

## **Great North Road Solar and Biodiversity Park**

Written Summary of Oral Submissions from Issue Specific Hearing 3 and Responses to Action Points

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# 1 WRITTEN SUMMARY OF THE APPLICANT'S ORAL SUBMISSIONS AT ISSUE SPECIFIC HEARING 3

## 1.1 INTRODUCTION

1.1.1 This section of the document summarises the oral submissions put forward by Elements Green Trent Limited ('the Applicant') at Issue Specific Hearing 3 ('ISH3') which took place in a blended format at the YMCA Community and Activity Village and on Microsoft Teams on 4 February 2026.

1.1.2 In what follows, the Applicant's submissions on the points raised broadly follow the Agenda for the ISH3 set out in the Examining Authority's ('ExA') letter which was published on the Planning Inspectorate's website [[EV7-001](#)]. Where the comment is a post-hearing note submitted by the Applicant, this is indicated.

1.1.3 The Issue Specific Hearing (ISH3) was led by Dr Andrea McGeehan (Lead Panel Member), with supporting panel members Mr Graham Hobbins and Dr Philip Brewer.

1.1.4 The Applicant, which is promoting the Great North Road Solar and Biodiversity Park ('the Development'), was represented by Mr Peter Nesbit of Eversheds. The following speakers were present at the hearings for the Applicant:

- Mr Matthew Sharpe (Senior Director, Quod);
- Ms Mary Fisher (Director, Abseline);
- Dr Mike Gray (Ecology Director, Envams);
- Mr Martin Stevenson (Acoustic Director, Metrica);
- Mr Shaun Edwards (Associate Director, Systra);
- Mr Mark Turner (Wessex);
- Mr David Lakin (Wessex);
- Mr Liam Nevins (Director, Raincloud)

1.1.5 The attending authorities and interest parties of ISH3 included:

- Newark & Sherwood District Council (NSDC);
- Nottinghamshire County Council (NCC);
- Environment Agency (EA);
- Joint Parishes Action Group (JPAG)
- Norwell Solar Farm Steering Group (Norwell SFSG);
- Carlton-on-Trent Parish Council;
- Buglife

## 1.2 AGENDA ITEM 1: WELCOME AND INTRODUCTIONS

1.2.1 *The ExA* welcomed attendees to ISH3 and provided introductory remarks about how the hearing would be conducted. *The ExA* confirmed that action points would be circulated shortly after the close of the hearing.

## 1.3 AGENDA ITEM 2: PURPOSE OF THE ISSUE SPECIFIC HEARING 3

1.3.1 *The ExA* explained that the purpose of this ISH3 is to inquire into the draft Development Consent Order ('**Draft DCO**' or '**dDCO**') to provide the ExA to explore initial questions about the following points:

- Landscape and visual (Agenda Item 3.1)
- Ecology and biodiversity (Agenda Item 3.2)
- Construction effects (Agenda Item 3.3)
- Cultural heritage and archaeology (Agenda Item 3.4)
- The Water environment (Agenda Item 3.5)

## 1.4 AGENDA ITEM 3.1 : LANDSCAPE AND VISUAL

### 1.1 The existing landscape character and qualities of the study area

1.4.1 *The ExA* chose to skip this agenda item and instead moved directly to the methodology for assessing the significance of landscape and visual effects.

### 1.2 The methodology for assessing the significance of landscape and visual effects

1.4.2 *The ExA* referred to the issue raised on how the significance of effects is assessed as set out in the Deadline 2 iterations of the **Draft Statement of Common Ground with Newark and Sherwood District Council [EN010162/APP/8.2A] [REP2-088]** (Point 2.3.6). *The ExA* noted NSDC's concern, as set out in its relevant representation **[RR-156]**, that it is not clear why 'moderate' or 'moderate adverse' landscape effects have not been judged as significant, particularly where other ES chapters have treated 'moderate' effects as significant.

1.4.3 The Applicant and NSDC indicated that it was agreed that it would not be necessary or productive to revise the **ES Volume 2, Chapter 7: LVIA [EN010162/APP/6.2.7A] [REP2-022]** to use a different significance threshold (Moderate rather than Major/moderate) at this stage.

1.4.4 The LVIA methodology is therefore agreed to be appropriate and NSDC have moved on to consider which of the impacts identified as Moderate they consider would be significant (see agenda item 1.3).

### 1.3 The assessment of landscape and visual effects

1.4.5 *The ExA* asked NSDC to identify receptors within Table 7.7 of **ES Volume 2, Chapter 7: Landscape and Visual Impact Assessment (LVIA) [EN010162/APP/6.2.7A] [REP2-022]** where 'moderate' effects were identified and where NSDC considered those effects to be significant.

1.4.6 *Ms Boland (NSDC)* explained that the Applicant had supplied appendices to **Responses to ExA's First Written Questions [EN010162/APP/8.22A]** setting out colour-coded levels of effect across visual receptors on Public Rights of Way and road users. Mrs Boland identified two locations of particular concern: (i) the Meadowlands Landscape Character Type ('LCT'); and (ii) road users between Ossington Road and Thornton, described as 'Group E north of Group F'. NSDC maintained that taking account of GLVIA guidance, non-significant effects do not mean the proposal is acceptable.

- 1.4.7 *The ExA* asked what it is about those receptors that warrants a categorisation as significant. *Ms Boland (NSDC)* confirmed that NSDC would set out its reasoning in writing.
- 1.4.8 **Post-hearing note:** This matter has been recorded as Action Point 1 for NSDC.
- 1.4.9 In relation to the Meadowlands LCT, *Ms Boland (NSDC)* stated that it is a small pocket of landscape character within the host landscape character area and that, although direct impacts are limited, some areas are surrounded 'quite intensely' by solar arrays, such that the 'perceptual and experiential' impact warrants being significant. In relation to the Ossington Road / A1 area around the edge of Groups E and F, *Ms Boland* referred to the openness of the landscape, the degree and extent of solar array, and the extent to which it will be experienced, and suggested that the area of significant effects 'tips a little bit further north' than currently shown.
- 1.4.10 *Ms Fisher (Applicant)* acknowledged that professional disagreement on detail can arise. She requested clarification from NSDC when the point is written up because the Meadowlands LCT includes two 'moderate' judgements (construction/early operation and after mitigation), and therefore confirmation would be needed as to whether NSDC's point relates to both or only one.
- 1.4.11 The *ExA* indicated that clarification from NSDC and a response from the Applicant regarding the receptors where disagreement remains would be helpful.
- 1.4.12 **Post-hearing note:** Please see the Applicant's responses to Action Point 2.
- 1.4.13 The *ExA* referenced JPAG's written representation [[REP1-091](#)], which sets out that the LVIA has not taken into account those settlements that are going to be completely encircled by the development. JPAG suggested that the traditional approach of identifying landscaping impacts is not appropriate for the particular nature of the scheme, given its unusual layout. *The ExA* requested comments from the Applicant on this point.
- 1.4.14 *Ms Fisher Applicant* stated that significant effects are identified for people travelling around and about villages, and that it is understood that the same people living in villages will experience those effects when moving through the landscape. She confirmed that the **ES Volume 2, Chapter 7: LVIA [EN010162/APP/6.2.7A]** [[REP2-022](#)] assesses visual receptors in specific places doing specific things, rather than attempting to assess everything a person might do.
- 1.4.15 *Mrs Hopkins* (Carlton-on-Trent Parish Council) stated that and the LVIA indicated that there would be no visibility from houses on the west side of the road through Carlton-on-Trent. In response, *Ms. Fisher Applicant* clarified that in response Mrs Hopkins point, neither she nor the LVIA stated that properties would not have outlook towards the site, and that the LVIA focuses on impacts on public amenity, including views from streets, footpaths and public places. *Ms. Fisher* stated that Carlton-on-Trent would have limited visibility from streets, which is not the same as limited visibility

from houses. *Ms. Fisher* explained that views from houses are addressed in the **ES Volume 4, Appendix A7.6: Residential Visual Amenity Assessment (RVAA) [EN010162/APP/6.4.7.6] [APP-213]**, which is provided as an appendix and covers the relevant property in detail.

- 1.3.1 *Mr John Groves (Mr and Mrs Gill and Drone Defence Systems)*, echoed the point raised by JPAG regarding constraints of methodology and stated that, for his client, a specific location experiences ‘massive and significant’ landscape and visual effects which may not be captured by global assessments but should be taken into account.
- 1.4.16 Concerns raised by Mr Groves in relation to effects at Caunton Lodge Farm. The applicant explained that these were not addressed in the LVIA, but in **ES Volume 4, Appendix 7.6: Residential Visual Amenity Assessment [EN010162/APP/6.4.7.6] [APP-213]**.

#### **1.4 The approach to assessing cumulative landscape effects**

- 1.4.17 In discussing cumulative landscape effects, *Mrs Boland (NSDC)* summarised productive discussions with the Applicant. She identified two main strands: (i) sequential experience of movement through the landscape, particularly between Great North Road and One Earth at the northern end, and (ii) a strategic or regional-level cumulative impact on wider landscape character areas. NSDC stated that the Applicant agreed to address specific sequential routes and that a PRoW route and a road route between Moorhouse and Skegby had been identified for additional assessment.
- 1.4.18 On strategic cumulative effects, *Mrs Boland (NSDC)* stated that guidance does not address ‘regional and strategic’ cumulative landscape character impacts, and that NSDC intends to provide a separate technical note (as was done at One Earth) so that its position on strategic change is recorded without altering the LVIA which follows current guidance.
- 1.4.19 The *ExA* indicated that this approach could be helpful.
- 1.4.20 **Post-hearing note:** This matter has been recorded as Action Point 3 for NSDC. Please refer to the Applicant’s responses to Action Point 4 in response to the NSDC’s Action.
- 1.4.21 NSDC indicated that they are now content that their concerns in relation to the cumulative assessment had been or were being addressed via the provision of a technical notes setting out what the effects would be without consented projects in the baseline; sequential visual effects on agreed routes between Moorhouse and Skegby; and additional description in relation to sequential effects from key routes. Drafts of these documents had been circulated to them prior to the hearing. The relevant updated documents are:
- Revised **ES Volume 4, Appendix 7.5: Non-significant Effects [EN010162/APP/6.4.7.5A]** and
  - New Cumulative Technical Note [Appendix A of this Written Summary Note].

- 1.4.22 *Mrs Hopkins* (Carlton-on-Trent Parish Council) stated that guidance may not have envisaged a project of this size and that guidance evolves. Mrs Hopkins stated that while the Applicant has fulfilled PINS guidance, the project is 'completely different to anything that's gone before' and that the Applicant should go 'above and beyond' to protect people living within the scheme.
- 1.4.23 *Mr Northcote* (JPAG) stated that the issue returns to 'concentration' and clustering of schemes, referencing the Written Ministerial Statement on solar and 'concentration'. Raised the concern about the overall scale of change and impact on landscape experience and the concentration of schemes that have been consented in the southeast of the LVIA study area near Averham. JPAG stated that standard cumulative methodology may not anticipate clustering and that the ExA should be alive to the issue and give it appropriate consideration.
- 1.4.24 The ExA queried **ES Volume 2, Chapter 7: Landscape and Visual Impact Assessment (LVIA) [EN010162/APP/6.2.7A] [REP2-022]** ssection 7.9.1, particularly the discussion of One Earth and the conclusion of negligible changes due to limited intervisibility. The ExA asked whether lack of direct intervisibility addresses changes to landscape character by virtue of schemes being in the same landscape context.
- 1.4.25 *Ms Fisher Applicant* explained, with reference to **ES Volume 3, Figure 7.8: Cumulative Effects with One Earth Solar Farm [EN010162/APP/6.3.7A] [AS-035]** that the relevant area has particularly limited visibility due to landform and layers of vegetation, and that the proposed development itself has negligible effects there; therefore adding One Earth does not change the conclusion.
- 1.4.26 *Mrs Boland* (NSDC) responded that 'a development does not need to be visible to have an impact on landscape character and suggested the additional sequential work that the applicant is undertaking may provide more information on the transition between Great North Road and One Earth.
- 1.4.27 *Mr Northcote* (JPAG) added that other permitted solar schemes and major infrastructure corridors sit between One Earth and Great North Road and that these factors bring schemes 'closer together' in perceptual terms.
- 1.4.28 *Ms Fisher (Applicant)* clarified that she had stated 'negligible' rather than 'no impact' and emphasised the need to focus on effects of the proposed development rather than the combined effects of multiple solar farms. *Ms Fisher (Applicant)* noted that they acknowledged that there is a change to the area as a result of the presence of solar farms added together, but this is not the impact of the proposed development they're the impacts of the developments of solar farms over time, from Edmonton Solar Farm onwards.
- 1.4.29 During this part of the ISH3, there was discussion of effects on landscape character between Moorhouse and Skegby and the Applicant indicated that these were judged to be Negligible taking account of the point that people may have a perception of solar farms nearby based on local knowledge despite limited visibility. A more detailed assessment is set out in the

Cumulative LVIA Technical Note 2[Appendix A of this Report]. The ExA, raised the discussion from ISH1 on the cumulative sequential effects. She noted the concerns of IPs, Examining Authority's First Written Questions [PD-008] 11.1.1.12C invited comments from parties how their concerns could be addressed. She noted JPAGs comments and suggestions who requested particular routes to be considered. The ExA noted that it would be most useful to see the applicants response to that in writing. Noting also the discussions between the Applicant and NSDC on sequential cumulative effects. The ExA requested this response from the Applicant by Deadline 3.

- 1.4.30 **Post-hearing note:** Please refer to the Applicant's responses to Action Point 5.

### 1.5 Approach to mitigation and enhancement

- 1.4.31 The ExA asked a specific question about proposed planting and the basis on which it had been identified as an enhancement to landscape character in Table 7.4 of **ES Volume 2, Chapter 7: Landscape and Visual Impact Assessment (LVIA) [EN010162/APP/6.2.7] [REP2-022]**. The ExA queried how woodland, hedgerow and tree planting listed as embedded enhancement measures in Table 7.4 is reconciled with local landscape character, noting some areas are characterised by large arable fields and longer views.
- 1.4.32 *Ms. Fisher* (Applicant) responded that the advice provided for the relevant Policy Zones in the Newark and Sherwood District Landscape Character Assessment had been referred to in developing the design and deciding whether planting would be appropriate and/or an enhancement in each area. This part of the landscape character assessment advises on management strategies for each area. NSDC were asked to consider this point and provide their response.
- 1.4.33 *Mrs Boland* (NSDC) requested time to review the point and indicated NSDC would respond.
- 1.4.34 **Post-hearing note:** This matter has been recorded as Action Point 6 for NSDC.

### 1.6 Detailed design control and management

- 1.4.35 *The ExA* addressed detailed design control and management and sought clarification on references to 'final build plan' and how detailed design would be secured under Requirement 6 of the **Draft Development Consent Order [EN010162/APP/3.1D]**, for the purpose to comply with the requirements included in the DCO and to demonstrate that the final built scheme remains within the parameters of the Rochdale envelope considered in the EIA. The ExA sought clarification in relation to requirement 6, that states that no phase of the development may commence until these elements are approved, suggesting there may be more than one final build plan.
- 1.4.36 *Mr Sharpe (Applicant)* clarified that detailed design submissions would be phase-specific, analogous to reserved matters for multi-phase development. The ExA indicated that clarification could be captured as an action point.

**1.4.37 Post-hearing note:** Please see the Applicant's responses to Action Point 7.

1.4.38 *Mr Northcote (JPAG)* requested that the Applicant set out the proposed phasing more clearly so that stakeholders understand how the scheme would be delivered.

1.4.39 *Mr Sharpe (Applicant)* referred to **ES Volume 2, Chapter 5: Development Description [EN010162/APP/6.2.5]** [[APP-048](#)] which sets out the applicants approach to the Rochdale Envelope, and therefore setting out the anticipated phasing of the development. Requirement 3 of the **Draft Development Consent Order [EN010162/APP/3.1D]**, which requires the phasing of the authorised development to be set out in a written scheme before commencement.

**1.7 Intermediate substation design and landscape character**

1.4.40 The *ExA* then raised design parameters for intermediate substations, noting the **Design Approach Document [EN010162/APP/5.6B]** [[REP2-019](#)] paragraph 81 describes substations and that outdoor equipment would typically be painted grey or uncoated, with buildings designed to reflect local character. The *ExA* asked how the intermediate substations would be designed to fit with local landscape character, particularly in relation to substations that were close to visual receptors such as roads, and what this meant in terms of the way they were depicted in visualisations. The visualisation for viewpoint 30 (C) was referred to as an example.

1.4.41 *Ms Fisher (Applicant)* explained that in that the visualisations show the Rochdale envelope for the intermediate substation, which would not occupy the full extent of the area. In the example only the roof of any building and the tops of taller electrical equipment would be seen above the solar arrays. She also explained that the area identified for each of the Intermediate Substations is large enough to accommodate both the substation and planting and that in terms of fit with local landscape character the primary mitigation measures would be planting and choice of materials for the substation buildings.

1.4.42 *Mr Sharpe (Applicant)* confirmed detailed design would be secured through Requirement 6 and concept parameters and design principles.

1.4.43 The *ExA* clarified that she understands that but wanted to understand how this would be experienced in the local environment and highlighted the substations due to their proximity to local roads.

