessary to implement a full planning permission. A TPO does however prevent unauthorised removal or work to protected trees prior to full planning permission being granted or an application for tree work being consented. Trees with a TPO are likely to be valued highly in local planning authority consultation responses to DCO applications.

19.3.2 Section 211 of the Town and Country Planning Act preserves trees in Conservation Areas. A Conservation Area is designated by a local planning authority as "*an area which has been designated because of its special architectural or historic interest, the character or appearance of which is desirable to preserve or enhance*" (Ref 19.2). Trees within a Conservation Area and not already covered by a TPO are protected from cutting down, topping, lopping,



uprooting, wilful damage and wilful destruction except insofar as the act in question is authorised by the local planning authority or by an order granting development consent.

- 19.3.3 To carry out work to a tree in a Conservation Area, a six week notification must be provided to the local planning authority prior to works being carried out unless an exception applies. The notification must identify the tree in question and describe the intended works to the tree. Once the six-week notification period has passed or the local planning authority issues a 'no objection' response to the proposed tree work, the tree work may then take place. Similarly to a TPO, works to trees in a Conservation Area can also take place (without the need for a six week notification) to facilitate a development provided full planning permission is in place.
- 19.3.4 Exemptions exist to the requirement to make an application/submit a notification to undertake works to trees protected a TPO or Conservation Area respectively. An application or notification is not required for:
- The removal of dead trees or dead wood (five days written notice to the local authority must be given to remove a dead tree covered by a TPO or Conservation Area designation);
 - The making safe of dangerous trees where there is an immediate risk of serious harm;
 - The minimum of work that is necessary to prevent or abate an actionable nuisance; and
 - Tree works necessary to implement a full and valid planning permission.
- 19.3.5 Full government guidance on TPOs and Conversation Areas can be found in government guidance (Ref 19.3).

Planning Policy

National Planning Policy

Overarching National Policy Statement for Energy (EN-1) (Ref 19.4)

- 19.3.6 Paragraph 5.4.32 (Ancient Woodland and Veteran Trees) requires proposals to *"include measures to mitigate fully the direct and indirect effects of development on ancient woodland, ancient and veteran trees or other irreplaceable habitats during both construction and operational phases"*.
- 19.3.7 Paragraph 5.4.53 (Ancient woodland, ancient trees, veteran trees and other irreplaceable habitats) states that *"The Secretary of State should not grant development consent for any development that would result in the loss or deterioration of any irreplaceable habitats, including ancient woodland, and ancient and veteran trees unless there are wholly exceptional reasons and a suitable compensation strategy exists."* Wholly exceptional reasons are *"For example where the public benefits (including need) of the nationally significant energy infrastructure would clearly outweigh the loss or deterioration of the habitat."*



- 19.3.8 Paragraph 5.11.27 of EN-1 requires existing trees and woodlands to be retained wherever possible. Paragraph 5.11.27 also states that "*Mitigation may include, but is not limited to, the use of buffers*" and "*Where woodland loss is unavoidable, compensation schemes will be required, and the long-term management and maintenance of newly planted trees should be secured*".

The National Policy Statement for Renewable Energy Infrastructure (EN-3) (January 2024) (Ref 19.5)

- 19.3.9 Paragraph 2.10.100 requires proposals to consider as part of the design, layout, construction, and future maintenance plans how to "*protect and retain, wherever possible, the growth of vegetation on site boundaries, as well as the growth of existing hedges, established vegetation, including mature trees within boundaries*". Paragraph 2.10.101 of EN-3 also states that the impacts of a proposed development should be informed by a tree survey and arboricultural assessment.

National Planning Policy Framework (NPPF, 2024) (Ref 19.6)

- 19.3.10 Paragraph 193 part c) states that:

"development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists"

- 19.3.11 It should be noted that in the context of DCO applications, while the NPPF is an important and relevant consideration, applications are decided in accordance with the National Policy Statements.

Local Planning Policy

West Northamptonshire's Joint Core Strategy Local Plan (Part 1) (Ref 19.7)

- 19.3.12 The Local Plan, by way of providing context to its policies for trees and woodlands, states that "*West Northamptonshire has a relatively poor level of tree cover. Creation of new woodlands, particularly with native species can stimulate the economy, through tourism, business diversification and forestry employment*".

- 19.3.13 The Local Plan contains one policy with specific regard to trees and woodlands – Policy BN3 'Woodland Enhancement and Creation'. This policy seeks to support development applications that propose to enhance and manage existing woodlands or create new woodlands. In particular, to support the creation of new woodlands to buffer, extend or relink areas of ancient woodland. The policy also supports the protection of "*aged or veteran trees*" outside of ancient woodlands. The policy states that development that would lead to loss or fragmentation of ancient woodland or aged or veteran trees will not be permitted unless the need for and benefits of the development in that location clearly outweigh the loss.

North Northamptonshire Joint Core Strategy 2011-2031 (Ref 19.8)

- 19.3.14 There are no tree-specific policies within North Northamptonshire's Joint Core Strategy except for Policy 21 'Rockingham Forest' which seeks to promote 40 hectares of new tree planting in Rockingham Forest to expand this woodland.



- 19.3.15 North Northamptonshire District Council has published a 'Trees and Landscape Supplementary Planning Document' (SPD) adopted in June 2013 (Ref 19.9). This document provides advice to applicants on recognising, protecting and enhancing existing arboricultural features such as mature trees, woodland and hedgerow and incorporating them into proposals. It also promotes the planting of new trees wherever possible and compliance with the design principles and process detailed in British Standard 5837:2012 'Trees in relation to design, demolition and construction – Recommendations'.
- 19.3.16 The SPD advises that a tree survey should be undertaken as the starting point and a Tree Retention Plan, Tree Protection Plan, Arboricultural Impact Assessment and Arboricultural Method Statement provided where necessary.
- Milton Keynes Council Plan: MK 2016-2031 (Adopted March 2019) (Ref 19.10)
- 19.3.17 Milton Keynes Council does not have any specific planning policies or Supplementary Planning Documents relating to trees. Policy NE1 'Protection of Sites' relates to ancient woodland and reiterates the effects of NPPF paragraph 186 part c) by stating:
- 19.3.18 *"Development proposals which would cause harm to a National Nature Reserve, Site of Special Scientific Interest or irreplaceable habitats such as ancient woodland will not be permitted unless:*
1. *There is no suitable alternative to the development;*
 2. *The benefits of the development, at this site, clearly outweigh the adverse impacts on the site;*
 3. *All reasonable possibilities for mitigation have been put in place; and*
 4. *Compensatory provision in line with the mitigation hierarchy to ensure that the overall coherence of the site is protected and with the intent to achieve a net gain in biodiversity."*

Guidance

Natural England and Forestry Commission, Ancient woodland, ancient trees and veteran trees: advice for making planning decisions (Ref 19.11)

- 19.3.19 This guidance is a material consideration for local planning authorities and advises the following for ancient and veteran trees and ancient woodland:
- Recorded ancient woodland should be identified using Natural England's Ancient Woodland database (Ref 19.12) and veteran/ancient tree records should be checked via the Woodland Trust's Ancient Tree Inventory (Ref 19.13);
 - For ancient woodlands, a buffer zone of at least 15 metres from the boundary of the woodland is needed to avoid root damage. Where assessment shows that other impacts are likely to extend beyond this distance, a larger buffer zone will likely be required;
 - For ancient and veteran trees, the Veteran Tree Buffer Zone should be at least 15 times larger than the diameter of the tree or five metres from the edge of the tree's canopy, whichever is greater; and



- Buffer zones should contribute to wider ecological networks and be part of the green infrastructure of the area. Buffer zones should comprise semi-natural habitats. Development, including drainage infrastructure, should not be located within buffer zones.

