FENWICK SOLAR FARM

Fenwick Solar Farm
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1. Introduction and Purpose

1.1.1 Iceni Projects (Iceni) have prepared this Landscape and Visual Supplementary Report in response to the Relevant Representation made by City of Doncaster Council (CDC) **[RR-001]** (CDC's Relevant Representation) in relation to the proposed Fenwick Solar Farm (the Proposed Development). This was informed by a review of the Landscape and Visual Impact Assessment (LVIA) which was carried out by LUC on behalf of CDC.

1.1.2 An initial review of the LVIA was undertaken by LUC in November 2024, followed by a meeting between Iceni, LUC, CDC, Boom Power (the Applicant) and AECOM (the EIA Coordinator) in December 2024. These informed CDC's Relevant Representation made in January 2024. Iceni provided a response to CDC's Relevant Representation and LUC's review at the end of January 2025. This provided a number of clarifications and set out additional information to be provided in early to mid-May. A further meeting was held between Iceni, LUC, CDC, Boom Power and the EIA Coordinator in February 2025, with LUC providing an additional response report in March 2025. Further clarifications to LUC's March 2025 response were provided in mid-April 2025, with a meeting shortly following this between LUC and Iceni.

1.1.3 This Supplementary Report provides supplementary information to CDC to inform the Statement of Common Ground, a draft of which was shared with CDC and LUC in March 2025.

2. Supplementary Information

2.1.1 Following Iceni's review of CDC's Relevant Representation and additional review documents, the following supplementary information is provided within this report:

- Detail of methodology clarifications to be made to **ES Volume III Appendix 10-2: Landscape and Visual Impact Assessment Methodology [APP-162]**. An updated version of Appendix 10-2 is appended to this report in **Appendix D**;
- Updated representative viewpoint plan (**ES Volume II Figure 10-9: Representative Viewpoint Locations [APP-111]**) with clearer base mapping;
- Detail of updates to be made to the Zone of Theoretical Visibility (ZTV) (**ES Volume II Figures 10-6 – 10-8 [APP-108 – APP-110]**);
- Detail of updates to be made to presentation of viewpoint photography (**ES Volume II Figure 10-10: Viewpoint Photography [APP-112]**) and photomontages (**ES Volume II Figure 10-13: Photomontages [APP-115]**);
- A review of sensitivity judgements for Local Landscape Character Areas (LLCA) and users of the Public Right of Way (PRoW) network;
- Clarifications on lighting and its presence in the visual assessment;
- Assessment of impacts on the Site (as defined in ES Volume 1 Chapter 2: The Scheme **[APP-054]**), including measurements of land occupied and vegetation removed;
- A review of judgements for LCA F2 and several visual receptors, including Fenwick and West End;
- A description of how the Proposed Development has positively responded to the published landscape character assessment and associated landscape strategy / guidelines, and how this has been embedded within the landscape mitigation proposals;
- Supplementary detail relating to the identification of cumulative schemes and their assessment; and
- Detail of updates to be made to the **Framework Landscape and Ecological Management Plan (FLEMP) [APP-203]**. The updated FLEMP is appended to this report in **Appendix C**.

2.1.2 Further supplementary information to be provided in early to mid-May and not included within this supplementary report includes:

- Updated presentation of viewpoint photography (**ES Volume II Figure 10-10: Viewpoint Photography [APP-112]**), including thumbnails of viewpoint location; and
- Updated ZTV and bare earth ZTV (**ES Volume II Figures 10-6 – 10-8 [APP-108 – APP-110]**).

Methodology Clarifications

2.1.3 The following updates will be made to **ES Volume III Appendix 10-2: Landscape and Visual Impact Assessment Methodology [APP-162]**:

- Additional narrative will be provided alongside Tables 7 and 8 to describe how the different elements of magnitude have been considered;
- Clarity will be provided around the production of the ZTV and the use of Digital Terrain Model (DTM) data; and
- Clarity will be provided around the use of vegetation in the ZTV and limitations to the dataset presented.

Updated Representative Viewpoint Plan

2.1.4 An updated representative viewpoint plan has been provided within **Appendix A**. This has been split across four sheets, using 1:25,000 OS base mapping. The 1:25,000 OS base mapping does not yet show the new properties along Fenwick Common Lane / Shaw Lane. However, these are included on the 1:10,000 mapping used as thumbnails to present the location of each representative viewpoint alongside the updated viewpoint photography photosheets (to be provided in early to mid-May).

Updated Zone of Theoretical Visibility

2.1.5 An updated ZTV and a bare earth ZTV will be provided following a request made by CDC. This will be provided in early to mid-May. These changes include:

- Extending the ZTV to the edge of the page as opposed to the Study Area;
- Updates to representative viewpoint location symbology transparency to make base map more legible; and
- Update to the transparency of the ZTV to make base map more legible.

Updated Presentation of Viewpoint Photography and Photomontages

2.1.6 Updated presentation of viewpoint photography will be provided in early to mid-May. This will include 53.5 degree views to accompany wide angle views. A review of the presentation of photomontages will also be undertaken.

Review of Sensitivity Judgements

Landscape Receptors

Local Landscape Character Areas (LLCA) within LCA F2

2.1.7 The landscape sensitivity of LCA F2: Owston to Sykehouse Settled Clay Farmlands is judged to be medium-high. This is formed from a combination of medium landscape susceptibility and high landscape value. This reflects the overall landscape value judgement for LCA F2 within the Landscape Character and Capacity Assessment of Doncaster Borough (2007)[1] (the 2007 Study) which is noted as high. No susceptibility or sensitivity judgement is made within the 2007 Study. The Doncaster Landscape Character

[1] https://www.doncaster.gov.uk/services/planning/doncaster-landscape-character-assessment-and-capacity-study

Assessment Update – Sensitivity to Wind Energy Development (2020)[2] (the 2020 study), although relevant to wind energy, makes an overall judgement on landscape sensitivity to wind turbines for LCA F2 as medium.

2.1.8 It was queried why some LLCAs, which are located within LCA F2, are judged to have a lower sensitivity than that of the wider LCA, for example LLCA 02 – Fenwick Farmlands which is considered to have a low-medium sensitivity, and LLCA 03 – River Went Farmlands (South) which is considered to have a low sensitivity.

2.1.9 The published key characteristics of LCA F2 are:

- *'Flat low lying landform;*
- *Geology of silts and clays underlain by Sherwood sandstone;*
- *Small scale arable and pasture fields including hay meadows;*
- *Thick field boundary hedges with frequent mature hedgerow trees;*
- *Some medium to large arable fields with fragmented hedges;*
- *Network of water-filled drains;*
- *Occasional small deciduous woodlands with larger and more frequent woodlands in the south-west;*
- *Compact historic settlements and many scattered farmsteads;*
- *Historic network of lanes with sharp corners and roadside ditches;*
- *Rail corridor cuts through the area with manned and unmanned gated crossings;*
- *River Don and straight New Junction Canal with flood control embankments;*
- *Occasional windmills and moated properties; and*
- *Network of green lanes and public rights of way.'*

2.1.10 The Solar PV Site (as defined in ES Volume 1 Chapter 2: The Scheme **[APP-054]**) displays some of these key characteristics, however, it is primarily comprised of the *'medium to large arable fields with fragmented hedgerows',* as opposed to the smaller-scale landscape with thick hedgerows and mature hedgerow trees found across much of the rest of the LCA. The reasoning behind the landscape quality and value judgement within the 2007 Study notes *'this is a strongly distinctive landscape which is relatively intact and in good condition. There is a high concentration of locally designated nature sites and a large proportion of the LCA is currently designated as an Area of Special Landscape Value. In view of this both the landscape quality and value are considered to be high'.* These points are largely irrelevant to the Solar PV Site and its immediate surroundings, therefore indicating a lower value landscape.

2.1.11 In acknowledgement of the scale of LCA F2 relative to the Site, as well the discrepancies between the key characteristics of the Solar PV Site and wider LCA, an LLCA was undertaken. This allows for a more refined assessment of local landscape sensitivity and therefore a more granular assessment of

[2] https://www.doncaster.gov.uk/services/planning/doncaster-landscape-character-assessment-and-capacity-study

effects. The reasoning for the sensitivity conclusions for each LLCA is provided within Tables 7 – 17 in **ES Volume III Appendix 10-5: Landscape Assessment Tables [APP-238]**.

Visual Receptors

Users of the PRoW Network

2.1.12 The sensitivity judgement was queried for users of the PRoW Network. Users of the PRoW Network within the Site, as well to the north, south and west, are considered to have a low-medium sensitivity. Users of the PRoW network to the east of the Site are considered to have a medium sensitivity.

2.1.13 For users of the PRoW network within the Site, as well as to the north, south and west, the sensitivity judgement is formed of a combination of medium susceptibility and low value. With reference to Table 5 in **ES Volume III Appendix 10-2: Landscape and Visual Assessment Methodology [APP-162]**, receptors with a medium visual susceptibility are *'people who are travelling through the area where views are relevant to the experience or the journey but are not a specific reason for visiting'*. Typically, a higher susceptibility would relate to users of PRoW within a designated landscape, or as part of a promoted walking route (for example the Trans Pennine Trail in Table 18), or residents at home.

2.1.14 With reference to Table 4 in **ES Volume III Appendix 10-2: Landscape and Visual Assessment Methodology [APP-162]**, a low visual value relates to *'views that include poor quality elements and/or detracting features, or a featureless view e.g. featureless agricultural landscape or poor quality urban fringe'*. Views from PRoW within the Site and its immediate surroundings are often comprised of large-scale arable fields bound by fragmented hedgerows with detracting features including pylons, the East Coast Mainline and wind turbines. As such, we consider most of the views from PRoW within the Site and its immediate surroundings to be of low value. From PRoW to the east of the Site, views more regularly consist of smaller-scale pastoral fields with moderate to good quality hedgerows and tree belts, as such, the visual value is deemed to be medium, resulting in an overall sensitivity of medium.

2.1.15 The CDC review (April 2025) noted *'the landscape sensitivity judgements of users of the PRoW network to the north, south and west of the Solar PV Site are described as low-medium. Users of the PRoW network within the Site are also described as being of low-medium sensitivity. Combining a low-medium sensitivity with a high magnitude of effect creates a moderate adverse (significant) effect. In general, it is considered that the levels of effect on these receptors have been under-reported, given the footpaths pass though the development area. Sensitivity judgements seem low for walkers'.*

2.1.16 With reference to Table 10-2 within **ES Volume I Chapter 10: Landscape and Visual Amenity [APP-062]**, a low-medium sensitivity combined with a high magnitude of effect typically results in a moderate or minor level of effect. Recognising the change in views for users of the PRoW within the Site, professional judgement was applied, identifying a major adverse (significant) effect during construction, during operation and maintenance at Year 1 and Year 15 Winter, and during decommissioning. A moderate adverse (significant) effect was identified during Summer at Year 15 due to internal hedgerows and landscape mitigation being in leaf, therefore

reducing the extent to which Solar PV Infrastructure would be visible from individual PRoWs. As the judgement for this receptor goes above the level of effect guide found in Table 10-2 in **ES Volume I Chapter 10: Landscape and Visual Amenity [APP-062]**, and gives it the highest possible level of effect, it is not considered that the effects have been 'under-represented' and significant adverse effects are identified across all assessment scenarios.

2.1.17 Significant effects are identified for users of some PRoW to the north and south of the Site. However, on account of the landscape's flat topography and intervening vegetation, intervisibility with the Site quickly reduces, and this is reflected in the level of effect judgements within Tables 14 – 17 of **ES Volume III Appendix 10-6: Visual Assessment [APP-166]**.

Lighting

2.1.18 Details of proposed lighting during construction and during operation and maintenance of the Scheme is highlighted below.

During Construction

2.1.19 The lighting strategy for the construction phase will be set out in the detailed Construction Environmental Management Plan (CEMP). The **Framework CEMP [APP-196]** and **ES Volume I Chapter 2: The Scheme [APP-054]** includes details of lighting design. Construction would generally be restricted to daylight hours only, with focussed task specific lighting provided where this is not practicable. Some 'general' lighting and task-specific lighting may be required in construction compounds during winter periods (i.e. early morning or early evening).

2.1.20 The security system will use thermal imaging and Infrared (IR) lighting to provide night vision functionality meaning no visible lighting will be needed for security. Some portable lighting would be used by the security team during regular checks and 'emergency' visits.

During Operation and Maintenance

2.1.21 No permanent lighting is proposed as part of the Solar PV Site when operational. With reference to the **Framework Operational Environmental Management Plan (OEMP) [APP-197]** and **ES Volume I Chapter 2: The Scheme [APP-054]**, the Solar PV Site will not require artificial lighting other than during temporary periods of maintenance/repair.

2.1.22 The security system will use thermal imaging and IR lighting to provide night vision functionality meaning no visible lighting will be needed for security. Some portable lighting would be used by the security team during regular checks and 'emergency' visits.

2.1.23 Containerised units, including Field Station Units and BESS containers may contain some internal artificial lighting which would be manually activated. However, light spillage would be minimal e.g. through doorway when open.

2.1.24 Task specific and fixed 'general' lighting will be used at the On-Site Substation, BESS Area and at the Operations and Maintenance Hub during the winter months (in early mornings and evenings only) to maintain safe working conditions. There will be internal lighting within the control buildings for the On-Site Substation and the BESS Area, and at the Operations and Maintenance Hub. Light spillage from these would be minimal.

Lighting in the Visual Assessment

2.1.25 There will be no permanent lighting as part of the Scheme. Where lighting is necessary, it will be temporary or task specific. Where some lighting is proposed at the BESS, On-Site Substation and the Operations and Maintenance Hub, there are no residential receptors in proximity or with direct views towards these areas. As such, there would be little to no visual impact resulting from lighting.

2.1.26 This clarification will be added to **ES Volume I Chapter 10: Landscape and Visual Amenity [APP-062]**.

Assessment of Impacts on the Site

2.1.27 It was noted within the CDC Relevant Representation that an assessment of the landscape effects on the Site should be included as a landscape receptor within its own right. This should include detail regarding effects on landscape resources, such as vegetation removal and area of fields to be developed. Table 2-1 provides a detailed assessment of the landscape effects on the Site.

Table 2-1. The Site (Solar PV Site and Grid Connection Corridor)

Landscape Receptor		The Site (Solar PV Site and Grid Connection Corridor)	
	Description/Key Characteristics	The Site is comprised of the Solar PV Site and the Grid Connection Corridor. With reference to **ES Volume III Appendix 10-3: Landscape Character Baseline [APP-163]**, the Solar PV Site primarily consists of medium to large-scale agricultural fields situated across low-lying and generally flat landform between 5 m and 6 m Above Ordnance Datum (AOD). The fields are mainly geometric in form and divided by a combination of drainage ditches, hedgerows and trees. The extent of this vegetation is notably less across the southeast part of the Solar PV Site, such that there is a more open character in relation to a higher degree of enclosure across the remainder of the Solar PV Site. There is also a more notable infrastructure character in the southeast part of the Solar PV Site due to the existing pylons. The Solar PV Site is not covered by any landscape designations, nor does it contain any rare landscape features. There is recreational use in the southwest part of the Solar PV Site due to several PRoW which cross the fields. There are no PRoW across the northwest and northeast parts of the Solar PV Site. The Solar PV Site is not lit and therefore reflects an area of generally darker night skies. The Grid Connection Corridor comprises an average width of 100m situated across low-lying and very gently undulating landform between 5m and 6m AOD. Agriculture is the main land use, characterised by a range of field sizes and forms, but with a consistent pattern of low hedgerows and trees dividing fields. Overhead pylons extending towards Thorpe Marsh Substation cross through the Grid Connection Corridor, alongside numerous watercourses. Several roads and lanes cross the Grid Connection Corridor, as well as a freight only railway line. There are no statutory or local landscape designations or Conservation Areas within the Grid Connection Corridor, nor is there any ancient woodland. Several PRoW cross the Grid Connection Corridor, including the Trans Pennine Trail and National Cycle Network 62. The Grid Connection Corridor is an area of predominantly ‘darker skies’ and considered to exhibit higher levels of tranquillity due to the land use.	
	Landscape Susceptibility	The landscape susceptibility of this receptor is judged to be **low** as it is a medium to large-scale landscape, particularly within the Solar PV Site, with a flat topography and vegetation-bound fields which contribute to the overall sense of enclosure. The landscape already hosts existing large-scale energy infrastructure, including pylons and Thorpe Marsh Substation. Although some vegetation will need to be removed to accommodate access and the laying of the Grid Connection Cable, this will largely be limited to short stretches of hedgerow which can be replanted.	
	Landscape Value	The landscape value of this receptor is judged to be **medium** as it is an ‘everyday’ landscape in moderate condition with good public access through a number of PRoW. Although there is an inherently rural character there are several detracting elements including pylons with the associated wirescape and Thorpe Marsh Substation.	
	Landscape Sensitivity	By combining the judgements of low susceptibility and medium value, the sensitivity of this landscape receptor is judged to be **low-medium**.	High Medium-High Medium **Low-Medium** Low
	Overall Magnitude of Landscape Effect	**During Construction (Winter)** <u>Scale of Effect and Geographical Extent</u> Construction of Solar PV Infrastructure and the laying of the Grid Connection Cable would take place across the Site. The majority of existing vegetation, including hedgerows and trees would be retained and protected during the construction process, in line with the **Framework Construction Environmental Management Plan [APP-196]**. Some sections of hedgerow and trees would need to be removed to accommodate access and the laying of cables. With reference to **ES Volume III Appendix 10-7: Arboricultural Impact Assessment [APP-167 – APP-168]** the following trees would need to be removed to facilitate the Scheme (across both the Solar PV Site and the Grid Connection Corridor): **Category B Trees**	**High** Medium

Landscape Receptor	The Site (Solar PV Site and Grid Connection Corridor)	
	• 3 individual trees • Part of 1 group • Part of 3 hedgerows **Category C Trees** • 2 individual trees • 2 groups • Part of 2 groups • Part of 33 hedgerows **Category U Trees** • 1 individual tree No Category A, Ancient or Veteran trees will need to be removed to accommodate the Scheme. The total length of hedgerows to be removed, as shown on **Figure 8-5-2: Hedgerow Removal** in **ES Volume III Appendix 8-5: Hedgerow Report [APP-150],** would be 1.3 km, this includes approximately 0.3 km within the Solar PV Site, and approximately 1 km across the Grid Connection Corridor. Despite the removal of some vegetation during the construction phase, the planting of new and replacement vegetation would also take place. During construction, some PRoW within the Site would be temporarily diverted (including Fenwick 14 and 16, and Moss 6), as identified within **Framework Public Rights of Way Management Plan [APP-202]**. All watercourses and ditches would be retained, and appropriate mitigation put in place as per the **Framework Construction Environmental Management Plan [APP-196]**. Construction activities would introduce movement into the landscape of the Site above that typically associated with farming. The introduction of machinery and plant used for the construction of the BESS Area, On-Site Substation, Solar PV Panels, and laying of the Grid Connection Cable, as well as fencing and earthworks, would represent a substantial but temporary change to the character of the Site which would be perceived across the extent of the Order limits. Focussed, task specific lighting would be introduced into the Site; however, this would only be used during core work hours. With reference to **ES Volume II Figure 10-12 CPRE Light Pollution and Dark Skies [APP-114]**, some of the Site is already influenced by light sources from the villages of Fenwick, Moss, Braithwaite, Trumfleet, and Thorpe in Balne, as well as Thorpe Marsh Substation. Therefore, the addition of some localised, temporary, and directional lighting would not affect the relatively dark skies experienced locally. <u>Duration and Reversibility</u> The construction phase is temporary and therefore the change would be short term and reversible.	Low Very Low None
	During Operation and Maintenance (Year 1, Winter) <u>Scale of Effect and Geographical Extent</u> Once complete, the total area of the Solar PV Site occupied by Solar PV Infrastructure (including Solar PV Panels, BESS Area and On-Site Substation) would be 56.8%.This would introduce an evident change in land use and character, reducing the agricultural character and degree of openness due to the introduction of Solar PV Infrastructure, including ancillary features, such as the BESS Area and On-Site Substation. This would be experienced alongside other existing large-scale infrastructure in the area, including pylons and wind turbines. Within the Solar PV Site, all Solar PV Infrastructure would be sited within the existing medium to large-scale fieldscape. This would allow for most hedgerows and vegetation to be retained, therefore preserving the landscape framework. The Grid Connection	**High** Medium

Landscape Receptor	The Site (Solar PV Site and Grid Connection Corridor)	
	Cable would be underground and the covering topsoil similar to that of an arable field in winter. New planting proposed as part of the Scheme across the Solar PV Site and the Grid Connection Corridor would be in place but would be yet to establish. As noted within the **Biodiversity Net Gain Assessment [APP-200]**, there would be a 36.46% increase in habitat area units, a 62.75% increase in hedgerow units, and a 24.97% increase in watercourse units, resulting from habitat enhancement and creation across the Solar PV Site and Grid Connection Corridor. As shown on the Landscape Masterplan in Annex A of the **FLEMP [APP-203]**, the Scheme would create approximately 4.45km of new hedgerows and vegetation belts across the Solar PV Site. During operation, some PRoW within the Site would be permanently diverted (including Sykehouse 29, Moss 6, and Fenwick 14), as identified within **Framework Public Rights of Way Management Plan [APP-202]**. These diversions would be small and would retain the overall route and length of the PRoW. Task focussed lighting would be introduced during temporary periods of maintenance and repair. Lighting on the On-Site Substation would only be used during emergencies, would be inward-facing, and manually activated. Given the temporary and occasional use of lighting there would be no effect on the relatively dark skies within the area. <u>Duration and Reversibility</u> The change would be long term and partially reversible, as it is assumed that vegetation proposed as part of the Scheme would be retained.	Low Very Low None
	During Operation and Maintenance (Year 15, Winter) <u>Scale of Effect and Geographical Extent</u> As above, however, at Year 15, planting proposed as part of the Scheme, including hedgerow thickening and new structural vegetation, would have established. This would not only enhance the structure of the landscape across the Site but also improve ecological function and connections. Grassland beneath the panels would have established, as well as new areas of grassland along the River Went and Fleet Drain, contributing towards a richer mosaic of habitats and a general increase in natural capital benefits. Whilst the establishment of planting would reduce the perception of the Scheme from parts of the Site not containing Solar PV Infrastructure, the magnitude of change across the Solar PV Site would remain high. However, there would be some benefits to landscape elements due to the improved landscape structure and ecological benefits. Like at Year 1, the underground Grid Connection Cables would not be perceived. Where installation of the Grid Connection Cables required the removal of vegetation or grassland, reinstatement planting would be established, reflecting baseline conditions. <u>Duration and Reversibility</u> The change would be long term and partially reversible, as it is assumed that vegetation proposed as part of the Scheme would be retained.	**High** Medium Low Very Low None
	During Operation and Maintenance (Year 15, Summer) <u>Scale of Effect and Geographical Extent</u> As above, however, existing and proposed vegetation would be in leaf, further reinforcing the landscape framework and helping to reduce the perception of the Scheme from parts of the Site which do not contain Solar PV Infrastructure. <u>Duration and Reversibility</u> The change would be long term and partially reversible, as it is assumed that vegetation proposed as part of the Scheme would be retained.	**High** Medium Low Very Low None
	During Decommissioning (Winter) <u>Scale of Effect and Geographical Extent</u> The effects of decommissioning would be similar to those of construction, including a general increase in activity, the presence of large machinery, and the introduction of temporary features. The On-Site Substation would remain in place, meaning the extent of	**High** Medium

Landscape Receptor	The Site (Solar PV Site and Grid Connection Corridor)				
	land affected across the Solar PV Site would be slightly less during construction. Vegetation proposed as part of the Scheme would also be retained. Grassland that once sat beneath the panels would be lost and returned to arable agriculture. The Grid Connection Cables would not be removed during the decommissioning process and therefore there would be no change to the Grid Connection Corridor. Duration and Reversibility The decommissioning phase is temporary and therefore the change would be short term and reversible.				Low Very Low None
Level of Effect and Significance	During Construction Combining a low-medium sensitivity with a high magnitude of effect typically results in a Moderate or Minor effect. However, given the disruptive nature of construction activity across the extent of both the Solar PV Site and Grid Connection Corridor, it is concluded that the effect would be major adverse (significant) for the Site.	During Operation and Maintenance (Year 1, Winter) Combining a low-medium sensitivity with a high magnitude of effect creates a moderate adverse (significant) effect for the Site.	During Operation and Maintenance (Year 15, Winter) Combining a low-medium sensitivity with a high magnitude of effect creates a moderate adverse (significant) effect for the Site.	During Operation and Maintenance (Year 15, Summer) Combining a low-medium sensitivity with a high magnitude of effect creates a moderate adverse (significant) effect for the Site.	During Decommissioning (Winter) Combining a low-medium sensitivity with a high magnitude of effect typically results in a Moderate or Minor effect. However, given the disruptive nature of decommissioning activity across the extent of the Solar PV Site, it is concluded that the effect would be major adverse (significant) for the Site.
	Major Adverse (Significant)	Major (Significant)	Major (Significant)	Major (Significant)	**Major Adverse (Significant)**
	Moderate (Significant)	**Moderate Adverse (Significant)**	**Moderate Adverse (Significant)**	**Moderate Adverse (Significant)**	Moderate Adverse (Significant)
	Minor (Not Significant)	Minor (Not Significant)	Minor (Not Significant)	Minor (Not Significant)	Minor (Not Significant)
	Negligible (Not Significant)	Negligible (Not Significant)	Negligible (Not Significant)	Negligible (Not Significant)	Negligible (Not Significant)
	Neutral	Neutral	Neutral	Neutral	Neutral

Review of Level of Effect Judgements

Landscape Receptors

LCA F2: Owston to Sykehouse Settled Clay Farmlands (LCA F2)

2.1.28 It was queried why LCA F2: Owston to Sykehouse Settled Clay Farmlands was judged to experience a minor adverse (not significant) effect at Year 15 and it was requested by CDC for the judgement to be reviewed. Iceni have reviewed their original judgement and assessment relating to LCA F2 and have made the same conclusions relating to the level of effect on the LCA. The reasoning behind this is presented below.