1.4.44 *Mr Northcote (JPAG)* emphasised balancing access requirements with screening and buffer zones and cited the Staythorpe BESS as an example. *Mr Northcote* expressed concern about hedgerow translocation and requested that during detailed design care should be taken that planting is designed to provide effective screening and that both proposed and existing vegetation is not excessively reduced by construction and access considerations.

1.4.45 *Mr Groves (Mr and Mrs Gill and Drone Defence Systems)* reiterated that, for his clients, the landscape impact is underestimated and that hedging

enclosure does not constitute mitigation in normal terms. The ExA noted that it would visit the property on an access required site visit.

- 1.4.46 *Mrs Boland* (NSDC) raised an additional point regarding decommissioning: the intent in the ES to remove hedgerows at decommissioning stage was considered counter-productive, particularly where associated with diverse grasslands. Ms Boland requested clarification on where hedgerows might be removed and whether removal is appropriate.
- 1.4.47 *Ms. Fisher (Applicant)* confirmed, in response to Mrs Boland, that the Applicant can provide a plan showing which hedges fall on the relevant list, and clarified that removal is not a commitment but an assumption in the ES that in a worst case they may be removed by future landowners.
- 1.4.48 *Mrs Hopkins* (Carlton-on-Trent Parish Council) raised a point about deer fencing and suggested that two lower fences could be cheaper and have less visual impact than high deer fencing.
- 1.4.49 *Ms. Fisher (Applicant)* stated she did not know enough about deer to respond and noted there may be other design considerations such as security, but agreed the Applicant could take the point away.
- 1.4.50 (*Applicant*) No further comments were raised and the ExA drew the Landscape and Visual discussion to a close.

1.4.51 **Post-hearing note:** Please see the Applicant's responses to Action Point 8.

## 1.5 AGENDA ITEM 3.2 : ECOLOGY AND BIODIVERSITY

### 2.1. Concerns raised around the ecology and biodiversity assessment methodology and baseline, including the aggregation of habitats within the assessment, and potential implications on the assessment conclusions and significance of effects

- 1.5.1 *The ExA* invited NSDC to address concerns raised in its Local Impact Report [[REP1-075](#)] and relevant representation [[RR-156](#)] regarding the methodology used to assess effects on ecological receptors, in particular concerns about the transparency of the process used to conclude that no significant effects occur for all key ecological receptors, and the potential for different conclusions and under-reporting. The ExA asked NSDC to explain how determinant these concerns could be and how much the effects have been potentially under reported and whether there are a larger number of significant effects or a smaller localised significant effects.
- 1.5.2 *Hayley Hurst (NSDC)* stated that subsequent meetings since the last hearing had resolved a number of concerns regarding transparency of the baseline. Mrs Hurst stated that, while the approach differs from that outlined in **ES Volume 2, Chapter 2: Environmental Impact Assessment (EIA) [EN010162/APP/6.2.2] [APP-045]**, it follows the same guidance and is therefore acceptable. Mrs Hurst noted that guidance discourages the use of a matrix and that much of the relevant information is contained within the **ES Volume 2, Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8B]**;

however, Mrs Hurst considered that the summary table at the end of the chapter is very concise.

- 1.5.3 *Mrs Hurst (NSDC)* stated that NSDC's concerns reduced to one or two receptors and the way in which 'non-significant' effects had been determined. Mrs Hurst stated that the principal issue related to how mitigation had been described, in particular where measures were presented as 'embedded mitigation' but in NSDC's view should be treated as 'additional mitigation'. Mrs Hurst cited farmland birds as the specific example and stated that measures such as large open arable compartments fenced off from solar panel areas and the establishment of skylark plots, lapwing plots and additional feeding should be described as additional mitigation. She stated that this could lead to a different conclusion pre-mitigation (i.e., a negative effect), but that after re-examination it would not change the overall conclusion such that significant effects would arise; rather, it was a matter of presentation.
- 1.5.4 She identified a further presentation point relating to the aggregation of habitats (woodland, hedgerows, streams and ponds) and whether such habitats should have been assessed separately for matters such as fragmentation and dust deposition. Mrs Hurst stated that, because those habitats are retained, separate presentation would not change the overall outcome. Mrs Hurst confirmed that discussions with *Applicant* are progressing and that NSDC is updating the Statement of Common Ground accordingly.
- 1.5.5 *Mike Gray (Applicant)* stated that the Applicant anticipates submitting a revised version of **ES Volume 2, Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8B]** at Deadline 3 to include clarifications discussed with NSDC, principally around mitigation for breeding birds and additional information in the summary table (Table 8.12). Dr Gray reiterated that these changes would not alter the conclusions of the assessment or the significance of effects.
- 1.5.6 *The ExA* asked NSDC whether concerns regarding baseline survey information had been agreed.
- 1.5.7 *Mrs Hurst (NSDC)* referred to an additional figure included with **ES Volume 4, Appendix A8.13: Biodiversity Net Gain (BNG) Assessment [EN010162/APP/6.4.8.13B]** showing where detailed assessments occurred and where they did not, and noted that some areas surveyed now fall outside the Order limits and that the majority of the site is arable land of predetermined value. She stated that the main concern related to accurate valuation of baseline value for the net gain assessment. She noted a commitment within the requirements to update surveys post-consent and stated that, even if baseline value changes slightly, the overall Biodiversity Net Gain outcome and Chapter 8 conclusions would not change significantly.
- 1.5.8 **Post-hearing note: Please see the Applicant's responses to Action Point 9.**

## **2.2 Effects on ecological receptors, including aquatic invertebrates and birds, and any relevant mitigations within the oCEMP and oLEMP**

- 1.5.9 *The ExA* invited Jamie Robins (Buglife) to explain concerns about the potential effects of horizontal polarised light. *The ExA* asked whether the research undertaken was on solar farms in the UK or in other countries.
- 1.5.10 *Mr Robins (Buglife)* explained that aquatic invertebrates locate breeding sites by perceiving light reflected off smooth surfaces as waterbodies, and that solar panels may attract invertebrates to lay eggs on panels, rendering eggs unviable and potentially affecting invertebrate populations with knock-on effects. Mr Robins stated that the mechanism is long established globally, but that the landscape-scale impacts of solar farms on invertebrate populations are not well researched.
- 1.5.11 *The ExA* asked whether there were concerns in relation to the layout of the panels of the Development or if there was a certain area where potential effects could be stronger than others on the invertebrates, or was it a generalised concern on the effects from the panels.
- 1.5.12 *Mr Robins (Buglife)* stated that Buglife's early concerns were focussed on the east of the red line boundary bordering the River Trent corridor and wetland habitats, but that the scheme has been reconfigured over time (largely due to flooding) and moved away from the Trent, alleviating concerns. He stated that remaining areas where impacts may be more likely include areas around Maplebeck and Moorhouse Beck and the north-east of the site near the Trent, though risks are substantially reduced compared with earlier designs and is a positive outcome. Mr Robins indicated that impacts may be greatest within around 300 metres of wetland habitats, whilst noting that more mobile species range more widely.
- 1.5.13 He outlined mitigation concepts including the use of non-reflective white tape applied as a grid over panels to break up reflected light and anti-reflective coatings, noting that commercially available coatings are largely designed for the visible spectrum rather than invertebrate perception. Mr Robins stated that Buglife is not aware of schemes that have implemented these measures, and that where risk is identified the best effort observed is reconfiguring schemes to move panels away from sensitive areas, as demonstrated by the Development.
- 1.5.14 **Post-hearing note:** This matter has been recorded as Action Point 10 for Buglife.
- 1.5.15 *Dr Gray (Applicant)* explained that invertebrate baseline is considered in section 8.5.1.2.2 in **ES Volume 2, Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8B]**. Polarised light effects are considered in section 8.7.7, where the matter was scoped out based largely on 2019 review, published by BSG consultants review, which describes the mechanism but notes no evidence of landscape-scale effects.
- 1.5.16 He stated that the Development avoids high-value habitats and includes riparian corridors around Moorhouse Beck and Maplebeck consisting of undeveloped land managed sensitively for habitats and invertebrates. He also referred to removal of infrastructure from the sensitive south-east area, retention of mitigation and enhancement in this area including along a Local Wildlife Site, and the benefit of reduced agricultural inputs and pesticides.

- 1.5.17 *Mr Robins (Buglife)* stated that Buglife supports well-sited solar schemes and recognised that the scheme earmarks around a third of its area for land uses with positive biodiversity outcomes, and welcomed that the polarised horizontal light issue was addressed.
- 1.5.18 *Mr Northcote (JPAG)* queried the Applicant's statement that the Development is 'away from ancient woodland', citing Cheveral Wood as an example where the Development would abut ancient woodland and a pond and would be surrounded within ten metres on three sides by solar panels, and suggested that micro-siting and stand-off issues may remain.
- 1.5.19 *Dr Gray (Applicant)* responded that the Applicant has avoided direct impacts on ancient woodland and that there will be no loss of ancient woodland. He stated that the Development has been designed in accordance with statutory guidance for ancient woodland and veteran trees, including development exclusion buffers around ancient woodland, and that these have been achieved at all stages of design. He also noted that surrounding baseline habitats are principally arable land with adverse edge effects on ancient woodland and that conversion to grassland would reduce those effects.
- 1.5.20 *The ExA* returned briefly to surveying birds and farmland birds. *Mrs Hurst (NSDC)* stated NSDC did not have concerns about survey level, but that a prior concern about absence of a nocturnal element had been clarified, including targeted surveys for barn owls and reporting of relevant findings.
- 1.5.21 *The ExA* asked NSDC to summarise progress on outstanding matters including great crested newts and mature trees.
- 1.5.22 *Mrs Hurst (NSDC)* stated that the **ES Volume 2, Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8B]** clarified where newts were found and addressed concerns about potential fragmentation, including that the relevant pond clusters are within woodland surrounded by arable land and already separated. She stated that the Development includes hedgerow networks and margins providing corridors for movement and that the point is resolved and will be reflected in updated Statements of Common Ground.
- 1.5.23 *The ExA* request an update from NCC on their current position.
- 1.5.24 *Mr Lawrence (NCC)* stated that its position is similar to NSDC's and that issues raised in the Local Impact Report [[REP1-075](#)] are expected to be resolved through dialogue and reporting progress in **Draft Statement of Common Ground with Nottinghamshire County Council [EN010162/APP/8.1B]**.

### **2.3 Concerns raised around the Biodiversity Net Gain assessment and whether its conclusions may change after further survey work**

- 1.5.25 *The ExA* asked NSDC to summarise their position in relation to the assessment.
- 1.5.26 *Mrs Hurst (NSDC)* stated that a revised net gain assessment was received at Deadline 2 and that not all technical issues had yet been addressed due to timeframes, but that issues can be resolved through ongoing discussions

and the revised **ES Volume 4, Appendix A8.13: Biodiversity Net Gain (BNG) Assessment [EN010162/APP/6.4.8.13B]** will be provided at Deadline 3.

- 1.5.27 *The ExA* invited NSDC comments on Requirement 8 in the **Draft Development Consent Order [EN010162/APP/3.1D]**.
- 1.5.28 *Mrs Hurst (NSDC)* noted the requirement now refers to a Landscape and Ecological Management Plan and a Biodiversity Gain Strategy, intended to separate BNG from the **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]**. *Mrs Hurst* queried whether BNG should be phased, but stated that, given impacts are not of a scale that would delay mitigation significantly and BNG is currently voluntary, an overarching assessment is acceptable, whilst the Biodiversity Gain Strategy should set out management and monitoring to achieve target condition.
- 1.5.29 *Mr Sharpe (Applicant)* confirmed that Requirement 8 is intended to operate as described and referred to precedent at the Stonestreet Green DCO, where the **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]** is split into an overarching Biodiversity Design Strategy and phase-specific LEMPs which demonstrate contributions to the overall strategy.
- 1.5.30 *The ExA* requested that the Applicant to provide a structure or framework for the Biodiversity Design Strategy to assist understanding of intended content. *Mr Sharpe* stated the document is produced post-consent, but the Applicant can provide a structure and explanation.
- 1.3.2 Post-hearing note: Please see the Applicant's responses to Action Point 11.**
- 1.5.31 *Mrs Hopkins (Carlton-on-Trent Parish Council)* asked how existing biodiversity will be retained and measured, noting proximity of panels to ancient woodland and potential displacement during construction, and raised concerns about baseline accuracy and the importance of local knowledge, including reference to tawny owl chicks.
- 1.5.32 *Dr Gray (Applicant)* responded that species and habitats raised have been assessed in **ES Volume 2, Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8B]** and technical appendices, and that safeguarding retained habitats is principally addressed through the **ES Volume 4, Appendix A5.2: Outline CEMP [EN010162/APP/6.4.5.3C]**, including construction exclusion areas and root protection areas in accordance with British Standards and further studies during construction. *Dr Gray* also referred to the **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]** as including prescriptions to manage and enhance retained habitats and create new habitats.
- 1.5.33 He further stated that pre-construction / pre-commencement surveys are included within the **ES Volume 4, Appendix A5.2: Outline CEMP [EN010162/APP/6.4.5.3C]** measures to establish locations of sensitive species and take necessary precautions, including for Schedule 1 bird species.

## **2.4 Effects on the Humber Estuary SAC and the need for an Appropriate Assessment under the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations).**

- 1.5.34 *The ExA* queried why the **Shadow Habitats Regulations Assessment [EN010162/APP/5.3B] [REP2-015]** submitted at Deadline 2 indicates that, notwithstanding low likelihood of river lamprey occurrence, the potential for significant effects means an appropriate assessment is required and would like to understand why this position on the Special Area of Conservation and the river lamprey has changed, and why this now requires an appropriate assessment in the **Shadow Habitats Regulations Assessment [EN010162/APP/5.3B] [REP2-015]**.
- 1.5.35 *Mr Nesbit (Applicant)* invited Dr Gray to explain, noting that he could cover any legal questions if any arose.
- 1.5.36 *Dr Gray (Applicant)* stated that information to support an appropriate assessment was submitted at Deadline 2 for the Humber Estuary SAC and Ramsar and concludes no adverse effect on integrity either alone or in combination, consistent with the earlier screening conclusion. Dr Gray stated that the information was produced to remove any concern regarding reliance on mitigation at the screening stage and reflected a precautionary approach supported by Planning Inspectorate advice on HRA encouraging progression to HRA stage two.
- 1.5.37 *The ExA* invited any final comments on ecology and biodiversity matters and no further comments were raised.

## **1.6 AGENDA ITEM 3.3: CONSTRUCTION EFFECTS**

### **Noise**

- 1.6.1 *The ExA* directed the first question to the Applicant and asked about the Applicant's proposed airborne construction noise effect threshold.
- 1.6.2 *Martin Stevenson (Applicant)* stated that the proposed airborne construction noise threshold is 65 dB at the nearest receptors, and that if this sound level is exceeded for ten days, the effect would constitute a medium magnitude of impact.
- 1.6.3 *The ExA* asked where this threshold was sourced.
- 1.6.4 *Mr Stevenson* explained that the threshold derives from BS 5228, which provides guidance for assessing construction noise. He noted that BS 5228 identifies 65 dB for a duration of one month or more, unless works of a shorter duration are likely to result in a significant effect.
- 1.6.5 He added that the Design Manual for Roads and Bridges (DMRB) also provides guidance, stating that construction noise may be significant if 65 dB is exceeded for ten days. Therefore, the Applicant adopted the ten-day duration as a worst-case approach rather than the one-month duration in BS 5228.

- 1.6.6 *The ExA* observed that BS 5228 is not publicly available and asked the Applicant to provide the document—or access to it—so that interested parties may scrutinize the basis of the stated threshold.
- 1.6.7 *Mr Nesbitt (Applicant)* replied that there may be legal issues surrounding the submission of paid-for guidance documents. He confirmed that the Applicant would consider this further and report back, noting that the Applicant would explore whether another form of “relevant access” could be offered.
- 1.6.8 **Post-hearing note:** Please see the Applicant’s responses to Action Point 12.
- 1.6.9 *The ExA* asked whether the Applicant considered the 65 dB LAeq daytime threshold for certain numbers of days to represent the Lowest Observed Adverse Effect Level (LOAEL) in policy terms, which forms the basis of the noise assessment.
- 1.6.10 *Mr Stevenson (Applicant)* confirmed that this understanding was correct.
- 1.6.11 *The ExA* then asked the Applicant to summarise the overall EIA assessment outcome as presented within **ES Volume 2, Chapter 12: Noise and Vibration [EN010162/APP/6.2.12] [APP-055]** in relation to construction airborne noise in EIA terms.
- 1.6.12 *Mr Stevenson (Applicant)* stated that **ES Volume 2, Chapter 12: Noise and Vibration [EN010162/APP/6.2.12] [APP-055]** concluded that construction noise effects are not significant and further responded that the assessment identifies that 65 dB threshold could be exceeded, but it was considered very unlikely that such exceedances would persist beyond the ten-day period.
- 1.6.13 *The ExA* asked how the negligible to minor adverse, non-significant EIA effects would translate into policy terms under NPS EN-1 (page 175), and whether the Applicant considered the effects of the Development to weigh against or in favour of granting the DCO.
- 1.6.14 *Mr Stevenson (Applicant)* stated that NPS EN-1 requires significant impacts to be avoided. He explained that, in policy terms, a medium magnitude impact corresponds to a 65 dB threshold. Subject to the applicable duration criteria, **ES Volume 2, Chapter 12: Noise and Vibration [EN010162/APP/6.2.12] [APP-055]** indicates that noise levels at receptors would not exceed 65 dB, meaning impacts would remain below that level.
- 1.6.15 *The ExA* sought clarification as to whether, in policy terms, such effects would be considered unlikely to amount to any adverse effects.
- 1.6.16 *Mr Stevenson (Applicant)* explained that, from a policy perspective, some residual adverse effects may still occur because construction noise would remain audible at the nearest receptors. However, as predicted levels would be below the 65 dB threshold, the effects would not be considered as medium or high magnitude.
- 1.6.17 *The ExA* then asked whether these residual effects, while limited, would amount to some degree of weight against the DCO.