Planning Policy Guidance for Tree Preservation Orders and Conservation Areas (Ref 19.3)

- 19.3.20 This guidance details how trees are protected by TPO and Conservation Area designations and the exemptions to the need to apply for permission or notify the local planning authority of works to such trees. Much of the content has been summarised above in paragraphs relating to UK Legislation.

British Standard 5837:2012 'Trees in Relation to Design, Demolition and Construction (BS5837:2012) (Ref 19.14)

- 19.3.21 This guidance provides a framework for surveying trees and providing tree constraints information to inform the design of developments. It then provides guidance on the assessment, mitigation and compensation of arboricultural impacts and the arboricultural input needed at each stage of the Town and Country Act 1990 planning process. Whilst BS5837:2012 does not provide explicit guidance on Development Consent Order (DCO) applications, its approach and recommendations can be adapted and followed for the DCO process.
- 19.3.22 BS5837:2012 states that when undertaking a tree survey for development, the Arboriculturist must assess the quality of the trees and categorise each arboricultural feature as either Category A (a high quality tree), Category B (a moderate quality tree), Category C (a low quality tree/young tree) or Category U (a very low quality tree). Subcategories 1 (mainly arboricultural qualities), 2 (mainly landscape qualities) and 3 (mainly cultural values, including conservation) are then added to the categorisation to reflect the predominantly arboricultural, landscape and/or cultural/conservation value of the tree. BS5837:2012 states that veteran trees will “*almost always be included in the A3 category*”, i.e. a high quality tree with mainly conservation value.
- 19.3.23 BS5837:2012 requires the following information to be recorded for each individual tree, groups of trees or woodland:
- Reference number (T = individual tree, G = group of trees, W = woodland);
 - Species (common name and scientific name);
 - Tree height;
 - Stem diameter measured at 1.5m height;
 - Branch spread at four cardinal points (north, east, south and west);
 - Existing height above ground level of a) first significant branch and direction of growth and b) canopy;
 - Life stage (young, semi-mature, early-mature, mature);
 - General Observations;



- Estimated remaining contribution in years; and
- Quality Category A-C and U.

19.3.24 BS5837:2012 then provides guidance on avoiding and minimising impacts to identified arboricultural features such as siting all development outside of RPAs and canopy spreads in the first instance. Should development need to occur within RPAs or canopy spreads, guidance is provided on how to minimise impacts to the above and below ground parts of the tree during construction through sensitive working methods, tree protection measures and arboricultural supervision.

19.4 Assessment Methodology and Significance Criteria

19.4.1 The methodologies described in the following section have been developed in line with the relevant planning policy and appropriate industry guidance for assessing the potential effects from the Scheme on arboricultural features.

Arboricultural Features

19.4.2 Arboricultural features, for the purpose of this assessment, are defined as individual trees, groups of trees and woodlands. Hedgerows are not included in this assessment and are considered separately in **Chapter 9: Ecology and Biodiversity [EN010170/APP/GH6.2.9]**.

19.4.3 Definitions and characteristics used to assess whether an arboricultural feature is an ancient tree, a veteran tree or an ancient woodland are shown below in Table 19.3.

Table 19.3: Definitions of Ancient Tree, Veteran Tree and Ancient Woodland

Ancient/Veteran Tree	Definition
Ancient Tree	An ancient tree is one that has passed beyond maturity and is old or aged in comparison with other trees of the same species. Definition as per the Ancient Tree Forum guidance (Ref 19.15).
Veteran Tree	<p>A veteran tree is a survivor that has developed some of the features found on an ancient tree, not necessarily as a consequence of time, but of its life and environment. Definition as per the Ancient Tree Forum guidance (Ref 19.15).</p> <p>As per Natural England advice (Ref 19.16), the following are characteristics of a veteran tree, the more characteristics a tree has the stronger the indication that it is a veteran:</p> <ul style="list-style-type: none">• Girth large for the tree species concerned• Major trunk cavities or progressive hollowing• Naturally forming water pools• Decay holes• Physical damage to trunk



Ancient/Veteran Tree	Definition
	<ul style="list-style-type: none">• Bark loss• Large quantity of dead wood in the canopy• Sap runs• Crevices in the bark, under branches or on the root plate sheltered from direct rainfall• Fungal fruiting bodies (e.g. from heart rotting species)• High number of interdependent wildlife species• Epiphytic plants• An 'old' look• High aesthetic interest
Ancient Woodland	<p>An area that has been wooded continuously since at least 1600 AD.</p> <p>It includes ancient semi-natural woodland and plantations on ancient woodland sites. Definition as per NPPF (Ref 19.6).</p>

Study Area

- 19.4.4 The Study Area comprises nine sites described as Green Hill A, A.2. B, C, D, E, F, G and the Green Hill BESS (collectively referred to as the Sites). The Sites are situated in an area of countryside to the west and south of Wellingborough, and north and southeast of Northampton.
- 19.4.5 The Study Area also includes the Cable Route Corridor, and in accordance with BS5837:2012 (Ref 19.14), the Study Area also includes trees within influencing distance of the boundary of the Order Limits (i.e. within 15m). This influencing distance accounts for the maximum size of RPAs as specified in BS5837:2012 and also the minimum buffer zone for ancient woodland.

Desk Study of the Study Area

- 19.4.6 A desk study was undertaken in 2024 and 2025 to review records of existing ancient woodlands, ancient and veteran trees and trees protected by a TPO or Conservation Area designation. Table 19.4 below details the information reviewed in the desk study.

Table 19.4: Desk Study Sources of Information

Feature	Data Source
Ancient woodlands	Natural England – Ancient Woodland (England) (Ref 19.12) reviewed on 27th February 2025.
Ancient and veteran trees	The Woodland Trust – Ancient Tree Inventory (Ref 19.13) reviewed on 27th February 2025.



Feature	Data Source
Tree Preservation Orders	Geographic Information System (GIS) shapefiles of all TPOs received from West Northamptonshire Council on 31st October 2024. GIS shapefiles of all TPOs received from North Northamptonshire Council on 5th April 2024. GIS shapefiles for all TPOs received from Milton Keynes Council on 6th March 2025.
Conservation Areas	Historic England – Conservation Area (Ref 19.17) reviewed on 27th February 2025.

- 19.4.7 The datasets above were overlaid onto the Order Limits within Quantum Geographic Information Service (QGIS) [Ref 19.18] software. The desk study considered all land within the Order Limits as well as within 50 metres (m) of the boundaries of the Order Limits. The 50m distance from the Order Limits was chosen as this is considered the maximum influencing distance of the Scheme on arboricultural features in terms of potential impacts to roots, canopies and Veteran Tree Buffer Zones.