2.1.29 The Solar PV Site occupies approximately 5.5% of the LCA. Of this, approximately 57% of the Site is occupied by Solar PV Infrastructure, including Solar PV Panels, BESS Area and On-Site Substation. Although it is recognised that geographic extent is just one part of the magnitude of change judgement, it is important to consider the extent to which the Scheme would be perceptible across the LCA.

2.1.30 In acknowledgement of the scale of LCA F2 relative to the Site, a Local Landscape Character Assessment was undertaken which recognises the physical and perceptual effects on the Site, as well as the perceptual effects on the landscape immediately surrounding the Site. This included the identification of Local Landscape Character Areas (LLCA), including LLCA02 – Fenwick Farmlands, that covers a large proportion of the Site and some of its surroundings. We agree that locally significant effects on landscape character are inevitable given the size of the Scheme, and that this should be made clear. As such, the assessment for LLCA02 identifies a significant landscape effect throughout all assessment scenarios.

2.1.31 Perception of an operational solar scheme is limited to visual qualities as there is very limited noise and light sources. Views of the Scheme quickly shorten with distance from the Site boundary due to the area's flat topography and intervening vegetation and built form.

2.1.32 Views, and therefore perception, of the Scheme would reduce over time as proposed landscape mitigation establishes, including new vegetation belts along the southern edge of the Site at Ell Wood and Fenwick Grange Drain, along the western edge of the Site at Fenwick Common Drain, to the north of Fenwick, to the north of West End, and to a lesser extent along the River Went in the north of the Solar PV Site. Furthermore, existing highly managed hedgerows would be strengthened and allowed to grow taller and denser due to an improved land management regime. This network of dense and taller vegetation would reduce the perception of change over time, therefore reducing the magnitude of change at Year 15 and the overall level of effect.

2.1.33 This is demonstrated through the assessment of visual receptors located within LCA F2. For example, significant effects are not identified for PRoW to the south, east and west of the Scheme, with the exception of PRoW to the immediate south of the Solar PV Site and in proximity to the Grid Connection Corridor during construction. Due to the intervening vegetation and flat topography, views towards the Site are quickly truncated, even during Winter conditions. This is demonstrated through the supporting viewpoint

photography for representative viewpoints 18, 20 and 22 found in **ES Volume II Figure 10-10: Viewpoint Photography [APP-112]**.

2.1.34 By siting the Solar PV Infrastructure within the existing pattern of arable fields, it allows for most landscape elements to be retained and strengthened, whilst also retaining the key characteristics of LCA F2, which are:

- Flat low lying landform;
- Small-scale arable and pasture fields including hay meadows;
- Thick field boundary hedges with frequent mature hedgerow trees;
- Some medium to large arable fields with fragmented hedges;
- Network of water-filled drains;
- Occasional small deciduous woodlands with larger and more frequent woodlands in the southwest;
- Compact historic settlements and many scattered farmsteads;
- Historic network of lanes with sharp corners and roadside ditches;
- Rail corridor cuts through the area with manned and unmanned gated crossings; and
- Network of green lanes and public rights of way.

2.1.35 Whilst the Scheme does propose the removal of some stretches of hedgerow and trees to accommodate access and the laying of cables, as shown on Figure 8-5-2: Hedgerow Removal in **ES Volume III Appendix 8-5: Hedgerow Report [APP-150]**, there would be an overall increase in structural vegetation, habitat and natural capital assets across the Site. As noted within the **Biodiversity Net Gain Assessment [APP-200]**, there would be a 36.46% increase in habitat area units, a 62.75% increase in hedgerow units, and a 24.97% increase in watercourse units, resulting from habitat enhancement and creation across the Solar PV Site and Grid Connection Corridor. These would be established at Year 15 and would therefore bring with them beneficial landscape change.

2.1.36 Combining the above conclusions and applying this to our methodology, we agree with our original conclusion that this represents a *'very slight alteration to the landscape receptor which may impact a limited area or no key characteristics. Likely short or medium term but may be reversible.'*

Visual Receptors

Residents of Fenwick

2.1.37 It was queried why some residents of Fenwick, namely those on the south-eastern extent of Shaw Lane, are judged to experience a minor adverse (not significant) effect at Year 1 and was requested for the judgement to be reviewed. Iceni have reviewed their original judgement and assessment relating to residents of Fenwick and have made the same conclusions relating to the level of effect. The reasoning behind this is presented below.

2.1.38 To provide a granularity of assessment, we have identified different receptors in Fenwick to recognise the different nature of people's views from different parts of the village.

2.1.39 Views towards the Site from those properties on the south-eastern extent of Shaw Lane are limited to south-facing first floor windows. From here, the Solar PV Site is seen at an oblique angle at a distance of approximately 0.25km. Existing vegetation, including trees, along Fenwick Common Drain would help to filter these oblique views, as shown in the photomontages for Viewpoint 15 within **ES Volume II Figure 10-13: Photomontages [APP-115]**. The expansive and open views across arable fields to the south of these properties, which are the focus of the view, would remain unchanged. The Site would occupy a small portion of the available view and there would be no loss of characteristic features within the view.

2.1.40 As identified within Table 1 of **ES Volume III Appendix 10-6: Visual Assessment [APP-166]**, properties which experience a direct, yet filtered view towards the Solar PV Site, including properties to the north of Lawn Lane, would experience a significant effect at Year 1 due to proposed landscape mitigation not yet being established.

2.1.41 It was noted by CDC that *'effects on residents should be considered in terms of their wider experience of living in each community – e.g. their approach and departure from the village, use of community spaces and local paths and lanes, not just individual views from each property and associated garden.'* It is accepted that people using the local PRoW network around Fenwick will experience significant visual effects, as assessed in Tables 13 and 17 in **ES Volume III Appendix 10-6: Visual Assessment [APP-166]**. Consideration is given to all users of the road network in and around Fenwick in Table 19 of **ES Volume III Appendix 10-6: Visual Assessment [APP-166]**. Here, it is noted that brief views would be available towards the Solar PV Site from Fenwick Common Lane and Shaw Lane as people arrive and depart Fenwick, where there are gaps in the hedgerow. However, no views would be available towards the Solar PV Site for people arriving and departing Fenwick using Fenwick Lane. A key community space for the village would be The Baxter Arms, which has a garden to the north of the pub. There would be no views of the Scheme from The Baxter Arms or from within its garden. How people move around and congregate in Fenwick is reflected in the visual assessment and through representative viewpoints 1, 5, 15, 16, 18, and 18. An assessment of the effects on the character of Fenwick as a receptor is provided in Table 7 of **ES Volume III Appendix 10-5: Landscape Assessment [APP-165]**.

2.1.42 CDC considered it unlikely that a development of this scale will result in so few significant effects at Year 15 within Fenwick. It is noted above why operational effects on residents along the south-eastern extent of Shaw Lane are not significant. In relation to residents to the north of Lawn Lane, a new vegetation belt is proposed approximately 150m north of these properties. This not only allows for Solar PV Panels to be set back from properties, but also for views to be heavily filtered at Year 15 once proposed planting established. Although the Solar PV Site would be screened from these

properties at Year 15 Summer, a negligible adverse effect remains due to the character of the view changing, i.e. it has been shortened.

Residents of West End

2.1.43 CDC queried why views from some properties at West End are not significant at Year 15 and that *'when considering effects on residents it is also important to recognise how the communities of these villages function, how people move around (arrive and depart), where the local walks are along paths and lanes, where people congregate etc.'*.

2.1.44 West End comprises a handful of properties along a 60mph lane with one PRoW, Sykehouse 29, extending from the bend between West Lane and Flashley Carr Lane. Vehicles move quickly along this lane and with no footways, it is unlikely for there to be much 'moving around' or 'congregating'. An assessment of effects on users of ProW Sykehouse 29 is included within Table 13 of **ES Volume III Appendix 10-6: Visual Assessment [APP-166]** and users of West Lane / Flashley Carr Lane are assessed in Table 20 of **ES Volume III Appendix 10-6: Visual Assessment [APP-166]**.

2.1.45 Visual effects on properties at West End, including Richmond and West End Cottage, are considered to be not significant at Year 15 due to a proposed new belt of vegetation along the Solar PV Site boundary, which would filter views of Solar PV Panels at a distance of approximately 0.25km. Existing vegetation along West Lane would add to this filtering effect. An existing static caravan at South Fork, despite being closer to proposed Solar PV Panels, is orientated away from the Site boundary and would have views from its curtilage heavily filtered by existing and proposed vegetation.

Response to the Published Landscape Character Assessment

2.1.46 The Landscape Character and Capacity Assessment of Doncaster Borough (2007) identifies LCA F2: Owston to Sykehouse Settled Clay Farmlands. It provides a description of the character area, its key characteristics and its broad landscape capacity to certain development types, of which solar is not one. The assessment provides a landscape strategy for LCA F2, which is to 'conserve'. The assessment notes that landscape strategies to 'conserve' should:

'Retain and protect existing landscape elements and character created by their unique combination. Avoid fragmentation.'

2.1.47 Doncaster Landscape Character Assessment Update – Sensitivity to Wind Energy Development (2020) builds on the 2007 study and provides an additional narrative on landscape sensitivity specifically relevant to wind energy developments. This includes guidance on locating development to reduce landscape and visual effects. Although this guidance is specific to wind energy development, it is also relevant to other large-scale energy infrastructure. As such, guidance which is deemed relevant to solar development within LCA F2 includes:

- *"Ensure that (wind) energy development located within the LCA does not compromise the integrity and characteristics of the landscape's rural qualities";*
- *"Medium-large scale landscapes with more extensive areas of consistent land cover would be less sensitive to (wind) energy development than complex or smaller scale field patterns";*
- *"Avoid placing (turbines) where they could affect the setting of settlements locally, including the conservation areas at Sutton and Owston";*
- *"Protect the network of locally and nationally important nature conservation sites";*
- *"Avoid development that would impact on integrity and appreciation of parks and gardens of local historic interest, as identified by Doncaster Council";*
- *"Presence of woodlands and copses may offer opportunities to site (turbines) so that they take advantage of 'ready-made' screening";*
- *"Due to the lack of woodland tracts within the LCA, avoid the need to fell woodlands to site (turbines) or to enable access"*; and
- *"Ensure siting and design of (turbines) maintains the openness of the Green Belt".*

2.1.48 The Scheme and its landscape mitigation responds to the landscape strategy to 'conserve' as it is sited within the existing landscape framework and therefore largely retains and protects existing landscape elements, with the exception of where vegetation is needed to be removed for access or for the laying of the Grid Connection Cable. Although it would represent a change in character across the Site and the landscape immediately surrounding it, the character of the vast majority of the LCA would remain unchanged. Due to the retention, enhancement and creation of vegetation and habitats, as well as the retention of PRoW, the Scheme avoids fragmentation.

2.1.49 The Scheme and its embedded landscape mitigation responds to the guidance within the 2020 assessment due to the following reasons:

- Although the Scheme would impact the rural character of the Site and its immediate surroundings, the majority of landscape elements would be retained and strengthened, along with its key characteristics. Over time and as landscape mitigation establishes, the perception of the Scheme, and therefore its effect on the rural character of the landscape surrounding the Site, would diminish.
- The Scheme is sited within the existing landscape framework created by medium to large-scale arable fields bound by fragmented hedgerows and hedgerow trees. This land cover is consistent across the Site.
- Solar PV Development has been set back from settlements and additional planting, comprising species reflective of existing character, integrated into the Scheme.
- The network of local habitat sites have been retained and enhanced throughout the Site. Additional links within the local nature network will be

provided through vegetation enhancement, new areas of grassland and new structural vegetation.

- The Site is not in proximity to any parks and gardens of local historic interest.
- The Scheme makes use of existing woodland screening along the disused railway, as well as the raised embankment of the East Coast Mainline as 'ready-made screening'. It also makes use of existing vegetated boundaries for screening.
- The Scheme avoids the need to fell woodland, including at Bunfold Shaw. Vegetation removal has been limited to where necessary for access and laying the of cables, as shown on Figure 8-5-2: Hedgerow Removal in **ES Volume III Appendix 8-5: Hedgerow Report [APP-150]**.
- The Site is not located within the Green Belt. The raised embankment of the East Coast Mainline, as well as the intervening distance coupled with flat topography and hedgerows, means there would be little to no perception of the Scheme from within the Green Belt. As such, there would be no change to the physical or visual openness of the Green Belt.

2.1.50 The 2007 assessment[3] also provides a series of general landscape design principles. Although none relate directly to solar development these have informed the landscape strategy and landscape mitigation, where relevant to the Scheme.

Cumulative Assessment

2.1.51 The CDC Relevant Representation requests additional information on the '*rationale for inclusion of the schemes within the cumulative assessment (e.g. radius of search) should be confirmed. It would be helpful to provide tables setting out the process for assessing cumulative effects.'*

2.1.52 Section 10.11 of **ES Volume I Chapter 10: Landscape and Visual Amenity [APP-062]** and Section 3 of **Volume III Appendix 10-2: Landscape and Visual Impact Assessment Methodology [APP-162]** set out the process of identifying schemes for the cumulative assessment of landscape and visual effects. These cross reference **ES Volume I Chapter 15: Cumulative Effects and Interactions [APP-067]**, which sets out the consultation process behind the identification of the long list of cumulative schemes, as well as the process behind refining the short list.

2.1.53 The Study Area for the cumulative assessment of landscape and visual effects is 5km from the Solar PV Site and Grid Connection Corridor. This takes account of the potential for significant landscape and visual effects up to 2km from the Site. It then includes a buffer of 3km to capture potential significant landscape and visual effects arising from cumulative schemes up to 3km away. This takes the total landscape and visual cumulative assessment Study Area up to 5km. This is a precautionary approach which factors in the surrounding topography and the type of cumulative schemes

[3] https://www.doncaster.gov.uk/services/planning/doncaster-landscape-character-assessment-and-capacity-study

being proposed. The incorrect distance was reported in Table 15-3 of **ES Volume I Chapter 15: Cumulative Effects and Interactions [APP-067]**. The list of cumulative schemes identified within paragraph 10.11.7 of **ES Volume I Chapter 10: Landscape and Visual Amenity [APP-062]** are correct and extend beyond the 2km/500m ZoI.

2.1.54 As noted within paragraphs 10.11.14 and 10.11.15 in **ES Volume I Chapter 10: Landscape and Visual Amenity [APP-062]** and within Section 3 of **Volume III Appendix 10-2: Landscape and Visual Impact Assessment Methodology [APP-162],** cumulative landscape and visual effects may arise where several developments, typically of the same typology, combine, increasing the prevalence or appearance of development to a receptor. As such, the cumulative schemes assessed all comprise either solar, battery or energy developments.

2.1.55 The CDC response notes that '*it would be helpful to provide tables setting out the process for assessing cumulative effects.'* A table setting out the process and narrative behind the assessment of cumulative landscape and visual effects is provided in Table 10-10 in **ES Volume I Chapter 10: Landscape and Visual Amenity [APP-062]**. CDC noted that *'it is not clear how the assessor has come to the individual judgements, as the narrative text to explain this judgement lacks detail and does not consider a sensitivity and magnitude of change, yet has provided a judgement of the overall effect. It is assumed the significance threshold is the same as that for landscape and visual effects, but this is not made clear.'*

2.1.56 As noted within paragraph 3.1.9 of **Volume III Appendix 10-2: Landscape and Visual Impact Assessment Methodology [APP-162]**, the sensitivity of each receptor within the cumulative assessment remains the same. As noted within paragraph 3.1.11 of **Volume III Appendix 10-2: Landscape and Visual Impact Assessment Methodology [APP-162]**, the significance threshold remains the same for landscape and visual effects, i.e. moderate and major are considered significant.

2.1.57 The cumulative assessment takes an additional approach i.e. considers the additional effects of the Scheme when judged against a baseline containing the cumulative developments. An assessment of the magnitude of change of the 'cumulative baseline' has not been presented as it is not the role of this LVIA to assess the cumulative schemes, and therefore a fully informed judgement cannot be made, as recognised in paragraph 7.18 of GLVIA3.

2.1.58 In most instances, no additional cumulative landscape or visual effects were identified. In some instances, interactions were identified between cumulative schemes, however, it was judged that the overall level of effect would be no greater than that reported for each of the developments in isolation, and therefore it was considered that there would be no significant additional cumulative effect. As such, it is considered the presentation of additional information over and above what is already provided is both unnecessary and not the role of this LVIA.

Outline Landscape and Ecological Management Plan

2.1.59 It is recognised that additional comments were made by CDC on the content of the **FLEMP [APP-203]**, including minor adjustments to the percentage mixes of species and heights of hedgerows. An updated version of the FLEMP will be provided at Examination Deadline 1.

Appendix A - Updated Figure 10-9: Representative Viewpoint Locations [APP-111]

Revision: 0 Drawn: LP Checked: JW Approved: SG Date: 2025-04-08

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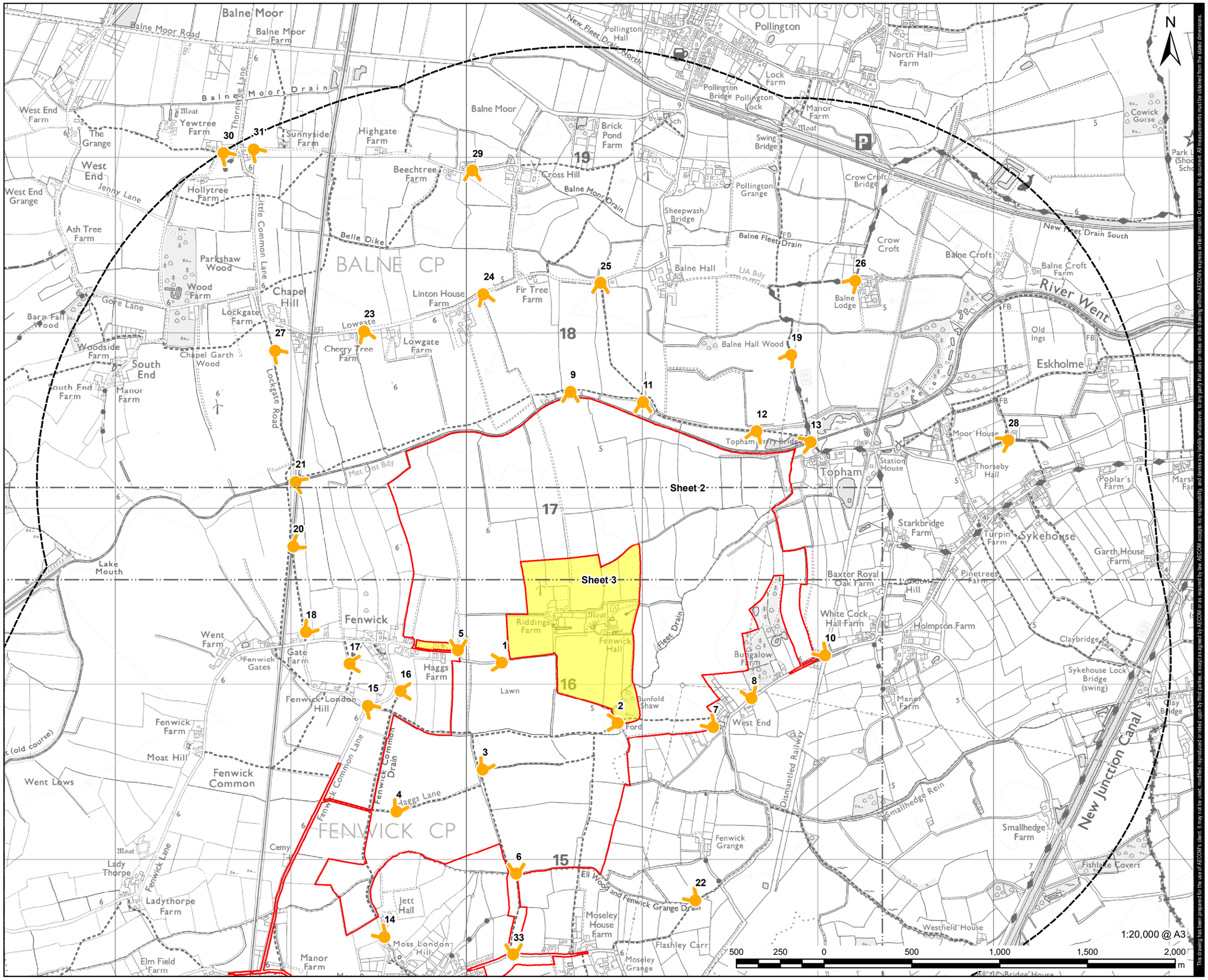

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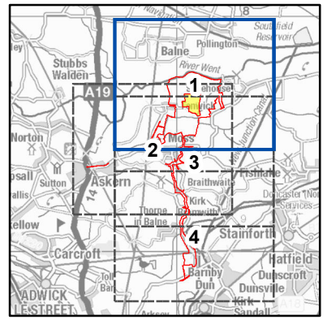
LEGEND

- Order limits
- Land not included in the Order limits
- Landscape and Visual Amenity Study Area (2km Buffer of the Solar PV Site and 500m Buffer of the Grid Connection Corridor and Site Access)
- Viewpoint Location (rotated to indicate direction)



NOTES

ISSUE PURPOSE

Post DCO Submission

PROJECT NUMBER

60698207

FIGURE TITLE

Representative Viewpoint Locations
Sheet 1 of 4

FIGURE NUMBER

Figure 10-9a

Revision: 0 Drawn: LP Checked: JW Approved: SG Date: 2025-04-08

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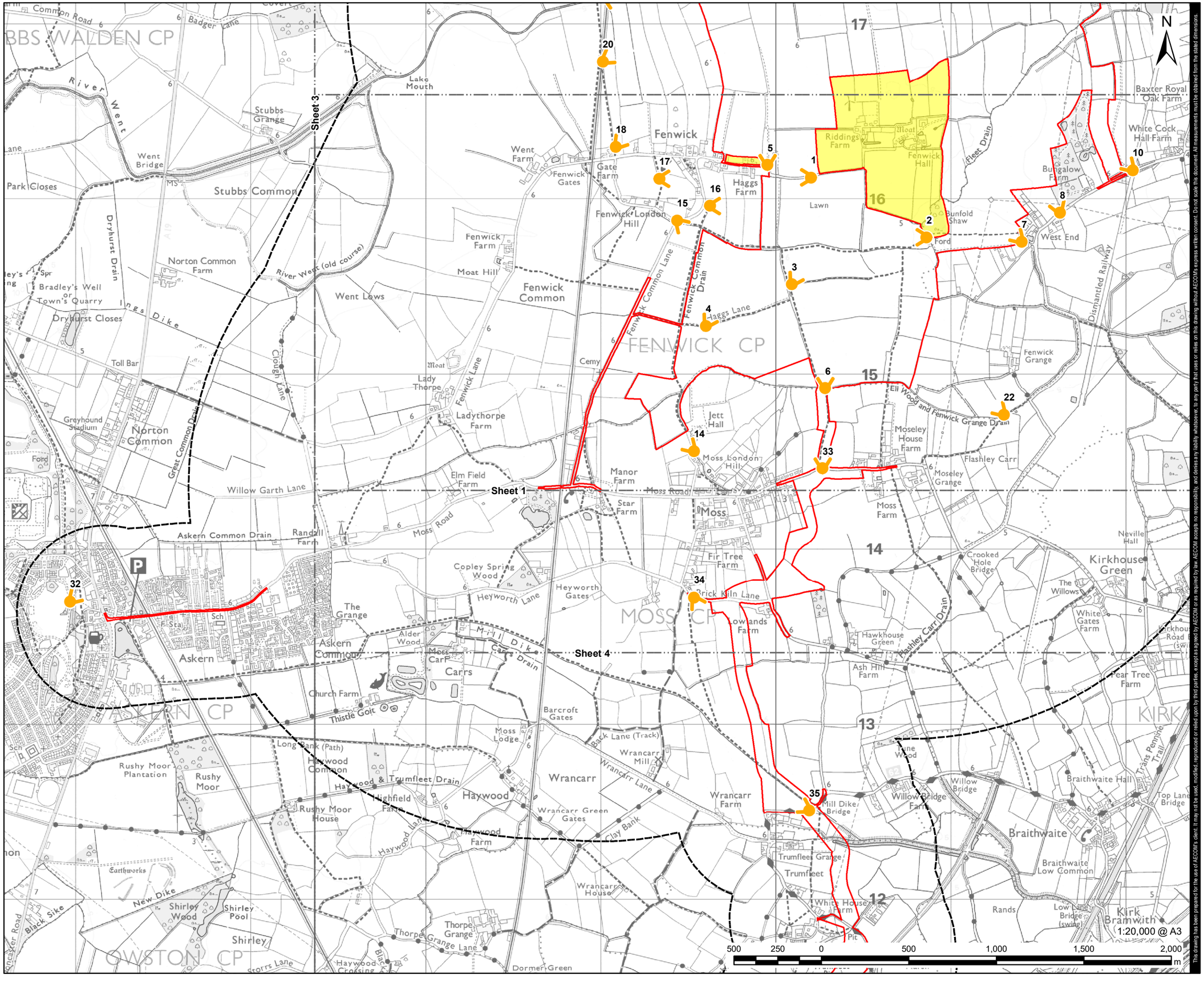