- 1.6.18 *Mr Sharpe (Applicant)* responded that the Development would be fully consistent with NPS EN-1, specifically paragraph 5.12.17, which requires significant adverse impacts to be avoided, and for reasonable steps to be taken to minimise other adverse impacts. He noted that no residual significant adverse effects had been identified.
- 1.6.19 *The ExA* acknowledged that the Applicant's position is that the Development has followed the required policy and assessment framework, including the application of best practicable means and recognised standards. The Examining Authority noted that there is no evidence before it to suggest that significant noise effects have not been appropriately avoided. However, *the ExA*, observed that, notwithstanding the mitigation measures, some residual adverse effects may remain. While limited in extent, these effects would represent a degree of adverse impact and therefore carry some albeit limited weight against the Development.
- 1.6.20 *The ExA* then completed their position. Such matter would be neutral and carry no weight if there is no evidence of anything above 65dB for even a day without getting into precise interpretation of BS 5228. There would become a point where the matter would be neutral. The ExA's understanding is that the Applicant are not claiming that.
- 1.6.21 *Mr Sharpe (Applicant)* clarified that, the policy recognises that some impacts — particularly those through the construction process are inevitable. The starting position is that the relevant policy is not framed on a “no harm” basis. From a planning perspective, the Applicant considers that the measures incorporated into the Development appropriately address the policy requirements. While acknowledging that some harms would remain, the Development is considered to be consistent with the policies set out in EN-1.
- 1.6.22 *The ExA* invited NSDC to comment on the Applicant's approach.
- 1.6.23 *Mr Dale Brain (NSDC)* stated that NSDC was broadly in agreement with the Applicant's approach. He acknowledged that the 65 dB figure was based on source modelling and represented a worst-case scenario in which all Development would be operated all the time. He added that proposed mitigation through a Construction Noise Management Plan within the **ES Volume 4, Appendix A5.3: Outline CEMP [EN010162/APP/6.4.5.3C]** would likely reduce actual noise levels, and that NSDC was satisfied with the overall approach.
- 1.6.24 *Mr Northcote (JPAG)* raised concerns regarding piling noise, noting that piling activity at the Staythorpe BESS site had been “exceedingly noisy” and questioned whether piling might also be required at the BESS site, and on the intermediate substations. The ExA invited the Applicant to address this question.
- 1.6.25 *Mr Stevenson (Applicant)* confirmed that piling noise had been included within the noise assessment. Although the full phase of construction of the Development would be long, any piling near residential properties would progress very quickly. Therefore, piling would not remain close to receptors for extended periods.

### 3.2 Land and water contamination

- 1.6.26 *The ExA* invited the Environment Agency to provide comments on the issues raised, noting that some discussions had taken place the previous day.
- 1.6.27 *Ryan Smitherman* (EA) provided an update on the **ES Volume 4, Appendix A5.3: Outline CEMP [EN010162/APP/6.4.5.3C]** issues relating to groundwater, contaminated land, and water quality. He explained that in the applicant's latest submission at Deadline 2 (**ES Volume 4, Appendix A5.3: Outline CEMP [EN010162/APP/6.4.5.3B] [REP2-051]**), two outstanding issues, EA15 and EA22, had been resolved. The Environment Agency would provide further comments on the four issues (EA1–EA4), previously outlined in their relevant representations, at Deadline 3. Additionally, the applicant had approached the Environment Agency outside the written process regarding two further issues, EA14 and EA24, for which discussions were ongoing, and the Environment Agency expected updates at Deadline 3. Two matters, EA16 and EA17, remained under discussion. EA16 relates to the provision of additional information on horizontal directional drilling (HDD) launch pit locations and a drilling fluid breakout plan. EA17 relates to clarity on the type of SuDS to be used for construction compounds and the inclusion of a maintenance schedule.
- 1.6.28 *Lucy Hutton* (EA) explained that the requests were consistent with standard practice. For HDD, the applicant is asked to provide the distance to the nearest water environment receptor. While the detailed breakout plan is not required at this stage, the Environment Agency requests commitment and cross-referencing to the plan within relevant documents. Regarding SuDS, details on the type of systems proposed (e.g., swales, filter strips, permeable pavements) should be included, along with a maintenance plan that identifies inspection frequencies, such as monthly walkovers for filter strips, to ensure functionality. *The ExA* noted that these details provided sufficient clarity for the applicant to respond.
- 1.6.29 *Mr Sharpe* (Applicant) confirmed that a constructive discussion had taken place with Mr. Harrington from the Environment Agency the previous week. He explained that the outstanding points summarised during the hearing are considered minor technical clarifications, essentially refinements of how the measures in the documents can be presented. The parties have agreed the actions required for Deadline 3 to resolve these points.
- 1.6.30 He confirmed that the applicant intends to provide updated versions of the relevant documents at Deadline 3. **Draft Statement of Common Ground with the Environment Agency [EN010162/APP/8.3B]** will continue to reflect a number of ongoing matters and confirmed that the outline documents will be updated to address the points raised. He noted that many of the detailed issues discussed would be captured at the detailed design stage. The applicant's commitment is to ensure that the outline documents clearly and precisely secure the relevant matters, proportionate to their scope.
- 1.6.31 He added that although some matters are still under discussion and the Environment Agency may not have seen all points, he was confident that they can be resolved quickly.

1.6.32 *Mr Smitherman (EA)* confirmed that they anticipate receiving the additional updates to the outline documents at Deadline 3 and believe all issues can be resolved through the examination process.

**1.3.3 Post-hearing note: Please see the Applicant's responses to Action Point 13.**

1.6.33 *Mr Northcote (JPAG)* noted that some areas of land within the site, including proposed accesses, currently act as sources of surface water runoff, which carries suspended solids into surrounding watercourses. This would be address it in more detail under item five.

1.6.34 *Mr Smitherman (EA)* confirmed that they anticipate receiving the additional updates to the outline documents at Deadline 3 and believe all issues can be resolved through the examination process.

1.6.35 *Mr Northcote (JPAG)* noted that some areas of land within the site, including proposed accesses, currently act as sources of surface water runoff, which carries suspended solids into surrounding watercourses. He acknowledged that this matter primarily relates to the drainage strategy and proposed to address it.

1.6.36 *The ExA* noted that while the applicant undertakes worst-case assessments and applies the Rochdale Envelope approach, they asked whether opportunities exist to avoid directional drilling under watercourses. They queried whether alternatives, such as installing a cable bridge over a watercourse, would be considered, and whether there is any reason such an approach would never be used.

1.6.37 *Mr Sharpe (Applicant)* agreed to take the matter away and provide a written response. The Examining Authority remarked that, while reasonable worst-case assessments and horizontal directional drilling are commonly used for crossing watercourses or roads, there may be scope for innovation and that, on a case-by-case basis, alternative approaches could be considered if they offered better environmental outcomes.

1.6.38 *Ryan Smitherman (EA)* responded that any decision would obviously depend on the specific crossing location and the individual impacts at that location. They noted that, without reviewing the documents in detail at that point, they could not assess the current crossing register or the associated impacts. They indicated that this would need to be considered further.

**1.6.39 Post-hearing note: Please see the Applicant's responses to Action Point 14.**

### **3.3 Traffic, Transport and Access**

1.6.40 The ExA invited National Highways to provide an updated position with the Applicant.

1.6.41 *Oliver Smith (National Highways)* advised that NH had reviewed all documents submitted at Deadline 2, including: **ES Volume 2, Chapter 14: Traffic and Transport [EN010162/APP/6.2.14A]** [\[REP2-028\]](#); **ES Volume**

- 4, Appendix A14.1: Transport Statement [EN010162/APP/6.4.14.1A] [REP2-066]; ES Volume 4, Appendix A14.1: Transport Statement Appendix G (Abnormal Load Report) [EN010162/APP/6.4.14.1A] [REP2-074].** In terms of the additional information provided, Mr Smith confirmed that National Highways were generally satisfied with the overall approach taken and the conclusions reached. Of 21 issues previously under discussion, 13 were now agreed, including all key technical matters in the traffic and transport sections.
- 1.6.42 He confirmed that the matters that are still under discussion include the approval process for the CTMP, that revolves mainly around the approvals process which was discussed in Issue Specific Hearing 2. In terms of **ES Volume 4, Appendix A5.2: Outline CTMP [EN010162/APP/6.4.5.2C]**, a number of points have been agreed in terms of signage and abnormal loads. The assessment of effects and mitigation measures in the **ES Volume 4, Appendix A16.1 Glint and Glare Assessment [EN010162/APP/6.4.16.1] [APP-286]** has also been agreed. National Highways are satisfied with the technical matters previously regarded as under discussion in the previous iteration of the common ground (**Draft Statement of Common Ground with National Highways [EN010162/APP/8.4A] [REP2-092]**), which have now been resolved and agreed.
- 1.6.43 He confirmed that further discussion is still required regarding the approval process of the detailed CTMP and decommissioning and restoration plans. Both of which were highlighted at ISH2. Overall, good progress has been made. It is the approval process of various documents that needs to be agreed with the applicant rather than technical issues.
- 1.6.44 *Mr Sharpe (Applicant)* agreed with Mr Smith's summary and confirmed that the outstanding point which applies to a number of the requirements is National Highways have requested to approve. This is the current area of disagreement. Both parties agreed continued dialogue is underway to resolve this point.
- 1.6.45 *The ExA* invited Nottinghamshire County Council to outline which transport and access matters had been resolved and which remained outstanding.
- 1.6.46 *Sarah Hancock (NCC)* explained that, in terms of Statement of Common Ground, most matters remained under discussion, and several points marked as "agreed" in the previous iteration of SoCG (**Draft Statement of Common Ground with Nottinghamshire County Council [EN010162/APP/8.1A] [REP2-086]**) had not, in NCC's view, been fully resolved. Differences remain in the **ES Volume 4, Appendix A14.1: Transport Statement [EN010162/APP/6.4.14.1A] [REP2-066]** and the previous iteration of the CTMP (**ES Volume 4, Appendix A5.2: Outline CTMP [EN010162/APP/6.4.5.2B] [REP2-048]**), and this has already been communicated to the transport consultant.
- 1.6.47 *Ms Hancock (NCC)* raised a substantive concern on temporary or permanent changes. NCC accepts that during the construction phase HGVs will use the secondary access as a crossover point, and that effects can be mitigated by banksmen and traffic management. However, during the operational phase, maintenance vehicles will use some secondary accesses as primary

accesses because they are the only points of entry to certain parcels of land. The issue is that majority of the secondary access points have not had the same design approach as the primary access has applied. NCC is therefore not convinced that appropriate speed surveys have been carried out.

- 1.6.48 *The ExA* asked Ms Hancock to explain the differences between primary and secondary access, and why this distinction is important.
- 1.6.49 *Ms Hancock (NCC)* explained that primary accesses are intended to be permanent, and the secondary accesses are considered to be solely in use for construction and can therefore be mitigated through traffic management and banksmen.
- 1.6.50 She disagreed that all “secondary” accesses were temporary because some secondary accesses are the only point of entry to particular parcels for operational-phase maintenance activities. These should therefore be treated as permanent in the **Draft Development Consent Order [EN010162/APP/3.1D]** and designed accordingly, including with appropriate visibility splays. She emphasised that this is a safety issue for users entering and exiting the accesses.
- 1.6.51 In terms of passing places, she noted that the Applicant proposes that many passing places be temporary and removed. NCC consider passing places necessary for operation and decommissioning if there is any large scale replacement, and therefore seeks them to be permanent features.
- 1.6.52 She noted that the biodiversity benefits of reinstating verges are often limited due to deposits of construction material that leave hydrocarbons. However, NCC consider them to be a necessary feature of the operational phase.
- 1.6.53 In terms of adequacy of design in the passing bays, the drawings provided do not clearly demonstrate forward visibility splays, although the text states that visibility is provided. She identified that there are several forward visibility splays do not appear to have that visibility without falling outside of the DCO or outside of highway extents. NCC is uncertain on how those spaces can be protected. This would apply to the visibility splays that are shown on the access drawings.
- 1.6.54 In relation to junction visibility, some drawings appear inaccurate. Until corrected, NCC cannot determine whether those space fall within highway extents or the DCO boundary.
- 1.6.55 There are concerns regarding stopping sight distance on junctions approaches and the way that has been drawn. It is not of a sufficient length and this affects junctions that are on bends or past bends. Until corrected, NCC cannot determine whether those space fall within the DCO area or highway.
- 1.6.56 There are some issues with the design where the access is skewed on approach to highway, which means that a driver sat in a cab would not be able to see through it. While construction-phase mitigation could address this, NCC considers some of these accesses to be permanent and will be required for access to parcel during the operational phase.

- 1.6.57 The Nottinghamshire Highway Design Guide requires that the safety of new or amended vehicular accesses be demonstrated. NCC expects the Applicant to undertake a Stage 1 Road Safety Audit as part of the design process. Such audits identify risks not evident from plan drawings alone. Visibility splays shown on drawings do not fully account for vertical and horizontal alignment. For example, a bridge deck over the A1 has been observed to obstruct forward visibility despite plan compliance and a Stage 1 Road Safety Audit is specifically intended to identify such risks.
- 1.6.58 She expressed concern on the inconsistency between the Deadline 2 version of the CTMP (**ES Volume 4, Appendix A5.2: Outline CTMP [EN010162/APP/6.4.5.2B]** [[REP2-048](#)]) and the **Draft DCO [EN010162/APP/3.1C]** [[REP2-005](#)]). The CTMP refers to technical approval requirements, whereas the Draft DCO does not explicitly require this for the work specified in the Schedules. NCC consider this could lead to difficulties with enforcement. Ms Hancock concluded by reiterating that the main concerns with regard to the access design.
- 1.6.59 *Mr Sharpe (Applicant)* stated that discussions with NCC were constructive and ongoing. The Applicant had amended the Outline Construction Traffic Management Plan (CTMP) at Deadline 2 to address the matters raised by NCC, including a new section in relation to the technical approval process. Following Issue Specific Hearing 2, the Applicant would refine the **ES Volume 4, Appendix A5.2: Outline CTMP [EN010162/APP/6.4.5.2C]** to seek to agree an approach with NCC. The Applicant explained that the **ES Volume 4, Appendix A5.2: Outline CTMP [EN010162/APP/6.4.5.2C]** is secured by Requirement 14 in the **Draft DCO [EN010162/APP/3.1D]**, which sets out the status of the illustrative design of those access points and the final design process. **ES Volume 4, Appendix A5.2: Outline CTMP [EN010162/APP/6.4.5.2C]** presented illustrative designs, which would be confirmed through the Detailed CTMP. The Applicant confirmed continued engagement with NCC to refine CTMP provisions.
- 1.6.60 **Post-hearing note: Please see the Applicant's responses to Action Point 15.**
- 1.6.61 *Mr Edwards (Applicant)* then addressed technical access matters. The Applicant agreed that secondary accesses should be treated as permanent and this should be reflected in the Schedules of the **Draft DCO [EN010162/APP/3.1D]** as being permanent rather than temporary measures.
- 1.6.62 The Applicant will continue discussions with NCC on the access designs to make sure that they are satisfied in all their design requirements. The Applicant remained confident that the access points and visibility splays could be delivered within the Order Limits.
- 1.6.63 In relation to passing places, the Applicant proposes a combination of temporary and permanent provision. Temporary passing places would be only required for the construction process, particularly where roads already function as two-way routes. All of the construction routes to a certain degree carry HGV traffic already and the Development would introduce passing places on these links to ease those movements and increase driver

- confidence in passing. During the operational phase, HGV traffic would be occasional and they would operate under normal free flow conditions as they do currently. However, acknowledging that on the roads which currently operates as a single lane, permanent passing places are recognised as beneficial.
- 1.6.64 Some routes are not wide enough to comfortably accommodate two-way traffic, even though in their current circumstances they do. The Applicant considers that the Development provides wider benefit to users where appropriate. For example, Western Road, previously used for the construction of Egmonton Solar Farm, operated without passing places, whereas this Development proposes permanent improvements.
- 1.6.65 The remaining matters concern design details, which the Applicant committed to resolving collaboratively with NCC.
- 1.6.66 *Ms Hancock (NCC)* NCC's concerns that some visibility splays are missing or inaccurately drawn, and in several cases extend beyond the DCO boundary, making them potentially undeliverable. There is a disagreement over what is permanent and what is secondary. The extent to which the passing place visibilities fall outside of the DCO and highway extent.
- 1.6.67 *The ExA* questioned the Applicant on whether they were confident they had the necessary powers within the Order Limits to deliver safe access. *Mr Sharpe (Applicant)* confirmed additional visibility drawings were submitted at Deadline 2 to demonstrate that visibility splays and the associated vegetation clearance can be done within the Order Limits. The Applicant remains confident that sufficient land is included within the Order Limits and is happy to continue the conversation with NCC.
- 1.6.68 **Post-hearing note: Please see the Applicant's responses to Action Point 16.**
- 1.6.69 *The ExA* mentioned that that NCC's concerns carry extra weight from a highway perspective.
- 1.6.70 *Mr Northcote (JPAG)* suggests the issue reflects disagreement about what constitutes a matter of principle vs. a detail for later approval. Taking Staythorpe BESS as an example, he noted that visibility splays often require hedgerow removal or translocation, which has ecological implications. Therefore, access visibility should be resolved at the application stage.
- 1.6.71 He reiterated NCC's position that Stage 1 Road Safety Audits are required for certain access routes. He cited the Sutton-on-Trent access, where forward visibility is severely restricted by the A1 overbridge. He suggested that the Applicant's evidence appeared to rely heavily on desktop analysis and contained inaccuracies, including incorrect speed limits. He supported NCC's view that core access safety issues are matters of principle requiring resolution now.
- 1.6.72 *Mr Sharpe (Applicant)* reiterated that the **ES Volume 4, Appendix A5.2: Outline CTMP [EN010162/APP/6.4.5.2C]** sought to address these points, along with the additional controls that are set out within Requirement 14.