High Level Tree Surveys at the Sites

- 19.4.8 BS5837:2012 guidance states that all trees with a stem diameter above 75mm diameter at a height of 1.5m should be recorded at a development site. However, given the number of trees that would need to be recorded under BS5837:2012 and the size of the Scheme, a high level and more proportionate survey approach was followed. This approach is explained below.
- 19.4.9 Each of the Sites was divided into numbered fields. For example, Green Hill D comprises four fields referred to as DF1, DF2, DF3 and DF4. Within each field, the individual tree with the largest stem diameter (and therefore the largest RPA) was identified and recorded on the northern, eastern, southern and western boundaries of that field. In addition to identifying the largest tree on each field boundary, all ancient and veteran trees within the Sites or within 15m of the Sites were also recorded in accordance with BS 5837:2012. All trees were recorded in accordance with BS5837:2012. The following data was recorded for each arboricultural feature:
- Reference number (T = individual tree) preceded by the field reference where feature was located within the Sites e.g. EF4-T1, EF4-T2 etc;
 - Species (common name and scientific name);
 - Tree height in metres (to nearest half metre for dimensions up to 10m and nearest whole metre for dimensions over 10m);
 - Stem diameter measured at 1.5m height (to nearest 10mm);



- Branch spread at four cardinal points - north, east, south and west (to nearest half metre for dimensions up to 10m and nearest whole metre for dimensions over 10m);
- Existing height above ground level of a) first significant branch and direction of growth and b) canopy;
- Life stage (young, semi-mature, early-mature, mature, over-mature, ancient);
- Comments;
- Estimated remaining contribution in years (<10, 10-20, 20-40, 40+); and
- BS5837:2012 quality category A-C and U and subcategory (1-3).

19.4.10 High level tree surveys of the Sites were undertaken between October 2023 and September 2024 by Alexander Lowe BSc MArborA MCIEEM Dip Arb L4 (ABC) and Ho Ming Mak FdSc. A Forestry Pro Laser was used to record tree height, a laser Distometer D110 was used to measure canopy spread and stem diameter was measured using a Diameter at Breast Height (DBH) measuring tape.

19.4.11 Tree positions were plotted directly onto topographical surveys of the Sites.

Cable Route Corridor Tree Survey

19.4.12 A BS5837:2012 tree survey of the Cable Route Corridor was undertaken between December 2024 and February 2025. A Forestry Pro Laser was used to record tree height, a laser Distometer D110 was used to measure canopy spread and stem diameter was measured using a DBH measuring tape.

19.4.13 The survey recorded all individual trees, groups of trees and woodlands within the Cable Route Corridor and within 15m of the Cable Route Corridor and relevant data recorded as per paragraph 19.4.9. Trees along the Cable Route Corridor were given a four digit reference number with no field reference (e.g. T0001, G0001, W0001). Hedgerows were not recorded and are generally not included in this report as they are considered separately in **Chapter 9: Ecology and Biodiversity [EN010170/APP/GH6.2.9]**.

19.4.14 Tree groups and woodlands were identified where trees formed cohesive arboricultural features. Principal trees within a group were plotted individually. Maximum stem diameters, tree heights and canopy spreads of the groups and woodlands were recorded. Insignificant trees (those with a stem diameter of less than 75mm at 1.5m height) were omitted from the survey in accordance with BS5837:2012.

19.4.15 No topographical survey was available for the Cable Route Corridor therefore trees were mapped on printed maps of aerial imagery and later plotted manually in QGIS.

Targeted Tree Surveys

19.4.16 Additional tree constraints data was collected in targeted areas of the Order Limits once additional information was received on the locations of:

- The Battery Energy Storage System (BESS);



- Temporary Construction Compounds for the Cable Route Corridor;
- Temporary Access Points and visibility splays; and
- Permanent Access Points and visibility splays.

19.4.17 A desktop review of the above information was undertaken and areas where potential tree impacts could occur (such as removal, root or canopy impacts) were identified for survey. By surveying these targeted areas, data was collected to inform this Chapter's assessment of likely arboricultural effects and required mitigation.

19.4.18 Targeted tree surveys in accordance with BS5837:2012 were undertaken from February 2025 to April 2025 using a Forestry Pro Laser, laser Distometer D110 and DBH measuring tape. Several hedgerows were also recorded by targeted tree surveys for completeness. BS5837:2012 data categories listed in paragraph 19.4.9 were collected and trees were given a four digit reference number with no field reference (e.g. T0001, G0001, W0001).

19.4.19 No topographical surveys were available for Temporary Access Points within the Cable Route Corridor or Temporary Construction Compounds therefore trees were mapped on printed maps of aerial imagery and later plotted manually in QGIS.

Tree Constraints Mapping

19.4.20 All tree constraints were mapped in QGIS software.

19.4.21 RPAs were calculated using the standard formulas provided in BS5837:2012 which produces a generalised RPA circle with a radius 12 times the stem diameter of the tree. Veteran Tree Buffer Zones for ancient and veteran trees were calculated by multiplying the stem diameter of the tree by 15 or by adding 5m to the maximum canopy spread, whichever was larger, in accordance with Natural England and the Forestry Commission's standing guidance (Ref 19.11). Ancient Woodland Buffer Zones were created by taking the polygons of ancient woodland mapped by Natural England (Ref 19.12) and applying a 15m buffer to these polygons. These buffer zones only apply to ancient and veteran trees and ancient woodland and are often larger than RPAs.

Impact Assessment Methodology

19.4.22 The assessment of potential effects on existing arboricultural features from the Scheme considers the construction, operational and decommissioning phases.

19.4.23 The following arboricultural features are scoped into the ES assessment in accordance with the Planning Inspectorate's Scoping Opinion:

- Ancient and veteran trees and ancient woodlands within the Sites; and
- All arboricultural features, including ancient and veteran trees within the Cable Route Corridor.

19.4.24 The following sources of information were reviewed to assess the potential impacts to arboricultural features.

**Table 19.5: Sources of Information for Assessment of Impacts**

Element of Scheme Design	Document Reference
Chapter 4: Scheme Description - provides a description of the proposed Scheme including the physical characteristics and key activities	EN010170/APP/GH6.2.4
Landscape and Ecology Mitigation Plans – provides an indicative layout of the Sites and proposed tree planting	EN010170/APP/GH6.4.4.10 - EN010170/APP/GH6.4.4.20
Works Plan – shows locations of Temporary Construction Compounds along the Cable Route Corridor	EN010170/APP/GH2.4
Crossing Schedule – shows locations of proposed open cut trenching and trenchless solution (e.g. Horizontal Directional Drilling (HDD)) in the Cable Route Corridor	EN010170/APP/GH7.18
Transport Assessment – shows Permanent and Temporary Access Points into the Sites and the Cable Route Corridor as well as visibility splays	[EN010170/APP/GH6.3.13.2]

19.4.25 Impacts to arboricultural features have also taken account of the embedded mitigation provided in section 19.7.

19.4.26 Effects on relevant trees are assessed by understanding both the sensitivity of the arboricultural receptor and the magnitude of the impact to that receptor to provide an overall assessment of the significance of the arboricultural effect. Table 19.6 to Table 19.8 below describe how this chapter defines the sensitivity of an arboricultural receptor, the magnitude of the impact and the significance of the overall arboricultural effect.

Sensitivity of Receptors

19.4.27 The sensitivity of arboricultural features to potential effects arising from the Scheme is defined below in Table 19.6.