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LEGEND

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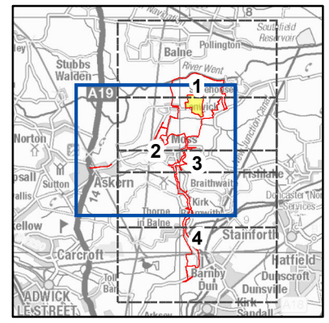

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ISSUE PURPOSE

Post DCO Submission

PROJECT NUMBER

60698207

FIGURE TITLE

Representative Viewpoint Locations
Sheet 2 of 4

FIGURE NUMBER

Figure 10-9b

Revision: 0 Drawn: LP Checked: JW Approved: SG Date: 2025-04-08

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LEGEND

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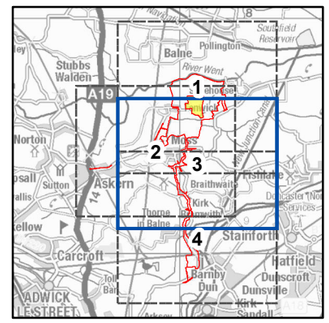

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ISSUE PURPOSE

Post DCO Submission

PROJECT NUMBER

60698207

FIGURE TITLE

Representative Viewpoint Locations Sheet 3 of 4

FIGURE NUMBER

Figure 10-9c

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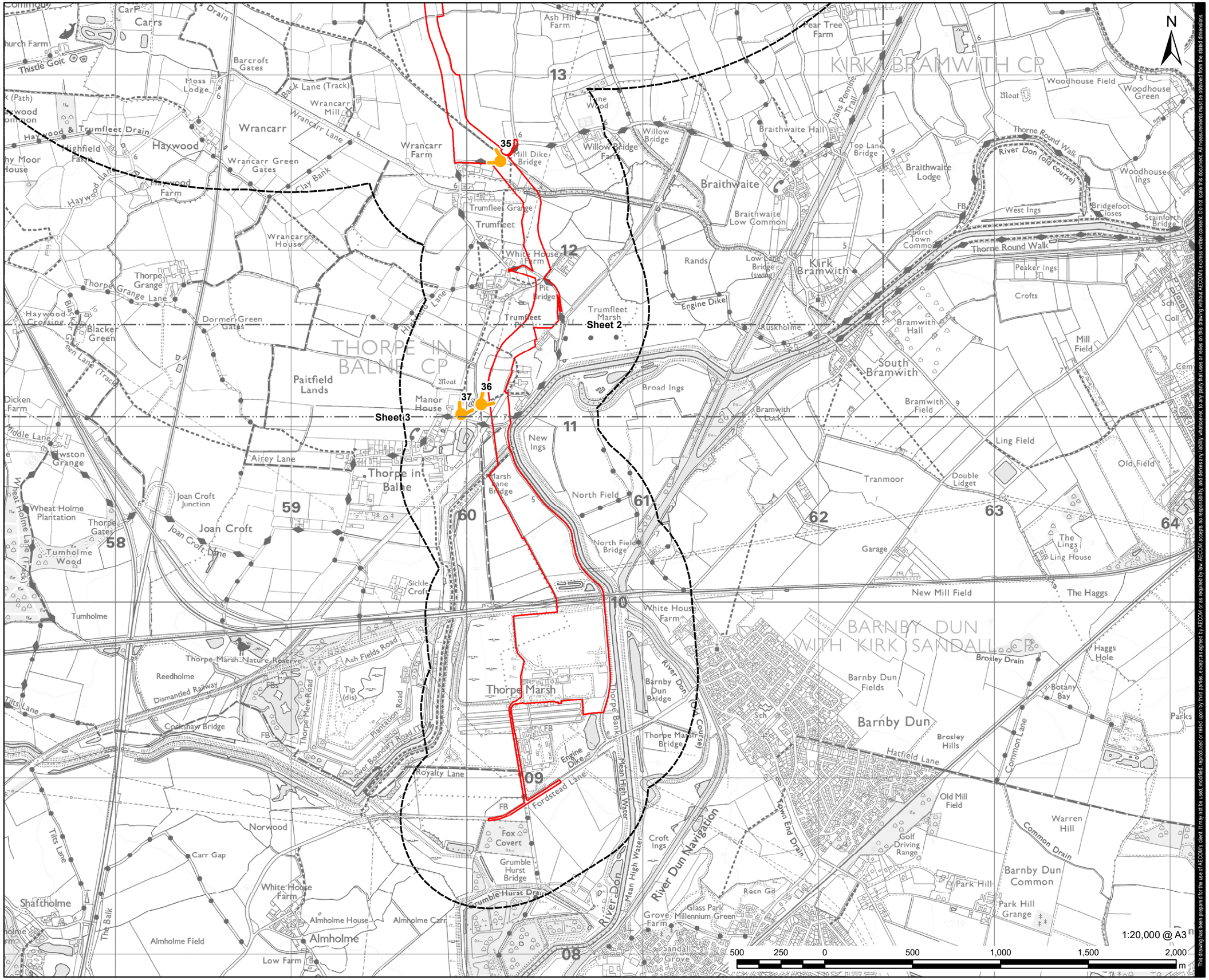

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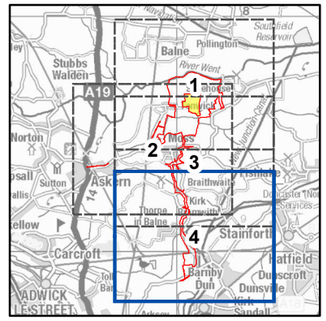
LEGEND

- Order limits
- Landscape and Visual Amenity Study Area (2km Buffer of the Solar PV Site and 500m Buffer of the Grid Connection Corridor and Site Access)
- Viewpoint Location (rotated to indicate direction)



NOTES

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PROJECT NUMBER

60698207

FIGURE TITLE

Representative Viewpoint Locations
Sheet 4 of 4

FIGURE NUMBER

Figure 10-9d

Appendix B – Appendix 8-5: Hedgerow Report, Annex A, Figure 8-5-2: Hedgerow Removal Plan [APP-150]

Revision: 0 Drawn: CA Checked: CC Approved: MP Date: 2024-10-25

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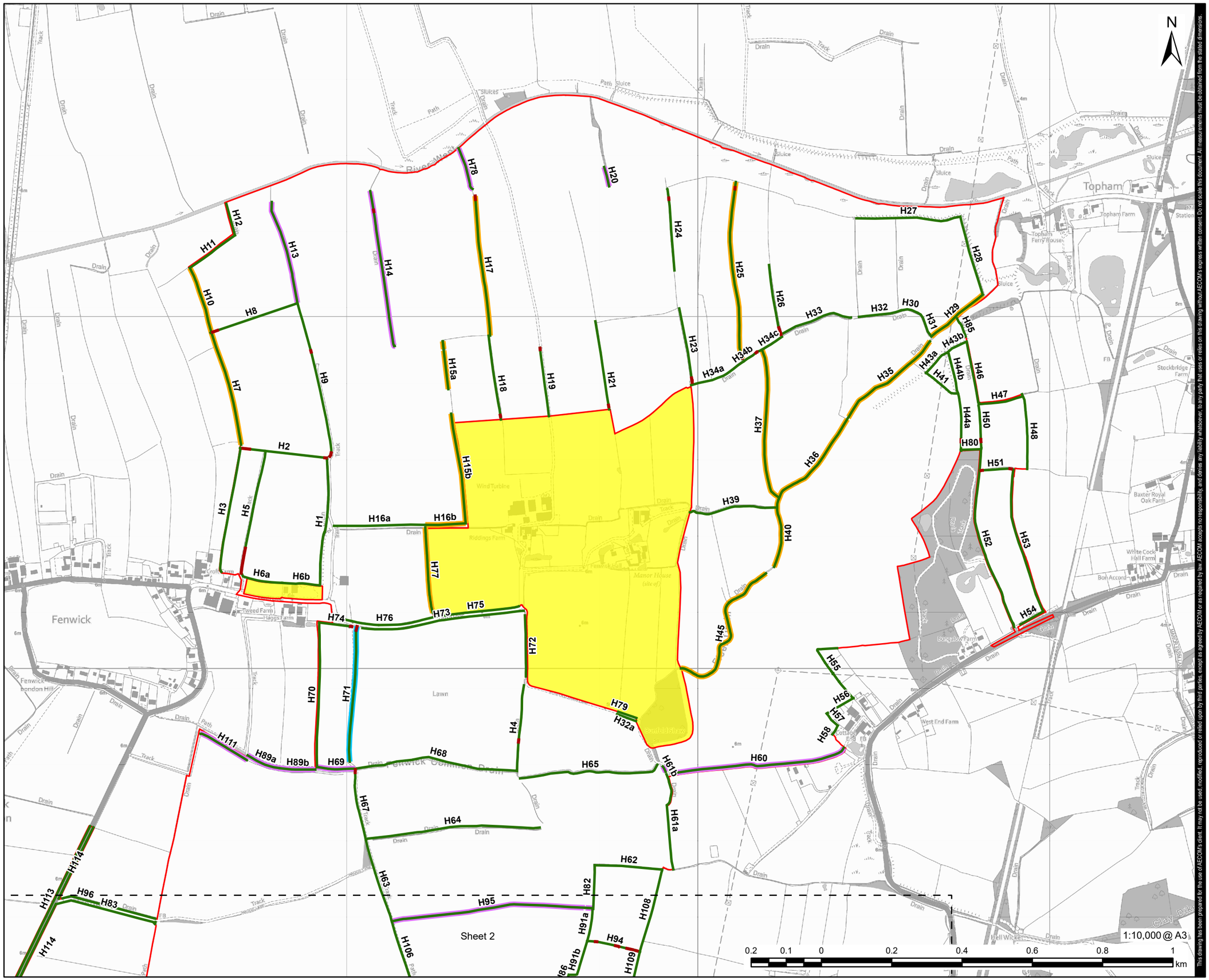

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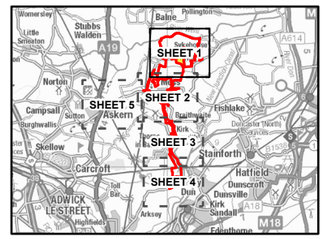
LEGEND

- Order limits
- Land not included in the Order limits
- Hedgerow
- Hedgerow Removal
- Important Hedgerow - Ecology
- Important Hedgerow - Heritage
- Important Hedgerow - Ecology & Heritage



NOTES

Hedgerows identified as *Important Hedgerow - Heritage* are those that meet the heritage assessment criteria for important hedgerows and are assessed in Chapter 7, Cultural Heritage, of the Environmental Statement [EN010152/6.2]

ISSUE PURPOSE

Environmental Statement

PROJECT NUMBER

60698207

FIGURE TITLE

Hedgerow Removal
Sheet 1 of 5

FIGURE NUMBER

Figure 8-5-2

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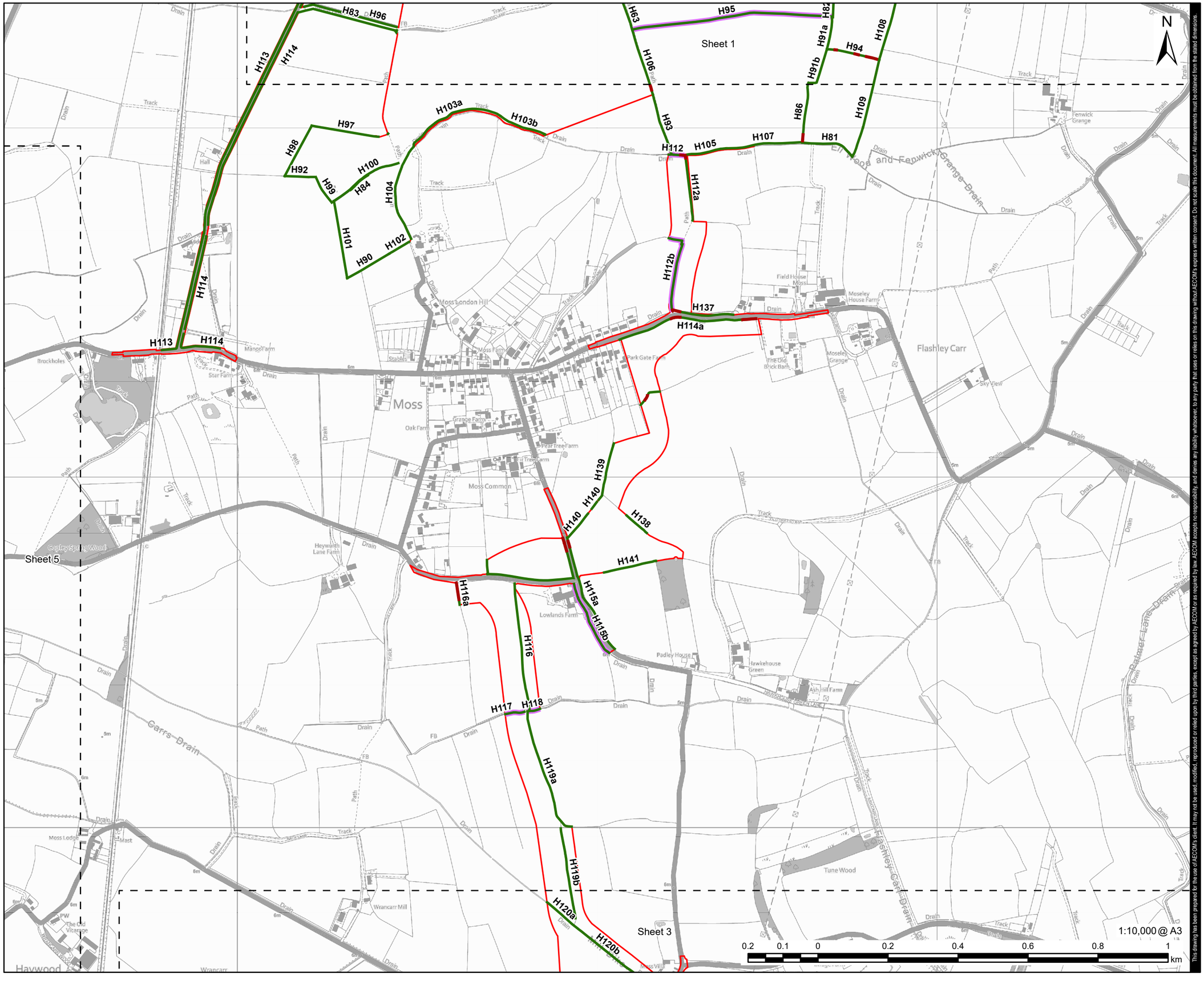

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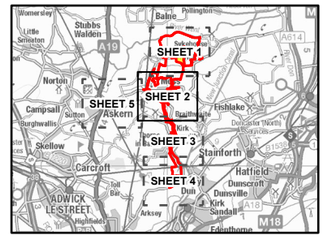
LEGEND

- Order limits
- Hedgerow
- Hedgerow Removal
- Important Hedgerow - Ecology



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ISSUE PURPOSE

Environmental Statement

PROJECT NUMBER

60698207

FIGURE TITLE

Hedgerow Removal
Sheet 2 of 5

FIGURE NUMBER

Figure 8-5-2

Revision: 0 Drawn: CA Checked: CC Approved: MP Date: 2024-10-25

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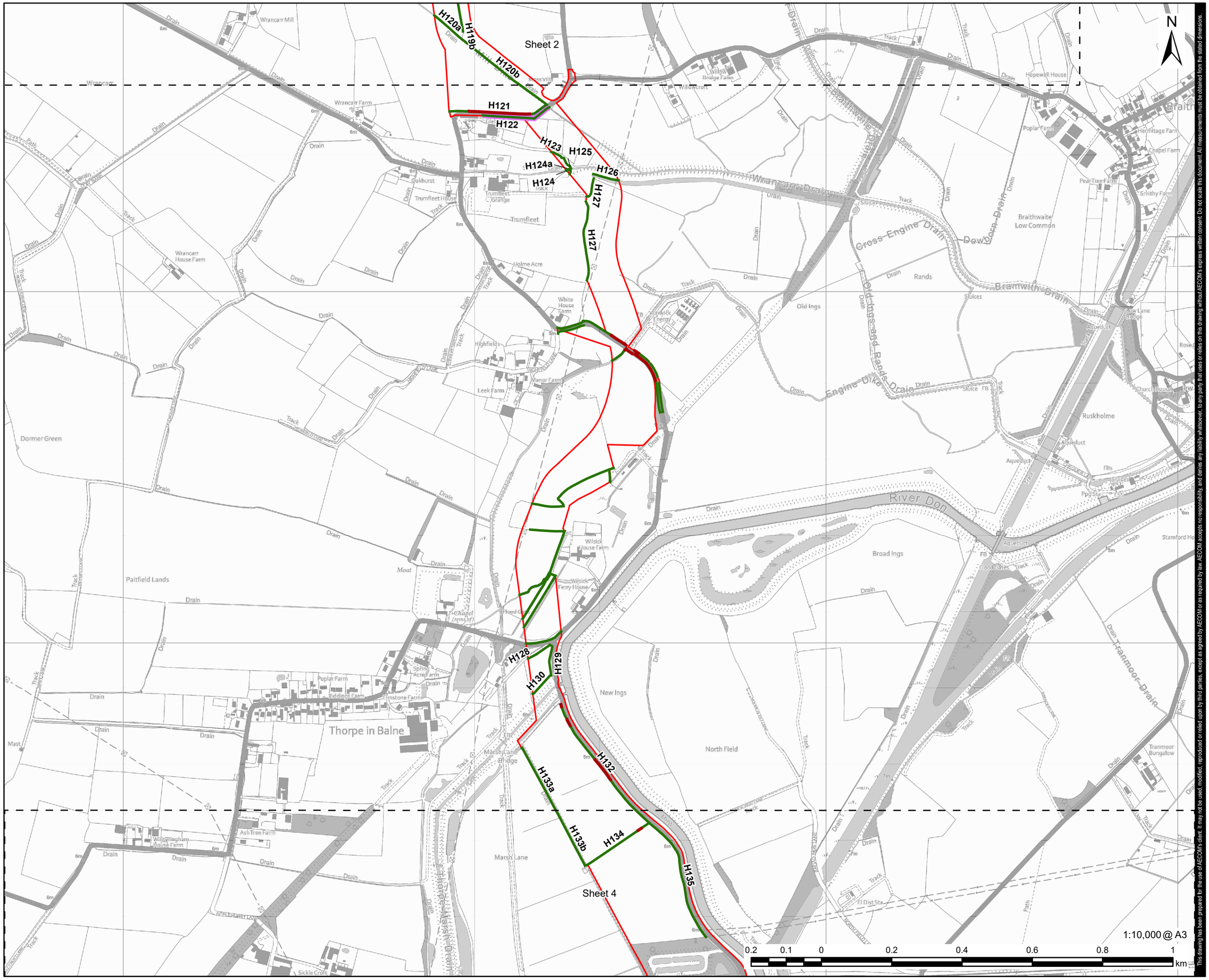

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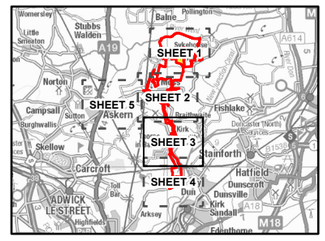
LEGEND

- Order limits
- Hedgerow
- Hedgerow Removal
- Important Hedgerow - Ecology



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ISSUE PURPOSE

Environmental Statement

PROJECT NUMBER

60698207

FIGURE TITLE

Hedgerow Removal
Sheet 3 of 5

FIGURE NUMBER

Figure 8-5-2

Revision: 0 Drawn: CA Checked: CC Approved: MP Date: 2024-10-25

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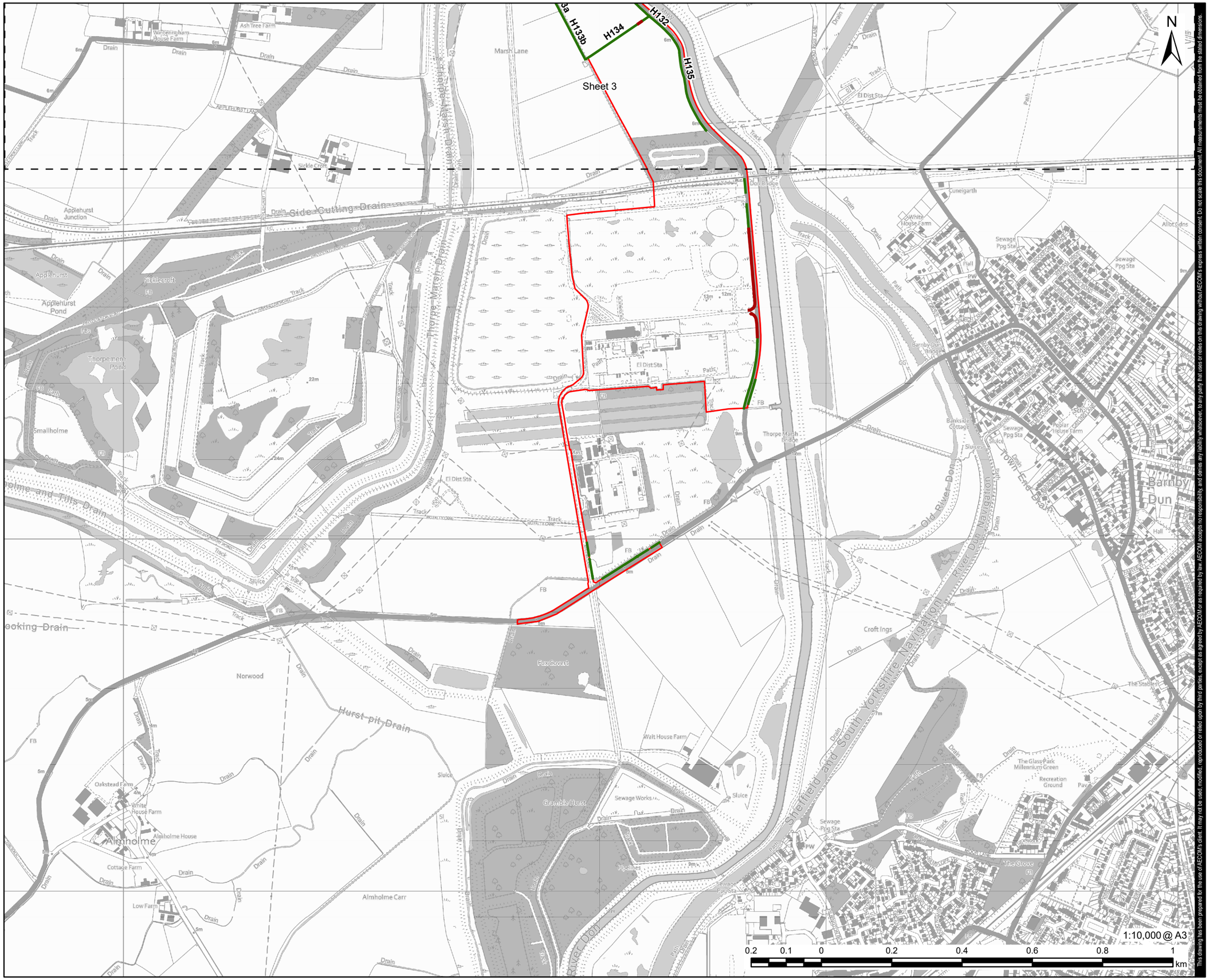

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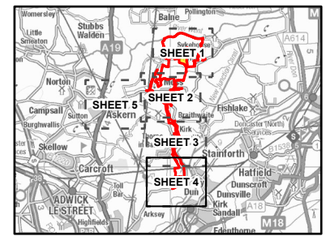
LEGEND