- 1.6.73 *Mr Edwards (Applicant)* clarified that no new access is proposed onto the B1164 at Sutton-on-Trent, and as the junction is existing, it would therefore not form part of a Road Safety Audit because no alterations are proposed.
- 1.6.74 *The ExA* encouraged all parties to continue constructive dialogue. The ExA also requested that parties check the SoCG for inaccuracies, including mismatched colour-coding, and correct them.
- 1.6.75 *Ms Sarah Hancock (NCC)* flagged that several items marked “agreed” were not agreed and the ExA noted NCC’s final comments regarding visibility plays missing or incorrectly drawn.
- 1.6.76 **Post-hearing note:** Please see the Applicant’s responses to the additional Action Point 29.

## 1.7 AGENDA ITEM 3.4: CULTURAL HERITAGE AND ARCHAEOLOGY

### 4.1 WHETHER THE SCOPING OUT OF CERTAIN HERITAGE ASSETS HAS BEEN JUSTIFIED

- 1.7.1 The ExA referred to NSDC’s Local Impact Report [[REP1-075](#)] where there is suggestion that 11 heritage assets identified as potentially sensitive to the effects of the Development, and that they should be included in the assessment. At ExQ1 8.1.23 [[PD-008](#)], the ExA asked for an update from both parties on how this point had been addressed. The ExA sought for the latest position between both parties.
- 1.7.2 *Mark Turner (Applicant)* explained that justification for the scoping of heritage assets had been provided in the Deadline 2 version of the settings assessment (**ES Volume 4, Appendix A11.2 Heritage Settings Assessment Scoping Exercise [EN010162/APP/6.4.11.2A] [[REP1-041](#)]**); discussions had taken place most recently with NSDC; and the Applicant’s understanding was that parties broadly agreed that significant effects were unlikely, with some wording and nuance still to be resolved and an update to the **Draft Statement of Common Ground with Newark and Sherwood District Council [EN010162/APP/8.2B]** for Deadline 3.
- 1.7.3 *Abbie Arestis (NSDC)* stated agreement that the potential impact would be unlikely to harm the significance of the assets but requested a clear and convincing justification for scoping decisions. Following the discussion with the Applicant and site visit, the list of assets for additional justification had been reduced from eleven to seven.
- 1.7.4 *The ExA* ask if NSDC are satisfied that the remaining justification for scoping out those assets could be addressed in the settings assessment. *Miss Arestis (NSDC)* agreed, and *Mark Turner (Applicant)* confirmed that it is the Applicant’s intention to update **ES Volume 4, Appendix A11.2 Heritage Settings Assessment Scoping Exercise [EN010162/APP/6.4.11.2B]**.
- 1.7.5 **Post-hearing note:** Please see the Applicant’s responses to Action Point 17.

## **4.2 Whether the assessment of the significance of effects on heritage assets has been adequate and reasonable**

- 1.7.6 The ExA referred to ExQ1 8.1.18 [[PD-008](#)], which refers to the methodology set out in Section 11.5.4 of **ES Volume 2, Chapter 11: Cultural Heritage and Archaeology [EN010162/APP/6.2.11] [APP-054]** (including Table 11.4). The ExA noted that NSDC, in its response, considered the framework to provide an appropriate starting point for assessment by placing emphasis on professional judgment of effects at paragraphs 69–71 of its submission. However, Historic England’s view that the approach appears to be reductive. Historic England’s position is that low magnitude effects on very high or high value heritage assets could amount to moderate adverse effects. The ExA invited the Applicant to comment on Historic England’s position.
- 1.7.7 *Mr Turner (Applicant)* disagreed with Historic England’s position, stating it was reasonable that low or negligible magnitude impacts on highly designated assets could be not significant, because not every element of an asset significance contributes equally and professional judgement is required. The ExA noted Historic England’s absence and deferred further probing to written questions.
- 1.7.8 The ExA referred to ExQ8.1.2 [[PD-008](#)] in relation to the grouping of assets, noting that listed buildings within conservation areas have not been considered individually and asking how the effect of the development within the settings of those listed buildings had been given specific consideration. The ExA noted Historic England questioning whether or not this is a reasonable basis for the assessment.
- 1.7.9 The ExA then referred to the Grade I listed Church of St Radegund in Maplebeck and noted on-site inspection that the spire of that church can be seen from the higher land on the approach to the village from the south. The ExA invited the Applicant to respond to how the consideration has been accommodated beyond the immediate setting of the conservation area.
- 1.7.10 *Mr Turner (Applicant)* stated that grouping was considered reasonable and proportionate, with separate assessment for the assets that have higher designations. There are individual cases where the setting of an asset may extend beyond the conservation area. The conservation area was often treated as the setting within which individual buildings contribute to significance; however, cases where setting extends beyond the conservation area had been considered case-by-case, with assessment considering prominence, size, and elevation.
- 1.7.11 *The ExA* requested specific examples to illustrate where professional judgement had been applied, and the Applicant offered to provide a clarificatory note with examples by Deadline 3.
- 1.7.12 **Post-hearing note: Please see the Applicant’s responses to Action Point 18.**

## **4.3 The approach to mitigating effects on designated and non-designated heritage assets**

- 1.7.13 *The ExA* referred to the points raised in NSDC's LIR [[REP1-075](#)] from paragraph 14.5 onwards, concerns are raised about the proposed mitigation measures relating to quite a number of designated and non designated heritage assets. The ExA noted ongoing discussions and requested an update.
- 1.7.14 Mr Turner (Applicant) stated that the screening proposed for specific views and effects around certain assets was considered appropriate. He confirmed the Applicant was in active discussion with NSDC on a number of specific issues, including Kersall and the Kelham area around the BESS, and has reviewed both the justification for what is proposed and whether consideration could be given to NSDC's suggestions.
- 1.7.15 Julia Lockwood (Newark and Sherwood) stated that two particular areas remained of concern and were the subject of continuing discussion with the Applicant: Kersall Conservation Area, and the relationship with the proposed BESS between Averham Park House and Kelham Conservation Area. She explained this concern related to getting better understanding of the level and scale and height of Development at the BESS area, and therefore the effect that would have. She confirmed that next steps included working on the Statement of Common Ground to capture areas agreed between the parties.
- 1.7.16 **Post-hearing note:** Please see the Applicant's responses to Action Point 19.

#### **4.4 Whether the historic landscape context, including unregistered parks and gardens, has been adequately recognised**

- 1.7.17 *The ExA* raised whether the historic landscape context (including unregistered parks and gardens) had been adequately recognised. The ExA referred to Historic England's early comments that the distribution of proposed arrays may pose challenges regarding how settlements sit and are experienced in their historic landscape context. They suggested that there needs to be consideration of setting issues around, particularly the kinetic experience of moving through the space. The ExA sought to clarify how this has been undertaken and how is impacted on the Development design.
- 1.7.18 *Mr Turner (Applicant)* responded that issues around historic parks and their contribution to designated assets had been substantially agreed. He noted that the Applicant understands that the approach set out in the **ES Volume 2, Chapter 11: Cultural Heritage and Archaeology [EN010162/APP/6.2.11]** [[APP-054](#)] was agreed with Historic England.
- 1.7.19 *Mr Turner (Applicant)* explained the assessment considers the interests from which the significance of heritage assets is derived, in accordance with relevant guidance, including Historic England's GPA3 guidance on the assessment of setting. He stated that this methodology has been followed in preparing the assessment. The focus of the assessment on historic landscape considers a broader landscape resulting from historic evolution (e.g., traces of medieval farming near Laxton, the parliamentary enclosure field pattern across much of the area, estate and park impositions, and modern farming practices that have opened up fields).

- 1.7.20 He stated that these historic layers have been taken into account when assessing the setting of individual heritage assets, including conservation areas, listed buildings and related assets. The Applicant did not consider it necessary to undertake a separate, detailed assessment of the wider landscape in its own right. Rather, the focus has been on how the landscape contributes to the setting of specific assets and to the appreciation of their significance.
- 1.7.21 *The ExA* acknowledged that the early-stage point had not been pursued later by Historic England.
- 1.7.22 *Mr Northcote (JPAG)* highlighted the area has very large estates and used Averham Park as an unregistered historic park and garden example, noting surviving features (e.g., stones in Chevrolet Wood) that relate to historic parkland. He suggested the historic connections have been lost and changed over time, and that the development would further erode such functional, traditional, historical connections, which is difficult to assess without drawing on local knowledge.
- 1.7.23 *Elizabeth Hopkins (Carlton-on-Trent Parish Council)* observed that St Mary's Church is a landmark when approaching from either north or south off the A1 and from Ossington, and that Ossington Road is likely to be heavily lined with panels, urging that the asset be borne in mind. She noted that the ExA's site visit would include the area.
- 1.7.24 *Mr Turner (Applicant)* stated that the Applicant would review the assessment relating to St Mary's and consider whether it could be used as a worked example to illustrate how significance has been articulated and derived within the assessment. He indicated that this clarification would be provided at Deadline 3.
- 1.7.25 **Post-hearing note:** This action point is already included in Action point 18 as stated at paragraph 1.7.16. Please see the Applicant's responses to Action Point 18.
- 1.7.26 In response to a point raised by Mr Northcote (JPAG), *Mr Turner (Applicant)* reiterated the Applicant's position that the proposed development would not remove the legibility of the historic landscape. He explained that key features, including woodland blocks, the overall land pattern and field boundary structure, would largely be retained. Accordingly, the Applicant does not consider that the Development would result in additional significant harm to the historic legibility of the landscape.

#### **4.5 Whether the extent of ground truthing by the desk-based assessment and pre-consent field evaluation is sufficient to assess the extent of the archaeological resources and inform significance and impact**

- 1.7.27 *The ExA* noted general agreement between the parties that the Applicant had undertaken a reasonable and proportionate programme of archaeological investigation. The Applicant's undertaken a full desk based assessment and non-intrusive geophysical survey of the majority of the order limits, and targeted trial trench evaluation and based on the results of the

physical survey. There has also been some evaluation in blank areas to assess the effectiveness of the geophysics results. Overall, there is acknowledged to be a reasonably good understanding of the archaeological resource in these areas.

- 1.7.28 The ExA acknowledged concerns raised by NCC and Historic England about the coverage of the Order Limits, noting the limitations of geophysical survey in terms of whether or not the work undertaken is sufficient to assess archaeological potential. The ExA then asked the Applicant to summarise the overall approach and explain how it met the relevant policy tests.
- 1.7.29 *Mr Turner (Applicant)* undertook a layered approach. The Applicant first undertook a desk-based assessment (**ES Volume 4, Appendix A11.1: Archaeological Desk-Based Assessment [EN010162/APP/6.4.11.1] [APP-251] [APP-252] [APP-253] [APP-254]** and **ES Volume 4, Appendix A11.3: Geoarchaeological Desk-Based Assessment [EN0101/APP/6.4.11.3] [APP-256]**) to establish the archaeological potential of the site. This was followed by geophysical survey (**ES Volume 4, Appendix A11.4: Phase 1 Geophysics Results [EN010162/APP/6.4.11.4A] [REP2-060] [REP2-061] [REP2-062] [REP2-063]** and **ES Volume 4, Appendix A11.5: Phase 2 Geophysics Results [EN010162/APP/6.4.11.5A]**), covering approximately 70% of the Order Limits.
- 1.7.30 He added that those geophysical survey results informs the Order Limits by removing areas of strong response from the Development at that earliest stage. Trial trenching was then used to ground-truth a range of geophysical responses as presented within **ES Volume 4, Appendix A11.6: Phase 1 Trial Trenching Results [EN0101/APP/6.4.11.6] [APP-263] [APP-264] [APP-265]** and **ES Volume 4, Appendix A11.7: Phase 2 Trial Trenching Interim Results [EN0101/APP/6.4.11.7] [APP-266] [APP-267] [APP-268]** and confirm the presence or absence of buried remains.
- 1.7.31 Mr Turner explained that the results of this staged process had directly influenced design. In areas where geophysics or trenching had revealed strong archaeological signals, the Applicant had excluded those areas from the Development. He then cited examples such as a cluster of possible Iron Age or Romano-British features near Maplebeck, and waterlogged deposits encountered in trenches along the River Trent. Both areas were excluded from the development footprint.
- 1.7.32 Although not every area could be fully examined at this stage, the scope of work completed considers proportionate and gives sufficient confidence in the likely significance should it be present and that the measures within the **ES Volume 4, Appendix A11.8: Outline Archaeological Mitigation Strategy (AMS) [EN010162/APP/6.4.11.8B]** and detailed written Developments that will flow from that process are appropriate.
- 1.7.33 In response to a question regarding how the assessment accounts for the limitations of geophysical survey techniques, the Applicant explained that geophysics is not a uniform or definitive method in all circumstances. Where trial trenching has been undertaken, a number of archaeological features were identified that either fell below the resolution of the geophysical survey

or were of limited archaeological significance. The Applicant stated that these findings presented within **ES Volume 4, Appendix A11.4: Phase 1 Geophysics Results [EN010162/APP/6.4.11.4A]** [\[REP2-060\]](#) [\[REP2-061\]](#) [\[REP2-062\]](#) [\[REP2-063\]](#) and **ES Volume 4, Appendix A11.5: Phase 2 Geophysics Results [EN010162/APP/6.4.11.5A]** were considered alongside the known technical limitations of the survey methods when forming professional judgements about the archaeological resource and the interpretation of results observed on site.

- 1.7.34 *Mr Lawrence (NCC)* agreed that the Applicant had undertaken substantial trenching in areas identified as having higher archaeological potential. However, he stated that the coverage was not comprehensive, and that NCC retains concerns regarding: Areas not yet evaluated, The risk to the archaeological resource in the absence of full pre-consent investigation, The potential for unexpected discoveries that may affect delivery of the Development.
- 1.7.35 He acknowledged that the Applicant's commitment to post-consent evaluation was acceptable in principle, but emphasised that NCC had not yet agreed the detail of the post-consent programme and required a robust framework before they could confirm satisfaction.
- 1.7.36 *The ExA* referred to ExQ1 8.1.2 [\[PD-008\]](#) and asked the Applicant about its reliance on a precautionary (worst-case) approach where areas had not been fully ground-truthed. Historic England had suggested that such caution should also apply to areas where geophysics or trenching had not been carried out, even where potential had not previously been identified.
- 1.7.37 Mr Turner (Applicant) stated that the Applicant's approach was proportionate. He explained that the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]** is intended to enable some completion of the geophysical survey and other phases of investigation. It allows application of professional judgement to decide whether mitigation should be Preservation in situ, Preservation by record, Design amendments, or other measures. He stressed that NCC's archaeological team would be directly involved in authorising WSIs and approving the scope of post-consent works.
- 1.7.38 The ExA noted NCC's view that the Applicant should assume worst-case scenario for areas that have not been subject to either, geophysical survey or trial trenching evaluation.
- 1.7.39 Mr Turner (Applicant) acknowledged that some details remain to be agreed and confirmed that the Applicant had met with NCC's archaeological adviser in the preceding week. He stated that the Applicant would update the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]** at Deadline 3 to clarify NCC's role and how this aligns with the phasing of the proposed works, including an indication of the activities anticipated during Phase 1 in **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]**. The Applicant considers that these updates should address NCC's request for additional detail and provide assurance that the process can be appropriately managed.

- 1.7.40 *The ExA* referred to ExQ1 8.1.7 [PD-008] and noted that the 120 ha of land that had not been surveyed due to ground conditions or access issues, and asked whether these would be addressed in Stage 2 of the evaluation and set out in the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]**.
- 1.7.41 Mr Turner (Applicant) confirmed that it is the Applicant's intention for the areas not covered by the initial geophysical survey to be addressed as part of the Stage 2 evaluation.
- 1.7.42 The ExA sought clarification on where the plans identifying these areas are shown. It was noted that the Applicant referenced document Technical Appendix A11.4: Phase 1 Geophysics Results, Appendix B; however, that document does not contain an Appendix B. The ExA indicated that the relevant plans appear to be included instead at the end of the Outline Archaeological Mitigation Strategy, identified as Figure 11.8.2.
- 1.3.4 *Mr David Lakin (Applicant)* confirmed that plans showing these areas were appended to the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]**, and that all areas capable of being surveyed would be covered post-consent, with exceptions only for hard-surfaced locations where geophysics is technically unviable.
- 1.3.5 **Post-hearing note: The Applicant has corrected the oAMS figure reference in response to ExQ8.1.7, ensuring the ExA is directed to the correct document and figure. Please see the Applicant's responses to additional Action Point 31.**
- 1.3.6 *The ExA* asked what the status of Solar Farms and the Assessment of Buried Archaeological Remains that was referenced in the Applicant's response to ExQ1 8.1.11 [PD-008].
- 1.7.43 *Mr Turner (Applicant)* confirmed that this document is an emerging draft, currently in its third iteration, and has not yet been issued as formally best-practice guidance.