Table 19.6: Criteria for Sensitivity/Value of Arboricultural Feature

Value/Sensitivity	Description
High	Ancient and veteran trees. Ancient woodlands.
Medium	Trees protected by a Tree Preservation Order and/or classified as Category A in BS 5837:2012.
Low	Trees protected by a Conservation Area designation and/or classified as Category B in BS 5837:2012.
Negligible	Trees classified as Category C and U in BS 5837:2012



Magnitude of Impacts

- 19.4.28 The magnitude of impact to an arboricultural feature is defined below in Table 19.7

Table 19.7: Criteria for Determining Magnitude of Impact

Magnitude of Impact	Description
High	Tree removal or significant tree pruning which alters the value/sensitivity of an arboriculture feature.
Medium	Canopy or root impacts which do not alter the value/sensitivity of an arboricultural feature but may have a medium to long term impact on tree condition, health and safe life expectancy. Safe life expectancy refers to the period of time a tree can be retained without posing an unacceptable risk to people or property.
Low	Canopy or roots impacts which do not meet the definitions of 'high' of 'medium' above and are likely to have a temporary/short term impacts on the condition of the arboricultural feature, health and safe life expectancy.
Negligible	Very minor impact to the arboricultural feature which does not meet the definitions of high, medium or low magnitude.
Neutral	No feasible impact to the arboricultural feature.

Assessment of Significance

- 19.4.29 Likely significant arboricultural effects, for the purposes of the Environmental Statement, will be defined as effects which are assessed as being moderate or major significance or above as defined in Table 19.7 below. Where an effect can be moderate or minor in Table 19.8 below, professional arboricultural judgement will be applied to categorise the effect as minor or moderate and therefore non-significant or significant.

Table 19.8: Significance of Effect

Magnitude of Impact	Arboricultural Value/Sensitivity			
	High	Medium	Low	Negligible
High	Major	Major/Moderate	Moderate	Moderate/Minor
Medium	Major/Moderate	Moderate	Moderate/Minor	Minor
Low	Moderate	Moderate/Minor	Minor	Negligible
Negligible	Moderate/Minor	Minor	Negligible	Negligible
Neutral	Neutral	Neutral	Neutral	Neutral

- 19.4.30 Mitigation and compensation measures will be required for likely significant effects. The residual likely significant effects on arboricultural features will then



be assessed in accordance with Table 19.6 to Table 19.8 which will confirm what the effects are likely to be on each feature provided advised mitigation and compensation is in place.

19.5 Assessment Assumptions and Limitations

19.5.1 The methodology for arboriculture has considered the following assumptions:

- It is assumed that all trees bisecting the open cut sections of the Cable Route Corridor (open cut sections shown in the **Crossing Schedule [EN01017/APP/GH7.12]**) may require removal to achieve the required working widths and permanent easements for the cables. The exception is for Category A and veteran trees within the Cable Route Corridor which are assumed to be retained given embedded mitigation for these trees;
- It is assumed that all arboricultural features standing parallel to the edge of the Order Limits can be retained within open cut sections of the Cable Route Corridor;
- It is assumed that all arboricultural features in trenchless solution (e.g. HDD) sections of the Cable Route Corridor will be retained;
- It is assumed that Permanent Access Points will need to be 6.5m width. The permanent easement for the cables within the Cable Route Corridor will be 11m;
- It has been assumed, following discussion with the Applicant, that for the Cable Route Corridor between Green Hill C and Green Hill D, the shortest route between the two Sites is likely to be followed for open cut trenching, the working corridor and the permanent easement;
- It is assumed that the permanent easement for Sections of the cable that will be installed using a trenchless solution will not require any tree removal as the depth of the cable will far exceed the potential influence of tree roots;
- Overall, the assessment of arboricultural impacts is limited given that the design of the Sites is indicative only and follows a Maximum Design Scenario whereby the maximum project design parameters are shown for each technical discipline. All tree impacts provided in the Chapter therefore represent the 'worst case scenario' in regards to arboricultural impacts;
- It is assumed that the Permanent Access Tracks within the Sites will also be used for decommissioning; and
- It is known that additional access tracks will be required for construction (additional to those shown on the Landscape and Ecology Mitigation Plans), it is assumed that all construction access tracks will be sited outside of the RPAs and canopy spreads of existing arboricultural features.

19.5.2 The methodology for arboriculture has considered the following limitations:

- The positions of all trees, groups of trees and woodlands plotted in the Cable Route Corridor, Temporary Construction Compounds and adjacent to Temporary Access Points were estimated from aerial imagery only and not based on a topographical survey. This is not considered to be a significant



constraint given that the design of these elements is indicative only and not available in sufficient detail to allow for accurate predictions of potential canopy or root impacts even if precise tree locations were known;

- Visibility splays for Temporary Access Points into the Cable Route Corridor were drawn on Ordnance Survey mapping only as no topographical survey was available. Trees plotted either side of Temporary Access Points were mapped based on aerial imagery only. Consequently, anticipated impacts to trees from Cable Route Corridor access points have been estimated using professional judgement; and
- Access to some tree stems and canopy spreads by the surveyors was sometimes impeded due to a range of factors such as dense vegetation. Estimates were therefore made of dimensions where necessary.

19.6 Baseline Conditions

19.6.1 This section describes the baseline environmental characteristics for the Scheme and surrounding areas with specific reference to arboriculture.

Existing Baseline

19.6.2 The existing baseline conditions are derived from the completed desk and field-based studies.

Desk Study

19.6.3 Table 19.9 below summarises the results of the desk study of the Order Limits and up to 50m from the Order Limits.

Table 19.9: Summary of Desk Study Results

Feature	Number of Features and Description	Local Planning Authority Area	Tree Constraints Plan Figure Reference
Tree Preservation Orders	TPO T9/21 WBC (Easton Maudit) TPO 1985 – 35m from Order Limits near Green Hill F	North Northamptonshire	Figure 19.2.24
Conservation Areas	Mears Ashby Conservation Area – 45m from Order Limits near Green Hill E	North Northamptonshire	Figure 19.2.14
	Easton Maudit Conservation Area – 5m from Order Limits near Green Hill F	North Northamptonshire	Figure 19.2.24
Recorded Ancient Trees	None		
Recorded Veteran Trees	None		



Feature	Number of Features and Description	Local Planning Authority Area	Tree Constraints Plan Figure Reference
Ancient Woodland	Sywell Wood on northern boundary of Green Hill C and adjacent to the Cable Route Corridor	North Northamptonshire	Figure 19.2.10
	Horn Wood – directly adjacent to Green Hill F	North Northamptonshire	Figure 19.2.26
	Three Shire Wood – directly adjacent to Green Hill G	Milton Keynes	Figure 19.2.29
	Nun Wood – directly adjacent to Green Hill G	Milton Keynes	Figure 19.2.29
	Barslay Spinney – directly adjacent to the Cable Route Corridor	Milton Keynes	Figure 19.2.30 (labelled W0001)

Tree Surveys

- 19.6.4 A total of 974 individual trees, 169 groups of trees, 8 woodlands and 8 hedgerows were recorded altogether across the Study Area.
- 19.6.5 59 veteran trees were recorded, one of which was found to be ancient (CF4-T1 Ash). One woodland (W0001) was recorded by the tree survey as ancient in accordance with the desk study results and five tree groups were recorded on the edge of the ancient woodland Sywell Wood (G0083, G0084, G0082, G2000 and G2002). All ancient and veteran trees and ancient woodlands are shown underlined throughout this chapter.
- 19.6.6 A summary of the trees recorded is shown in **Table 19.10**.