- Order limits
- Hedgerow
- Hedgerow Removal



NOTES

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ISSUE PURPOSE

Environmental Statement

PROJECT NUMBER

60698207

FIGURE TITLE

Hedgerow Removal
Sheet 4 of 5

FIGURE NUMBER

Figure 8-5-2

Revision: 0 Drawn: CA Checked: CC Approved: MP Date: 2024-10-25

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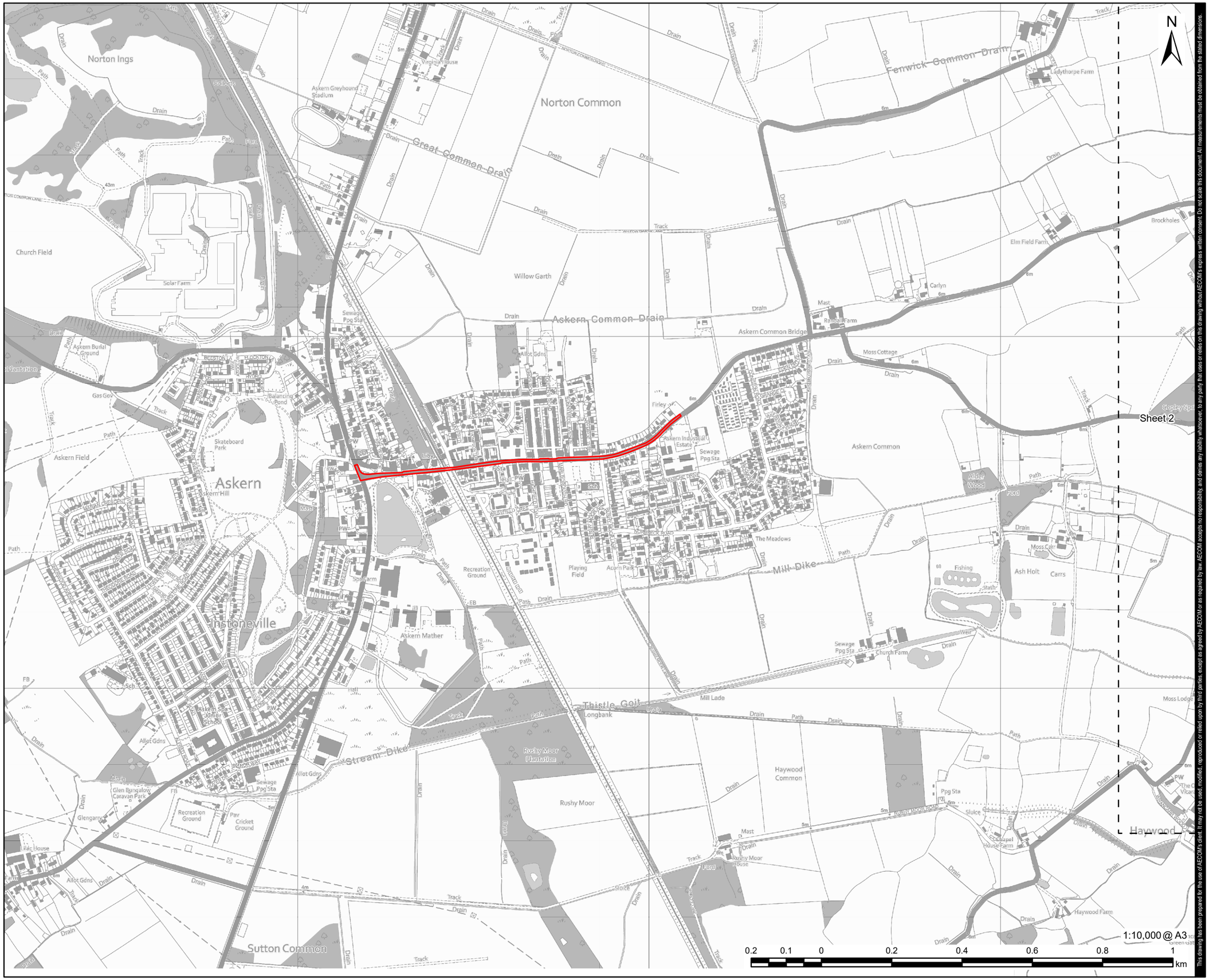

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CLIENT

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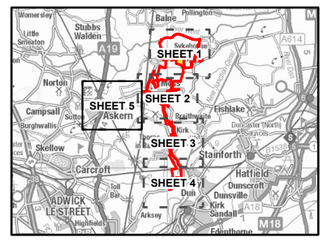
LEGEND

Order limits



NOTES

Hedgerows identified as *Important Hedgerow - Heritage* are those that meet the heritage assessment criteria for important hedgerows and are assessed in Chapter 7, Cultural Heritage, of the Environmental Statement [EN010152/6.2]

ISSUE PURPOSE

Environmental Statement

PROJECT NUMBER

60698207

FIGURE TITLE

Hedgerow Removal
Sheet 5 of 5

FIGURE NUMBER

Figure 8-5-2

Appendix C - Updated Framework Landscape and Ecological Management Plan [APP-203]

Prepared for: Fenwick Solar Project Limited
April 2025

FENWICK SOLAR FARM

Fenwick Solar Farm

EN010152

Framework Landscape and Ecological Management Plan

Document Reference: EN010152/APP/7.14

Regulation 5(2)(q)

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

~~October~~ April 202~~3~~4
Revision Number: 0~~1~~0

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Revision History

Revision Number	Date	Details
00	October 2024	DCO application
01	April 2025	Examination Deadline 1

Prepared for:
Fenwick Solar Project Limited

Prepared by:
AECOM Limited

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1. Introduction

1.1 Overview

1.1.1 This Framework Landscape and Ecological Management Plan (LEMP) has been prepared to support the Development Consent Order (DCO) application for Fenwick Solar Farm (hereafter referred to as 'the Scheme') and has been prepared on behalf of Fenwick Solar Project Limited (hereafter referred to as 'the Applicant'). It sets out management prescriptions for the successful establishment and future maintenance of biodiversity and landscaping works associated with the development and operation and maintenance of the Scheme.

1.1.2 The document outlines both short-term and long-term actions and procedures that the Applicant will implement to establish, monitor, and manage landscape and ecological mitigation and enhancement measures, including biodiversity net gain (BNG), integrated into the Scheme design. This will involve creating habitats beyond those needed for habitat mitigation.

1.1.3 The Scheme involves the construction, operation and maintenance, and decommissioning of a solar photovoltaic (PV) electricity generation facility with a capacity exceeding 50 megawatts (MW). It will connect to the National Grid either at the Existing National Grid Thorpe Marsh Substation or via the Grid Connection Line Drop with both options including necessary associated infrastructure. Since the proposed generating capacity surpasses 50 MW, the Scheme is classified as a Nationally Significant Infrastructure Project (NSIP), requiring consent through a Development Consent Order (DCO) under the Planning Act 2008. Further details on the Scheme can be found in **ES Volume I Chapter 2: The Scheme [EN010152/APP/6.1]**.

The Scheme will be situated within the 'Order limits', referring to all land within these boundaries. The Order limits, a collective term for all land required for the Scheme, encompasses the Solar PV Site and Grid Connection Corridor, totalling approximately 509 hectares (ha), as depicted in **ES Volume II Figure 1-3: Elements of the Site [EN010152/APP/6.2].** The Solar PV Site is approximately 407 ha comprised predominantly of agricultural fields.

1.1.4 Key components include:

a. Solar PV Site: The portion of the Scheme where Solar PV Panels, BESS Area, On-Site Substation and other associated infrastructure would be located.

b. Habitat Management Areas: Areas of habitat management comprising landscape and biodiversity enhancement measures; habitat creation and management, including earthworks, landscaping, means of enclosure, and laying and construction of drainage infrastructure.

c. Grid Connection Corridor: The area in which the 400 kV Grid Connection Cables would be installed between the On-Site Substation and the Existing National Grid Thorpe Marsh Substation.

1.1.5 The Scheme is located within the administrative area of City of Doncaster Council and is located to the south of the administrative areas of North Yorkshire Council and East Riding of Yorkshire Council.

1.1.6 The Indicative Landscape Masterplan, provided in Appendix A, demonstrates how the Scheme will be integrated within the wider landscape and mitigate any related effects associated.

1.1.7 As set out in the **Draft DCO [EN010152/APP/3.1]**, a requirement will necessitate the submission and approval of a detailed LEMP to deliver the provisions set out in this Framework LEMP.

1.1.8 This Framework LEMP is a live document, the context of which will continue to be updated, refined and (where necessary) added to, based on ongoing discussions between the Applicant and statutory bodies and relevant Local Planning Authorities. It will be updated by the Applicant into a final detailed LEMP prior to the commencement of works in accordance with the Requirements contained in Schedule 2 of the **Draft DCO [EN010152/APP/3.1]**.

1.2 Purpose of this Document

1.2.1 The purpose of this Framework LEMP is to provide and set out measures to mitigate the effects of the Scheme on landscape and biodiversity features. The Framework LEMP also sets out the measures proposed to enhance the biodiversity, landscape, and green infrastructure value of the Scheme, to secure compliance with relevant national and local planning policies. Where areas of the Order Limits are temporarily impacted by the construction phase, replanting measures will be proposed, for example along the Grid Connection Corridor and at temporary site accesses.

1.2.2 The Scheme has been through an iterative design process in order to avoid or reduce effects on landscape and biodiversity features, through the careful siting of infrastructure, access tracks and proposed planting. For further information see **ES Volume I Chapter 8: Ecology [EN010152/APP/6.1]** and **ES Volume I Chapter 10: Landscape and Visual Amenity [EN010152/APP/6.1]**.

This document outlines the landscape and biodiversity avoidance measures to be implemented before and during the construction of the Scheme, along with the habitat and landscape restoration, enhancement, management, and monitoring measures to be carried out once the Scheme is operational. These measures are proposed to be secured through a DCO requirement for a detailed LEMP, which will be developed in accordance with this Framework LEMP.

1.2.3 To ensure a consistent approach to impact avoidance and enhancement, this document combines the necessary measures for both landscape and biodiversity, presenting a unified strategy.

1.2.4 This Framework LEMP is structured as follows:

a. Section 1 sets out the context, objectives responsibilities and arrangements for delivery of the Framework LEMP;

b. Section 2 sets out the legislation, policy and guidance;

c. Section 3 describes the existing baseline for landscape and biodiversity features;

d. Section 4 describes the landscape and ecology strategy for the Scheme, which incorporates proposals for landscape and biodiversity impact mitigation;

e. Section 5 describes how existing and proposed habitats will be protected or implemented, managed through establishment and maintained in the long-term;

f. Section 6 discusses the pre-construction survey and post-construction monitoring that will be undertaken;

g. Section 7 describes the measures to be undertaken in the Grid Connection Corridor; and

h. Section 8 provides details of references used within this Framework LEMP.

Objectives

1.2.5 The primary objectives of the Framework LEMP are to:

a. Integrate the Scheme into its landscape setting, aiming to avoid or minimise adverse effects on the landscape, biodiversity, heritage, and visual effects as much as possible;

b. Promote the conservation, protection, and enhancement of the physical, natural, and historic environment within the Scheme and its surroundings, ensuring the landscape measures described in this document are implemented in order to ensure that the Scheme sits as an integral part of the wider landscape;

c. Diversify the ecological value of existing habitats through initiatives such as hedgerow restoration, riparian corridor management and the creation of diverse habitats; and

d. Guide the design and management of landscape and biodiversity elements that respond to and enhance the character of the landscape, reinforce local distinctiveness, and strengthen the sense of place.

Responsibilities

1.2.6 The Applicant will define the appropriate roles and responsibilities for site staff, as outlined in the **Framework Construction Environmental Management Plan (CEMP) [EN010152/APP/7.7]**. An Ecological Clerk of Works (ECoW) will be tasked with ensuring that construction-related environmental mitigation measures are properly implemented, monitored, and maintained. These measures will include, but are not limited to, vegetation clearance, species identification, and exclusion of protected or non-protected species.

1.2.7 The ECoW's responsibilities will encompass activities that could impact biodiversity, such as providing advice on methods to prevent or minimise light spill, as well as delivering Toolbox Talks before starting any work that might affect habitats and species.

1.2.8 The Contractor, appointed by the Applicant to construct the Scheme, will be responsible for establishing, managing, and monitoring the implementation of landscape and ecological mitigation during the five-year establishment

aftercare period. The Applicant will inspect and report on the success of this establishment during that time. For more details, please refer to Section 4.

1.2.9 Any long-term biodiversity monitoring and management requirements specified in this document will be carried out by the Applicant and/or a Contractor appointed by the Applicant.

2. National Legislation, Policy and Guidance

2.1.1 Legislation, planning policy and supporting guidance relevant to the Framework LEMP and pertinent to the Scheme comprises:

Legislation

a. Directive 2009/147/EC on the conservation of wild birds (the codified version of Council Directive 79/409/EEC as amended) (Birds Directive) (Ref. 1);

b. Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) (Ref. 2);

c. Regulation (EU) 1143/2014 on the introduction and spread of invasive alien species (Ref. 3);

d. Convention on Biological Diversity (Ref. 4);

e. COP15: Global biodiversity framework (2023) (Ref. 5);

f. Ramsar Convention (Ref. 6);

g. The Conservation of Habitats and Species Regulations 2017 (as amended) (Ref. 7);

h. The Wildlife and Countryside Act 1981 (as amended) (WCA) (Ref. 8);

i. The Countryside and Rights of Way Act 2000 (Ref. 9);

j. The Natural Environment and Rural Communities Act 2006 (NERC) (Ref. 10);

k. The Protection of Badgers Act 1992 (Ref. 11);

l. The Hedgerows Regulations 1997 (Ref. 12);

m. The Invasive Alien Species (Enforcement and Permitting) Order 2019 (as amended) (Ref. 13);

n. Animal Welfare Act 2006 (Ref. 14);

o. Salmon and Freshwater Fisheries Act 1975 (Ref. 15);

p. Eels (England and Wales) Regulations 2009 (Ref. 16);

q. The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (Ref. 17); and

r. The European Landscape Convention (2000) (Ref. 18).

National Policy

a. Overarching National Policy Statement (NPS) for Energy (EN-1) (November 2023) (Ref. 19);

b. NPS for Renewable Energy Infrastructure (EN-3) (November 2023) (Ref. 20);

c. NPS for Electricity Networks Infrastructure (EN-5) (November 2023) (Ref. 21);

d. National Planning Policy Framework (NPPF) (December 2023) (Ref. 22);

e. Consultation Draft NPPF (2024) (Ref. 23); and

f. Environmental Improvement Plan 2023 (Ref. 24)

Local Policy

a. Doncaster Local Plan 2015-2035 (2021) (Ref. 25); and

b. Doncaster Green Infrastructure Strategy 2014 – 2028, April 2014 (Ref. 26).

Other Guidance

a. National Planning Practice Guidance (PPG), Natural Environment (Landscape) (2019) (Ref. 27);

b. Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services with regards to marine habitats, ecosystems, and fisheries (Ref. 28);

c. 25-year Environment Plan (Ref. 29);

d. UK Post 2010 Biodiversity Framework (including priority habitats and species listed which succeeds the UK Biodiversity Action Plan (UK BAP) (Joint Nature Conservation Committee (JNCC) and Defra, 2018) (Ref. 30);

e. UK Biodiversity Framework, produced in response to the Kunming-Montreal Global Biodiversity Framework (JNCC, 2024) (Ref. 31);

f. Landscape Institute, Infrastructure Technical Guidance Note 04/20 (2020) (Ref. 32);

g. Local Biodiversity Action Plans (LBAPs) for Doncaster (Ref. 33) and Selby (now North Yorkshire) (Ref. 34);

h. British Standard (BS) 5837: 2012 Trees in relation to design, demolition and construction – Recommendations (Ref. 35);

i. BS 3998: 2010 Treework – Recommendations (Ref. 36); and

j. National Joint Utilities Group (NJUG) Guidelines for the Planning, Installation and Maintenance of Utility Apparatus in Proximity to Trees (Ref. 37).

Biodiversity Net Gain

2.1.2 Government policy within NPS EN-1 (November 2023) states that development proposals should provide opportunities for building-in beneficial biodiversity or geological features as part of good design and that such opportunities in and around developments should be maximised where appropriate. The NPPF (December 2023) (Ref. 22) states that planning decisions should maximise impacts on and provide net gain for biodiversity.

2.1.3 The Applicant will provide at least 10% BNG as part of the Scheme.

2.1.4 Further information on BNG and potential BNG for the Scheme can be found in the **Biodiversity Net Gain (BNG) Assessment [EN010152/APP/7.11]**.

3. Existing Landscape and Biodiversity Features

3.1 Existing Landscape Features

3.1.1 The northwest part of the Solar PV Site (covering fields NW1 to NW11) extends northwards from the eastern edge of Fenwick and Lawn Lane to the River Went. This part of the Solar PV Site is situated across low lying landform, which falls very gradually from Fenwick, at around 6m Above Ordnance Datum (AOD) to the River Went at 5m AOD. The land use is agricultural, consisting of medium to large scale geometric fields divided by hedgerows, trees and drainage ditches.

3.1.2 The northeast part of the Solar PV Site (covering field boundaries NE1 to NE12) extends northwards from Fleet Drain to the River Went. This part of the Solar PV Site is similarly situated across low lying and generally flat landform at around 5m AOD. The land use is agricultural, consisting of medium and large-scale fields which vary in form. The fields are divided by drainage ditches and hedgerows with trees. However, the extent of this boundary vegetation is varied due to former hedgerow removal.

3.1.3 The southeast part of the Solar PV Site (covering field boundaries SE1 to SE7) extends southwards from Fleet Drain to border West Lane and West Cottage End. The landform is low lying and generally flat, being situated at around 5m AOD. The land use is agricultural, consisting of medium and large-scale fields that are irregular in form and contiguous with each other due to very limited field boundary vegetation. There is a National Grid pylon tower in the southern field (SE2), with its overhead wires extending southwards and eastwards. There are also two other pylon towers in the eastern fields (SE3 and SE4).

3.1.4 The southwest part of the Solar PV Site (covering field boundaries SW1 to SW6) extends to the south of Lawn Lane and consists of small to medium-scale rectangular agricultural fields. These fields are situated across low lying land between 6m AOD and 5m AOD and divided by hedgerows and trees. Fenwick Common Drain divides field boundaries SW1, SW2 and SW5 from SW3, SW4 and SW6.

3.1.5 The Order limits also include a section of highway at the junction of the A19 and Station Road in the town of Askern to allow for abnormal indivisible load (AIL) vehicle access and escort. As the works would be limited to temporary traffic signal and banksman control for the period of AIL delivery, there would be no landscape or ecological interventions here, and therefore this area is not considered further within this Framework LEMP.

3.2 Existing Biodiversity Features

3.2.1 The following section summarises the baseline detail for biodiversity, as presented in **ES Volume I Chapter 8: Ecology [EN010152/APP/6.1]**.

Statutory and Non-Statutory Sites

3.2.2 There are three sites statutorily designated for their biodiversity value at an International level and within the 10 km Study Area of the Order limits. These are:

a. Thorne Moor SAC;

b. Thorne and Hatfield Moors SPA; and

c. Hatfield Moor SAC.

3.2.3 Beyond the 10 km Study Area, the River Went and minor watercourses connected to it are linked to the Humber Estuary SAC/Ramsar site approximately 16 km downstream of the Solar PV Site via the River Don and Dutch River. The Humber Estuary SAC/Ramsar site is in part designated for two migratory fish species (River Lamprey and Sea Lamprey), which have the potential to be present in the River Went and connected watercourses. These impacts are considered within the **No Significant Effects Report [EN010152/APP/7.12]** and within **ES Volume I Chapter 8: Ecology [EN010152/APP/6.1]**.

3.2.4 There is one site statutorily designated for its biodiversity value at a national level within the 2 km Study Area, this being Shirley Pool SSSI which is located approximately 900 m to the south of the Order Limits - (this being the section of highway at the junction of the A19 and Station Road in the town of Askern). The site is approximately 3.2 km west of the Grid Connection Corridor and 3.3 km southwest of the Solar PV site.

3.2.5 There are 46 non-statutory sites designated for their biodiversity value identified within 2 km of the Solar PV Site boundary, including those within the Order limits. These sites have all been designated as LWS or Candidate Local Wildlife Sites (cLWS) for their biodiversity value at a county level and are known to have supporting value to a wide variety of protected or notable species and/or habitats. Whilst cLWS have not yet been designated, they are included within this Framework LEMP as they are being considered for designation and may become so within the lifetime of the Scheme.

Habitats

3.2.6 The habitats present within the order limits include other neutral grassland, coastal and floodplain grazing marsh, ruderal/ephemeral habitat, modified grassland, ancient lowland mixed deciduous woodland, plantation broadleaved woodland, plantation mixed woodland, scattered trees, ancient/veteran trees, lines of trees, native hedgerows (including species-rich hedgerows and hedgerows associated with trees and ditches, bramble scrub, hawthorn scrub, mixed scrub, cereal crops, developed land, buildings, bare ground, Open Mosaic Habitat on Previously Developed Land (OMH), introduced shrub, ponds, rivers and ditches.

3.2.7 The habitats that offer the highest value are the coastal floodplain grazing marsh, ancient woodland, ancient/veteran trees, native hedgerows, OMH and rivers as these are all priority habitats, Habitats of Principal Importance or irreplaceable habitats. The most extensive habitat is cereal crops as this makes up the majority of the Solar PV site.

Species

3.2.8 The Solar PV Site supports a range of protected and priority species including common aquatic macro-invertebrates, common aquatic macrophytes, fish (including potential European bullhead, brown/sea trout, lamprey and European eel due to connectivity to historical records), common terrestrial invertebrates, GCN, grass snake, common nesting bird species and an assemblage of notable breeding birds, barn owl, an assemblage of

non-breeding waterbirds, widespread bat species, otter, badger and brown hare. There is also assumed presence of European hedgehog and harvest mouse.

4. Landscape and Ecology Strategy

4.1 Landscape Strategy

4.1.1 Good design has been a key consideration from the outset. The iterative design process has been shaped by the Environmental Impact Assessment (EIA), which was guided by design principles specifically developed to address the unique opportunities and constraints of the Scheme. These principles were developed in response to policy requirements, published landscape character assessment guidance, and fieldwork analysis.

4.1.2 As illustrated on the Indicative Landscape Masterplan in Appendix A, the following design mitigation measures have been integrated into the Scheme to minimise environmental impacts, including effects on landscape character, visual amenity, biodiversity, and heritage assets.

4.1.3 In developing the landscape design strategy, special attention was given to:

a. Recommendations within relevant landscape guidelines, such as Natural England's Statements of Environmental Opportunity (SEO) outlined in the profile for NCA 39 (Ref. 38); and

b. Guidance from the Landscape Institute's Infrastructure Technical Guidance Note (TGN) 04/20 (Ref. 32).

4.1.4 The overall goal of the landscape strategy is to integrate the Scheme into its surrounding landscape and to avoid or minimise adverse landscape and visual effects as much as possible. This design approach also seeks to maximise opportunities for delivering net biodiversity gains. Accordingly, the landscape design aims to:

a. Integrate the Scheme into the existing landscape pattern by utilising and aligning with existing features, including vegetation where feasible;

b. Replace habitats lost during construction and enhance habitats within the Solar PV Site through the creation and enhancement of hedgerows, scrub, grasslands and riparian habitats; and

c. To filter and screen more prominent components of the Scheme in views from sensitive receptors.

4.1.5 Details of the landscape measures that are embedded into the Scheme's design are presented in **ES Volume I Chapter 2: The Scheme [EN010152/APP/6.1]** and **ES Volume I Chapter 3: Alternatives and Design Evolution [EN010152/APP/6.1]**.

Overview of Landscape Design Principles

4.1.6 This section provides a description of the landscape design principles employed on the Scheme.

Careful Siting in the Landscape

4.1.7 Careful consideration of the existing visual amenity of receptors has helped to define the offsets from residential properties in proximity to the Solar PV Site, as well as PRoW. The form and extent of these offsets has been refined through the design process, taking into account feedback from the community in regard to the existing character of views.

4.1.8 With reference to the Indicative Landscape Masterplan shown in Appendix A and **ES Volume II Figure 2-3: Indicative Site Layout [EN0101520/APP/6.2]**, the design of the Scheme has been carefully developed through an iterative design process to minimise, or avoid, adverse effects on views experienced by residents.

4.1.9 Some areas where the effects on visual receptors have been reduced through the landscape design principles are outlined, but not limited to, the areas below.

Residential Receptors

4.1.10 Visual effects for residential receptors have been reduced by:

a. Hedgerow enhancement in the form of gapping up of existing hedgerows with similar species as those found on Site, where open or filtered views are available of Solar PV Panels;

b. New native hedgerows with trees on boundaries where there are no physical boundary features, including on the boundary to the north of West Lane and Ell Wood and Fenwick Grange Drain;

c. Solar PV Panels have been set back from PRoW by a minimum of 20 m (fence line to be at least 15 m from the centreline of the PRoW and Solar PV Panels to be at least 5 m from the fence line);

d. Solar PV Panels have been set back from the northeast corner of Fenwick village by approximately 100m with an area of structural planting and scrub to provide screening;

e. New planting, including scrub and a new hedgerow, running parallel to Fenwick Common Drain, screening views of the Solar PV Panels for residents along Shaw Lane and Fenwick Common Lane;

f. New structural planting and the gapping up of existing vegetation along the northern edge of the Solar PV Site to filter longer views from properties along Lowgate and Highgate; and

g. Siting of On-Site Substation and BESS Area away from residential properties, over 500 m away from the nearest residential property, and screened from view by further structural planting. All proposed planting will comply with applicable UK fire safety regulations. Adequate spacing will be maintained between the planting and the On-Site Substation, with precise distances to be determined during the detailed design stage.

Recreational Receptors

4.1.11 Visual effects for recreational receptors using PRoW within and nearby to the Solar PV Site have been reduced by:

a. Introduction of areas of open space adjacent to footpaths will be managed for biodiversity, while new hedgerow planting with trees will help screen and filter views when Solar PV Panels are located on both sides of PRoW;

b. The River Went corridor will remain open and managed for the benefit of biodiversity with new wet-loving vegetation planted along the northern edge of the Solar PV Panels to provide screening from the PRoW in this area;

c. Gapping up of existing vegetation along the northern boundary of the Solar PV Site to further filter and screen views from the Trans Pennine Trail; and

d. New native hedgerows along footpaths in close proximity to Solar PV Site, including the BESS Area and On-Site Substation.