#### **4.6 Whether post consent geophysics and trial trench evaluation would resolve pre-consent deficiencies**

- 1.7.44 *The ExA* referred to NCC's response to ExQ8.1.3 [PD-008] and summarised its understanding that NCC's concern relates to the Applicant's proposed post-consent evaluation approach. The ExA noted that, while the Applicant has committed to post-consent evaluation and the targeting of areas identified through geophysical survey results, NCC considers that the Development may not provide for sufficiently extensive evaluation beyond those areas. The ExA asked whether this represents an appropriate post-consent assessment strategy.
- 1.7.45 *Mr Lawrence (NCC)* replied that such a programme would in principle resolve the issue. He noted, however, that post-consent discoveries always carry an elevated risk for Development delivery, but acknowledged that such risk does not sit with the County Council. The ExA noted that discussions are ongoing and acknowledged the Applicant's intention to provide an updated

**ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]**  
at Deadline 3.

- 1.7.46 *The ExA* sought clarity on paragraph 8 of the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]**. The paragraph states that each phase of the development would require a standalone Written Scheme of Investigation following the grant of consent. The ExA sought clarification as to whether the reference to “phases” relates to the overarching project phases (construction, operation and decommissioning), or whether it instead refers to the staged archaeological works described in paragraph 9.
- 1.7.47 *Mr Sharpe (Applicant)* confirmed that Requirement 11 (archaeology) in the **Draft DCO [EN010162/APP/3.1D]** provides that no phase of the authorised development may commence until the details specified in paragraph 2 have been approved. He explained that the deliberate use of the term “phase of the development” in the Requirement relates to the development phasing secured under Requirement 3. By contrast, **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]** uses the term “stages” to describe the archaeological evaluation process. He confirmed that the Applicant would revise the AMS to ensure consistent terminology, so that “phase” refers to development phasing and “stage” refers to archaeological steps.
- 1.7.48 *The ExA* referred to Historic England’s response to ExQ2.1.21 [[PD-008](#)], which suggested that the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]** should include a dedicated section addressing unexpected discoveries, and should clearly demonstrate an iterative process through which any unexpected archaeological findings are fed back into the overall strategy. The ExA indicated that incorporating these matters into the forthcoming AMS amendments would be helpful.
- 1.7.49 *Mr Turner (Applicant)* confirmed that such a protocol is normally incorporated either directly into the AMS or linked through the CEMP. The Applicant agreed to clarify this explicitly in the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]** and **ES Volume 4, Appendix A5.3: Outline Construction Environmental Management Plan (CEMP) [EN010162/APP/6.4.5.3C]**.
- 1.7.50 **Post-hearing note: Please see the Applicant’s responses to Action Point 20**

**4.7 Whether risks of non-intrusive works have been appropriately recognised/would be appropriately managed**

- 1.7.51 The ExA noted that Historic England, in its earlier submission, had questioned whether the risks associated with BNG measures, including habitat establishment, soil manipulation, or landscape reshaping, had been sufficiently recognised, and whether the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]** demonstrated an iterative process whereby any unexpected archaeological implications of BNG proposals would be fed back into the strategy.
- 1.7.52 The ExA noted that, within the Deadline 2 version of the **Draft Statement of Common Ground with Historic England [EN010162/APP/8.5A]** [[REP2-094](#)], the applicant states that the impacts from BNG measures would be

refined as the detailed design develops post consent. The ExA sought clarity on any possible risks associated with BNG activities can be considered in terms of the development of the evolution of the Development design.

- 1.7.53 *Mr Turner (Applicant)* responded that if BNG proposals evolve such that subsurface impacts are anticipated, then the Applicant would undertake appropriate survey or evaluation to ensure the risk is managed. This would be subject to the provisions and the process outlined in the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]**.
- 1.7.54 *The ExA* noted that at paragraph 51 of the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]**, which states that post-consent geophysical survey is not proposed in Work Area 3 because the works are “not expected to affect below-ground remains. The ExA queried how the two positions correspond.
- 1.7.55 *Mr Turner (Applicant)* responded that if specific BNG proposals were later found to involve subsurface impact, the Applicant would advise accordingly and undertake appropriate survey or evaluation to manage risk.
- 1.7.56 *The ExA* noted that Historic England was not present at the hearing and, therefore, the matter could not be explored in further detail at this stage. The ExA indicated that a question may be raised at the next stage of written questions to address any outstanding concerns.

#### **4.8 The drafting of dDCO requirement 11 - archaeology**

- 1.7.57 *The ExA* noted that earlier written questions ExQ2.1 [[PD-008](#)] had sought clarification on the wording of this requirement and noted that NCC had provided detailed alternative drafting. The ExA noted that this Requirement 11 was updated at deadline two in the **Draft Development Consent Order [EN010162/APP/3.1C] [[REP2-005](#)]** to include elements of Nottinghamshire's suggestion include the requirement for an investigation for each phase, and though generally the Nottinghamshire wording is far more detailed than the revision is actually made. The ExA noted that this matter is agreed in the NCC Statement of Common Ground.
- 1.7.58 *Mr Lawrence (NCC)* responded that agreement had been recorded in principle, subject to the **Draft Development Consent Order [EN010162/APP/3.1D]** being updated. He explained that NCC's proposed wording had been submitted alongside the applicant's Deadline 2 revisions (**Draft Development Consent Order [EN010162/APP/3.1C] [[REP2-005](#)]**), resulting in two versions. NCC, having reviewed what was submitted at deadline two, that the wording NCC provided in response to the ExQ1 [[REP2-120](#)] is the correct form of words. It is a form of words that's been used on other consent orders and was designed to secure a clear iterative process of performing the evaluation, or getting approval for the evaluation, performing the evaluation, updating the mitigation strategy, and then implementing the updated mitigation strategies followed through. He emphasised that this was necessary given the complexity and scale of post-consent archaeological work.

- 1.7.59 *The ExA* acknowledged the explanation and invited the applicant to respond to NCC's more detailed drafting.
- 1.7.60 *Mr Sharpe (Applicant)* noted that the Statement of Common Ground had been agreed prior to Deadline 2. He explained that NCC's revised wording had not been seen before submission, and the applicant's Deadline 2 version (**Draft Development Consent Order [EN010162/APP/3.1C] [REP2-005]**) was therefore an attempt to address the ExA's points raised in the ExQ1.
- 1.7.61 *Mr Sharpe (Applicant)* stated that the revised wordings is based on the precedent set out in Stonestreet Green, which then the Applicant had discussed with NCC in advance of Deadline 2. He stated that subsequent discussions with NCC's archaeologist had taken place to understand the intent behind NCC's drafting. He expressed confidence that a sensible compromise could be reached. He noted that one outstanding issue concerned whether details such as qualifications of archaeological personnel should sit within the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]** itself, to ensure it functioned as a comprehensive delivery document without requiring repeated cross-reference to the DCO wording.
- 1.7.62 He added that NCC's suggested paragraph 5 appeared reasonable as an addition to what the Applicant's proposed wordings and that the applicant was keen to combine both drafting versions into an agreed form. He confirmed willingness to progress discussions promptly once NCC was available.
- 1.7.63 *The ExA* noted NCC's point in respect of an iterative process. The ExA then asked the Applicant whether, in principle, they would consider it reasonable to include such wording within the Requirement.
- 1.7.64 *Mr Sharpe (Applicant)* confirmed that the applicant agreed with this principle. He explained that the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]** already envisaged an iterative approach, whereby each development phase would be governed by a written scheme of investigation including a programme of archaeological works consistent with the AMS. He concluded that there appeared to be no substantive disagreement between the parties on the principle of iteration.
- 1.7.65 *The ExA* indicated that discussions between the applicant and NCC should continue to refine Requirement 11 and explore whether further modifications could address NCC's concerns.
- 1.7.66 **Post-hearing note: Please see the Applicant's responses to Action Point 21.**

#### **Agenda 4.9 The effects of development on the former Ossington Airfield**

- 1.7.67 *The ExA* noted the strong local interest in the former Ossington airfield, referencing representations received, including concerns raised by Ossington Solar Concerns Group [[REP1-135](#)]. The ExA noted in

Nottinghamshire County Council's Local Impact Report [REP1-075], which set out that the RAF Ossington World War II battle headquarters had not been given sufficient consideration within the applicant's assessment. The ExA noted that the Council was enhancing its historic environment records as a result of recently discovered information.

- 1.7.68 The ExA has further noted in the Applicant's response that they will engage with NCC with a view to agree an appropriate course of action, and noted that there is disagreement between the parties regarding whether there is any significance associated with the setting of RAF Ossington. In NCC's responses to ExQ8.1.2 [REP2-123], it points out that Ossington and the associated built remains and would be impacted both directly and as a consequence of changes to their setting.
- 1.7.69 The ExA also noted that the airfield area had not been subject to Stage 1 archaeological investigation, and referring to the figure which set out those areas that hadn't been included as part of that investigation, does include the field as having not been subject to that investigation. The ExA requested NCC's position regarding any heritage significance associated with this area.
- 1.7.70 *Jason Morden (NCC)* had undertaken its own site examinations and identified more extensive World War II airfield remains than previously recorded. Although the site was included on the Council's historic environment record, Mr Morden advised that the extent of surviving features suggested it merited a more thorough assessment than it had received to date. He acknowledged that it is still worthy of some consideration.
- 1.7.71 *The ExA* asked what had prompted this recent interest and requested further information on the features identified.
- 1.7.72 *Mr Morden (NCC)* stated that NCC is currently engaged in other heritage-related projects in the Ossington area, such as assessment of the designed landscape, which is a non-designated heritage asset being reviewed in conjunction with the Nottinghamshire Gardens Trust. However, he explained that the airfield itself was not an area in which he specialised, and that the recent investigations had consequently represented something of a learning process for the Council.
- 1.7.73 He stated that, during a site visit, guided by the tenant farmer, Mr Morden (NCC) identified substantial remains of features associated with the former airfield, including barrack sites, a WAAF site, fire sites and other communal components, all of which have some form of built remains above ground.
- 1.7.74 He further advised that there is potential for below-ground archaeological remains, particularly in areas proposed for panel installation. While most surviving buildings would not be directly affected by the proposed development, he noted that the runways and open airfield areas could be subject to direct impacts, and that setting considerations are relevant given the scale of the landscape.

- 1.7.75 *The ExA* then asked the Council to comment on the implications of its findings, and in particular whether the airfield should be formally recognised as a heritage asset, either designated or non-designated.
- 1.7.76 *Mr Morden (NCC)* clarified that no designated airfields are currently identified within Nottinghamshire. Based on the information held on the historic environment record and the results of NCC's recent site work, he suggested that the airfield may represent the best example of an undesignated heritage asset of World War II of airfields.. He emphasised the need for further communication between the Council and other parties.
- 1.7.77 He noted that the installation of photovoltaic infrastructure would have a direct impact on a non-designated heritage asset. While archaeological issues could potentially be managed through an archaeological mitigation strategy, he considered that impacts upon setting were also a relevant factor. He further highlighted that NCC's reconnaissance work had indicated significant communal value associated with the site, with regular gatherings on and around the former airfield linked to its World War II history. He noted that visitors, including international visitors with connections to those who served at the airfield (for example from Canada and Italy), travel considerable distances to visit the site, which highlights the
- 1.7.78 *The ExA* sought clarification on whether the area is currently publicly accessible. The ExA stated its understanding that the site is not publicly accessible in terms of accommodating the activities described, and asked NCC to confirm whether that understanding was correct.
- 1.7.79 *Mr Morden (NCC)* explained that parts of the former Ossington airfield are publicly accessible. A road following part of the original runway affords access through the centre of the site, and Ossington village lies within the historic core of the airfield. Some former airfield components, particularly the barracks and outlying areas, extend across the landscape and overlap with the designed landscape park and garden, within which public rights of way exist. It was acknowledged that some of the larger surviving structures are not readily visible from the public rights of way and are not directly accessible by the public at present.
- 1.7.80 *Mr Northcote (JPAG)* provided local historical context regarding the former Ossington airfield. He explained that the site was first entered onto the historic environment record in 1966 and is recorded under two entries: one relating to the airfield itself and another concerning the associated battle headquarters. He stated that the airfield was constructed during the Second World War as a standard three-runway bomber airfield.
- 1.7.81 Mr Northcote described how the original construction severed an existing public road. Following closure of the airfield, the road was realigned along sections of two former runways, resulting in its present configuration. He advised that in recent years the local community has taken steps to enhance the visitor experience, including the installation of interpretation boards funded by the community. He further noted that a memorial has been established near the centre of the airfield, adjacent to the public road on the northern side, and that the site attracts visitors, particularly from Canada.

- 1.7.82 Mr Northcote explained that the airfield is now held in two broad ownerships. Although there is no formal public access onto the site, he stated that the northern part of the airfield is regularly used by members of the public for walking along former runway. He advised that access has not been restricted by the landowner and that there is long-standing informal public use of this part of the site. There has in effect been de facto acceptance that the public wander right across the northern part of the airfield and it is that northern part where the panels are proposed, is where the majority of the former structures are sort of located from,
- 1.7.83 In his view, the airfield should be regarded as a non-designated heritage asset that would experience direct impacts from the proposed development. While acknowledging that panels would not be positioned directly over surviving built remains, he expressed concern that the introduction of infrastructure would alter the open character of the airfield. He stated that the current uninterrupted visibility of the airfield layout allows an understanding of the historic spatial relationships between features.
- 1.7.84 Mr Northcote (JPAG) advised that the legibility of the airfield's original wartime layout remains clearly visible from aerial views, which he considered unusual within the county. He concluded that the community is concerned that the proposal would significantly diminish the experiential and evidential value of the site by interrupting these views and eroding the ability to appreciate the airfield's historic form.
- 1.7.85 The ExA invited the Applicant to respond to the concerns raised regarding potential direct and indirect effects on what may constitute a non-designated heritage asset.
- 1.7.86 *Mr Turner (Applicant)* advised that key heritage considerations had been identified at an early stage and were referenced within **ES Volume 4, Appendix A11.1: Archaeological Desk-Based Assessment [EN010162/APP/6.4.11.1] [APP-251] [APP-252] [APP-253] [APP-254]**. By way of clarification, he indicated that geophysical survey work may have been undertaken on the northern part of the airfield and that the Applicant would review the record and issue any necessary correction.
- 1.7.87 He explained that the survey results suggested the presence of strong positive anomalies, likely representing made ground and debris associated with the removal of former RAF infrastructure. On that basis, the Applicant considered that there was a relatively low likelihood of significant archaeological remains surviving within the areas proposed for panel installation.
- 1.7.88 He acknowledged the presence of the former battle headquarters within woodland to the north and north-west, noting that these features would not be directly affected by the proposed development. He further advised that many other surviving structures appear to be located within wooded areas or outside the Order limits, to the Applicant's current understanding. The Applicant recognised that interest in the airfield is developing and expressed a willingness to work more closely with Nottinghamshire County Council to improve understanding of the site.

- 1.7.89 Mr Turner (Applicant) stated that the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]** secures the additional survey work, including topographical recording within areas under its control, and would record any surviving features. He advised that such work could be incorporated following the Stage 2 investigations secured by the **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]**. The Applicant proposed continued engagement with the Council to identify surviving above-ground structures, confirm their relationship to the Order limits, and agree appropriate mitigation measures. He concluded that further discussion would enable proportionate mitigation to be developed in response to the site's heritage interest.
- 1.7.90 **Post-hearing note:** For clarity, the further survey work at Ossington Field will take place in Stage 2, as set out in **ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]**.
- 1.7.91 *The ExA* acknowledged that the potential significance of the former Ossington airfield had only been identified relatively late in the examination process. The ExA emphasised the importance of ongoing engagement between the parties, as indicated by the Applicant, and requested that a clear approach be agreed by Deadline 3. The ExA then invited Mrs Hopkins to respond before moving toward a conclusion on this matter.
- 1.7.92 *Ms Hopkins (Carlton on Trent Parish Council)*, noted that the Ossington airfield is the primary site of interest. She explained that, historically, other farmsteads—specifically Cophthorne—also had occasional access to the airfield, although this was rare. Ms Hopkins further advised that a tower had previously been located in the centre of the open area, the remains of which are likely to survive below ground.
- 1.7.93 The ExA invited Jason Morden (NCC) to respond to the Applicant's proposed approach, as outlined by Mr Turner, regarding the consideration of the potential significance of Ossington airfield, including both direct and indirect effects of the development. The ExA asked whether Mr Morden was confident that an agreed approach could be reached within the current examination timescales.
- 1.7.94 *Mr Morden (NCC)* confirmed that he was confident the Applicant could undertake the level 1 survey and welcomed this, noting that it would inform the historic environment record and further clarify the Council's position on the site's significance. He stated that, based on the ground-truthing undertaken to date, the airfield is a significant heritage site. While he did not consider it likely to meet criteria for statutory designation (i.e., listing or scheduling), he emphasised that the site should be considered holistically rather than as a collection of individual assets, given its communal value. However, he indicated that he was not fully confident that an agreement could be reached with the Applicant at this stage.
- 1.7.95 *The ExA* then sought clarification from the Applicant regarding the proposed timescales for the survey.
- 1.7.96 *Mr Turner (Applicant)* confirmed that a more detailed survey would be undertaken as part of Stage 2, as set out in the **ES Volume 4, Appendix**

**A11.8: Outline AMS [EN010162/APP/6.4.11.8B].** He noted that much of the hard infrastructure of the airfield has been removed and the site largely returned to agricultural use. While some roads, tracks, and perimeter features survive, the majority of the northern runways have been removed. Consequently, the Applicant does not consider the site to meet the criteria for national designation, and its assessment has been undertaken on that basis.