Table 19.10: Summary of Tree Survey Results

BS5837:2012 Quality Category	Number			
	Individual Trees	Group of Trees	Woodland	Hedgerows
A (high quality)	172	9	0	0
B (moderate quality)	254	50	7	3
C (low quality or young)	478	107	1	5
U (very low quality)	70	3	0	0



Total	974	169	8	8
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- 19.6.7 Full results of the tree survey are provided in Appendix 19.1 Tree Survey Schedule [EN10170/APP/GH6.3.19.1] The locations of trees are also shown in ES Figures 19.1 – 19.1.30 Tree Constraints Plans [EN010170/APP/GH6.4.19.1-EN010170/APP/GH6.4.19.1.30]
- 19.6.8 The most common species recorded included ash *Fraxinus excelsior* (57% of all individual trees), oak *Quercus robur* (20%), field maple *Acer campestre* (4%), willow species *Salix sp.* (4%) and sycamore *Acer pseudoplatanus* (2%).
- 19.6.9 It should be noted that due to the high level survey methodology used for the Study Area, the tree survey data contains a disproportionately large number of mature and Category A trees which does not necessarily reflect the average age or quality of trees within the Study Area.

Future Baseline

- 19.6.10 This section considers changes to the baseline conditions, described above, that might occur in the absence of the Scheme and during the time period over which the Scheme would be in place. The future baseline scenarios are set out in **Chapter 2: EIA Process and Methodology [EN010170/APP/GH6.2.2]**.
- 19.6.11 In the absence of the Scheme, it is anticipated that over the 60-year operational lifetime of the Scheme, the baseline arboricultural features on the Sites are likely to change negatively as a result of climate change producing hotter drier summers which negatively affect tree health and the progression of existing and future tree pests and diseases and potentially positively as a result of future land management.
- 19.6.12 Of particular note for the Study Area is the presence of ash dieback disease, which was recorded frequently across the Sites and the Cable Route Corridor. The most common large tree recorded across nearly all of the Sites was ash, many of which were found to have varying degrees of canopy decline due to ash dieback. Veteran ash trees were also often recorded as being affected by ash dieback disease. This disease was first officially recorded in the UK in 2012 and research from the UK and Europe predicts that 70-80% of ash trees may die from the disease (Ref 19.20). For the Study Area, this would result in a significant loss of some of largest trees with implications for landscape and ecology.
- 19.6.13 Other pests and diseases that may affect the future baseline arboricultural conditions of the Study Area include oak pests and diseases such as chronic oak decline and acute oak decline as well as *Phytophthora sp.* infections.
- 19.6.14 The future baseline arboricultural conditions may also change positively in the Study Area should any of the land fall out of agricultural use and change into secondary woodland through natural regeneration over time. In the absence of the Scheme, it is also feasible that Environmental Land Management schemes may also be implemented within the Sites and Cable Route Corridor which could see the planting of new hedgerows, trees and woodland.



19.7 Embedded Mitigation Measures

- 19.7.1 The way that potential environmental impacts have been or will be prevented, avoided or mitigated to reduce arboricultural impacts to a minimum through design and/or management of the Scheme is outlined in this section and will be taken into account as part of the assessment of the potential effects. Proposed environmental enhancements are also described where relevant.
- 19.7.2 The following embedded mitigation measures for the construction, operation and decommissioning phases have been incorporated into the Scheme's design.

Embedded Construction Mitigation Measures

- Significant tree and woodland planting is proposed within the Sites to compensate for any tree losses associated with the Scheme – secured in the Landscape and Ecology Mitigation Plans **[EN010170/APP/GH6.4.4.10 - EN010170/APP/GH6.4.4.20]**;
- No new landscaping is proposed within the Veteran Tree Buffers Zones to avoid soil disturbance to veteran trees during construction – secured in the Landscape and Ecology Mitigation Plans **[EN010170/APP/GH6.4.4.10 - EN010170/APP/GH6.4.4.20]**;
- The Cable Route Corridor has been widened up to 120m adjacent to identified veteran trees to provide sufficient space to allow for open cut trenching around Veteran Tree Buffer Zones ensuring impacts to veteran trees are avoided – secured in the Works Plan **[EN010170/APP/GH2.4]**;
- Micro-siting will be used to avoid the removal or occurrence of root or canopy impacts to veteran trees and Category A trees within the Cable Route Corridor. Micro-siting describes a method of avoiding or minimising impacts to trees by moving all construction activities and elements outside of tree canopies and Root Protection Areas. If micro-siting cannot be achieved around such arboricultural features, trenchless techniques such as Horizontal Directional Drilling (HDD) will be used to avoid impacts to veteran and Category A trees – secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;
- An Arboricultural Clerk of Works (ACoW) will be required to guide tree removal and pruning and ensure tree protection measures are put in place to safeguard trees during construction – secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;
- Tree removal along the Cable Route Corridor will preferentially target trees of lower quality over those of higher quality. Veteran trees and Category A trees will not be removed in the Cable Route Corridor. The order of priority for tree removal will be as follows: Category U, C, B and lastly Category A trees – secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;
- Tree pruning will be specified by an ACoW in collaboration with the construction contractor. Pruning will be minimised wherever possible. The order of priority for tree pruning will be as follows: Category U, C, B and A trees. All tree works will be undertaken by a suitably qualified and ensured



arborist working in accordance with British Standard 3998:2010 Tree Work – Recommendations (Ref. 18) – secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;

- Temporary Construction Compounds will be sited outside of the canopy spreads and RPAs of adjacent trees and woodlands – secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;
- Trees at the Sites will be protected throughout construction by the installation of perimeter fencing which will be installed at the start of construction works. Any trees at the Sites not protected by perimeter fencing will be protected with Tree Protection Fencing for the duration of construction – secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;
- Trees along the Cable Route Corridor will also be protected with Tree Protection Fencing for the duration of works in a given section of the Cable Route Corridor – secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;
- Ground protection will be used where vehicle/machinery access is required within the RPAs of retained trees - secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;
- Any excavation work within the RPAs of retained trees (such as for cable trenches, Access Tracks or Permanent/Temporary Access Points) will be undertaken using hand tools only and the root pruning methodology within the Outline Arboricultural Method Statement. All excavation work within RPAs will also be supervised by the ACoW – secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;
- Tall machinery working near the canopies of retained trees will be accompanied by a banksman to ensure no damage occurs to tree stems and canopies - secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;
- All machinery used for trenchless solutions (e.g. HDD) will be situated outside the RPAs of retained trees. Entry and exit points for the trenchless solutions will be sited more than 15m from retained tree stems. Trenchless solution depths will exceed 1m under RPAs - secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;
- Machinery movements and spoil/material storage will avoid the RPAs of retained trees within the Sites and the Cable Route Corridor - secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;
- Dust and sediment controls will be in place for relevant works near ancient woodlands along the Cable Route Corridor and near the Sites - secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;
- Construction traffic will not use access tracks within the Veteran Tree/Ancient Woodland Buffer Zones in order to avoid the pruning of



veteran trees/trees within ancient woodland to achieve clearance heights for tall vehicles or machinery. Instead, construction traffic will be routed outside of Veteran Tree/Ancient Woodland Buffer Zones - secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**;

- Any access tracks (for use during operation/decommissioning) situated within Veteran Tree/Ancient Woodland Buffer Zones will be constructed using a 'no-dig' solution and all excavation within Veteran Tree/Ancient Woodland Buffer Zones will be avoided - secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**; and
- A detailed Arboricultural Method Statement, based on post-DCO detailed design, will be produced prior to construction commencing - secured in the Outline Construction Environmental Management Plan **[EN010170/APP/GH7.1]**.