Conserving Existing Vegetation Patterns

4.1.12 The layout of the Scheme has been designed to minimise or avoid the loss of existing landscape features where practicable, and to avoid significant impacts on those existing features.

4.1.13 The Scheme is set within the existing field pattern. The layout utilises existing farm tracks and field openings as the preferred method of construction and operational access in order to minimise the loss of existing landscape features, where practicable.

4.1.14 Proposed planting responds to the existing character of landscape and looks to perpetuate the current conditions found there, allowing key views to stay open and key habitats to remain in place, with enhancement measures proposed in areas that are deemed suitable.

Creating New Green Infrastructure

4.1.15 New green infrastructure (GI) elements will be established, and habitat corridors enhanced through the Solar PV Site. These will improve wildlife connectivity, elevate landscape quality, and enhance visual amenity.

4.1.16 Large areas of modified and neutral grassland will be provided beneath the solar panels and across the broader Solar PV Site in order to boost biodiversity and create new habitats. This will also help to ameliorate soil conditions after long-term agricultural practices. This includes a new green corridor that follows the existing Fleet Drain through the northeast of the Solar PV Site.

4.1.17 The proposed mitigation will also increase and enhance the existing hedgerow network, with gapping up and planting of native hedgerows with hedgerow trees, providing better connectivity and creating new valuable habitats.

4.1.18 Land adjacent to the River Went will be conserved and enhanced in order to maintain the existing open riparian mosaic and provide further benefits to biodiversity.

4.2 Ecology Strategy

Impact Avoidance

4.2.1 From the outset, the Scheme has been designed to avoid key nature conservation and ecological features present within or adjacent to the Order limits. Accordingly, the following buffers from key habitat features have been applied to developable areas where practicable:

a. All woodland – at least 15 m;

b. All trees within hedgerows, lines of trees and individual trees – protected by clearly defined root protection areas, concordant with the requirements for each individual tree, in line with British Standard BS

5837:2012 Trees in relation to design, demolition and construction – Recommendations (Ref. 8-71);

c. Watercourses (where practicable and open trenching is not required during construction) – at least 10 m from the bank-top of the watercourse to protect riparian habitats and to mitigate for potential hazards such as chemical and soils spills into watercourses and avoid potential direct impacts to watercourses and any protected species that may use them;

d. Standing water - at least 20 m; and

e. Hedgerows (without trees) – where practicable, at least 5 m. In addition, there are embedded mitigation measures which will minimise impacts upon protected species. This includes security perimeter fencing to protect retained habitats while allowing badger, brown hare and hedgehogs to pass beneath. Equally, in some locations, gaps will be avoided to allow the security fencing to act as an anti-predator fence, particularly in areas targeted at providing habitat for ground-nesting birds.

4.2.2 Construction lighting will also be designed to avoid impacts, including restriction of works to daylight hours where practicable.

Updated Surveys

4.2.3 To comply with relevant wildlife legislation, pre-construction surveys, such as updated UKHab and badger walkovers, and updated Ground Level Tree Assessments (GLTA) of trees to be lost, will be undertaken to support the baseline survey findings. The purpose of these pre-construction surveys is to ensure mitigation during the construction phase is based on the latest protected species information. These surveys will also provide an update on the presence and location of any invasive species, the findings of which will inform the implementation of measures to prevent their spread into the wild. These measures will be incorporated within the Detailed CEMP which will be secured by DCO requirement. In the event that any future infestations of INNS are identified prior to and or during the development process, exclusion zones will be established around them, and an Ecological Clerk of Works (ECoW) contacted for advice.

4.2.4 Any protected species licenses required from Natural England will be applied for and obtained in preparation of construction. A District Level License (DLL) is being obtained with regard to GCN to facilitate the works.

Ecological Clerk of Works (ECoW)

4.2.5 ECoW will be present during works that may impact protected species or habitats during construction. This will include:

a. Supervision of works within the disturbance distance of badger setts;

b. Fingertip search of vegetation suitable for reptiles and amphibians prior to clearance;

c. ECoW for aquatic species for works within or adjacent to ditches, streams and riparian habitats;

d. Nesting bird check's where vegetation clearance or pruning works cannot be avoided during bird nesting season (from March to August inclusive).

e. These measures (and others) are detailed within the **Framework CEMP [EN010152/APP/7.7]** and their implementation is secured through a Requirement in the **Draft DCO [EN010152/APP/3.1]** that the detailed CEMP be prepared in substantial accordance with the Framework CEMP and then the measures contained therein implemented

Tree Works

4.2.6 The scheme has been designed to ensure that all veteran and ancient trees will be retained and protected. The majority of trees which are not classed as veteran or ancient will be retained and protected, and measures taken to avoid direct and/or indirect impacts. As detailed in **ES Volume III Appendix 10-7: Arboricultural Impact Assessment (AIA) [EN010152/APP/6.3]**, six individual trees, five groups of trees and 42 hedgerows are to be removed or part removed (in the case of hedgerows) to facilitate the Scheme (as shown on Figure 10-5-1 in Annex C of **ES Volume III Appendix 10-7: AIA [EN010152/APP/6.3]**).

4.2.7 As detailed in **ES Volume III Appendix 10-7: AIA [EN010152/APP/6.3]**, 19 tree features are subject to an incursion into their Root Protection Area (RPA) or canopy spread. This is generally limited to facilitate temporary construction facilitation access and the implementation of BESS Fire Service Access Tracks. This includes two veteran trees. In all cases RPA incursions will be managed so that there will be no detrimental impacts on the health or amenity of retained trees, which will generally be achieved by the use of a no dig installation, proprietary three-dimensional cellular raft system (or equivalent) installed utilising 'no dig' techniques where existing hard surfacing is not present.

4.2.8 Where part of a group of trees is to be removed, the final extent of tree loss is to be determined on-site by the project arboriculturist who will assess the suitability and stability of retained trees. This operation must take place as specified in an Arboricultural Method Statement as part of and secured by the **Framework CEMP [EN010152/APP/7.7]**.

4.2.9 No trees have been identified for pruning at this stage. The final requirement for pruning will be reviewed and identified at the detailed design stage and will be confirmed in an Arboricultural Method Statement secured by the **Framework CEMP [EN010152/APP/7.7]**.

4.2.10 Landscape management works to thin existing woodland and copses across the Site, where appropriate, will be reviewed and identified at the detailed design stage and confirmed in an Arboricultural Method Statement secured by the **Framework CEMP [EN010152/APP/7.7]**. This will encourage tree growth and promote long-term resilience of tree planting, for example within the small copse at the eastern extent of Haggs Lane. This is likely to comprise a crown thin around timber trees to promote free growth by selecting approximately, 200 seed trees per ha. Thin at marginal thinning intensity (70% of yield) when stand reaches threshold basal area (m^2) or at desired interval.

~~4.2.9~~4.2.11 Landscape management works to remove non-native species within tree belts, such as Norway spruce (Picea abies) and Cupressus spp, will be reviewed and identified at the detailed design stage and confirmed in an Arboricultural Method Statement secured by the **Framework CEMP [EN010152/APP/7.7]**. This will help to reinforce the Site's landscape

character. As part of tree works, non-native species are to be selected for removal during any proposed crown thinning operations (or low thinning where non-native species regeneration is observed). Thinning works are not to exceed marginal thinning intensity (70% of yield) and should account for published threshold basal areas (m^2).

~~4.2.10~~4.2.12 Tree loss will be mitigated with a robust and high quality scheme of new tree planting as detailed in this Framework LEMP which represents an opportunity to increase the quality, impact, diversity, and resilience of the local tree stock.

~~4.2.11~~4.2.13 Where practicable, the detailed design will be developed to avoid or minimise impacts to trees. The final level of arboricultural impacts is confirmed as part of an Arboricultural Method Statement and secured by the **Framework CEMP [EN010152/APP/7.7]**.

~~4.2.12~~4.2.14 Measures to protect retained trees and their associated root protection zones will be put in place (e.g. tree protection fencing and ground protection), which will be implemented at an early stage to protect these features from impacts during construction, to be confirmed as part of an Arboricultural Method Statement and secured by the **Framework CEMP [EN010152/APP/7.7]**.

~~4.2.13~~4.2.15 The **Framework CEMP [EN010152/APP/7.7]** includes suitable pollution prevention measures.

Hedgerow Works

~~4.2.14~~4.2.16 The Scheme has been designed to ensure hedgerows are outside of the developable areas of the Scheme, with minimum 5 m undeveloped stand-off buffers, increased to 15 m (or greater if required by root protection area) where hedgerow trees are present.

~~4.2.15~~4.2.17 Where practicable, the layout of the Scheme uses existing farm tracks and field openings as the preferred routes for construction access, minimising loss of hedgerows (sections of), where practicable. Therefore, the majority of this habitat will be retained, however, some sections of hedgerow will need to be removed to facilitate access and will be temporarily removed to facilitate construction of cable routes. The total length of hedgerows to be removed, as shown on **Figure 8-5-2: Hedgerow Removal in ES Volume III Appendix 8-5: Hedgerow Report [EN010152/APP/6.3]**, would be 1.3 km, this includes approximately 0.3 km within the Solar PV Site, and approximately 1 km across the Grid Connection Corridor.

~~4.2.16~~4.2.18 Measures to ensure incursions into this habitat do not occur will be put in place, e.g. security fencing, which will be implemented at an early stage to protect retained habitats from incursion during construction.

~~4.2.17~~4.2.19 The **Framework CEMP [EN010152/APP/7.7]** includes suitable pollution prevention measures.

~~4.2.18~~4.2.20 Precautionary working methods are to be adhered to during construction and are detailed within the **Framework CEMP [EN010152/APP/7.7]** and their implementation is secured through a Requirement in the **Draft DCO [EN010152/APP/3.1]** that the detailed CEMP be prepared in substantial accordance with the Framework CEMP and then the measures contained therein implemented.

~~4.2.19~~4.2.21 Precautionary Working Methods include:

a. Vegetation clearance will be undertaken in advance of construction and at an appropriate time of year (dependant on habitat) so as to avoid the nesting bird period and incidental injuring or killing of animals, such as Brown Hare , hedgehogs or reptiles;

b. Excavations will be covered, any pipe openings capped and fencing installed with gaps to prevent entrapment of any fauna;

c. No allowance of night works where practicable;

d. Where vegetation clearance cannot avoid the inactive season and is proposed within the nesting bird period, these will be checked for the presence of any nests by a suitably experienced ornithologist, prior to vegetation removal, and if active nests are found, then appropriate buffer zones would be put in place and the area monitored until the young birds have fledged.

e. Vegetation with the potential to support reptiles will be cut in a phased approach, firstly cutting to 30cm (centimetres), then, following a period of no less than 24 hours, to 15cm and then to ground level, after another 24 hours. Any habitat features within such areas which may conceal sheltering reptiles and amphibians (e.g. log piles rubble mound bunds, any other debris) will not be dismantled during their inactive season (i.e. November to February inclusive).

f. Pollution prevention measures including those associated with dust deposition, air pollution, pollution incidents, water quality, light, noise and vibration.

Works in Proximity to Watercourses

~~4.2.20~~4.2.22 Vegetation removed to facilitate the laying of cables and at open cut watercourse crossings will be reinstated as soon as practicable following completion of construction activities.

~~4.2.21~~4.2.23 Drill pits for horizontal directional drilling will be located on existing hardstanding, bare ground or arable land, where practicable.

~~4.2.22~~4.2.24 Length-for-length equivalent watercourse enhancements will be required for each new culvert extension to ensure compliance with WFD objectives. These requirements will be outlined in a WFD Mitigation and Enhancement Strategy, which will be developed after DCO consent is granted. To improve the condition of the targeted watercourses within the Solar PV Site, as discussed in the **BNG Assessment [EN010152/APP/7.11]**, proposed enhancements may include the following, where appropriate:

a. Fencing off the riparian zone to reduce managed ground cover at the bank top and allow the riparian zone to re-naturalise;

b. Removing bank face reinforcement to enable the establishment of natural bank habitats and allow natural bank erosion processes; and

c. Removing vegetation that shades the ditch and clearing filamentous algae and/or duckweed.

Animal Welfare Requirements

~~4.2.23~~4.2.25 Implementation of measures to avoid animals being injured or killed within construction working areas, such as through the inclusion of perimeter fencing and covering excavations or providing a means of escape, will exclude them from such areas and prevent them from becoming trapped in excavations.

5. Management Prescriptions

5.1 Introduction

5.1.1 This section describes how existing and new habitats illustrated on the Indicative Landscape Masterplan in Appendix A will be protected or implemented during construction, maintained during the first five years to ensure successful establishment, and managed in the long-term until the decommissioning of the Scheme.

5.1.2 As a framework management plan, further details will be added as the design progresses in order to refine species and seed mixes of local provenance, management prescriptions and timescales, and site-specific mitigation and enhancement measures.

5.1.3 Accesses to the Solar PV Site that are established during the construction phase (whether new or modified/extended existing accesses) will remain in place throughout the operation and maintenance phase.

5.1.4 All implementation and monitoring works will be supervised by the ECoW.

5.2 Existing Habitats

5.2.1 Existing habitats to be retained include:

a. Individual trees (including hedgerow trees);

b. Hedgerows;

c. Neutral grassland; and

d. Riparian mosaic.

Individual trees (including hedgerow trees)

5.2.2 Existing trees will be managed to promote longevity, enhance habitat value and improve resilience to climate change. This will include the gapping up of existing hedgerows with hedgerow trees, where appropriate, to boost species and age diversity, providing better connectivity and increasing the number of climate and disease resilient species.

5.2.3 During construction, the retained structural vegetation across the Order Limits will be protected in accordance the Tree Protection Plan included as part of **ES Volume III Appendix 10-7: AIA [EN010152/APP/6.3]**.

5.2.4 Implementation of safety measures will include, but not limited to:

a. Clearly defined stand-offs using temporary protective fencing;

b. Managing the structure of and integrity of the retained structural vegetation and of the soil in which the vegetation is planted;

c. Measures to prune or manage the canopies/growth of existing hedgerows and trees will be undertaken outside of bird nesting seasons; and

d. Where root protection zones fall within heavily trafficked areas, ground protection will be used to ensure any soil compaction is limited and root growth is not impeded.

5.2.5 During the construction phase, retained trees will be routinely inspected by a qualified arboriculturist with any findings reported to the ECoW. Any excavation works required within the Root Protection Area of retained trees will be undertaken under the guidance of an arboriculturist to ensure that agreed upon methodologies are implemented and to record any root pruning, and if necessary to advise on further arboricultural remedial works, as required.

5.2.6 Veteran and ancient trees on the Solar PV Site are to be managed as per principles of minimum intervention. This includes affording the veteran and ancient trees sufficient space to facilitate the continuation of decay and regeneration lifecycle processes. The principal issue identified during the tree survey is encroaching scrub and tree growth competing with the ancient and veteran trees, which may cause their premature loss or deterioration (e.g. due to shade suppression). Where identified, work to prevent this competition will be carefully undertaken to avoid sudden changes in exposure (e.g. through a multi-year staged work programme). The potential to take cuttings from existing veteran and ancient willow to propagate and allow for succession planning will be explored.

Hedgerows

5.2.7 Existing hedgerows will be managed to enhance biodiversity and improve ecosystem services, whilst also increasing screening for visual receptors. This will involve filling gaps and thickening hedgerows with a broader range of native species, where needed, and planting additional native hedgerow trees with locally appropriate species. Management practices will include adjusting cutting regimes to benefit cover, shelter, food sources, and breeding birds. More detail on the implementation, management and maintenance of hedgerow enhancements is described below in ‘native hedgerows with trees and hedgerow enhancement’.

Neutral Grassland

5.2.8 Areas of neutral grassland exist within some fields within the northeast of the Solar PV Site. These will be maintained beneath the proposed Solar PV Panels and managed accordingly with appropriate grazing regimes or mowing. If grazing is used, this would include low stocks of sheep allowed to graze the areas between August and March.

Riparian Mosaic

5.2.9 Along the northern boundary of the Solar PV Site, a riparian corridor sits adjacent to the River Went. A mosaic of wet, semi-improved and grazed neutral grassland exists along the corridor, including some areas identified as Coastal Floodplain Grazing Marsh, a Priority Habitat.

5.2.10 The open character of the River Went corridor will be retained by siting mitigation vegetation as close to the northern boundary of the Solar PV Site as possible. This will also allow for local widening of the riparian corridor through the creation of new areas of grassland on former agricultural land. Proposed structural vegetation along the northern boundary of the Solar PV Site would not be located within areas of Coastal Floodplain Grazing Marsh.

5.2.11 A Wetland Habitat Management Plan will be included within the detailed LEMP prepared prior to the commencement of works. No management

activity associated with all types of grassland shall be undertaken within 5m from the top of banks associated with ditches and within 10m from the bank tops associated with other rivers and streams.

Local Wildlife Sites

5.2.12 With reference to **ES Volume II Figure 8-2: Sites Non-Statutorily Designated for their Biodiversity Value [EN010152/APP/6.2]**, part of the Went Valley Local Wildlife Site (LWS) is within the Solar PV Site. However, with reference to **ES Volume II Figure 2-3: Indicative Site Layout [EN010152/APP/6.2]**, it is located outside of any developable areas of the Scheme.

5.2.13 Wrancarr Drain and Braithwaite Delves LWS, Trumfleet Pit LWS and Trumfleet Pond LWS will be crossed by the Grid Connection Cables. In line with the **Works Plans [EN010152/APP/2.2]**, the Scheme has been designed to ensure that these LWS will be retained, and measures taken to avoid direct or indirect impacts. A security perimeter fence will be implemented early in the construction phase to secure the Order limits and prevent construction activity from intruded into the LWS'.

5.2.14 Setbacks of at least 10m from watercourses (taken from the bank-top of the watercourse), with the exception of where open cut trenching is required, are included within the Scheme design to protect riparian habitats and to mitigate for potential hazards such as chemical and soils spills into watercourses. This will protect the watercourse and avoid potential direct impacts to watercourses and any protected species using them. Construction methods across all watercourses within LWS' will utilise trenchless methods. There is no potential for any direct impacts on these LWS along the Cable Route Corridor (see **ES Volume I Chapter 2: The Scheme [EN010152/APP/6.1]**). Methods such as HDD, boring, micro-tunnelling or impact moling are all trenchless methods that would not directly impact upon running water habitats of these LWS.

5.2.15 The implementation of standard environmental protection measures during construction, such as dust suppression and pollution prevention, will be adopted to ensure no indirect impacts occur and these measures have been set out in the **Framework CEMP [EN010152/APP/7.7]**, and their implementation is secured through a Requirement in the **Draft DCO [EN010152/APP/3.1]** that the detailed CEMP be prepared in substantial accordance with the Framework CEMP and then the measures contained therein implemented. Accordingly, the **Framework CEMP [EN010152/APP/7.7]** details the measures required to mitigate any construction related effects on this habitat (and species using them), including those associated with dust deposition, air pollution, pollution incidents, water quality, light, noise and vibration. Furthermore, the **Framework CEMP [EN010152/APP/7.7]** specifies requirements for the safe storage of chemicals/other hazardous materials (e.g. fuel), to prevent them reaching standing and running waters through flood events during construction (see also **ES Volume I Chapter 10: Water Environment [EN010152/APP/6.1]**). It will ensure that those involved with the construction phase are committed to agreed good practice and meet all relevant environmental legislation including the Hazardous Waste (England and Wales) Regulations 2005. Boundary vegetation will be retained and

protected, as much as is practicable, which will maintain connectivity for any species using LWS's.

5.2.16 Where lighting is required, it will conform to good practice guidelines with respect to minimising light spill into retained habitats to prevent or reduce the impact on running water habitats and will be minimised to that required for safe site operations and security and directed towards the middle of the Order limits rather than towards the boundaries.

5.2.17 During operation and maintenance of the Scheme, there are no pathways (e.g. habitat loss or disturbance to designated site features (such as through noise, water quality, air quality, lighting or visual) which could affect LWS within the Order Limits. The management of surface water, including for Solar PV Panel runoff, BESS Area runoff and foul water drainage (see also **ES Volume I Chapter 9: Water Environment [EN010152/APP/6.1]**) will ensure no hydrological impacts occur and that there are consequently no impacts upon any non-statutory sites during operation and maintenance of the Scheme.

5.3 Proposed Habitats

5.3.1 Proposed habitats, as shown on the Indicative Landscape Masterplan in Appendix A, include:

a. Native hedgerows with trees and hedgerow enhancement
b. Native scrub;
c. Riparian edge trees and scrub;
d. Neutral grassland (moderate and good condition);
e. Modified grassland;
f. Wet grassland; and
g. Wetland scrapes.

General Implementation of Native Planting

5.3.2 Opportunities for planting mature stock, for example ready hedges and larger specimen trees, will be focussed in the most sensitive areas to mitigate impacts at the earliest possible stage, including during the construction phase. These will be explored at the following locations, where significant visual effects have been identified, where practicable:

a. Along the southern edge of Fields NW3 and NW4;
b. Along the southern edge of Field SE3;
c. Along the southern and western edge of Field SW12.

5.3.3 Planting will be carried out in the first available planting season following consent, ideally in November and December for bare root stock, as it is felt with current climate trends.

5.3.4 Plants will be inspected at the nursery and upon delivery, prior to planting. Protection from strimming damage and animals will be provided using guards, preferably biodegradable, though care will be taken to avoid excessive use. Trees will be staked according to industry standard specifications.

Native Hedgerow Planting with Trees and Hedgerow Enhancement

Function

5.3.5 New hedgerows with trees will be planted across the Solar PV Site to help supplement the existing hedgerow network and to filter views of the Scheme. New hedgerows with trees will provide valuable habitats for a range of species, allowing for better connectivity across the Scheme. Hedgerows will be maintained at a height of at least 3.5 m in order to adequately screen the Solar PV Site. Potential for variations in established hedgerow height will be explored as part of the detailed LEMP to reflect local landscape character, whilst ensuring adequate screening for sensitive receptors.

5.3.6 Species will be chosen to build in resilience and will consider the particular requirements of the local area, taking into account climate change and potential pest and pathogen threats.

5.3.7 Existing hedgerows across the Solar PV Site will be 'gapped up', in order to enhance existing landscape features, reinforce field patterns and to provide continuous habitat corridors.

5.3.8 Consideration will be given to the planting of vegetation along existing utility corridors and consultation sought from the relevant utility company on their requirements. Beneath and in proximity to the overhead line, low and slow growing species will be used to ensure the intended landscape structure is maintained, but that recommended offsets are adhered to.

Implementation

5.3.9 The locations of the new hedgerows with trees and gapping up of existing hedgerows are shown on the Indicative Landscape Masterplan in Appendix A.

5.3.10 Hedge trenches will be dug to dimensions of 450 mm wide by 450 mm deep, with the base loosened before returning the backfill mixture. All stock will be supplied as bare root if in season (unless otherwise stated) and container-grown if planted out of season. A detailed specification for hedgerows will be developed based on the indicative species, sizes, and percentages outlined in Table 1.

5.3.11 Individual trees will be planted in pits measuring 900 mm in diameter and 900 mm in depth. The base of the tree pit will be broken up to a depth of 200 mm, and the pit will be backfilled with topsoil, consolidated in layers to ensure the tree is positioned at the correct depth. Each tree will be planted to the nursery line and secured with stakes, ties, and an irrigation pipe. A specification for hedgerow trees will be developed, detailing the indicative species, sizes, and percentages, as presented in Table 2.

5.3.12 Planting should take place from November to March, ideally November or December for bare root stock. Planting should be into soil that is not frozen or waterlogged. New planting shall be protected using adequate strimmer and pest guards and will vary depending on the size of the plant.

5.3.13 All new hedgerows will be species-rich, meaning they will comprise of five or more species. Where there is gapping up of hedgerows, species will be chosen to diversify the mix of existing species present.

Table 1: Indicative Mix for Native Hedgerows

Botanical Name	Common Name	% Mix	Density	Specification
Corylus avellana	Hazel	20%	5 per linear metre	Bare root (BR) whips, selected to 900mm, except Ilex 9cm pot(30-40cm). Planted in a double staggered row at 5No. plants per linear metre
Crataegus monogyna	Hawthorn	30%		
Ilex aquifolium	Holly	10%		
Prunus spinosa	Blackthorn	2530%		
Euonymus europaeus	Spindle	5%		
Rosa canina	Dog Rose	5%		
Viburnum opulus	Guelder Rose	5%		

Table 2: Indicative Species for Hedgerow Trees

Botanical Name	Common Name	% Mix	Girth (cm)	Specification
Acer campestre	Field Maple	15%	12-14cm	Heavy Standard
Populus nigra subsp. betulifolia	Black Poplar	15%		
Prunus padus	Bird Cherry	10%		
Quercus robur	English Oak	40%		
Salix alba	White Willow	20%		

Establishment Maintenance

5.3.14 A detailed plan for the establishment and maintenance of the new hedgerows with trees will be submitted as part of the detailed LEMP. This will cover a period of five years from the construction phase of the Scheme.