1.7.97 He concluded that while the significance and communal interest of the site should not be overstated or underplayed, further engagement with NCC is required to understand the surviving features and the Council's assessment of their significance.

1.7.98 *The ExA* summarised that, at this stage, the discussion between the parties is focused on clarifying the current knowledge of surviving features at Ossington airfield and understanding their significance. Any further investigative work and consideration of mitigation would be undertaken as part of Stage 1 works following consent. The ExA encouraged the parties to collaborate on this initial phase to clearly articulate what is known and to assess the implications of the proposed development. The ExA noted that this represents the extent of agreement possible at this point.

1.7.99 **Post-hearing note:** Please see the Applicant's responses to Action Point 22.

1.7.100 *Mr Turner (Applicant)* confirmed that this approach was appropriate and indicated the Applicant's intention to engage with NCC during the process. He explained that the aim would be to reach as common a position as possible by Deadline 3, while acknowledging that some disagreement may remain given the examination timescales. He confirmed that discussions would continue to establish the appropriate scope of works and future approach.

1.7.101 *Mr Morden (NCC)* confirmed the Council's willingness to participate in these discussions. He noted that his own site inspection had identified additional physical remains, including parts of runways and other elements, which may not have been fully captured by the Applicant's assessment. Mr Morden encouraged the Applicant to verify these features on site where possible. He emphasised that, despite the tight timescales, the parties should cooperate to ensure that a robust understanding of the site is established.

1.7.102 *The ExA* encouraged continuation of this collaborative work, noting the importance of the information for the examination. The ExA then invited any final points on heritage and archaeological matters before moving to the next agenda item

## 1.8 AGENDA ITEM 3.5: THE WATER ENVIRONMENT

### 5.1 If and how the Proposed Development meets the Exception test set out in NPS EN-1 and the NPPF

1.8.1 *The ExA* directed questions to the Environment Agency regarding their response to the First Written Questions, specifically in relation to the

- exception test. The ExA noted the EA's position that the proposed Development does not satisfy the exception test due to the Applicant not having considered the risk of flooding from ordinary watercourses.
- 1.8.2 *The ExA* sought to clarify the EA's position, requesting further explanation of why the exception test had not been met and what actions would be required for it to be satisfied. The ExA asked whether the Agency's concern related to the fluvial assessment not including ordinary watercourses, or to the increased flood risk on ordinary watercourses resulting from the loss of floodplain storage, seeking to ensure an accurate understanding of the Agency's position.
- 1.8.3 *Sean Holland (EA)* explained that the Agency's concerns relate specifically to the area surrounding the BESS, where ordinary watercourses are present. He noted that, according to the Applicant, above-ground infrastructure would generally not be sited in areas with flooding greater than 0.4 m, with the exception of a small area in Works Area 5.
- 1.8.4 Ms Holland (EA) indicated that raised infrastructure could result in a loss of floodplain, even in areas where flooding is below 0.4 m. The Agency therefore seeks a clearer understanding of the extent of floodplain loss and its potential impacts. He emphasised that, while the risk is not considered extreme, clarification is required to ensure that the assessment of the exception test is complete.
- 1.8.5 *The ExA* sought confirmation on whether the Agency's concerns could be addressed through further information from the Applicant. *Mr Holland (EA)* confirmed that the assessment as presented within **ES Volume 4, Appendix A9.1: Flood Risk Assessment [EN010162/APP/6.4.9.1C]** could meet the exception test once the additional information is provided. He noted that, depending on the results of that assessment, some minor mitigation measures may be required, but these would not involve extensive site-wide changes.
- 1.8.6 *The ExA* requested that the Agency clearly set out the nature of its concerns and proposed approach in writing, and in the Statement of Common Ground, for the next examination deadline, to ensure transparency and clarity for all parties.
- 1.8.7 **Post-hearing note:** This matter has been recorded as Action Point 23 for the EA. Please see the Applicant's responses to Action Point 24.
- 1.8.8 *Ms Holland (EA)* stated that they had received additional information from the Applicant since providing their earlier comments and that they were reviewing this. They would provide full comments to clarify the position and expressed confidence that the matter could be resolved before the end of the examination.
- 1.8.9 *Liam Nevins (Applicant)* explained that in Work Area 5 the 0.4 m flood depth relates to pluvial flooding, as derived from 2D flood modelling undertaken as part of the **ES Volume 4, Appendix A9.1: Flood Risk Assessment [EN010162/APP/6.4.9.1C]**. He confirmed that Work Area 5 will be served by a sustainable drainage system (SuDS) designed to accommodate a 1 in

100-year rainfall event, including a 40 % climate change allowance, as agreed with Nottinghamshire County Council prior to the PEIR stage. He stated that this system will be designed to manage extreme rainfall events while maintaining greenfield runoff rates, thereby avoiding any loss of floodplain storage.

1.8.10 He also addressed the Environment Agency's comments regarding ordinary watercourses. He explained that ordinary watercourses connected to the particular watercourse were considered in the 1D/2D Pengelly Dyke flood modelling. He noted that the model indicates the 1 in 100-year plus 39% climate change flood outline does not encroach upon Work Area 5, There are linear drainage ditches around the BESS which convey a certain amount of water. However, the conveyance capacity far exceeds the hydrograph coming into those, and the Applicant would provide an updated submission at Deadline 3 to clarify this information as presented within **ES Volume 4, Appendix A9.1: Flood Risk Assessment [EN010162/APP/6.4.9.1C]**.

1.8.11 **Post-hearing note:** Please see the Applicant's responses to Action Point 25.

## **5.2 The Flood Risk Assessment (FRA) and its modelling parameters, with particular reference to the CCP1 dataset used for climate change allowances**

1.8.12 *The ExA* returned to the Environment Agency to seek clarification regarding the flood modelling used to assess ordinary watercourses, referencing points raised in the Agency's submissions (specifically Issue EA028). The ExA noted the use of the 1 % AEP plus 23 % dataset and sought to understand the Agency's concerns and their implications. The ExA asked whether the Agency's concern relates to the suitability of this allowance for the assessment of central infrastructure associated with the proposed development, and sought confirmation that this correctly reflected the Agency's position.

1.8.13 *Ms Holland (EA)* explained that the concerns regarding the 1 % AEP plus 23 % dataset had been raised by a modelling specialist within the Agency. He clarified that the Agency considers this issue to be a reporting error rather than a material error. Specifically, there appears to have been a misreporting in the Deadline 1 version of Flood Risk Assessment (**ES Volume 4, Appendix A9.1: Flood Risk Assessment [EN010162/APP/6.4.9.1B]** [[REP1-039](#)]) that requires clarification.

1.8.14 She advised that the Agency does not consider this issue to have any material impact on the site or the conclusions of the assessment. The reporting discrepancy relates to the use of the central climate change allowance, whereas for essential infrastructure a higher allowance would normally be applied. He confirmed that this does not affect the modelling undertaken for the River Trent, which he stated has used the correct allowances. The reporting issue is specific to the Lower Trent and Erewash management catchment areas.

- 1.8.15 *The ExA* sought confirmation that the impacts of climate change had been appropriately considered in the flood modelling and over a suitable timeframe.
- 1.8.16 *Ms Holland (EA)* confirmed that, according to advice from the Agency's modelling specialist, the Deadline 1 version of Flood Risk Assessment (**ES Volume 4, Appendix A9.1: Flood Risk Assessment [EN010162/APP/6.4.9.1B] [REP1-039]**) should be updated to reference the correct climate change databases. However, he confirmed that the fluvial flood risk has been accurately represented, and no additional mitigation is required. The issue is a reporting clarification rather than a material error.
- 1.8.17 *Mr Nevins (Applicant)* welcomed the Agency's comments and clarified that the CCP1 climate change allowance dataset had been used solely as a validation tool, not for as a standalone assessment. He confirmed that Work Area 1 was designed to be outside Flood Zone 2 (i.e., the 1 in 1,000-year event) and that the conclusions in the Flood Risk Assessment remain valid. He stated that only minor clarifications are needed in the **ES Volume 4, Appendix A9.1: Flood Risk Assessment [EN010162/APP/6.4.9.1C]** to reflect the Environment Agency's comments.

### **5.3 The conclusions of the FRA and the level of detail provided in the assessment**

- 1.8.18 *The ExA* sought further clarification on the Flood Risk Assessment, specifically in relation to overall flood risk within the core study area. The ExA asked the Environment Agency to comment on whether they were satisfied that the proposed development would not result in an increase in overall flood risk and whether the FRA conclusions demonstrate compliance with relevant policy.
- 1.8.19 *Ms Holland (EA)* confirmed that the Agency is satisfied that the Applicant has placed all infrastructure outside of the design flood event, ensuring no loss of fluvial floodplain. He noted that, as a result, no additional mitigation is required and the Development is not expected to increase flood risk either on or off site.
- 1.8.20 She highlighted a few outstanding issues: clarification of reporting in relation to Work Area 5 (the "BESS"), placement of construction compounds and stockpiles during the construction phase, and ensuring that biodiversity mitigation areas, such as new tree planting, do not impede essential access to watercourses for incident management or emergency purposes. He indicated that these matters can be readily resolved, for example, by agreeing appropriate placement or providing a map to indicate key access routes. It noted that these points are subject to ongoing discussion and will be reflected in the **Draft Statement of Common Ground with the Environment Agency [EN010162/APP/8.3B]**.
- 1.8.21 *The ExA* raised a wider point regarding surface water runoff from the proposed development, noting submissions from Interested Parties concerning potential impacts. The ExA invited the Environment Agency to comment on whether the risk of surface water runoff from the solar panels has been appropriately addressed.

- 1.8.22 *Ms Holland (EA)* explained that surface water runoff does not fall within the Agency's remit. She noted that the assessment of such runoff is typically the responsibility of the local planning authority, which ensures that appropriate mitigation, such as sustainable drainage systems (SuDS), is implemented to prevent any increase in flood risk. The Environment Agency confirmed that their focus is on fluvial flood risk, and they do not assess surface water runoff from the panels except in the context of surface water mapping used as a proxy for ordinary watercourse flooding.
- 1.8.23 *The ExA* invited the Applicant to respond to concerns raised by local people regarding surface water runoff from the development.
- 1.8.24 *Mr Nevins (Applicant)* explained that the project team has engaged with several members of the public, gathering information to inform both the flood risk assessment and the placement of infrastructure. He highlighted Field E7 as an example, where the original layout of solar panels was revised to accommodate a surface water flow pathway. The area is now proposed to remain as grassland and mitigation habitat, providing a form of natural flood management, consistent with best practice guidance for controlling surface water from solar developments.
- 1.8.25 He also referenced the Environment Agency's response to ExQ13.1.1 [[REP2-125](#)], noting that the Agency confirmed the appropriateness of grassland beneath photovoltaic arrays as a measure to mitigate increases in surface water runoff.
- 1.8.26 *Mr Northcote (JPAG)* raised further points regarding surface water runoff, noting that these relate to ExQ13.1.6 in **Responses to ExA's First Written Questions [EN010162/APP/8.22A]**. He observed that the Applicant's response had addressed only Work Areas 6 and 7, whereas the ExA's question also included Work Area 8 and other access points.
- 1.8.27 *Mr Northcote (JPAG)* highlighted that in JPAG's response to the first written questions, details were provided regarding proposed new access points across the development, including their locations within areas of medium or high pluvial (surface water) flood risk. He noted that some of these access points correlate with representations from local stakeholders, including RR-169 (Mrs Pamela Gladwin), where surface water had previously flowed through an existing access and onto private land.
- 1.8.28 He stated that there remains an outstanding issue regarding how drainage and surface water management for both existing and proposed new access points will ensure that additional hardstanding does not exacerbate surface water flooding. *Mr Northcote* emphasised that, at present, no mitigation or management measures appear to have been proposed to address these potential impacts.
- 1.8.29 *Mr Nevins (Applicant)* highlighted that the **ES Volume 4, Appendix A5.3: Outline CEMP [EN010162/APP/6.4.5.3C]** contains provisions for managing storm events, including from the access tracks and access points.

- 1.8.30 *The ExA* invited the Lead Local Flood Authority to comment on the management of surface water, including the concerns raised regarding new access points and potential runoff.
- 1.8.31 *Mr Lawrence (NCC)* confirmed that the submitted information is broadly satisfactory at this stage of the examination. He deferred to Mr Marshall, representing Nottinghamshire County Council as Lead Local Flood Authority, for further comment.
- 1.8.32 *Mr Marshall (NCC)* confirmed that the Council is satisfied with the principles proposed by the Applicant for surface water management. He noted that the Council is actively engaging with the Applicant to progress the detailed design and expressed no concerns regarding the site's ability to adequately manage surface water, subject to the implementation of the detailed design measures.

#### **5.4 Concerns raised by the Environment Agency relating to water quality, groundwater and contaminated land**

- 1.8.33 *The ExA* moved on to consider matters relating to water quality, groundwater, and contaminated land, including the potential for contaminated water release in the event of a fire at the site. The ExA invited the Environment Agency to highlight any outstanding concerns and to indicate whether agreement with the Applicant is expected before the close of the examination.
- 1.8.34 *Ryan Smitherman (EA)* noted that several concerns regarding water quality, groundwater, and contaminated land are being addressed through ongoing discussions. He introduced Ms Susie Bates, a groundwater and contaminated land specialist within the Environment Agency's National Infrastructure Team, to provide further detail.
- 1.8.35 *Susie Bates (EA)* identified a number of minor issues that could be resolved easily, primarily relating to amendments to Chapter 9 of the Environmental Statement submitted at the application (**ES Volume 2, Chapter 9: Water Resources [EN010162/APP/6.2.9] [APP-052]**). She highlighted three key issues associated with drainage at the substation and firewater management (EA-008, EA-009, and EA-010):
- Firewater drainage system – The inclusion of an automatic penstock with backup power and a regular testing schedule was welcomed. However, the Environment Agency requested that this information be incorporated into Chapter 9 of the Environmental Statement, which has not yet been completed.
  - Maintenance and disposal commitments – The Agency requested a commitment to maintaining the sustainable drainage (SuDS) system and clarification on handling firewater, including off-site disposal to a suitably permitted facility. These commitments were requested to be included in the Outline Fire Safety Management Plan, the Flood Risk Assessment, the Outline Drainage Strategy, and the Outline Operational Environmental Management Plan. These updates are outstanding.
  - Post-fire pollution prevention – Concerns were raised regarding the lack of controls to manage firewater pollution following a fire. The

Environment Agency requested confirmation that any containment system would be cleaned after a fire before normal drainage resumes, with updates to Chapter 9, the Outline Fire Safety Management Plan, the Flood Risk Assessment, and the Outline Drainage Strategy.

- 1.8.36 Ms Bates (EA) confirmed that these issues are minor and can be addressed through amendments and clarifications within the relevant documents.
- 1.8.37 *Mr Sharpe (Applicant)* noted that a detailed meeting had taken place with Mr Harrington (EA) the previous week, which had been reported during the hearing the day before. Mr Sharpe confirmed that the Applicant has tracked all outstanding matters relating to water quality, groundwater, and contaminated land, including the points raised regarding firewater management and associated drainage. Actions required to address these points have been agreed, and all updates will be incorporated in the Deadline 3 submission, alongside an updated tracker of outstanding matters. He indicated that the parties are very close to agreement on these issues.
- 1.8.38 **Post-hearing note:** Please see the Applicant's responses to Action Point 26.
- 1.8.39 *Mr Lawrence (NCC)* confirmed that the issues and recommendations raised in the Council's Local Impact Report [\[REP1-075\]](#) have largely been addressed by the Applicant through updates to the **ES Volume 4, Appendix A9.1: Flood Risk Assessment [EN010162/APP/6.4.9.1C]** and the **ES Volume 4, Appendix A9.3: Outline Drainage Strategy [EN010162/APP/6.4.9.3]**. He noted that, on this basis, the Council does not currently have any outstanding concerns requiring further work. Any updates will be reflected in the **Draft Statement of Common Ground with Nottinghamshire County Council [EN010162/APP/8.1B]**.
- 1.8.40 *Paul Williams (NSFSG)* raised two principal issues, noting that the second issue was water-related but could be addressed in writing to avoid taking up time at the hearing. He explained that in the Applicant's **Responses to the Relevant Representation Report [EN010162/APP/8.16]** [\[REP1-065\]](#) submitted at Deadline 1, the issue of thermal runaway at the BESS had been highlighted. Although the Nottinghamshire Fire and Rescue Service (NFRS) is not a statutory consultee, he noted that they have been approached for comment and information, but he had not seen any published response from NFRS in the examination library. He considered it would be useful to clarify the current position with NFRS, given their statutory responsibility to acquaint themselves with fire risks within the county.
- 1.8.41 Mr Williams (NSFSG) observed that the **ES Volume 4, Appendix A5.4: Outline Fire Safety Management Plan (FSMP) [EN010162/APP/6.4.5.4B]** indicates that, following the grant of the DCO and once the preferred make and model of batteries have been decided, the **ES Volume 4, Appendix A5.4: Outline FSMP [EN010162/APP/6.4.5.4B]** would be refined into a final FSMP. He expressed concern that the examining authority and the Secretary of State would only have access to the **ES Volume 4, Appendix A5.4: Outline FSMP [EN010162/APP/6.4.5.4B]** as submitted, and that further details and refinements would only be addressed after the DCO had been granted. He could not accept that matters such as the siting of

hydrants or the location of the two tanks could be dealt with later by agreement with Nottinghamshire County Council.