Embedded Operation Mitigation Measures

- Perimeter fencing (wooden post fencing with deer wire mesh to a height of 2.5m) will be installed and remain in situ during operation of the Sites. This will protect trees on the field boundaries of the Sites from operational impacts such as maintenance and replacement activities – secured in ES Chapter 4 - Scheme Description **[EN010170/APP/GH6.2.4]**;
- New tree and woodland planting are not proposed within the open cut sections of Cable Route Corridor, ensuring that future tree removal will not be required to remedy possible tree root interference with the cables – secured in the Landscape and Ecology Mitigation Plans **[EN010170/APP/GH6.4.4.10 - EN010170/APP/GH6.4.4.20]**;
- No new tree planting is proposed within the Veteran Tree Buffer Zones of identified veteran trees to ensure no future shading and resulting decline in the health and longevity of veteran trees – secured in the Landscape and Ecology Mitigation Plans **[EN010170/APP/GH6.4.4.10 - EN010170/APP/GH6.4.4.20]**;
- Replacement activities will be facilitated through use of Access Tracks installed during the construction of the Scheme, ensuring no additional root or canopy impacts to retained trees during replacement activities – secured in the Outline Operational Environmental Management Plan **[EN010170/APP/GH7.2]**;
- Permanent Access Points and visibility splays for the Sites will be the same as those used for construction, ensuring no additional tree removal or pruning during operation of the Sites – secured in the Outline Operational Environmental Management Plan **[EN010170/APP/GH7.2]**; and
- All maintenance and replacement activities near FF30-T2 will be supervised by an ACoW to ensure no machinery or materials enter the Veteran Tree Buffer Zone. This may be achieved through implementation of ground protection and/or Tree Protection Fencing around the Veteran Tree Buffer



Zone during maintenance and replacement activities – secured in the Outline Operational Environmental Management Plan [EN010170/APP/GH7.2].

Embedded Decommissioning Mitigation Measures

- Permanent Access Points and visibility splays for the Sites will be the same as those used for construction, ensuring no additional tree removal or pruning during decommissioning of the Sites – secured within the Outline Decommissioning Statement [EN010170/APP/GH7.3];
- Decommissioning and removal of Solar PV Panels will take place using the existing Access Tracks installed at the construction stage, ensuring no additional tree root or canopy impacts to retained trees during decommissioning works – secured within the Outline Decommissioning Statement [EN010170/APP/GH7.3];
- Cabling will likely be left in situ after decommissioning which will avoid any future tree removal or root impacts from excavation to remove cables. Should cabling require removal, it may be possible to remove cabling at the jointing bays and extracting it from the ducting to avoid the need for significant lengths of open cut trenching which may harm trees – secured within the Outline Decommissioning Statement [EN010170/APP/GH7.3]; and
- Prior to decommissioning of the Scheme, a tree survey must be undertaken in accordance with BS 5837:2012 (or most recent updated standard and industry guidelines) of the Study Area. An Arboricultural Impact Assessment must be produced alongside an Arboricultural Method Statement to guide the decommissioning works and ensure potential tree impacts are identified, mitigated and compensated for where appropriate - secured within the Outline Decommissioning Statement [EN010170/APP/GH7.3].

19.8 Assessment of Impacts and Effects

Construction Phase

- 19.8.1 Taking into account the embedded mitigation measures as detailed in Section 19.7, the potential for the likely effects of the Scheme on arboricultural features was assessed using the methodology as detailed in Section 19.4 of this Chapter. In the sections below, associated effects during the construction, operation and decommissioning phases of the Scheme are discussed for arboricultural features scoped into the ES chapter (namely ancient and veteran trees and ancient woodlands within the Sites, and all arboricultural features within the Cable Route Corridor).

Effects on Ancient and Veteran Trees and Ancient Woodlands at the Sites

- 19.8.2 No ancient or veteran trees require removal at the Sites. No ancient woodland requires removal at the Sites. No impacts to ancient woodland or veteran trees are anticipated at the Sites during construction given the embedded mitigation for these features.



Likely Effects on All Arboricultural Features within the Cable Route Corridor

- 19.8.3 The following tree removals may be required along the Cable Route Corridor as detailed in **Table 19.11**. Significant effects are highlighted in **bold**. Ancient and veteran trees and ancient woodlands are underlined.

Table 19.11: Likely Tree Removals and Effects for All Trees along the Cable Route Corridor

BS5837:2012 Quality Category	Tree Reference	Value/Sensitivity	Magnitude of Impact	Significance of Effect
Category B trees, hedgerows and tree groups	T0004, T0072, T0093, T0094, T0128, T0132, T0272, T0301, T0336, T0337, T0338, T0383, T0340, T0353, T0421, T0423, T0430, T1003, T1004, T3029, G0002 (partial), G0068, G0069, G0072 (partial removal), G0073 (partial removal), G0095 (partial removal), BESS1-H6 (partial removal), W0006 (very small section of small diameter trees at woodland edge), W0122 (small section south-west corner of group)	Low	High	Moderate
Category C trees and tree groups	T0003, T0008, T0023, T0024, T0028, T0079, T0110, T0156, T0157, T0158, T0159, T0160, T0172, T0195, T0208, T0209, T0211, T0212, T0226, T230, T231, T0238, T0239, T0240, T0242, T0248,	Negligible	High	Minor



BS5837:2012 Quality Category	Tree Reference	Value/Sensitivity	Magnitude of Impact	Significance of Effect
	T0249, T0250, T0251, T0253, T0273, T0274, T0275, T0276, T0277, T0282, T0283, T0284, T0285, T0286, T0291, T0300, T0305, T0309, T0310, T0379, T0380, T0381, T0382, T0392, T0393, T0394, T0395, T0396, T0397, T0398, T0399, T0400, T0405, T0406, T0415, T0419, T0420, T0422, T0424, T0431, T1027, T3065 G0003 (partial), G0018 (partial), G0016, G0020, G0021, G0035, G0042, G0045 (partial), G0057 (partial), G0058 (partial), G0070, G0071, G0074, G0077, G0080, G0093, G0102, G0107, G0109 (partial), G0117, G0118, G0123 (partial), G3015, BESS2-T33, BESS2-T34, BESS2-T35, BESS2-T36, BESS2-T37, DF1- T3			
Category U trees and tree groups	T0005, T0210, T0237, T0243	Negligible	High	Minor



- 19.8.4 The following trees in **Table 19.12** may also be subject to root and canopy impacts from construction activities along the Cable Route Corridor. Significant effects are highlighted in **bold**. Ancient and veteran trees and ancient woodlands are underlined.

Table 19.12: Likely Canopy/Root Impacts and Effects on All Trees along the Cable Route Corridor

BS5837:2012 Quality Category	Tree Reference	Value/Sensitivity	Magnitude of Impact	Significance of Effect
Category A trees and tree groups	T0241, T0241A	High	Medium	Major
	A2F2-T2	High	Low	Moderate
Category B trees and tree groups	T1005, T1008, T0047, T0080, T0081, T0183, T0184, T0187, T0390, T0434, T1028, T1029, T1030, T1031, T2009, T3067, BESS2-T39, G0008, G0038, G0052, G0059, G1025, G2021, G2022, W0122	Low	Low	Minor
Category C trees and tree groups	T0246, T1006, T0046, T0088, T0433, T3032, T3033, T3039, T3060, BESS2-T38, G0034, G0036, G0037, G0051, G0054, G0055, G0056, G0057, G0058, G0092, G2007	Negligible	Low	Negligible
Category U trees and tree groups	BF4-T3, T0082, T0084, T0085, T0086, T0087	Negligible	Low	Negligible



- 19.8.5 Details of the nature of the anticipated impacts to trees listed in Table 19.12 is provided in the Arboricultural Impact Assessment and Outline Arboricultural Method Statement [EN010170/APP/GH6.3.19.2].