5.3.15 The aim of establishment maintenance will be to support the early stages of growth to encourage thick, bushy growth and good form. This is based on the following principles and outline prescriptions:

a. Maintain a 0.5 metre weed free strip either side of hedgerow through chemical and mechanical control;

b. First cut in spring to 45–60 cm above ground level taking care to exclude hedgerow trees;

c. Irrigation may be required during periods of drought or extended dry weather;

d. Remove litter, rubbish, and debris from planted areas throughout the year;

e. Re-firm soil around roots to ensure plants are supported and upright in spring each year;

f. Inspect and adjust stakes, guards, and ties in spring and autumn and after periods of particularly inclement weather;

g. Check and record failed or defective plants in September annually;

h. Replace failed or defective plants with matching species of the same size during the next planting season after failure; and

i. ECoW to undertake a quarterly check of plants to record their growth and condition.

Long-Term Management

5.3.16 The long-term management of new hedgerows with trees will focus on the following interventions:

a. Hedgerows will be managed and maintained at a height of at least 3.5 m, whilst individual tree species planted within hedgerows will be allowed to establish and left to reach maturity;

b. Cutting of hedgerows will take place outside of the bird nesting season and at the end of the winter in February. This will allow berries to stay in place for the maximum period of time throughout the winter;

c. Any branches/growth that overhangs or obstructs PRoW or access tracks will be cut back to keep routes clear to use;

d. Dead or dying hedgerow trees will be removed if considered a hazard on health and safety grounds and in accordance with any protected species constraints; and

e. Monitoring of new hedgerows will be undertaken periodically in order to check any significant changes in health and viability of the hedgerow. Maintenance and condition checks will take place every three years.

Native Scrub

Function

5.3.17 Native scrub has been proposed to add a further level of screening around visually sensitive areas. In addition to its screening benefits, native scrub planting will help to create a habitat mosaic and introduce structure, providing shelter and food resources for birds and other wildlife.

5.3.18 The scrub areas have been designed to have no single dominant species; however, the composition will favour dense, shrubby growth which is typical of bushes and small tree species. This will create a scrub-like environment which better caters for local wildlife.

Implementation

5.3.19 The locations of proposed native scrub are indicated on the Indicative Landscape Masterplan in Appendix A.

5.3.20 Native scrub areas will be pit planted in cultivated ground to accommodate the full depth of roots, level and firm soil. Woodland and shrub plants will be planted in single species groups of 5no. minimum and protected against mammalian pests. Indicative species, sizes and percentages for scrub areas are presented in Table 3.

Table 3: Indicative Mix for Native Scrub Areas

Botanical Name	Common Name	% Mix	Density	Specification
Acer campestre	Field Maple	5%	1.5m~~2~~ Ctr	BR Whips selected to 900mm
Corylus avellana	Hazel	10%	1.5m~~2~~ Ctr	BR Whips selected to 900mm
Crataegus monogyna	Hawthorn	30%	1.5m~~2~~ Ctr	BR Whips selected to 900mm
Prunus spinosa	Blackthorn	30%	1.5m~~2~~ Ctr	BR Whips selected to 900mm
Ilex aquifolium	Holly	10%	1.5m~~2~~ Ctr	2lt pot 40-60cm
Rosa canina	Dog Rose	10%	1.5m~~2~~ Ctr	BR Whips selected to 900mm
Salix alba	White Willow	5%	**1.5m**~~2~~ Ctr	BR Whips selected to 900mm

Establishment Maintenance

5.3.21 A detailed plan for the establishment and management of the native scrub area will be developed within the detailed LEMP.

5.3.22 The aim of establishment maintenance will be to support the early stages of growth to encourage thick, bushy growth and good form, reducing the future need for maintenance by supressing weed growth. The species listed above will be maintained in line with the recommendations of a ECoW.

5.3.23 The maintenance of the native scrub area will be based on the following principles and outline prescriptions:

a. Irrigation may be required during periods of drought or extended dry weather;

b. Remove litter, rubbish, and debris from planted areas throughout the year;

c. Re-firm soil around roots to ensure plants are supported and upright in spring each year;

d. Inspect and adjust stakes, guards, and ties in spring and autumn and after periods of particularly inclement weather;

e. Check and record failed or defective plants in September annually;

f. Replace failed or defective plants with matching species of the same size during the next planting season after failure; and

g. ECoW to undertake a quarterly check of plants to record their growth and condition.

Long-Term Management

5.3.24 The long-term management of new native scrub will focus on the following interventions:

a. Cutting of native scrub areas will take place outside of the bird nesting season and at the end of the winter in February. This will allow berries to stay in place for the maximum period of time throughout the winter;

b. Any branches/growth that overhangs or obstructs PRoW or access tracks will be cut back to keep routes clear to use;

c. Between years seven and ten, scrub areas will be reviewed and thinned as necessary to remove any poor or weak specimens, allowing neighbouring specimens to flourish and provide better establishment across the area;

d. From year five onwards, all guards, ties and stakes will be removed unless attached to replacement scrub species; and

e. Monitoring of new native scrub will be undertaken periodically in order to check any significant changes in health and viability of the hedgerow. Maintenance and condition checks should take place every three years.

Riparian Edge Hedgerow and Trees

Function

5.3.25 A new hedgerow with trees will be planted along the northern boundary of the Solar PV Site. This will be located close to the proposed fenceline to ensure vegetation is not planted within the open riparian mosaic, including areas of Coastal and Floodplain Grazing Marsh.

5.3.26 The vegetation will comprise a variety of trees and hedgerow species to provide a variety of structure and will make use of wet-loving species to reflect the edge of floodplain location. Additional gapping up of the existing line of vegetation along the northeast edge of the Solar PV Site would provide a continuous linear corridor of vegetation along the Solar PV Site's northern boundary.

5.3.27 As well as providing additional habitat and wildlife connections, this new row of vegetation will screen and filter views of the Scheme from the PRoW to the north of the River Went, as well as in longer views south from properties along Lowgate and Highgate.

Implementation

5.3.28 The location of the proposed riparian edge hedgerow and trees is indicated on the Indicative Landscape Masterplan in Appendix A.

5.3.29 Hedgerow trenches will be dug to dimensions of 450 mm wide by 450 mm deep, with the base loosened before returning the backfill mixture. All stock will be supplied as bare root if in season (unless otherwise stated) and container-grown if planted out of season. A detailed specification for hedgerows will be developed based on the indicative species, sizes, and percentages outlined in Table 4~~Table 4~~.

5.3.30 Individual trees will be planted in pits measuring 900 mm in diameter and 900 mm in depth. The base of the tree pit will be broken up to a depth of 200 mm, and the pit will be backfilled with topsoil, consolidated in layers to ensure the tree is positioned at the correct depth. Each tree will be secured with stakes and ties. A specification for hedgerow trees will be developed, detailing the indicative species, sizes, and percentages outlined in Table 5~~Table 5~~.

5.3.31 Planting will take place from November to March, in soil that is not frozen or waterlogged. Consideration will be given to periods of excess flooding. New planting will be protected using adequate strimmer and pest guards and will vary depending on the size of the plant.

Table 4: Indicative Mix for Riparian Edge Hedgerows

Botanical Name	Common Name	% Mix	Density	Specification
Crataegus monogyna	Hawthorn	30%	5 per linear metre	Bare root (BR) whips, selected to 900mm, except Ilex 9cm pot(30-40cm). Planted in a double staggered row at 5No. plants per linear metre
Salix caprea	Goat willow	20%		
Prunus spinosa	Blackthorn	30%		
Cornus alba	Dogwood	15%		
Viburnum opulus	Guelder Rose	5%		

Table 5: Indicative Species for Riparian Edge Trees

Botanical Name	Common Name	Mix %	Girth (cm)	Specification
Salix fragilis	Crack Willow	20%	12-14cm	Heavy Standard
Populus nigra subsp. betulifolia	Black Poplar	15%		
Quercus robur	Pedunculate Oak	20%		
Alnus glutinosa	Alder	15%		

Salix alba	White Willow	30%		

Establishment Maintenance

5.3.32 A detailed plan for the establishment and maintenance of the new riparian edge hedgerow with trees will be submitted as part of the detailed LEMP. This will cover a period of five years from the construction phase of the Scheme.

5.3.33 The aim of establishment maintenance will be to support the early stages of growth to encourage thick, bushy growth and good form. This is based on the following principles and outline prescriptions:

a. Maintain a 0.5 m weed free strip either side of hedgerow through mechanical control;

b. First cut in spring to 45–60 cm above ground level taking care to exclude hedgerow trees;

c. Irrigation may be required during periods of drought or extended dry weather;

d. Remove litter, rubbish, and debris from planted areas throughout the year;

e. Re-firm soil around roots to ensure plants are supported and upright in spring each year;

f. Inspect and adjust stakes, guards, and ties in spring and autumn and after periods of particularly inclement weather, including flooding;

g. Check and record failed or defective plants in September annually;

h. Replace failed or defective plants with matching species of the same size during the next planting season after failure; and

i. ECoW to undertake a quarterly check of plants to record their growth and condition.

Long-Term Management

5.3.34 The long-term management of the new riparian edge hedgerow with trees will focus on the following interventions:

a. Hedgerows will be managed and maintained at a height of at least ~~3.5~~4 m, whilst individual tree species planted within hedgerows will be allowed to establish and left to reach maturity;

b. Cutting of hedgerows will take place outside of the bird nesting season and at the end of the winter in February. This will allow berries to stay in place for the maximum period of time throughout the winter;

c. Dead or dying hedgerow trees will be removed if considered a hazard on health and safety grounds and in accordance with any protected species constraints; and

d. Monitoring of new hedgerows will be undertaken periodically in order to check any significant changes in health and viability of the hedgerow. Maintenance and condition checks will take place every three years.

General Grassland Management Prescriptions

Function

5.3.35 New grassland will be seeded beneath the Solar PV Panels, providing an extensive grassland habitat. These areas would be categorised as 'modified' or 'neutral' grassland, reflecting existing areas of neutral grassland, necessary management practices, and the shading provided by the solar panels. Whilst this type of grassland is not considered a priority habitat, it includes hybrid white clover to fix free nitrogen for companion grasses, making it suitable for grazing. It would also support greater species diversity compared to the existing arable crops.

5.3.36 New neutral grassland will be seeded outside of the fenceline of the Solar PV Site, along hedgerows and field margins, under power lines and along PRoW buffers across the Scheme. These will provide areas of neutral grassland in moderate condition.

5.3.37 A large green corridor of neutral grassland in good condition will run through the centre of the Solar PV Site, providing a continuous seam of grassland. This will connect habitats in the north and the south of the Scheme, as well as providing valuable nesting opportunities for ground nesting birds.

5.3.38 Neutral grassland features a diverse mix of grasses, herbs and wildflowers and is a valuable habitat for a wide range of wildlife, including birds, small mammals and insects. The mix of grass species found in each location will be dependent on soil composition, proximity to wetland areas, light levels and management techniques.

5.3.39 Where practicable, seed mixes will be obtained from local sources to ensure continuity and to create a species mix that is best suited to the local environment.

5.3.40 Receiving soils will be prepared to reduce the nutrient levels. Techniques for reducing nutrient levels should follow good practice and take into consideration soil surveys, where available.

5.3.41 Once nutrient levels have been reduced, all clods should be broken up and alien material (such as plastics and metals) above 50mm in size will be removed. The top 50mm will be raked to allow for a fine tilth before seeding. This will be done directly before seeding, which will preferably take place in the autumn to avoid sowing during dry periods. If unable to sow during the autumn, then the spring sowing window will be used.

5.3.42 In areas where existing neutral grassland exists, which includes a number of fields within the northeast of the Solar PV Site, there will be minimal disruption to the existing grassland.

Establishment Maintenance of Grassland Areas

5.3.43 A detailed plan for the establishment and management of grassland areas will be developed as part of the detailed LEMP.

5.3.44 The aim of establishment maintenance will be to encourage development of a diverse sward of grasses and herbs. Establishment maintenance will be based on the following principles and outline prescriptions:

a. Immediately after sowing, the ground will be left undisturbed and unwatered to allow the grassland to establish naturally;

b. In the first year, mowing will occur in August or September, with subsequent cuts in March and September;

c. Regular visual inspections will be conducted throughout the growing season;

d. Control measures for undesirable species, such as arable and injurious weeds, will be implemented to prevent their dominance. This may involve additional mowing or, if necessary, the use of selective herbicides;

e. Botanical surveys will be conducted in late spring to assess the success of the grassland in meeting its objectives. Spot checks by a qualified ecologist will take place in years 1, 3, and 5 to document plant species, their distribution, and the overall condition of the grassland. Any issues requiring remedial action will be noted; and

f. Should remedial measures be necessary, the ECoW will consult with a qualified ecologist to determine the appropriate actions, including re-seeding of identified areas.

Long-Term Management of Grassland

5.3.45 The long-term management of grassland within the Solar PV Site aims to sustain a stable grassland community with a diverse sward height, and to prevent areas from evolving into tall, dense, grass-dominated habitats.

5.3.46 Measures for the grassland mosaic will focus on a regime of:

a. Grazing or mowing of modified grassland (beneath Solar PV Panels) to maintain vegetation under the panels;

b. Low intensity grazing of neutral grassland where present beneath Solar PV Panels and along field boundaries between September and February. If grazing is not used, areas of neutral grassland will receive one mechanical cut a year in later Summer/early Autumn;

c. Visual inspections during the growing season. Where any areas not already subjected to removal of cuttings, are identified as having a decline in habitat condition or species diversity, a targeted cut and collect management regime will be implemented on a temporary basis;

d. Control of undesirable species (e.g. arable weeds) and injurious weeds to prevent colonisation and domination of the grassland using a selective herbicide (where appropriate and managed in accordance with locality e.g. applying appropriate buffers to watercourses or grasslands managed for invertebrates);

e. Conditions Assessments following BNG methodologies will be undertaken in years 2, 5, 10, 15, 20, 25 and 30. The results of these monitoring surveys will be used to adjust the management regime to maximise biodiversity.

Neutral Grassland

Function

5.3.47 Neutral grassland of moderate condition will be retained and enhanced beneath Solar PV Panels where existing neutral grassland is present.

5.3.48 Neutral grassland of moderate condition will be created outside the fenceline of the Solar PV Site, including along hedge and field margins, under power lines and along PRoW buffers.

5.3.49 Neutral grassland within the Ecology Mitigation Area that extends along Fleet Drain through the northeast of the Solar PV Site will be enhanced to good condition, as shown on the Indicative Landscape Masterplan in Appendix A.

Implementation

5.3.50 The locations of the proposed neutral grassland areas are shown on the Indicative Landscape Masterplan shown in Appendix A.

5.3.51 An indicative mix as outlined in Table 6 will provide a low-maintenance, self-sustaining mix that brings environmental benefits and is suitable for grazing. This is subject to the needs of the Scheme's biodiversity requirements and the prevailing soil types found on Solar PV Site.

Table 6: Indicative Mix for Neutral Grassland

Botanical Name	Common Name	% Mix
Trifolium repens	White Clover	5%
Festuca ovina	Sheep's Fescue	20%
Festuca rubra litoralis	Slender Creeping Red Fescue	20%
Agrostis capillaris	Browntop Bentgrass	10%
Lolium perenne	Perennial Ryegrass	20%
Holcus lanatus	Yorkshire Hog	5%
Dactylis glomerata	Cock's-foot	5%
Phalaris arundinacea	Reed Canary Grass	10%
Agrostit sp.	Bentgrass	5%

Establishment Maintenance

5.3.52 Within the first 12 months after sowing, the grass will be cut regularly to help the sown species to establish.

5.3.53 Once the areas are fully established, typically the second Spring after sowing, the area will need to be cut in the Spring (before April) to reduce the vigour of the grass.

Long-Term Management

5.3.54 Following the establishment period, and within subsequent years, areas will be managed through sheep grazing or mowing, with areas of good condition seeing less disturbance. Grazing would take place between September and December. Any areas ungrazed will receive one mechanical cut in late

summer/early autumn. Any management activities will be restricted for the full extent of the breeding season (typically March to August inclusive).

Modified Grassland

Function

5.3.55 Modified grassland will be established beneath most of the Solar PV Panels and will differentiate from areas of 'neutral grassland' via the grazing/mowing regime. Modified grassland is not regarded as a priority habitat, however, it includes hybrid white clover to free fix nitrogen for companion grasses and would be suitable for grazing, whilst offering a greater species diversity than existing arable crops.

Implementation

5.3.56 The locations of the proposed modified grassland areas are shown on the Indicative Landscape Masterplan shown in Appendix A.

5.3.57 An indicative mix as outlined in Table 7 will provide a low-maintenance, self-sustaining mix that brings environmental benefits and is suitable for grazing. This is subject to the needs of the Scheme's biodiversity requirements and the prevailing soil types found on Solar PV Site.

Table 7: Indicative Mix for Modified Grassland

Botanical Name	Common Name	% Mix
Trifolium repens	White Clover	5%
Festuca ovina	Sheep's Fescue	45%
Festuca rubra litoralis	Slender Creeping Red Fescue	20%
Agrostis capillaris	Browntop Bentgrass	10%
Lolium perenne	Perennial Ryegrass	20%

Establishment Maintenance

5.3.58 Within the first 12 months after sowing, the grass will be cut regularly to help the sown species to establish.

5.3.59 Once the areas are fully established, typically the second Spring after sowing, the area will need to be cut in the Spring (before April) to reduce the vigour of the grass.

Long-term Management

5.3.60 Following the establishment period, and within subsequent years, areas will be managed through sheep grazing or mowing. If grazing is used, it will take place between September and February. If mowing is used, a single cut will take place in September. If grass is particularly vigorous, a second cut may be required in February. Any management activities will be restricted for the full extent of the breeding season (typically March to August inclusive).

Wet Grassland

Function

5.3.61 Habitat enhancement to the north of the Solar PV Site, adjacent to the River Went, will be delivered through the creation of wet grassland on areas of former arable land. Elsewhere the existing riparian mosaic will be maintained, including areas of Coastal and Floodplain Grazing Marsh.

Implementation

5.3.62 The indicative wet grassland seed mix outlined in Table 8~~Table 8~~ will provide a diverse selection of native wildflowers and grasses with the ability to withstand seasonal flooding, providing environmental benefits to pollinator, ground nesting birds and other wildlife. Species mix may be subject to change based on the needs of the Scheme's biodiversity and prevailing soil types.

Table 8: Indicative Species for Wet Grassland Areas

Botanical Name	Common Name
Achillea millefolium	Yarrow
Centaurea nigra	Black knapweed
Filipendula ulmaria	Meadowsweet
Galium palustre	Marsh bedstraw
Hypericum tetrapterum	Square stemmed St John's-wort
Hypochaeris radicata	Common cat's-ear
Lathyrus pratensis	Meadow vetchling
Leontodon autumnalis	Autumn hawkbit
Leucanthemum vulgare	Ox-eye daisy
Lotus corniculatus	Common bird's-foot trefoil
Lotus pendunculatus	Greater bird's-foot trefoil
Lychnis flos-cuculi	Ragged robin
Plantago lanceolata	Ribwort plantain
Primula veris	Cowslip
Prunella vulgaris	Selfheal

Botanical Name	Common Name
Ranunculus acris	Meadow buttercup
Rhinanthus minor	Yellow rattle
Rumex acetosa	Common sorrel
Sanguisorba officianlis	Great burnet
Silaum silaus	Pepper saxifrage
Stachys officianlis	Betony
Succisa pratensis	Devil's-bit scabious
Trifolium pratense	Red clover
Vicia cracca	Tufted vetch
Agrostis stolonifera	Creeping bent
Poa pratensis	Smooth-stalked meadow grass
Alopecurus geniculatus	Marsh foxtail
Alopecurus pratensis	Meadow foxtail
Anthoxanthum odoratum	Sweet vernal grass
Cynosurus cristatus	Crested dog's-tail
Deschampsia cespitosa	Tufted hair grass
Festuca rubra ssp. rubra	Red fescue
Holcus lanatus	Yorkshire fog
Phalaris arundinacea	Reed canary-grass
Glyceria maxima	Reed sweet-grass
Carex flacca	Glaucous sedge

Establishment Maintenance

5.3.63 Within the first 12 months, the grassland will be cut regularly to help species to establish.

5.3.64 Once the wet grassland has established, typically the second Spring after sowing, the area will be cut in the Spring (before April) to reduce the vigour of grass species.

Long-Term Management

5.3.65 Wet grassland will receive one mechanical cut annually, in the later Summer/early Autumn. Any management activities will be restricted for the full extent of the breeding season (March to August inclusive). Low intensity sheep grazing (with fenced areas and where practicable) from September to December will provide optimum conditions, however, where this is not possible, a further late cut in the season will be carried out.

5.3.66 A Wetland Habitat Management Plan will be included within the detailed LEMP prepared prior to the commencement of works.

Wetland Scrapes

Function

~~5.3.65~~5.3.67 A series of linear wetland scrapes will be delivered within the River Went riparian corridor. The exact location of these will be determined through additional site survey work. Where practicable, a network of scrapes of different sizes and depths will be provided. These will create suitable habitat for waders and wildfowl and will enhance biodiversity generally.

Implementation

~~5.3.66~~5.3.68 Wetland scrapes will be created through the mechanical removal of topsoil to create an area of bare earth that can hold water in wet habitats. The scrapes will be at least 100m from hedgerows or tall trees and will be irregular in shape to maximise edge habitat. The scrapes will be created with a gentle slope from shallow margins (3cm to 5cm deep) to a maximum depth of 40cm to 50cm at the centre.

Establishment Maintenance

~~5.3.67~~5.3.69 The scrapes should hold water for most of the year, with the aim of retaining water until July-August. This can be kept wet using gravity feed or pumping if rainfall is low.

Long-Term Management

5.3.70 Scrapes will be monitored long-term to ensure that the water levels are maintained. If scrapes silt up or dry up, new scrapes may be required.

5.3.71 A Wetland Habitat Management Plan will be included within the detailed LEMP prepared prior to the commencement of works.

~~5.3.68~~

Provision of Habitat Boxes

~~5.3.69~~5.3.72 Bat boxes are to be incorporated upon retained trees, close to foraging habitats such as tree lines, hedgerows, waterbodies and woodlands. These are to be located within the Ecology Mitigation Area. Boxes will be mounted

on trees facing south and southwest, with some additional boxes facing northwards to allow a range of conditions during warmer periods.

~~5.3.70~~5.3.73 Boxes will be installed at a minimum of three metres with a clear flight path.

~~5.3.71~~5.3.74 Bat boxes will be inspected in years 1, 3, 5,10 and 15 postconstruction and thereafter every ten years from years 20 to 40 by bat licensed ecologists and cleaned during the winter while not inhabited.

Bird boxes are also to be incorporated on retained trees, where practicable 1.5m beneath the bat boxes with a clear flight path. A range of bird boxes are to be used to support a range of species. This also includes species-specific bird boxes. A minimum of five tree mounted or tower mounted barn owl boxes will be provided within the Solar PV Site. The bird boxes are to be cleaned during the winter when not occupied.

Creation of Habitat Piles

~~5.3.72~~5.3.75 Any vegetation that is cleared or pruned during construction can be used to create refugia for reptiles/amphibians. These can be made from tree roots, leaf litter, log piles and rocks. The refugia piles will be filled loosely with topsoil and covered in topsoil, turf or moss covering. Refugia piles will be created within retained woodlands as well as open grassland habitat within the Ecology Mitigation Area.

Protected Species

~~5.3.73~~5.3.76 Additional enhancement for protected species that is not covered in the habitat creation sections above is described below.

Badger

~~5.3.74~~5.3.77 To enhance the Solar PV Site for badgers, habitat connectivity from known setts to foraging areas will be maintained and enhanced through the maintenance of hedgerows. In addition, planting of fruit trees within tree planting areas will provide a food source for badgers, and the creation of grassland will provide foraging habitat.

Bats

~~5.3.75~~5.3.78 The planting of tree lines and hedgerows will increase foraging value and connectivity within the Solar PV Site for bats.

Riparian Mammals

~~5.3.76~~5.3.79 The management of the riparian corridor and creation of wetland scrub habitat such as planting of willow species will create suitable habitat for riparian mammals, with scrub providing suitable cover for otter holt creation.

~~5.3.77~~5.3.80 Where temporary works to ditches are required, these should be replanted following works with grassland habitat that provides a suitable food source for water vole.

6. Pre and Post Construction Monitoring

6.1.1 Monitoring is required in order to determine that the functions documented within this Framework LEMP are being achieved and whether any remedial management action may be required. The baseline against which the monitoring can be compared against comprises the pre-construction baseline data. This baseline data collected in 2023/2024 will require updating prior to construction, as by the operation and maintenance phase (from 2030 at the earliest), this data will be over six years old and out of date. Updates would include a similar set of surveys undertaken at the baseline where relevant ecological receptors have been identified, including surveys of breeding and non-breeding birds, bats, riparian mammals and badgers.

6.1.2 A post-construction monitoring programme will be formalised, agreed and included within the detailed LEMP. Walkover surveys of the Solar PV Site will be undertaken between April and June in years 2, 4, 6, 10 and then every 5 years post-construction until year 40. The surveys will involve inspection of the hedgerows, grassland, riparian and scrub habitats to ensure they are being managed accordingly.