- 1.8.42 He explained that the requirements for water storage are quite specific and that the applicant has followed the guidelines published by the Nottinghamshire National Fire Chiefs Council regarding the volume of water to be stored on-site, its availability, and the discharge rate from the on-site tanks. He noted that, in some respects, the examining authority would also be concerned with these issues, especially as the applicant is already constructing a BESS base nearby.
- 1.8.43 He highlighted that in the original outline FSMP for the BESS, an impermeable membrane was to be installed 300 mm below ground level to prevent any contaminant water from seeping into the water table in the event of a fire.
- 1.8.44 He acknowledged that many elements from the original outline FSMP had been carried over into **ES Volume 4, Appendix A5.4: Outline FSMP [EN010162/APP/6.4.5.4B]** and indicated he had no issue with that approach if it remained effective. However, he expressed concern that the impermeable membrane had not been carried forward into the current plan and reported that residents had indicated the membrane had been abandoned, with only permeable material now placed beneath the battery cells, which he considered concerning. He concluded by emphasising that the lack of an impermeable membrane under the cells represented a material concern.
- 1.8.45 Mr Williams (NSFSG) noted that the **ES Volume 4, Appendix A5.4: Outline FSMP [EN010162/APP/6.4.5.4B]** stipulates the size of the drainage lagoon, pond, or similar feature, which appears to be designed to accommodate the contents of one of the on-site tanks. He explained that the on-site tanks have a capacity of approximately 228,000 litres. He expressed concern that the design seems to assume that two hours of firefighting would be sufficient, in accordance with the National Fire Chiefs Council's guidelines. Mr Williams suggested that this assumption may be optimistic, either in terms of the tanker arriving within two hours or the fire brigade being able to extinguish a fire within that time.
- 1.8.46 Mr Williams (NSFSG) provided examples of previous BESS fires to illustrate the potential scale of contaminated firewater. He referred to a fire at Moss Landing, California, where US Environmental Protection Agency responders reported that 586,300 gallons (approximately 2.6 million litres) of contaminated firewater had to be removed. He noted that this volume is far greater than the 228,000-litre capacity of the proposed on-site pond and is equivalent to an Olympic-sized swimming pool.
- 1.8.47 Mr Williams (NSFSG) continued by highlighting a BESS fire on 15th September 2020 in Liverpool, where water deployed to fight the fire contained hydrofluoric acid. He noted that firefighting at this site continued for 58 hours, and while there was no exact calculation of contaminated firewater, several reports estimated it at over 5,000,000 litres.

- 1.8.48 Mr Williams (NSFSG) referenced another BESS fire in Essex during the construction phase, which also generated contaminated firewater. He noted that issues arose with waste carriers to remove the water, resulting in contaminated firewater remaining on-site for four months. He suggested that lessons from these incidents should inform the Staythorpe BESS, which is currently under construction, including the possible appointment of a contractor prepared to respond to any contaminated firewater resulting from an explosion or fire during the construction phase.
- 1.8.49 Mr Williams (NSFSG) stated that he was unsure whether such a contractor has already been appointed or will be appointed, but if it has, this would provide greater confidence in the site's ability to manage a major fire event at the Staythorpe BESS. He concluded by noting that he was unsure whether this information would be of interest to the examining authority.
- 1.8.50 Mr Williams (NSFSG) commented on contaminants, noting that he would not go through the full list, as these have been provided previously. He highlighted hydrogen fluoride, which has the capacity to form hydrofluoric acid, and explained that in the event of a fire, this would be contained within the smoke plume. He noted that he had not seen any modelling for the smoke plume in the **ES Volume 4, Appendix A5.4: Outline FSMP [EN010162/APP/6.4.5.4B]** or information regarding wind direction. Mr Williams raised a concern about the implications for contamination beyond the site under various weather conditions, including rain, snow, fog, or mist. He acknowledged that these matters may have been considered but indicated that, so far, they do not appear to be addressed in the **ES Volume 4, Appendix A5.4: Outline FSMP [EN010162/APP/6.4.5.4B]**. He concluded that he would not elaborate further at the hearing.
- 1.8.51 Mr Williams (NSFSG) confirmed that any remaining issues could be submitted in technical writing. He then briefly raised a second issue concerning a field west of Norwell Woodhouse. He explained that he represents a resident whose property is fed by a natural spring originating from a field labelled W7 on most maps, which feeds pond 116. The spring originates in the area proposed for solar panel installation, and there is a concern that pile driving could pierce existing piping. He noted that this pipe may have been identified by the Applicant but not formally recognized as a pipe. He confirmed that he would provide further details in writing rather than taking additional time during the hearing.
- 1.8.52 *Mr Sharpe (Applicant)* confirmed that the applicant has reached out to Nottinghamshire Fire and Rescue Service to establish a statement of common ground, but no substantive response has yet been received. Nottinghamshire Fire and Rescue Service has not provided any representations to the examination and is not registered as an interested party. As such, they have not raised any objections. Mr Sharpe noted that **ES Volume 4, Appendix A5.4: Outline FSMP [EN010162/APP/6.4.5.4B]** is substantially based on the established version used at Staythorpe BESS, which was agreed with the Fire and Rescue Service. He confirmed that these principles have been carried through to the current outline FSMP, which was acknowledged by the interested party. He offered to provide

responses on the other matters, which fall outside the water scope, once these issues are received in writing.

**1.8.53 Post-hearing note:** This matter has been recorded as Action Point 27 for NSFSG. Please see the Applicant's responses to Action Point 27.

1.8.54 *Ms Hopkins (Carlton-on-Trent Parish Council)* explained that Carlton is at the downstream end of the watercourse, so all water entering the watercourse ultimately reaches Carlton. She emphasized the importance of the maintenance of SuDS and other mitigation measures, including drainage channels, scrapes, and ponds, to ensure that they remain effective throughout the operational period. She noted that upstream water management will differ from downstream management, and that maintenance must be properly policed or ensured. Drawing from her experience, she highlighted that drainage channels tend to fill with silt over time and become less effective, and that being at the downstream end increases the likelihood of receiving silt and contaminated water from upstream.

1.8.55 She added that there are several other issues regarding the battery energy storage system (BESS) which are not strictly water related. She suggested that, to save time, these design-related issues could be submitted in writing to the applicant for response, rather than being discussed in full during the hearing.

1.8.56 *Mr Nevins (Applicant)* confirmed that the applicant is actively engaging with Elizabeth Hopkins and Carlton-on-Trent Parish Council to discuss the issues that they experience in terms of downstream flooding. In terms of the issue that was raised in terms of maintenance of particular structures and grassland, covered in the **ES Volume 4, Appendix A5.1: Outline Landscape and Ecological Management Plan (LEMP) [EN010162/APP/6.4.5.1C]**, which commits to ensuring these structures remain functional and serve their intended purpose. There is accountability and a clear mechanism for continued maintenance. He further confirmed that updates on the discussions with Ms Hopkins would be provided at Deadline 3.

**1.8.57 Post-hearing note:** Please see the Applicant's responses to Action Point 28.

## 2 THE APPLICANT’S WRITTEN SUBMISSIONS IN RESPONSE TO ACTION POINTS

### 2.1 List of Action Points From Issue Specific Hearing 3

2.1.1 Table 2-1 below sets out the list of action points that arose during the hearing and the Applicant’s post-hearing response to them.

Table 2-1 List of Action Points from Issue Specific Hearing 3 and the Applicant's Post-hearing Responses

Ref	Action Point	Applicant’s Responses
Landscape and Visual		
1.	NSDC to explain why they disagree with applicant’s LVIA in terms of the assessment of significant two particular locations where they consider a moderate effect is significant using professional judgement.	N/A
2.	Applicant to clarify and update progress on discussions with NSDC concerning agreement on assessment of Landscape and Visual effects.	Based on the current discussions, the Applicant considers that the majority of matters are now agreed. The status of discussions is reflected in their the <b>Draft Statement of Common Ground with Newark and Sherwood District Council [EN010162/APP/8.2B]</b> .
3.	NSDC to submit technical note on cumulative effects and impact on visual character at a strategic scale to be provided as a way of setting out the Council’s concerns.	N/A

Ref	Action Point	Applicant's Responses
4.	Applicant to provide response to note referred to above (action 3).	<p>The note from NSDC has not yet been received, However, it is understood that the community and NSDC are concerned about the ongoing landscape change at a regional level as a result of a series of consents and applications for solar farms. As agreed with NSDC, this falls outwith the scope of cumulative assessment included within the LVIA for any individual project.</p> <p>At a regional scale the landscape character in this area has been uniquely shaped by its geology and geography and the uses people have put those resources to. This can be seen in the arable farmland, sand and gravel workings and the local use of Newark brick as a building material. The region has also been profoundly shaped by the coalfields to the west and the presence of the Trent. This combination of geology and geography resulted in the chain of 13 coal-fired power stations which by "<i>the mid-1980s, generated up to a quarter of the power demand for England and Wales.</i>" (from <a href="https://en.wikipedia.org/wiki/Megawatt_Valley">https://en.wikipedia.org/wiki/Megawatt_Valley</a>). These power stations, and the associated power lines became a characteristic feature of the landscape from the early 1960's. From the 1990's onwards the closure of the coal fields started to result in the restoration of former mining landscapes and the replacement of coal-fired power station with gas; making use of the grid connections and often in the same or similar locations to previous power stations, such as at Staythorpe.</p> <p>From the early 2000's a further change started, with the shift towards renewable energy; making continued use of the grid capacity which was a legacy of the major role the region has played in providing power. Large wind farms were sited near Goole to the north where the Trent meets the Humber in 2000-2010. This change slowed from 2015-2025 due to changes in government policy, but has now recommenced in the form of large-scale solar farms. These use a different means of generating electricity, which needs to be sited away from the river flood plains (unlike the power stations which needed a nearby water supply), but in a regional context the landscape change to solar farms can be directly traced to the legacy of the coal fields and the Trent which have strongly influenced the shaping</p>

Ref	Action Point	Applicant's Responses
		<p>of the regional landscape character for the purposes of generating power since the 1960's.</p> <p>Please refer to Appendix A of this Written Summary Note for the Applicant's cumulative technical note in relation to the concerns raised by NSDC in the hearing.</p>
5.	Reminder to applicant to respond to JPAG's submissions in response to Q11.1.12c with regard to sequential impacts.	Please refer to Table 3-8 Responses to JPAG's Deadline 2 Submission of the <b>Responses to Deadline 2 Submission Report [EN010162/APP/8.23]</b> .
6.	NSDC to comment on Applicant's use of landscape character type guidance to justify the woodland planting included in landscape and visual mitigation measures.	N/A
7.	Clarify how Requirement 6 relating to detailed design approval would work in practice.	<p>The detailed design for the Development is secured by Requirement 6 of the <b>Draft Development Consent Order [EN010162/APP/3.1D]</b>, and will be confirmed following the grant of the Development Consent Order ('DCO') for the Development and completion of archaeological investigation works. Details submitted pursuant to Requirement 3 would set out a written scheme setting out the Phases of the Authorised Development.</p> <p>The detailed design would be prepared for each Phase of the Authorised Development. This could include one or more of the Phases approved pursuant to Requirement 3 (Phasing of the authorised development and date of final commissioning).</p> <p>Each detailed design submission pursuant to Requirement 6 (Detailed design approval) would include the following details:</p>

Ref	Action Point	Applicant's Responses
		<p>a) layout;                      b) scale;                      c) proposed finished ground levels;                      d) external appearance;                      e) hard surfacing materials;                      f) vehicular and pedestrian access, parking and circulation areas; and                      g) refuse or other storage units, signs and lighting,</p> <p>The details must demonstrate how they accord with the <b>Concept Design Parameters and Principles [EN010162/APP/7.14C]</b>.</p> <p>The <b>ES Volume 4, Appendix A5.1: Outline Landscape and Ecological Management Plan (LEMP) [EN010162/APP/6.4.5.1C]</b> and biodiversity design strategy is then secured by Requirement 8, which would be prepared for each Phase of the Authorised Development. As with Requirement 6, Requirement 8 can include one or more of the Phases approved pursuant to Requirement 3 (Phasing of the authorised development and date of final commissioning).</p>
8.	Applicant to provide a plan of which new hedges could be impacted at decommissioning and to consider Mrs Hopkins' suggestion concerning double rather than single higher deer fences.	<p>A plan showing the hedges that are assumed (as a worst-case, from a landscape and visual perspective) to be removed at decommissioning is provided in Appendix B (Hedges Assumed to be Removed at Decommissioning) of this Written Summary Note.</p> <p>The intention of the "deer" fence is principally to keep people out, from a site security point of view, rather than to keep deer out. It is acknowledged that a "deer" fence is not as secure as a paladin or palisade fence, however, these alternative fence types are more expensive, have much higher carbon footprint and are more visually intrusive. These alternative fence types are not considered proportionate to the security risk, given the length of fence involved. <b>Concept Design Parameters and Principles [EN010162/APP/7.14C]</b> sets out that up to</p>

Ref	Action Point	Applicant's Responses
		140 km of such fence will be required). Two lower fences would not provide the same deterrent for people minded to try to enter the site. This approach is in common with most other modern solar farms.
<b>Biodiversity</b>		
9.	Applicant to submit a revised Chapter 8 to respond to NSDC concerns regarding the ecological assessment.	Please refer to Appendix C of the Written Summary Note which provides clarification about how embedded and applied mitigation have influenced the assessment of effects on breeding birds.  Table 8.12 in <b>ES Volume 2, Chapter 8: Ecology and Biodiversity Rev 3 [EN010162/APP/6.2.8B]</b> has been revised to show how key elements of embedded mitigation relate to the assessment of significance.
10.	Buglife to submit further details of potential mitigation measures to be provided e.g. nonreflective/anti reflective coatings.	N/A
11.	Applicant to provide a draft framework for the Biodiversity Design Strategy referred to in dDCO Requirement 8(2).	Please refer to Appendix D, which sets out a suggested structure for the Biodiversity Design Strategy. This structure has been informed by the 'Biodiversity gain plan: phased development templates', published by DEFRA in October 2024 <sup>1</sup> . The intention of the Biodiversity Design Strategy is to provide certainty over how a phased development can deliver the BNG, and provide a clear structure within which the detailed landscape design and management arrangements can be prepared, and controlled.