Significance of Effects

- 19.8.6 Within **Table 19.11** and **Table 19.12**, all minor and negligible effects listed in are non-significant. All moderate and major effects listed are significant.

Operational Phase

- 19.8.7 During operation of the Scheme, maintenance and replacement activities (as detailed in ES Chapter 4 - Scheme Description [EN010170/APP/GH6.2.4] will need to take place during the Scheme's 60 year lifespan. Embedded mitigation is in place to protect ancient and veteran trees from impacts to canopies and roots during maintenance and replacement activities at the Sites (see section 19.7). The only anticipated impacts to trees during operation are those concerning Horn Wood and Three Shires Wood as detailed in Table 19.13 below. All impacts in **Table 19.13** are non-significant.

Table 19.13: Impacts to Ancient Woodlands during Operational Phase

BS5837:2012 Quality Category	Tree/Woodland Reference	Value/Sensitivity	Magnitude of Impact	Significance of Effect
Category A woodland	<u>Horn Wood</u>	High	Negligible	Minor
	<u>Three Shires Wood</u>	High	Negligible	Minor

- 19.8.8 Canopy pruning during operation may occasionally be required above the 24m of access track within the Ancient Woodland Buffer Zone of Three Shires Wood at Green Hill G. Woodland edge trees may require small diameter branches to be pruned back or removed to allow vehicles space to pass. Negligible impacts to woodland edge trees and Three Shires Wood are anticipated given the minor works that are likely to be anticipated. No veteran trees were found along the woodland edge.
- 19.8.9 Similarly, for Horn Wood, canopy pruning during operation may occasionally be required above the 840m of access track within the Ancient Woodland Buffer Zone at Green Hill F. Woodland edge trees may require small diameter branches to be pruned back or removed to allow vehicles space to pass. Negligible impacts to woodland edge trees and Horn Wood are anticipated given the minor works.
- 19.8.10 During operation, trees and woodlands planted at the Sites will mature and have a significant positive impact upon tree cover at the Sites.

Decommissioning Phase

- 19.8.11 Given that the Solar PV Panels are anticipated to be removed using the Access Tracks and Permanent Access Points installed during the construction stage, no



significant effects to ancient and veteran trees and ancient woodland at the Sites are anticipated during decommissioning.

- 19.8.12 It is anticipated that the cables installed within the Cable Route Corridor will not be removed at decommissioning. Excavation work to remove cables is therefore not anticipated and therefore no significant effects to trees along the Cable Route Corridor are anticipated during decommissioning. Should cabling require removal, it will be possible to remove cabling at the jointing bays and extracting it from the ducting to avoid the need for significant lengths of open cut trenching which may impact arboricultural features.
- 19.8.13 Embedded mitigation is secured (see section 19.7) for a BS5837:2012 tree survey (or most recent updated standard or industry guidelines) to be undertaken prior to decommissioning in order to inform an Arboricultural Impact Assessment and Arboricultural Method Statement to guide decommissioning works and specify mitigation and compensation measures as required.

19.9 Additional Mitigation Measures

- 19.9.1 No additional mitigation is required for the construction, operation and decommissioning phases. All mitigation measures have been secured as embedded mitigation within the Outline Construction Environmental Management Plan (OCEMP) [EN010170/APP/GH7.1], Outline Operational Environmental Management Plan [EN010170/APP/GH7.2], Outline Decommissioning Statement [EN010170/APP/GH7.3], Landscape and Ecology Mitigation Plans [EN010170/APP/GH6.4.4.10] – [EN010170/APP/GH6.4.4.20] and Appendix 19.2 Arboricultural Impact Assessment and Outline Arboricultural Method Statement [EN010170/APP/GH6.3.19.2].

19.10 Residual Effects

- 19.10.1 This section summarises the residual effects of the Scheme on arboricultural receptors following the adoption of embedded and additional mitigation.

Residual Effects for Ancient and Veteran Trees and Ancient Woodlands at the Sites

- 19.10.2 Neutral and non-significant effects are anticipated for ancient and veteran trees at the Sites provided that embedded mitigation measures are followed. Minor and non-significant effects are anticipated for ancient woodlands at the Sites provided embedded mitigation measures are followed.

Residual Effects for All Trees within the Cable Route Corridor

- 19.10.3 A **Moderate Adverse** residual effect is anticipated to veteran trees T0241 and T0241A should these trees require crown lifting and works within the RPAs to install an access track for Green Hill B.
- 19.10.4 A **Moderate Adverse** residual effect is anticipated from the potential removal of Category B trees along the Cable Route Corridor in order to create working space, a trench and a 11m width permanent easement. It is likely that many of the Category B trees listed precautionarily in **Table 19.11** as requiring removal can be retained through micro-siting during construction.



19.10.5 A **Moderate** Adverse residual effect to veteran tree A2F2-T2 is anticipated from potential crown lifting required to achieve visibility splays for a Temporary Access Point to the Cable Route Corridor. It should be noted that the Temporary Access Point and visibility splay have been indicatively drawn on an Ordnance Survey base rather than a topographical survey therefore it is not certain that A2F2-T2 will require canopy lifting. Pruning is unlikely given the small canopy spread of the tree and the first significant branch was recorded at 3.5m height therefore only minor adventitious growth on the stem may need to be pruned back. A **Moderate Adverse** residual impact is therefore precautionarily concluded at this stage.

19.10.6 Minor and non-significant residual effects are anticipated from the removal of Category C and Category U trees along the Cable Route Corridor as well as potential canopy and root impacts to Category B trees along the Cable Route Corridor.

19.11 Cumulative Effects

19.11.1 A list of cumulative projects can be found in **Appendix 25.1 [EN010170/APP/GH6.3.25.1]** of the ES. A summary of Cumulative effects will be listed within **Chapter 25: Cumulative Effects** of this ES.

Cumulative effects

19.11.2 For arboriculture, cumulative effects are relevant where arboricultural features within the Study Area may also be impacted by other projects in the local area. For ancient woodlands, cumulative effects are considered relevant using professional judgement where such woodlands within the Study Area or within 50m of the Study Area may also be impacted by other projects in the local area. For all other arboricultural features, cumulative effects are relevant where trees are within 15m of the Study Area as this reflects the maximum influencing distance provided by BS5837:2012.

19.11.3 Only two planning applications were found relating to projects within 50m of the Study Area. These are both registered with North Northamptonshire District Council:

- NW/23/00360/FUL – located adjacent to the Green Hill BESS at Grendon Lakes, Main Road, Grendon, Northampton, NN7 1JW. The application is for the development of a Battery Energy Storage System (BESS) with associated infrastructure including: access, drainage and landscaping; and
- NW/21/00629/SCQ – located adjacent to the Green Hill BESS site at Land To The East Of Northampton Aquapark (at Grendon Lakes), Main Road, Grendon, Northampton, Northamptonshire. The application details the scope of the required Environmental Impact Assessment (EIA) of a proposed solar farm and associated development.

19.11.4 The first planning application listed above is still being determined by the Local Planning Authority. The application does not impact any of the trees within or adjacent to the Green Hill BESS and Study Area. It proposes the removal of 10 trees for development purposes alongside significant replacement planting of



individual trees, native woodland and native scrub to deliver a net gain of trees and canopy cover

19.11.5 The second planning application listed above has been determined by the Local Planning Authority. The application is only for deciding the scope required for an Environmental Impact Assessment and contains no details of potential tree impacts. It is therefore assumed at this stage that no significant impacts to trees are anticipated from the application.