6.1.3 Post-construction monitoring for flora, birds (breeding and non-breeding), riparian mammals, badgers and bats (bat box roosting and activity survey), will be undertaken in the respective seasons, in years 1, 3, 5,10 and 15 postconstruction and thereafter every ten years from years 20 to 40. For the purposes of BNG Condition Assessments, post-construction surveys will also be undertaken in years 2, 5, 10, 15, 20, 25 and 30. These surveys are likely to involve similar methods to those used to determine the ecological baseline of the Scheme.

6.1.4 Maintenance checks of wildlife boxes (bats and birds) will be made as per the prescription in Paragraphs 5.3.6 and 5.3.7 to ensure that all boxes are still in position and secure. Some refitting of boxes, repairs and replacements are likely to be required over the lifetime of the Scheme.

6.1.5 Results from the post-construction monitoring will feed into the management plan and, if required, management may be amended accordingly based on this monitoring.

7. Grid Connection Corridor

7.1 Introduction

7.1.1 This section summarises the landscape elements of the Framework LEMP that are relevant to the Grid Connection Corridor and to provide additional information in relation to replacement planting.

The Grid Connection Corridor extends over 5 km between the On-Site Substation and the Existing National Grid Thorpe Marsh Substation. The width of the construction area required for the Grid Connection Corridor varies depending on the land needed for specific construction operations, access, storage and constraints. The land within the Grid Connection Corridor totals approximately 95 ha.

7.1.2 The Scheme allows for spatial flexibility in the routeing of the Grid Connection Cables. The typical working area for installation of the Grid Connection Cables is anticipated to be a 30 m wide corridor. This may be widened to accommodate construction works at complex interfaces and narrowed in others, for example to minimise the removal of vegetation or to avoid habitats such as hedgerows, woodland, grassland, scrub and open mosaic. The minimum width is anticipated to be 5 m where the route passes through hedgerows, where practicable. The Grid Connection Working Width includes the trench, soil and spoil storage, working area and haul road, with passing places where required.

7.2 Landscape Strategy

7.2.1 Good design as been a key consideration from the outset. The EIA has informed the iterative design process, guided by design principles developed specifically to address the opportunities and constraints presented by the Scheme. These principles have been developed in response to policy requirements, published landscape character assessment guidance and fieldwork analysis.

Conserving Existing Vegetation Patterns

7.2.2 The Grid Connection Corridor has been designed to minimise disturbance of existing vegetation. Where selective vegetation removal is required, replacement planting will be reinstated, where practicable. Anticipated vegetation removal is illustrated on the Tree Protection Plan included as part of **ES Volume III Appendix 10-7: AIA [EN010152/APP/6.3]**.

Impact Avoidance

7.2.3 The impact avoidance measures outlined below will be implemented, as relevant and appropriate, prior to and during the construction phase of the Scheme. The purpose of these is to minimise the impact of works on landscape and biodiversity features, and to achieve legislative compliance.

7.2.4 Standard environmental good practice and mitigation will be implemented to ensure construction and operation and maintenance of the Scheme complies with legislation relating to protected species. It will also ensure the Scheme does not compromise the local conservation status of ecological receptors present within or in the vicinity of the Order Limits.

7.2.5 The impact avoidance approach allows for the majority of trees and hedgerows to remain unchanged to ensure that the connectivity of the existing green infrastructure network is maintained.

Tree Works

7.2.6 The Scheme design minimises the need for the removal of trees across the Order Limits. The Scheme will not impact upon any TPOs. Some removal and pruning of trees will be required to facilitate vehicle access during construction (and operation), and for cabling works.

Works within the Grid Connection Corridor will be undertaken outside of the identified Root Protection Areas, as shown in **ES Volume III Appendix 10-7: AIA [EN010152/APP/6.3]**. Where this cannot be accommodated, the works will be undertaken in accordance with current good practice at the time of the works, as defined in:

a. British Standard (BS) 5837: 2012 Trees in relation to design, demolition and construction – Recommendations (Ref. 35);

b. National Joint Utilities Group (NJUG) Guidelines for the Planning Installation and Maintenance of Utility Apparatus in Proximity to Trees (Ref. 37); and

c. British Standard (BS) 3998: 2010 Treeworks – Recommendations (Ref. 36).

7.2.7 All necessary protective fencing will be installed prior to the commencement of any site clearance or construction works. This will be set out in an Arboricultural Method Statement, the CEMP and a final Tree Protection Plan prepared pre-construction, pursuant to the DCO.

7.2.8 Where part of a group of trees is to be removed, the final extent of tree loss will be determined on site by an arboriculturist, who will assess the stability and suitability of retained trees.

7.2.9 Trees that will be removed to facilitate the construction of the Grid Connection Corridor will be replanted, where practicable, or planted within 50m of the original location. The location of replacement tree planting will be determined at the detailed design stage and brought forward as part of a detailed LEMP in accordance with requirement 6 of the **Draft DCO [EN010152/APP/3.1]**.

Hedgerow Works

7.2.10 The Grid Connection Cables routing will be designed to minimise the loss or, and avoid significant effects on, existing landscape features. Where hedgerow removal is anticipated, hedgerows will be replanted upon completion of construction, where practicable.

7.3 Management Prescriptions

7.3.1 Vegetation removed to facilitate the construction of the Grid Connection Cables and any associated temporary accesses, construction compounds (where they occur outside of the Solar PV Site), and at open cut watercourse crossings will be reinstated as soon as practicable following completion of construction activities, with the land being returned to its previous use and condition.

7.3.2 Reinstated tree and hedgerow planting will be maintained during the first five years following implementation of each planting phase and monitored in the long-term until decommissioning of the Scheme.

7.3.3 As the design progresses, further details will be provided, particularly in relation to plant species selection, specification of seed mixes, management prescriptions and timescales; and site-specific mitigation and enhancement elements.

7.3.4 Drill pits for horizontal directional drilling will be located on existing hardstanding, bare ground or arable land, where practicable.

7.3.5 Following the installation of the Grid Connection Cables, the ground above the cable will be returned to its previous use and condition.

7.3.6 Implementation and monitoring works will be supervised by the ECoW.

Existing Habitats

Retained Hedgerows and Trees

7.3.7 During construction the retained hedgerows, woodland and trees will be protected in accordance with a detailed Tree Protection Plan and Arboricultural Method Statement, as required by the **Framework CEMP [EN010152/APP/7.7]**. The measures will include the use of clearly defined stand-offs (secured with temporary protective fencing), managing the structure and integrity of the retained vegetation and the soil upon which it relies, and undertaking any pruning outside of the bird nesting season.

7.3.8 Retained trees will be periodically inspected by an arboriculturist during construction. Where excavation works are within the Root Protection Area (RPA) of retained trees, works will be undertaken under a watching brief by an arboriculturist to ensure agreed methodologies are fully implemented, to record any root pruning, and to recommend further arboricultural remedial works where required.

Aquatic and Riparian Habitats

7.3.9 A pre-works condition survey will be conducted to guide the reinstatement of the channel at open cut watercourse crossings. Reinstatement will involve returning instream vegetation from its temporary locations and replanting and reseeding the banks of the watercourse. To support plant establishment and minimize soil erosion, the reinstated bank areas will be covered with hessian, which will naturally degrade in place as vegetation regrows.

7.3.10 Length-for-length equivalent watercourse enhancements will be required for each new culvert extension to ensure compliance with WFD objectives. These requirements will be outlined in a WFD Mitigation and Enhancement Strategy, which will be developed after DCO consent is granted. To improve the condition of the targeted watercourses within the Grid Connection Corridor, as discussed in the **BNG Assessment [EN010152/APP/7.11]**, proposed enhancements may include the following, where appropriate:

a. Fencing off the riparian zone to reduce managed ground cover at the bank top and allow the riparian zone to re-naturalise;

b. Removing bank face reinforcement to enable the establishment of natural bank habitats and allow natural bank erosion processes; and

c. Removing vegetation that shades the ditch and clearing filamentous algae and/or duckweed.

Proposed Habitats

Hedgerow and Tree planting

Function

7.3.11 Replacement planting will be undertaken where hedgerow or tree removal is required as part of laying the Grid Connection Cables.

Implementation

7.3.12 Planting will take place in the first available planting season following consent being granted, ideally during November and December for bare root stock.

7.3.13 Plants will be inspected at the nursery and on delivery, prior to planting. Plants will be protected from strimming damage and animals through guards, preferably biodegradable, although consideration will be given to avoiding excessive use of guards. Trees will be staked in line with industry standard specifications.

Establishment Maintenance

7.3.14 Establishment maintenance will be as per set out within Section 6 of this Framework LEMP.

7.3.15 A detailed plan for the establishment and management of new hedgerows with trees will be developed for the five year establishment maintenance period.

7.3.16 The aim of establishment maintenance will be to support the early stages of growth to encourage thick, bushy growth and good form. This is based on the following principles and outline prescriptions:

a. Maintain a 0.5 metre weed free strip either side of hedgerow through chemical and mechanical control.

b. First cut in spring to 45–60 cm above ground level taking care to exclude hedgerow trees.

c. Water new plants to minimise failures in periods of drought.

d. Remove litter, rubbish, and debris from planted areas throughout the year.

e. Re-firm soil around roots to ensure plants are supported and upright in spring each year.

f. Inspect and adjust stakes, guards, and ties in spring and autumn.

g. Check and record failed or defective plants in September annually.

h. Replace failed or defective plants with matching species of the same size during the next planting season after failure.

i. ECoW to undertake a quarterly check of plants to record their growth and condition.

Long-term Management and Maintenance

7.3.17 Once established, replacement tree and hedgerow planting will be managed as part of the annual maintenance of adjacent vegetation.

Open Mosaic Habitat on Previously Developed Land

Function

7.3.18 An area of habitat that has been assessed as Open Mosaic Habitat (OMH) on Previously Developed Land (PDL) is to be temporarily lost in order to construct the Grid Connection Corridor. As this is a priority habitat and the Grid Connection Corridor comprises temporary works, this is to be re-instated following construction of the cable. OMH is listed on the UK Biodiversity Action Plan (UK BAP) as a Priority Habitat listed in Section 41 of the Natural Environment and Rural Communities Act 2006 (NERC Act).

Implementation

7.3.19 The substrate that is removed to facilitate the construction of the Grid Connection Cables is to be retained during the works period and infilled once the Grid Connection Cables is in place. Much of the value in OMH habitats is within the topsoil and, as such, the same substrate should be used to reinstate the habitat. This substrate must be stored appropriately to prevent it from mixing with any nutrient-rich substrates.

7.3.20 OMH is a habitat that forms on disturbed ground and comprises early successional species. As such, it is proposed that infilling the cable trench will disturb the seed bank and create new opportunities for local flora to establish. This will happen naturally. Precautions must be taken during the works period to not flush the habitat with any nutrient-rich run-off from nearby habitats.

7.3.21 The natural succession can be accelerated through translocation of species from the adjacent habitat, as well as supplementary plug planting and scarification and seeding with grasses.

Establishment Maintenance

7.3.22 Within the first 12 months, management will be minimal, however, the habitat should be monitored to manage dominant species to prevent encroachment. Dominant grasses, ruderal species and shrub should be managed to ensure they do not outcompete the successional species.

Long-term Management and Maintenance

7.3.23 The habitat should not require any long-term management due to the nature of the habitat type. However, monitoring will be carried out with remedial measures taken to prevent encroachment of scrub where required.

8. References

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Ref. 12 H.M. Government (1997). Hedgerow Regulations 1997. Available at: https://www.legislation.gov.uk/uksi/1997/1160/contents/made. [Accessed 05 September 2024].

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Abbreviations

Abbreviation/Term	Meaning
AIL	Abnormal Indivisible Load
AOD	Above Ordnance Datum
BAP	Biodiversity Action Plan
BESS	Battery Energy Storage System
BNG	Biodiversity Net Gain
BR	Bare Root
CEMP	Construction Environmental Management Plan
DLL	District Level License
DCO	Development Consent Order
ECoW	Ecological Clerk of Works
EIA	Environmental Impact Assessment
ES	Environmental Statement
GI	Green Infrastructure
GLTA	Ground Level Tree Assessments
GCN	Great Crested Newt
ha	Hectares
HDD	Horizontal Directional Drilling
INNS	Invasive Non-Native Species
LEMP	Landscape and Ecological Management Plan
LWS	Local Wildlife Site
MW	Megawatts
NCA	National Character Area
NJUG	National Joint Utilities Group
NPPF	National Planning Policy Framework
NSIP	Nationally Significant Infrastructure Project
OMH	Open Mosaic Habitat
PDL	Previously Developed Land
PRoW	Public Rights of Way
PV	Photovoltaic

Abbreviation/Term	Meaning
RPA	Root Protection Area
SAC	Special Area of Conservation
SPA	Special Protection Area
SSSI	Site of Special Scientific Interest
TPO	Tree Preservation Order
WCA	Wildlife and Countryside Act
WFD	Water Framework Directive

Indicative Landscape Masterplan

Existing hedgerows
Will be retained and improved through 'gapping up' in order to maintain the historic landscape character

Hedgerow buffer
Minimum of 5 m buffer from all hedgerows

Existing neutral grassland
Existing neutral grassland within the Solar PV Site will be retained in a moderate condition beneath Solar PV Panels through a low intensity grazing/cutting regime

Land not included within the Solar PV Site
Land around Riddings Farm and Fenwick Hall not included within the Solar PV Site

Operations and Maintenance Hub
Makes use of existing agricultural building

Fenwick buffer
To provide an offset and new planting between the village and the solar array

New planting
To screen views of solar arrays from Fenwick Common Lane

Fenwick Common Lane access
During construction, operation and maintenance, and decommissioning

New planting
To screen views of BESS and On-Site Substation

Moss Road access
During construction, operation and maintenance, and decommissioning

River Went Corridor
Land adjacent to the River Went to remain open and managed for the benefit of biodiversity

Existing hedgerows
Will be improved through 'gapping up'

Heritage buffer
For the protection of archaeological remains

Green corridor
Land adjacent to Fleet Drain to remain open providing habitat managed for biodiversity and connectivity in the green infrastructure network

Watercourse offset
10 m offset from watercourses has been included as a minimum

Heritage buffer
To provide an offset to maintain the setting of built heritage assets and for the protection of archaeological remains

Grid connection compound
Potential connection to the existing overhead power lines

Open space
Areas of open space included adjacent to footpaths and managed for biodiversity

Footpath offset
20 m minimum offset either side of footpaths (including 15 m to fenceline and 5m between fenceline and Solar PV Panels)

Modified grassland
Modified grassland is located beneath the Solar PV Panels across much of the Solar PV Site

On-Site Substation
Located away from properties to protect residential views

BESS Area
Located at a minimum 500 m away from residential properties

Temporary Construction Compound
Main Construction Compound
BESS Area
ON-SITE SUBSTATION
RIDDINGS FARM
FENWICK HALL
FENWICK
TOPHAM
RIVER WENT
RAILWAY LINE
FENWICK COMMON LANE
WEST LANE
MOSS ROAD

0 0.5 1km

Legend

- Proposed field stations
- Proposed operations and maintenance hub
- Proposed internal access track
- Public Right of Way (PRoW)
- Drains
- Overhead power lines
- Proposed native hedgerow / vegetated boundary
- Proposed gapping up of existing hedgerows / hedgerow trees (avoiding underplanting of ancient or veteran trees)
- Proposed riparian edge hedgerow and trees
- Proposed gapping up of existing hedgerows / hedgerow trees with wet-loving species (avoiding underplanting of ancient or veteran trees)
- Proposed neutral grassland (good condition)
- Proposed neutral grassland (moderate condition)
- Proposed modified grassland
- Proposed Solar PV Panels
- Conserve and enhance the existing open riparian mosaic, including the creation of some wet grassland
- Existing woodland (outside Solar PV Site)
- Proposed native scrub
- Proposed temporary construction compounds
- Proposed BESS Area
- Proposed On-Site Substation
- Potential grid connection line drop compound
- Access

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CLIENT: Fenwick Solar Project Limited

PROJECT: Fenwick Solar Farm

TITLE: Indicative Landscape Masterplan

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SCALE @ A3	DATE	
NTS	24/03/2025	
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Appendix D - Updated Appendix 10-2: Landscape and Visual Impact Assessment Methodology [APP-162]

Prepared for: Fenwick Solar Project Limited
April 2025

FENWICK SOLAR FARM

Fenwick Solar Farm
EN010152

Environmental Statement

Volume III Appendix 10-2: Landscape and Visual Impact Assessment Methodology

Document Reference: EN010152/APP/6.3

Regulation 5(2)(a)

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

April 2025~~October 2024~~
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Revision History

Revision Number	Date	Details
00	October 2024	DCO application
01	April 2025	Examination Deadline 1

Prepared for:
Fenwick Solar Project Limited

Prepared by:
AECOM Limited

Table of Contents

Tables

1. Introduction

1.1.1 This appendix sets out the methodology applied in the Landscape and Visual Impact Assessment (LVIA). The LVIA is reported in **Environmental Statement (ES) Volume I Chapter 10: Landscape and Visual Impact Assessment [EN010152/APP/6.1]**.

1.1.2 Landscape and visual effects are interrelated but are assessed separately:

a. Landscape effects relate to changes to the landscape as a resource, including physical changes to the fabric or individual elements of the landscape, its aesthetic or perceptual qualities and its overall landscape character; and

b. Visual effects relate to changes to receptor's (people's) visual amenity and views from the loss or addition of features within their view(s) due to the Scheme.

1.1.3 The LVIA methodology involves the following stages:

a. A baseline review of published landscape assessments, studies, relevant supporting evidence base documents, aerial photography, mapping, and field work to identify the landscape and visual baseline and receptors;

b. Consideration of the sensitivity of landscape and visual receptors, based on an assessment of their respective value and susceptibility to change;

c. Consideration of the magnitude of effect resulting from the Scheme during construction, Year 1 and Year 15 of operation and maintenance, and decommissioning. The consideration of magnitude of effect is based on the scale, duration, and reversibility of the effect. Short term durations are considered to be two years or less; medium term durations are considered to be between two and five years; and long-term durations are considered to be more than five years;

d. Combination of the receptor's sensitivity and the magnitude of effect experienced to determine the resultant level of effect; and

e. An assessment of the significance of the effect to the landscape and visual receptors for the above phases of the Scheme.

1.1.4 The assessment of the Scheme has been undertaken for:

a. Peak construction activity in winter;

b. Year 1 of operation, assuming the Scheme is built out and in winter;

c. Year 15 of the operation, assuming the proposed planting has established, in both winter and summer conditions; and

d. Decommissioning in winter.

2. Assessment Methodology

2.1 Applicable Guidance

2.1.1 The following guidance has been used to inform the scope and approach of the LVIA, and to assist in the identification and mitigation of likely significant effects. This builds upon the overarching EIA methodology.

a. Guidelines for LVIA, 3rd Edition (GLVIA3) (Ref. 1) is the primary source of guidance for the assessment of landscape and visual effects as referenced in National Policy Statement EN-1 (November 2023), footnote 244 (Ref. 2).

b. Advice contained within the Natural England publication 'An Approach to Landscape Character' (Ref. 3) was used to supplement the guidance and approaches to undertaking landscape character assessment contained GLVIA3.

c. The Landscape Institute's technical note regarding the assessment of landscapes outside national designations (Ref. 4) has also informed the approach to the definition of landscape character areas and judgements of their respective value.

d. The design approach and landscape strategy for the Scheme was further supported by guidance set out in the Landscape Institute's Infrastructure Technical Guidance Note 04/2020 (Ref. 5).

e. The Landscape Institute's Tranquillity Technical Guidance Note 2017 (Ref. 6) was referred to in developing the approach to describing and assessing impacts on tranquillity of the Scheme.

f. Information contained within the Landscape Institute's Technical Guidance Note 06/19: Visual Representation of Development Proposals, 2019 (Ref. 7) was used to aid the selection and preparation of viewpoint photography to support the LVIA.

g. Landscape Institute's Technical Guidance Note 2/19: 'Residential Visual Amenity Assessment' (2019) (Ref. 8).

2.2 Establishment of the Study Area

2.2.1 With reference to **ES Volume II Figure 10-1: Landscape and Visual Amenity Study Area and Relevant Designations [EN010152/APP/6.2]**, the LVIA Study Area extends approximately 2 kilometres (km) from the Solar PV Site and 500 m from the Grid Connection Corridor.

2.2.2 The initial area of search extended 5 km from the Solar PV Site. This area was subject to a desk-based review of aerial photography, analysis of a computer generated Zone of Theoretical Visibility (ZTV) and Ordnance Survey (OS) mapping and included consideration of potential effects arising from the proposed Solar PV Panels, Battery Energy Storage System (BESS) Area, Field Stations, the On-Site Substation, and construction plant. The review found that there was no potential for significant landscape or visual effects beyond 2 km due to intervening surface features, in particular field boundary vegetation, hedgerows lining local roads and infrastructure such as the dismantled railway with associated vegetation and the East Coast

Mainline which is elevated on an embankment running east and west of the Solar PV Site respectively. However, the elevated perspective of Askern Hill, located approximately 4.8 km southwest of the Solar PV Site affords potential for people to experience change to their visual amenity. Residents of and people visiting Askern Hill have therefore been included within the visual assessment as a single receptor beyond the LVIA Study Area.

2.2.3 Whilst the Scheme includes part of Station Road / Moss Road in Askern, the works in that location are not likely to give rise to significant landscape or visual effects given their short duration and small scale. As such, this area was not considered further within the LVIA.

2.3 Establishment of the Baseline

Desk Study

2.3.1 The landscape and visual baseline has been informed by relevant policy and guidance, as set out in **ES Volume III Appendix 10-1: Legislation, Policy and Guidance (Landscape and Visual Amenity) [EN010152/APP/6.3]**. The desk study has also included review of OS mapping, aerial photography, topographical data and site photography.

Field Survey

2.3.2 Field surveys have been undertaken by Chartered Members of the Landscape Institute to review and record baseline landscape character and visual amenity across the Solar PV Site Study Area and Grid Connection Corridor Study Area. Fieldwork was undertaken in winter and summer conditions between April 2023 and February 2024. The fieldwork informed the identification of landscape receptors, including analysis of key characteristics of Local Landscape Character Areas, and recorded the extent and distribution of:

a. Landcover, pattern and texture;

b. Scale and appearance;

c. Tranquillity;

d. Cultural associations; and

e. Land use.

2.3.3 Field surveys also identified visual receptors with potential to be affected by the Scheme.

Landscape Baseline and Receptors

2.3.4 Landscape is defined by the European Landscape Convention as *“an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors”* (Ref. 9).

2.3.5 GLVIA3 defines landscape receptors as “*aspects of the landscape resource that have the potential to be affected by a proposal*” (Ref. 1).

2.3.6 Landscape receptors have been identified via a review of published landscape character assessments, maps and aerial photography, relevant planning policy and fieldwork surveys.

2.3.7 Landscape character is defined by GLVIA3 as *"a distinct, recognisable and consistent pattern of elements in the landscape that makes one landscape different from another, rather than better or worse"* (Ref. 1).

2.3.8 Published landscape character assessments at the national, regional and district level have been reviewed to identify Landscape Character Types (LCT) and Landscape Character Areas (LCA). The geographical extent of LCAs in published assessments are generally large and may extend beyond the Study Area. To enable a more detailed assessment of the existing landscape character at a scale more relevant to the Scheme, Local Landscape Character Areas (LLCA) have been identified via desk study and fieldwork surveys in line with Natural England's An Approach to Landscape Character Assessment. These LLCA form the basis of the assessment of landscape effects and inform the development of the masterplan and landscape design. They are generally sub-divisions of existing LCAs identified in published landscape character assessments and are shown on **ES Volume II Figure 10-3: Local Landscape Character Areas [EN010152/APP/6.2]**.

Visual Baseline

2.3.9 Visual receptors are defined in GLVIA3 as "*individuals and/or defined groups of people who have the potential to be affected by a proposal*" (Ref. 1). This includes residents, users of public rights of way (PRoW) and motorists. A computer-generated zone of theoretical visibility (ZTV) was prepared based on 3-dimensional models of existing terrain and the Scheme. GLVIA3 defines the ZTV as "*a map, usually digitally produced, showing areas of land within which a development is theoretically visible*." The ZTV will be updated as the design of the Scheme is progresses.

2.3.10 The purpose of the ZTV is to:

a. Identify the theoretical extents of the Scheme visibility i.e. the locations from which it could potentially appear in existing views;

b. Assist in the identification of the Study Area;

c. Identify visual receptors likely to be affected by the Scheme;

d. Identify locations that are representative of the views experienced by visual receptors at different locations within the Study Area (representative viewpoints); and

e. Inform the design, including the extent and type of proposed mitigation.

Visual Receptors

2.3.11 Visual receptors likely to experience change to their visual amenity due to construction, operation and maintenance or decommissioning of the Scheme have been identified through analysis of the ZTV and through field surveys. Visual receptors identified are categorised into the following categories:

a. Residents;

b. Recreational users of the PRoW network, promoted walking routes and cycle routes;

c. Users of the road network; and

d. Users of the rail network.

2.3.12 Visual receptors who are likely to experience similar views have been grouped as a single receptor group.

Representative Viewpoints

2.3.13 In line with GLVIA3, viewpoints were selected for illustration of the visual effects likely to be experienced by visual receptors. 37 representative viewpoints have been selected to inform and illustrate the visual assessment, capturing views experienced by visual receptors and demonstrating the difference in visibility across different viewing distances, elevation and orientations from across the Solar PV Site Study Area and Grid Connection Corridor Study Area. All representative viewpoints have been captured from publicly accessible locations. The location of the viewpoints is shown on **ES Volume II Figure 10-9: Representative Viewpoint Locations [EN010152/APP/6.2]**.