19.11.6 Following this review of nearby planning applications that could affect the same arboricultural features and woodlands considered in this report, no cumulative effects to arboricultural features are anticipated.

In-combination effects

19.11.7 No likely significant in-combination effects relating to arboriculture have been identified.

19.12 Summary

19.12.1 **Table 19.14** sets out a summary of the arboriculture environmental effects.


Table 19.14 Summary of Residual Effects for Arboriculture

Receptor	Description of Impact	Sensitivity of Receptor	Magnitude of Impact	Embedded Mitigation	Significance of Effect (with embedded mitigation)	Additional Mitigation Measures	Residual Effect (with additional mitigation)
Construction Phase – Ancient and Veteran Trees and Ancient Woodlands at the Sites							
None							
Construction Phase – All Trees along the Cable Route Corridor							
T0004, T0072, T0093, T0094, T0128, T0132, T0272, T0301, T0336, T0337, T0338, T0383, T0340, T0353, T0421, T0423, T0430, T1003, T1004, T3029, G0002 (partial), G0068, G0069, G0072 (partial removal), G0073 (partial removal), G0095 (partial removal), BESS1-H6 (partial removal), W0006 (very small section of small	Potential removal to achieve: working corridors and/or permanent easements for cables; and Temporary Access Points and visibility splays	Low	High	New tree planting at the Sites. Micro-siting, tree protection fencing, ground protection, root pruning with hand digging, tree removal hierarchy prioritising removal of lower quality trees.	Moderate	None	Moderate (if some Category B trees require removal after micro-siting)



Receptor	Description of Impact	Sensitivity of Receptor	Magnitude of Impact	Embedded Mitigation	Significance of Effect (with embedded mitigation)	Additional Mitigation Measures	Residual Effect (with additional mitigation)
diameter trees at woodland edge), W0122 (small section south-west corner of group)– all Category B trees							
T0003, T0008, T0023, T0024, T0028, T0079, T0110, T0156, T0157, T0158, T0159, T0160, T0172, T0195, T0208, T0209, T0211, T0212, T0226, T230, T231, T0238, T0239, T0240, T0242, T0248, T0249, T0250, T0251, T0253, T0273, T0274, T0275, T0276, T0277, T0282, T0283, T0284, T0285,	Potential removal to achieve: working corridors and/or permanent easements for cables; Temporary Access points and visibility splays; and Temporary Construction Compounds	Negligible	High	New tree planting at the Sites. Micro-siting, tree protection fencing, ground protection, root pruning with hand digging, tree removal hierarchy prioritising removal of lower quality trees.	Minor	None	Minor (if some Category C trees require removal after micro-siting)



Receptor	Description of Impact	Sensitivity of Receptor	Magnitude of Impact	Embedded Mitigation	Significance of Effect (with embedded mitigation)	Additional Mitigation Measures	Residual Effect (with additional mitigation)
T0286, T0291, T0300, T0305, T0309, T0310, T0379, T0380, T0381, T0382, T0392, T0393, T0394, T0395, T0396, T0397, T0398, T0399, T0400, T0405, T0406, T0415, T0419, T0420, T0422, T0424, T0431, T1027, T3065 G0003 (partial), G0018 (partial), G0016, G0020, G0021, G0035, G0042, G0045 (partial), G0057 (partial), G0058 (partial), G0070, G0071, G0074, G0077, G0080,							



Receptor	Description of Impact	Sensitivity of Receptor	Magnitude of Impact	Embedded Mitigation	Significance of Effect (with embedded mitigation)	Additional Mitigation Measures	Residual Effect (with additional mitigation)
G0093, G0102, G0107, G0109 (partial), G0117, G0118, G0123 (partial), G3015, BESS2-T33, BESS2-T34, BESS2-T35, BESS2-T36, BESS2-T37, DF1-T3– all Category C trees							
T0005, T0210, T0237, T0243 – all Category U trees	Removal to achieve working corridors and permanent easements for cables.	Negligible	High	New tree planting at the Sites. Micro-siting, tree protection fencing, ground protection, root pruning with hand digging.	Minor	None	Minor (if some Category U trees require removal after micro-siting)
<u>A2F2-T2</u>	Canopy lifting may be required to create visibility splays at Cable Route Corridor Temporary Access Points.	High	Low	Pruning to be specified by ACoW and undertaken in accordance with BS3998:2010.	Moderate	None	Moderate



Receptor	Description of Impact	Sensitivity of Receptor	Magnitude of Impact	Embedded Mitigation	Significance of Effect (with embedded mitigation)	Additional Mitigation Measures	Residual Effect (with additional mitigation)
T1005, T1008, T0047, T0080, T0081, T0183, T0184, T0187, T0390, T0434, T1028, T1029, T1030, T1031, T2009, T3067, BESS2-T39, G0008, G0038, G0052, G0059, G1025, G2021, G2022, W0122 – Category B trees	Canopy lifting and/or root impacts from Temporary Access Points, indicative construction access routes, access tracks and visibility splays along Cable Route Corridor	Low	Low	Pruning to be specified by ACoW and undertaken in accordance with BS3998:2010. Root pruning/hand digging under ACoW supervision. Retention of subbases for existing Access Tracks.	Minor	None	Minor
T0246, T1006, T0046, T0088, T0433, T3032, T3033, T3039, T3060, BESS-T38, G0034, G0036, G0037, G0051, G0054, G0055, G0056, G0057, G0058, G0092, G2007 – all Category C trees.	Canopy lifting and/or root impacts from Temporary Access Points, indicative construction access routes, access tracks and visibility splays along Cable Route Corridor	Negligible	Low	Pruning to be specified by ACoW and undertaken in accordance with BS3998:2010. Root pruning/hand digging under ACoW supervision. Retention of	Negligible	None	Negligible



Receptor	Description of Impact	Sensitivity of Receptor	Magnitude of Impact	Embedded Mitigation	Significance of Effect (with embedded mitigation)	Additional Mitigation Measures	Residual Effect (with additional mitigation)
				subbases for existing Access Tracks.			
BF4-T3, T0082, T0084, T0085, T0086, T0087 – Category U trees	Canopy lifting from indicative construction access routes, access tracks and Temporary Access Points	Negligible	Low	Pruning to be specified by ACoW and undertaken in accordance with BS3998:2010.	Negligible	None	Negligible
Operational Phase							
Horn Wood	Possible canopy pruning to trees on woodland edge next to 840m of access track.	High	Negligible	Use of access track limited to operation and decommissioning only. No tall construction machinery will need to pass underneath canopies. Access track will be constructed using a no-dig methodology.	Minor	None	Minor



Receptor	Description of Impact	Sensitivity of Receptor	Magnitude of Impact	Embedded Mitigation	Significance of Effect (with embedded mitigation)	Additional Mitigation Measures	Residual Effect (with additional mitigation)
Three Shires Wood	Possible canopy pruning to trees on woodland edge next to 24m of access track.	High	Negligible	Use of access track limited to operation and decommissioning only. No tall construction machinery will need to pass underneath canopies. Access track will be constructed using a no-dig methodology.	Minor	None	Minor
New tree and woodland planting	Significant increase in canopy cover at the Sites	N/A	N/A	N/A	N/A	N/A	N/A
Decommissioning Phase							
None							



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