2.3.14 Photographs have been captured from each representative viewpoint in line with the requirements for 'Type 1s' as set out in the Landscape Institute's Technical Guidance Note 06/19: Visual Representation of Development Proposals, 2019 (Ref. 7). The fieldwork undertaken, and photographs captured, have been used to:

a. Assist in the identification of the Study Area;

b. Identify visual receptors likely to be affected by the Scheme; and

c. Identify locations that are representative of the views experienced by visual receptors at different locations within the Study Area (representative viewpoints).

2.3.15 Photomontages, which are presented as 'Type 3s' and prepared in accordance with good practice guidance published by the Landscape Institute (Ref. 10-13), have been produced for ten representative viewpoints across the Solar PV Site Study Area. These are shown in **ES Volume II Figure 10-10: Viewpoint Photography [EN010152/APP/6.2]**. A range of representative viewpoints have been selected for photomontages to demonstrate a variety of views and receptors, including short, middle and longer views, as well as residential, road and recreational receptors. Where applicable, photomontages have been chosen to demonstrate the worst-case scenario for visual receptors. Type 3 photomontages have been produced at both Year 1 and Year 15 to demonstrate the effects of mitigation planting.

2.4 Sensitivity of Receptors

Landscape Sensitivity

2.4.1 Paragraph 5.39 of GLVIA3 states that *"landscape receptors need to be assessed firstly in terms of their sensitivity, combining judgements of their susceptibility to the type of change or development proposed and the value attached to the landscape"* (Ref. 1).

Landscape Value

2.4.2 Landscape value refers to the relative value that is attached to different landscapes by society. The assessment of the value of each landscape receptor has been informed by the information set out in the baseline, including any relevant landscape designations, geographic criteria and valued features as set out in GLVIA3 (Ref. 1) Box 5.1, e.g. aesthetic, perceptual, or experiential value and in the Landscape Institute's technical note regarding the assessment of landscapes outside national designations (Ref. 4).

2.4.3 Table 1 sets out the criteria for the assessment of landscape value.

Table 1: Criteria for the Assessment of Landscape Value

Classification	Value Criteria
High	High quality landscapes which are likely to be protected by a landscape-specific designation, or landscapes with abundant evidence of natural, cultural, perceptual, or recreational capital. These are likely to include, but are not limited to: a. Designated landscapes, such as Registered Parks and Gardens, Conservation Areas, or local authority landscape designations; b. Landscapes adjacent to designated landscapes which exhibit elements that underpin the designation; c. Landscapes which are highly representative of the key characteristics of the relevant LCAs within published Landscape Character Assessments; d. Landscapes which are consistently in good condition; e. Landscapes exhibiting distinctive features that may be referenced in art or literature and/or a high scenic and perceptual quality; and f. Landscapes with a high degree of widespread tranquillity.
Medium	'Everyday' landscapes which may include elements of community importance or aspects of natural, cultural, perceptual or recreational capital. These are likely to include, but are not limited to: a. Landscapes which are partially representative of the key characteristics of the relevant LCAs within published Landscape Character Assessments; b. Landscapes which are mostly in moderate condition; c. Landscapes that have some scenic or perceptual qualities that may have some cultural association; d. Landscapes with some areas of tranquillity; and e. Landscapes with few detracting elements.
Low	Landscapes with weak or discordant elements and characteristics which detract from the quality of the area. These are likely to include, but are not limited to:

Classification	Value Criteria
	a. Landscapes which exhibit few of the key characteristics of the relevant LCA within published Landscape Character Assessments; b. Landscapes in poor condition; c. Landscapes with limited scenic or perceptual qualities with limited or no cultural association; d. Landscapes which have a limited or no sense of tranquillity; and e. Landscapes with multiple detracting elements, or detracting features that affect a large extent of the area.

Landscape Susceptibility

2.4.4 GLVIA3 (Ref. 1) Paragraph 5.40 defines landscape susceptibility as:

"the ability of the landscape receptor (whether it be overall character of condition of a particular landscape type or area, or an individual element and/or features, or a particular aesthetic and perceptual aspect) to accommodate the proposed development without undue consequences for the maintenance of the baseline situation and/or the achievement of landscape planning policies and strategies" (Ref. 1).

2.4.5 The following aspects of the landscape are considered to be particularly susceptible to the change proposed:

a. Overall agricultural character of the landscape;

b. Sense of remoteness from development;

c. Vegetation pattern formed by the network of hedgerows that form field boundaries; and

d. The agricultural setting of existing settlements.

2.4.6 Landscape susceptibility is assessed with reference to the criteria set out in Table 2~~Table 2~~.

Table 2: Landscape Susceptibility Criteria

Classification	Susceptibility Criteria
High	The landscape is less able to accommodate change associated with the Scheme without excessive changes to existing landscape features or the landscape character. Landscape features, such as landform and vegetation, and overall character offer limited potential for change without being fundamentally altered to accommodate the Scheme. These are likely to include, but are not limited to: a. Landscapes which are smaller or more intimate in scale; b. Landscapes with little or no existing infrastructure;

Classification	Susceptibility Criteria
	c. Landscapes which are open and therefore afford a wider intervisibility with the surrounding landscape; and d. Landscapes with a notable vegetation structure which can't easily be replaced if removed.
Medium	The landscape is able to accommodate change associated with the Scheme to some extent without excessive changes to existing landscape features or the landscape character. This may include, but is not limited to: a. Medium-scale landscapes; b. Landscapes with some infrastructure present; c. Partially enclosed landscapes, by nature of topography or vegetation; and d. Landscapes with a common or easily replaceable vegetation structure.
Low	The landscape is able to accommodate change associated with the Scheme without excessive changes to existing landscape features or the landscape character. These are likely to include, but are not limited to: a. Large-scale landscapes; b. Landscapes influenced by infrastructure; and c. Enclosed landscapes, for example those with flat and low lying topography with existing screening features.

Landscape Sensitivity

2.4.7 Landscape value and landscape susceptibility are assessed separately and then combined to define the sensitivity of the landscape receptor, with reference to the criteria set out in Table 3~~Table 3~~. Generally, value and susceptibility are given even weightings when combined, however, every situation is different and professional judgement will be applied to determine if the weighting deviates from this. Landscape sensitivity can also be expressed as the intermediate levels of 'low-medium' and 'medium-high'.

Table 3: Landscape Sensitivity Definitions

Classification	Sensitivity Definition
High	Typically landscapes of high value which have little opportunity to accommodate the Scheme. This is likely to include designated landscapes which are of high quality. The landscape is likely to comprise rare or important elements that combine to create a strong sense of place.
Medium	Typically landscapes of medium value with some opportunity to accommodate the type of development which is proposed. The change experienced would not lead to a major change to the landscape elements or character.

Classification	Sensitivity Definition
Low	Typically landscapes of low value or quality, comprising features and elements that combine to create an indistinct and / or discordant character. These landscapes generally have opportunity to accommodate the type of development which is proposed without major loss of key or important elements.

Visual Sensitivity

2.4.8 Paragraph 6.31 of GLVIA3 states that *"each visual receptor, meaning the particular person or group of people likely to be affected at a specific viewpoint should be assessed in terms of both their susceptibility to change in views and visual amenity and also the value attached to particular views."*

Visual Value

2.4.9 The value attached to views experienced has been considered in line with GLVIA3, Paragraph 6.37, which identifies the following indicators of value:

a. Views associated with heritage assets or planning designations;

b. Appearances in guidebooks or tourist maps or proximity to facilities such as parking or interpretive materials; and

c. References to views in literature or art.

2.4.10 Visual value has been assessed in line with the criteria set out in Table 4.

Table 4: Visual Value Criteria

Classification	Visual Value Criteria
High	Views of high quality or distinctive elements or viewing places which are within landscape designations. These are likely to include, but are not limited to: a. Viewpoints specified within guidebooks, OS maps or Landscape Character Assessments; b. Views from historic landscapes, such as Registered Parks and Gardens and/or designated heritage assets; and c. High quality views noted within Local Plans and Neighbourhood Plans.
Medium	Views of moderate quality elements but unlikely to be designated or promoted. Views may include local landmarks which are valued by local communities.
Low	Views that include poor quality elements and/or detracting features, or a featureless view e.g. a featureless agricultural landscape or poor quality urban fringe.

Visual Susceptibility

2.4.11 The susceptibility of visual receptors results from parameters, such as:

a. The occupation or activity of people experiencing the view at particular locations; and

b. The extent to which their attention or interest may therefore be focussed on the views and the visual amenity they experience at particular locations.

2.4.12 GLVIA3 notes that visual receptors "*most susceptible to change"* include residents at home and visitors engaged in outdoor recreation whose attention is likely to be focused on the landscape and particular views. Visitors to heritage assets where the view is important, and communities where views contribute to the landscape setting are also noted as indicators of susceptibility.

2.4.13 The criteria used to assess susceptibility is listed in Table 5.

Table 5: Visual Susceptibility Criteria

Classification	Visual Susceptibility Criteria
High	People whose attention or interest is focused on their view, and it forms an important part of their experience. These are likely to include, but are not limited to: a. Residents at home; b. Communities where views contribute to the landscape setting enjoyed by residents; c. People engaged in outdoor recreation where their interest is likely to be focussed on the landscape, for example promoted walking routes; and d. Visitors to heritage assets, or other attractions, where views are an important contributor to the experience.
Medium	People whose attention is less focused on their view or are travelling through the area where views are relevant to the experience of the journey but are not specific reasons for visiting. These are likely to include, but are not limited to: a. People walking on Public Rights of Way; b. Users of the local road network where views are transitory but the surrounding landscape forms part of the experience; c. Users of the rail network where views are transitory but the surrounding landscape forms part of the experience; and d. People at their place of work where views contribute to the quality of working life.
Low	People passing through the area at higher speeds or where their attention is not focused on their surroundings. These are likely to include, but are not limited to: a. People travelling at higher speeds on the major road network;

Classification	Visual Susceptibility Criteria
	b. People engaged in outdoor sport or recreation which does not depend on an appreciation of views of the landscape; and c. People at their place of work where the setting is not important to the quality of working life / focus is on work and not their surroundings.

Visual Sensitivity

2.4.14 The sensitivity of a visual receptor is derived from a combination of value and susceptibility. A description of sensitivity is provided in Table 6. Generally, value and susceptibility are given even weightings when combined, however, every situation is different and professional judgment will be applied to determine if the weighting deviates from this. Visual sensitivity can also be expressed as the intermediate levels of 'low-medium' and 'medium-high'.

Table 6: Visual Sensitivity Description

Classification	Visual Sensitivity Description
High	People with a particular interest or appreciation of a high quality view, for example people visiting promoted viewpoints or designated landscapes, residents with high quality views, or people visiting heritage assets or other attractions where the view is an important contributor to the experience.
Medium	People with a general interest or appreciation of the view and/or a view of moderate quality elements that may be important to the local community value.
Low	People whose interest or appreciation of the view is secondary to the activity or short in duration, for example motorists travelling at high speeds along the major road network, or a view of limited value.

2.5 Magnitude of Effect

2.5.1 GLVIA3 notes that magnitude is informed by combining considerations of the scale, extent, ~~and~~ duration and reversibility of an effect (Ref. 1 Paragraph 3.28).

Duration and Reversibility of Landscape and Visual Effects

~~2.5.1~~2.5.2 This assessment considers the duration of effects as:

a. Short term: 0–2 years;

b. Medium term: 2–5 years; and

c. Long term: over 5 years.

~~2.5.2~~2.5.3 The reversibility of a change is considered to be either reversible, partially reversible or permanent.

Magnitude of Landscape Effects

2.5.4 Magnitude of landscape effects would be drawn from a combined assessment of duration and reversibility, the parameters of which are noted above, as well as an assessment of size/scale and geographical extent.

2.5.5 Indicators of a lower or higher size/scale of landscape change are shown below:

Lower Size / Scale of Effect		**Higher Size / Scale of Effect**
Subtle or very slight alteration to the aesthetic or perceptual aspects of the landscape receptor. Could be through the addition or removal of features. Likely to cause limited impact on key characteristics.	⟷	Partial or substantial alteration to the aesthetic or perceptual aspects of a landscape receptor through the addition or removal of features. Likely to affect key characteristics.

2.5.6 Indicators of a lower or higher geographical extent over which landscape effects will be felt are shown below:

Smaller Geographical Extent		**Larger Geographical Extent**
Likely to affect a small or limited area of a landscape receptor.	⟷	Likely to affect a large proportion of the landscape receptor.

~~2.5.3~~ Table 7 sets out the criteria used to determine the magnitude of landscape effects. This is reached via a combination of size/scale of effect, geographical extent, and duration and reversibility, with size/scale of effect being the most important factor.

Table 7: Landscape Magnitude of Effect Criteria

Classification	Landscape Magnitude of Effect Criteria
High	Substantial alteration to the aesthetic or perceptual aspects of the landscape receptor through the addition or removal of features. Likely to affect a large proportion of the receptor. Likely long term but may be reversible.
Medium	Partial alteration to the aesthetic or perceptual aspects of the landscape receptor through the addition or removal of features. Likely to affect a moderate extent of the receptor. Likely medium or long term but may be reversible.
Low	Subtle alteration to the aesthetic or perceptual aspects of the landscape receptor through the addition or removal of features. Likely to affect a small proportion of the receptor. Likely short or medium term but may be reversible.
Very Low	Very slight alteration to the landscape receptor which may impact a limited area or no key characteristics. Likely short or medium term but may be reversible.

Classification	Landscape Magnitude of Effect Criteria
None	No change to the physical or perceptual qualities of the landscape receptor.

Magnitude of Visual Effects

2.5.7 Magnitude of visual effects would be drawn from a combined assessment of duration and reversibility, the parameters of which are noted above, as well as an assessment of size/scale and geographical extent.

2.5.8 Indicators of lower or higher size/scale of visual change are shown below:

Lower Size / Scale of Effect		Higher Size / Scale of Effect
Barely perceptible or subtle change to the existing view due to the limited loss of characteristic features or the addition of new features. Change may occupy a small portion of the available view, for example at an oblique angle, or views which are screened, glimpsed or seen at a distance.	⟷	Substantial alteration to the composition of the existing view through the loss of characteristic features or introduction of new features. Change may occupy a large portion of the available view, for example direct views, or views which are open and close.

2.5.9 Indicators of a lower or higher geographical extent over which visual effects will be felt are shown below:

Smaller Geographical Extent		Larger Geographical Extent
A smaller extent of the visual receptor is affected, for example from limited windows of a house or from part of a footpath or road.	⟷	A larger extent of the visual receptor is affected, for example from a large number of windows from a house, including ground floor windows, and from long lengths of footpaths or roads.

~~2.5.4~~2.5.10 Table 8 sets out the criteria used to determine the magnitude of visual effects. This is reached via a combination of size/scale of effect, geographical extent, and duration and reversibility, with size/scale of effect being the most important factor.~~-~~

Table 8: Visual Magnitude of Effect Criteria

Classification	Visual Magnitude of Effect Criteria
High	Substantial alteration to the composition of the existing view (e.g. widespread loss of characteristic features or the addition of new features within the view) and/or high degree of exposure to view (e.g. long-term, close, direct, or open views). Likely long term but may be reversible.
Medium	Partial change to the composition of the existing view (e.g. noticeable loss of some characteristic features or the

Classification	Visual Magnitude of Effect Criteria
	addition of new features within the view) and/or medium degree of exposure to view (e.g. medium-term, middle-distance or partially screened views). Likely medium or long term but may be reversible.
Low	Subtle change to existing view (e.g. limited loss of characteristic features or the addition of new features within the view) and/or low degree of exposure to view (e.g. medium term, long-distance, substantially screened or glimpsed views). Likely short or medium term but may be reversible.
Very Low	Barely perceptible change to the existing view and/or very brief exposure to view.
None	No change to visual amenity/views.

2.6 Significance of Effect

2.6.1 The significance of landscape and visual effects has been determined by considering the relationship between the sensitivity of the receptor and the magnitude of effect. Table 9 provides a guide showing how these two elements are combined. However, this conclusion is principally made on professional judgement. Where this differs from the guide provided a reasoned explanation is provided within the assessment.

Table 9: Level of effect guide

Sensitivity	Magnitude of Effect				
	High	**Medium**	**Low**	**Very Low**	**None**
High	Major	Major or Moderate	Moderate or Minor	Moderate or Minor	Neutral
Medium-High	Major or Moderate	Major or Moderate	Moderate or Minor	Minor or Negligible	Neutral
Medium	Major or Moderate	Moderate	Moderate or Minor	Minor or Negligible	Neutral
Low-Medium	Moderate or Minor	Moderate or Minor	Minor	Negligible	Neutral
Low	Moderate or Minor	Moderate or Minor	Minor or Negligible	Negligible	Neutral

2.6.2 Following identification of the level of effect, an assessment of significance is provided. Major and moderate effects (adverse or beneficial) are typically considered to be significant. Minor, negligible, and neutral effects are considered not significant.

3. Cumulative Landscape and Visual Assessment

3.1.1 The methodology for the cumulative assessment follows that contained within GLVIA3. The landscape and visual baseline for the LVIA considers existing development, whereas the cumulative assessment considers the potential baseline of consented and proposed developments.

3.1.2 The cumulative assessment is a high-level exercise. GLVIA3 (Ref. 1) (Paragraph 7.13) acknowledges that *"assessing combined effects involving a range of different proposals at different stages in the planning process can be very complex"*. It also acknowledges that there is a high degree of uncertainty regarding when undertaking a combined approach as it is not the role of this LVIA to assess the effects of other projects. Paragraph 7.13 goes on to note that *"the assessor will not have assessed the other schemes and cannot therefore make a fully informed judgement"*. As such, this cumulative assessment takes an additional approach whereby the additional effects of the Scheme are judged against a baseline containing the cumulative developments.

3.1.3 An assessment of the additional cumulative landscape and visual effects of the Scheme alongside other cumulative developments within the Solar PV Site Study Area and Grid Connection Corridor Study Area has been undertaken for each of the landscape and visual receptors identified within the LVIA.

Identification of Cumulative Developments

3.1.4 The cumulative developments to be considered in combination with the Scheme was prepared and shared with City of Doncaster Council, North Yorkshire Council and East Riding of Yorkshire Council and are listed in **ES Volume I Chapter 15: Cumulative Effects and Interactions [EN010152/APP/6.1]** and presented in **ES Volume II Figure 15-3: Location of Short List Schemes [EN010152/APP/6.2]**. The assessment has been made with reference to the methodology and guidance set out in **ES Volume I Chapter 5: Environmental Impact Assessment Methodology [EN010152/APP/6.1]**.

3.1.5 GLVIA (Ref. 10-12) Paragraph 7.10 states that *"In most cases the focus of the cumulative assessment will be on the additional effect of the project in conjunction with other developments of the same type"* whilst also noting that *"In some cases, development of another type or types will be relevant"*. Since the Scheme comprises elements that are sector specific in their design and spatial parameters (for example Solar PV Panels and BESS Area), they are distinct from the scale, materiality and activity typically involved in wider development typologies. As such the potential impact on landscape character and visual amenity will vary. As such, this cumulative assessment adopts the guidance provided for the majority of cases and therefore considers effects that may arise from other solar, battery and energy developments, as shown on **ES Volume II Figure 15-3: Location of Short List Schemes [EN010152/APP/6.2]**.

3.1.6 The cumulative assessment identified the areas where the predicted landscape and visual effects of the Scheme could interact with effects arising

from other cumulative developments on the same landscape or visual receptor on a spatial and/or temporal basis.

3.1.7 Where the Scheme has been found to result in a negligible effect on landscape character or visual amenity, the associated receptor is not considered further as part of the cumulative assessment.

Magnitude of Cumulative Effects

3.1.8 The cumulative assessment for each landscape and visual receptor considers the additional effects of the Scheme when judged against a baseline containing the cumulative developments.

3.1.9 The sensitivity of each receptors remains the same as was reported in the LVIA. The magnitude of cumulative effect is judged against the same criteria defined in Table 7 and Table 8.

3.1.10 Given the uncertainty associated with the programme of cumulative developments, it has been assumed that construction of cumulative developments would be concurrent with the construction of the Scheme. This would represent an unlikely worst-case scenario. If construction were to not occur simultaneously, then the reported cumulative effect would be reduced.

Significance of Cumulative Effects

3.1.11 As with the LVIA, the assessment of cumulative effects results from a combination of sensitivity and magnitude. Where a cumulative landscape and visual effect is identified over and above those set out in the LVIA, this will be identified and described as major, moderate, minor, negligible or neutral. In the context of the EIA Regulations, major and moderate are considered to be significant.

4. Relationship to Glint and Glare Assessment

4.1.1 Glint and glare resulting from the Scheme has potential to contribute to landscape and visual effects. Consideration of glint and glare has therefore been incorporated into the assessment of magnitude of effect and, where applicable, referenced within the assessment tables in **ES Volume III Appendix 10-5: Landscape Assessment [EN010152/APP/6.2]** and **ES Volume III Appendix 10-6: Visual Assessment [EN010152/APP/6.2]**.

5. Relationship to Residential Visual Amenity

5.1.1 The LVIA has assessed the potential visual effects to different types of visual receptor, including residents, i.e. private views. With reference to the Landscape Institute's Technical Guidance Note 2/19: 'Residential Visual Amenity Assessment' (Ref. 9), the Residential Visual Amenity Threshold is considered as to whether: "*the effect of the development on Residential Visual Amenity of such nature and / or magnitude that it potentially affects 'living conditions' or Residential Amenity*."

5.1.2 The guidance is based upon a 'four' stage approach. Stages 1 to 3 accord with the above LVIA methodology, whereby, in line with GLVIA3, visual receptors are identified, along with the magnitude of impact and the significance of effect.

5.1.3 The fourth step is a more detailed examination of views from residential properties, where appropriate, when the highest 'significance of effect' levels are identified via stages 1 to 3. Although, as stated by the guidance, there are no 'hard and fast rules' as to making a judgement on the Residential Visual Amenity Threshold. Therefore, if at Year 15 of operation and maintenance, i.e. post the establishment of the proposed mitigation there are residential receptors predicted to experience the highest level of significant adverse effects (i.e. major adverse), a Residential Visual Amenity Assessment (RVAA) would be undertaken. As major adverse visual effects are unlikely for residential receptors as a result of the Scheme, an RVAA has not been undertaken.

6. Zone of Theoretical Visibility Methodology

6.1.1 ZTVs have been modelled using the 'Viewshed' tool in ESRI ArcMap GIS Software. ~~A bare earth ZTV was prepared using Environment Agency Lidar digital terrain model (DTM) data of 1 m resolution.~~ ZTVs were generated using Environment Agency 1m Lidar Digital Terrain Model (DTM). The DTM was resampled to a cell size of 2m. These models do not take into account the screening effect of vegetation, buildings and other structures. Existing buildings have been incorporated into the DTM from OS MasterMap and OS VectorMap Local, both with an assumed height of 7.5m. Woodland has been incorporated into the DTM from the National Forest Inventory (NFI) with an assumed height of 12m alongside trees / hedgerows with trees / lines of trees from the National Tree Map (NTM) with an assumed height of 4m. The ZTV is based upon a grid of points at 50m intervals within the Solar PV Area, On-Site Substation, and BESS Area, with assumed maximum heights of 3.5m, 13m, and 3.5m respectively. The assumed observer eye height is 1.6m. All heights mentioned are above ground level (AGL) unless otherwise specified.

6.1.2 The use of vegetation as a screening feature within ZTVs has some limitations. Screening by vegetation does not take into account seasonal variations as it is represented on a ZTV as a solid screen. This would be more representative of a Summar scenario when vegetation is in leaf and creates a more solid screening effect. Furthermore, a blanket assumption of 4m has been applied to all vegetation outside of woodland blocks, including trees and hedgerows. This will create an under-representation in some instances where vegetation in higher, and an over-representation in some instances where vegetation is lower. In some cases, where vegetation is limited to just an individual or row of trees, the ZTV does not take account of the ability to see through bare trunks below the canopy level.

6.1.3 The ZTV is intended to be a starting point for the identification of visual receptors and representative viewpoints. This was followed up by fieldwork during winter conditions to confirm actual visibility.

~~6.1.1 The ZTV that accounts for surface features, such as existing buildings and woodland, was prepared using Environment Agency digital terrain model (DTM) of 2 m resolution. Features that provide screening were then added using National Forest inventory data and Ordnance Survey Mastermap building data with assumed heights of 12 m and 7.5 m respectively. For all the ZTVs, an assumed viewing height of 1.6 m above ground level has been used to simulate the eye level of a person of average height.~~

~~6.1.2~~6.1.4 The proposed Solar PV Panels, Field Stations, BESS Area, On-Site Substation and permanent plant buildings have been modelled as part of the ZTV. The outputs of the ZTV analysis are presented in **ES Volume II Figure 10-6: Screened Zone of Theoretical Visibility – Solar PV Panels [EN010152/APP/6.2]**, **ES Volume II Figure 10-7: Screened Zone of Theoretical Visibility – On-Site Substation and BESS Area [EN010152/APP/6.2]** and **ES Volume II Figure 10-8: Screened Zone of Theoretical Visibility – Solar PV Site (All Features) [EN010152/APP/6.2]**.

7. References

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