**Construction Effects**

<sup>1</sup> Biodiversity gain plan: phased development templates: <https://www.gov.uk/government/publications/biodiversity-gain-plan-phased-development-templates>

Ref	Action Point	Applicant's Responses
12.	Applicant to consider providing relevant extracts from the noise standards referred to in BS5228.	Please refer to Appendix E of the Report which provides a technical note on the relevant extracts from the noise standards referred to in BS5228.
13.	Outline CEMP to be updated to reflect land and water contamination risk matters raised by the EA.	<p>Section A5.3.6 of the <b>ES Volume 4, Appendix A5.3: Outline Construction Environmental Management Plan (CEMP) [EN010162/APP/6.4.5.3C]</b> has been updated to:</p> <ul style="list-style-type: none"> <li>• Remove previous paragraph 24, which related to a 'discovery strategy' for contaminated land, because this was replaced in Version B with the "Unsuspected Contamination Protocol" (in accordance with the EA's preferred wording).</li> <li>• Add a commitment to provide a Foundation Works Risk Assessment in the event that contaminated land is identified within 100 m of proposed foundation works within Work no.s 4, 5a, 5b, 6 and 7, and that this would need the approval of the EA and then would need any identified mitigation implementing.</li> </ul>
14.	Applicant/EA to consider whether cable bridges rather than HDD could be used to cross water courses.	<p>HDD is proposed for the following (types of) watercourses: principal and ordinary, but not field drains.</p> <p>The Environment Agency requested that the Applicant propose HDD for cable-crossings of these watercourses. The alternatives were:</p> <ol style="list-style-type: none"> <li>a. Cut trench across the watercourse, with temporary (a few days' duration) pumped watercourse diversion during installation. This was not favoured because of the direct impacts on the watercourse habitat and species. Notably, it would be impossible to avoid siltation to some degree when the water was allowed to run over the works area on completion, and in addition there would be a temporary cessation of the ability of river-bound fauna to pass the crossing point, when the water was pumped via pipe.</li> </ol>

Ref	Action Point	Applicant's Responses
		<p>b. Cable bridges, where the cables cross the watercourse above normal water height. This was not favoured because it would involve creating a potential barrier to the flow of flood water and debris in the flood water. To be elevated sufficiently to avoid the flow of flood water, the bridges would have to be, in places, several metres above the water level and many tens of metres long, and these would include supports that could not avoid the flood water. Such elevated bridges would have landscape and visual impacts, and would affect the usability of the land either side of the watercourse for agriculture or solar PV usage.</p> <p>Cable bridges, as compared to HDD, have the following technical considerations:</p> <ul style="list-style-type: none"> <li>a. Cable bridges would be more visible, and would have additional management, maintenance and security considerations.</li> <li>b. Cable bridges would need to be engineered to avoid risks to the cable, which would influence their design and appearance.</li> <li>c. The extent of physical works near watercourses (concrete footings as bridge supports, for example) would need to have regard to avoiding risks of flooding, and appropriate pollution control measures.</li> </ul> <p>To provide ensure that the construction phase seeks to use better alternatives, where practicable and feasible, the following has been added to the <b>ES Volume 4, Appendix A5.3: Outline CEMP [EN010162/APP/6.4.5.3C]</b>: <i>“The Outline CEMP supports innovation and modern methods of construction. The Detailed CEMP for each relevant phase will confirm any further mitigation that is reasonable and practicable that could further reduce the impacts of the Development on people and the environment.”</i></p>

Ref	Action Point	Applicant's Responses
15.	Applicant to respond to the concerns raised by NCC relating to the oCTMP and provide an updated version in relation to these.	<p><b>ES Volume 4, Appendix A5.2: Outline Construction Traffic Management Plan (CTMP) [EN010162/APP/6.4.5.2C]</b> has been amended to confirm that vegetation within required visibility splays will be cut-back on the approaches to the site access locations.</p> <p>Text has also been added to the <b>ES Volume 4, Appendix A5.2: Outline Construction Traffic Management Plan (CTMP) [EN010162/APP/6.4.5.2C]</b> to strengthen the Applicant's commitment to the detailed design of any works to the highway to require technical approval of the highway authority. Detailed designs are to be provided as part of the Detailed CTMP submitted for each Phase of the Development.</p>
16.	Applicant consider the concerns raised by NCC relating to construction routes, passing places and visibility splays at junctions/access points.	<p>The Applicant has continued to engage positively with NCC on these matters and following a meeting with both parties, the Applicant has provided NCC with additional site access drawings that better present the site access visibility splays and demonstrate the suitability of the designs. A commentary note has also been sent to NCC regarding the site access arrangements to accompany the drawings and identifies locations where access-specific traffic management may be required to further improve road safety. When agreed with NCC and finalised, the revised documents will be published.</p> <p>The Applicant has discussed with NCC the strategy for the implementation of passing places and specific locations queried by NCC, and this has been broadly accepted by NCC in principle. The Applicant has agreed to provide NCC with a technical note that documents the rationale for acceptability at locations where inter-visibility is not achieved.</p> <p>Other observations and requests for further information made by NCC are also being addressed and this information will be published when agreed finalised.</p>

Cultural Heritage and Archaeology

Ref	Action Point	Applicant's Responses
17.	Applicant to update Settings Assessment to include further rationale for the scoping out of assets identified by NSDC.	<p><b>ES Volume 4, Appendix A11.2 Heritage Settings Assessment Scoping Exercise [EN010162/APP/6.4.11.2B]</b> has been updated, with the insertion of a section A11.2.6 Additional Consideration of Selected Assets following Post-Submission Consultation. This section includes further justification as requested, as well as clarifying how the specific assets identified by NSDC have been addressed. The Applicant concludes that the original decision to exclude these assets was justified and reasonable, given that no significant effects were likely to occur.</p>
18.	Applicant to provide note to clarify where professional judgement has been applied to the assessment heritage assets (including St Mary's church as an example).	<p>A section has been added to <b>ES Volume 4, Appendix A11.2 Heritage Settings Assessment Scoping Exercise [EN010162/APP/6.4.11.2B]</b> at A11.2.7 Clarification of Grouping Rationale and Application of Professional Judgement. This provide clarification on how the process of grouping assets (as referred to in Section A11.2.3 of <b>ES Volume 4, Appendix A11.2 Heritage Settings Assessment Scoping Exercise [EN010162/APP/6.4.11.2B]</b>) or selecting individual assets for separate assessment was applied, and how professional judgement was used in making such determinations. This process was used internally when considering whether to scope assets (whether individually or as part of groups) in or out of detailed assessment, both in the original scoping exercise, initial assessment and when considering responses from consultees to Scoping and after submission of the PEIR, Three examples are presented to make that internal process explicit; these are St. Radegund's Church and the Maplebeck Conservation Area, Beesthorpe Hall and Associated Assets, and the Church of St. Mary and Carlton Conservation Area.</p>
19.	NSDC and Applicant to update SoCG with progress on addressing NSDC concerns relating to impacts on Kersall Lodge Farmhouse and the BESS (edge	<p>Please refer to row 2.6.4 of Table2-6 (Cultural Heritage) in the <b>Draft Statement of Common Ground with Newark and Sherwood District Council [EN010162/APP/8.2B]</b>.</p>

Ref	Action Point	Applicant's Responses
	of Kelham Conservation area Averham Park PaG).	
20.	Applicant to provide updated Archaeological Mitigation Strategy covering the concerns raised by NCC, detail on how unexpected archaeological discoveries would be dealt with, and clarifying the wording with regards to 'stages' and 'phases'.	<p><b>ES Volume 4, Appendix A11.8: Outline Archaeological Mitigation Strategy (AMS) [EN010162/APP/6.4.11.8B]</b> has been updated following further discussion with the County Archaeologist. It includes reference to an Unexpected Discoveries Protocol (which will also be included in the <b>ES Volume 4, Appendix A5.3: Outline CEMP [EN010162/APP/6.4.5.3C]</b>). Language used in the oAMS now reflects the wording of "stages", which refer to stages of the archaeological works covered by the oAMSs, and "phases", referring to Development and construction phases.</p> <p>A protocol on unexpected discoveries has been incorporated into the revised <b>ES Volume 4, Appendix A11.8: Outline Archaeological Mitigation Strategy (AMS) [EN010162/APP/6.4.11.8B]</b>.</p>
21.	NCC and Applicant to discuss any further changes to Requirement 11 Archaeology in the dDCO.	As set out in <b>Draft Statement of Common Ground with Nottinghamshire County Council [EN010162/APP/8.1B]</b> , the Applicant has updated Requirement 11 and has sought feedback from NCC. The Parties will update the ExA at Deadline 4.
22.	Applicant and NCC to discuss and agree the current understanding of the heritage significance of Ossington Airfield and its setting, and to agree the approach to survey works to be completed on Ossington Airfield post consent, as part of the Stage 1 works.	<p>Responses will be provided in the <b>Draft Statement of Common Ground with Nottinghamshire County Council [EN010162/APP/8.1B]</b>.</p> <p>The Applicant has continued to engage with NCC regarding Ossington Airfield and is in receipt of new information provided by NCC, following their recent inspections of the site and wider area of Ossington.</p> <p>The Applicant's original assessment was based on the HER data available at the time the assessment was undertaken, together with some geophysics survey results, concentrated around the western, northern and north-eastern parts of the former airfield. This indicated that there was potential for buried remains of now demolished structures associated with the former airfield (and shown on historic mapping) to survive within the Order Limits.</p>

Ref	Action Point	Applicant's Responses
		<p>Figure 11.2b within <b>ES Volume 3, Figure 11.2: Location of Geophysical Survey and Trenching [EN010162/APP/6.3.11B] [REP2-039]</b> shows the extent of geophysical coverage carried out at the Airfield Site at Stage 1 (pre-application investigations). The areas not surveyed within the main airfield site (within the perimeter tracks and adjacent to the main runway) were under crop at the time of survey. It is intended that these areas will be surveyed as part of the programme of work to complete geophysical survey over the Development, as part of Stage 2 Post-Consent of the works set out in the <b>ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]</b> In addition, it is proposed to undertake a topographical survey to identify and locate other features within the order limits. This together with the completed geophysical survey will inform detailed design, and the application of appropriate mitigation.</p> <p>The applicant has given consideration to the new information presented by NCC, as well as additional visits within the wider area of Ossington. The applicant acknowledges that many structures associated with the former airfield survive (some partially demolished, and some in varying use and in generally poor condition) within the wider environs of Ossington. However, the majority of these structures lie outside of the proposed Order Limits and at some distance from the nearest part of the proposed infrastructure and will not be subject to any direct or other impact. Many are not intervisible with each other or the area of the proposed Development, and although together they form part of the Airfield's overall significance, there are unlikely to be any effects on their settings which would diminish their significance as individual components (nor their contribution to the significance of the asset overall)..</p> <p>Whilst there are some remains of concrete structures within the area in which panels are proposed (some of which seem to be related to the “arrester system” used at the Airfield), it is considered that any potential direct effects can be appropriately mitigated (either by avoidance at detailed design, or by preservation</p>

Ref	Action Point	Applicant's Responses
		<p>by record). It is noted here that key components of the former airfield, such as its hangers, and importantly its control tower no longer survive, reducing the legibility of the airfield as a whole. The EIA assessed the potential effect as of high magnitude upon assets of low significance (as a non-designated heritage asset), the effect of which would be minor and not significant (and for which archaeological mitigation as referred to above was possible). The Applicant considers this assessment to be valid and does not consider that the conclusions in the EIA need to be changed.</p> <p>The Applicant will continue to work with NCC to agree the scope and extent of the surveys proposed, and any specific recording and mitigation requirements. <b>ES Volume 4, Appendix A11.8: Outline AMS [EN010162/APP/6.4.11.8B]</b> has been updated to reflect the feedback received and the Applicant will continue to seek feedback from NCC to seek agreement on this matter.</p>
Flood		
23.	EA to set out any residual concerns over the exception test regarding the BESS after review of further information from applicant.	N/A
24.	Applicant to provide further details in relation to point 23 with regard to the BESS area.	<p>The EA have confirmed via email on 11th February 2026 that <i>“With respect to the potential loss of storage associated with the BESS, the applicant’s response to our comments looks reasonable. Pending inclusion of this commitment in the Outline Drainage Strategy at deadline 3, we would have no further concerns in relation to this matter. With respect to the ordinary watercourses, we can confirm that on review these look to be drains, and therefore we agree with the applicant’s assessment”</i>.</p>

Ref	Action Point	Applicant's Responses
		<p>Regardless, the <b>Flood Risk Assessment [EN010162/APP/6.4.9.1C]</b> has been updated to explicitly cover flood risk from ordinary watercourses in proximity to Work Area 5a and 5b, which concludes that the watercourses have capacity to convey the 1 % AEP event plus 39% climate change allowance without overtopping. As such, there will be no loss of floodplain at the BESS.</p> <p>The <b>Outline Drainage Strategy [EN010162/APP/6.4.9.3]</b> commits Work Area 5a and 5b to having a SuDS network to be designed to the 1 % AEP plus 40 % climate change event. As such, work Area 5a and 5b will be safe from surface water flooding and there will be no loss of floodplain storage.</p>
25.	Impacts of climate change modelling to be reported more clearly in response to EA comments.	<p>The <b>Flood Risk Assessment [EN010162/APP/6.4.9.1C]</b> has been updated to clarify that the CCP1 dataset was used as a validation flood outline, not as the sole climate change scenario, and that Work Area 1: Solar PV was designed to be located outside the 0.1 % AEP event (1:1000 year event).</p> <p>Responses will be provided in the <b>Draft Statement of Common Ground with the Environment Agency [EN010162/APP/8.3B]</b>.</p>
26.	Applicant to update EA issues tracker, SoCG and amend Chapter 9 and associated outline operational and fire safety management plans including issues around BESS contaminated surface water run-off, firewater, SuDS. In response to detailed points raised by the EA.	<p><b>ES Volume 2, Chapter 9: Water Resources [EN010162/APP/6.2.9]</b> and the <b>ES Volume 4, Appendix A5.4: Outline Fire Safety Management Plan (FSMP) [EN010162/APP/6.4.5.4B]</b> have been updated to include the following commitments:</p> <ul style="list-style-type: none"> <li>• An automated penstock will be placed on the outlet of the SuDS unit and would be closed in the event of BESS containers needing to be cooled during a fire event.</li> <li>• The penstock would be regularly tested to ensure its functionality and there will be a backup power system in place.</li> <li>• Following a fire-fighting event, the impermeable lining or clay base of the detention basin could be replaced if testing identified that contaminants were</li> </ul>

Ref	Action Point	Applicant's Responses
		<p>present. Any containment systems for firewater would be thoroughly cleaned before any penstock was re-opened and drainage resumes.</p> <p>Responses to these matters are set out in the <b>Draft Statement of Common Ground with the Environment Agency [EN010162/APP/8.3B]</b>.</p>
27.	Norwell Solar Farm Steering Group (NSFSG) concerns over BESS safety and firefighting to be submitted in writing and responded to by applicant.	Noted. The Applicant will provide a response once the NSFSG's submission has been received.
28.	Applicant to provide an update to how the concerns on surface water flooding raised by Mrs Hopkins would be addressed.	<p>The Applicant and Mrs Hopkins discussed the changes in the layout following PEIR, including the removal of a section of Work Area 1 from a modelled surface water flow pathway and the removal of Work Area 4: Substations east of Carlton Road.</p> <p>Both parties also discussed the current flow pathways from Field E6 and that they correlate with the Raincloud modelled 2D rainfall pathways. The Applicant explained that Field E6 is currently tilled and compacted and is leading to runoff which flows to the east. Work Area 1 will be sown with grass and will promote retention of surface water for longer compared to the baseline scenario. Both parties also discussed the Natural Flood Management Measures being taken forward as part of the NG+ fund and that there will be engagement with the PC on how best to deliver these / have engagement with the process.</p> <p>Other matters discussed but not related to Hydrology - Work Area 4 and the detail / Rochdale envelope parameters, hedging proposals, cable depth.</p> <p>The Applicant and Mrs Hopkins agreed to further dialog and the provision of detail on matters not relating to the water environment.</p>

## 2.2 List of Additional Action Points From Issue Specific Hearing 3

2.2.1 Table 2-2 below sets out the list of additional action points that arose during the hearing and the Applicant’s post-hearing response to them.

Table 2-2 List of Additional Action Points from Issue Specific Hearing 3 and the Applicant's Post-hearing Responses

Ref	Action Point	Applicant’s Responses
Additional Action Points		
29.	The Applicant to provide an update on discussions with NCC as highway authority and to updated the colour-coding of agreed and disagreed matters within the SoCGs.	The Applicant and NCC have undertaken a full review of the <b>Draft Statement of Common Ground with Nottinghamshire County Council [EN010162/APP/8.1B]</b> , including Table 2-5 (Traffic and Access). This has now confirmed a number of additional items can now be reported as having been agreed. NCC have confirmed in writing that this is an accurate reflection of the status of each matter.
30.	The Applicant to continue discussions with the County Archaeologist on further archaeological work to be progressed within the oAMS, including clarification of how the oAMS process would operate and how the County Archaeologist would be involved.	Further discussions have been ongoing with the County Archaeologist, and the <b>ES Volume 4, Appendix A11.8: Outline Archaeological Mitigation Strategy (AMS) [EN010162/APP/6.4.11.8B]</b> has been updated to respond to the feedback received.
31.	The Applicant to provide clarity within the oAMS on the protocol and stages of work for dealing with unexpected archaeological discoveries, including how such discoveries would be incorporated into the iterative assessment strategy.	<b>ES Volume 4, Appendix A11.8: Outline Archaeological Mitigation Strategy (AMS) [EN010162/APP/6.4.11.8B]</b> and <b>ES Volume 4, Appendix A5.3: Outline Construction Environmental Management Plan (CEMP) [EN010162/APP/6.4.5.3C]</b> have been updated to include an Unexpected Discoveries Protocol. This covers protocols for dealing with archaeological discoveries during consented construction works, outside of the formal mitigation programme, including areas which may have been formally “signed-off” following the completion of agreed mitigation. The Protocol include instructions regarding

		<p>discoveries of materials/features that would qualify as Treasure for purposes of the Treasure Act 1996 and the Treasure (Designation) (Amendment) Order 2023 or in the event of the discovery of potentially human remain.</p> <p>The Protocol is secured by <b>ES Volume 4, Appendix A5.3: Outline Construction Environmental Management Plan (CEMP) [EN010162/APP/6.4.5.3C]</b> and have been referred to in <b>ES Volume 4, Appendix A11.8: Outline Archaeological Mitigation Strategy (AMS) [EN010162/APP/6.4.11.8B]</b>.</p>
32.	The Applicant to update the referenced document for the plans in the ExQ Report.	Please refer to <b>Responses to ExA's First Written Questions [EN010162/APP/8.22A]</b> , which has been updated to correct the references to the plans and appendices referred to within the document.

## **APPENDIX A: CUMULATIVE LVIA TECHNICAL NOTE 2**

# 1 INTRODUCTION

## 1.1 PURPOSE OF THIS DOCUMENT

- 1.1.1 Newark and Sherwood District Council (NSDC) have raised concerns relating to the inclusion of consented projects in the assessment baseline. Whilst it is a matter of common ground that the relevant projects are likely to be constructed, this note is provided to address the unlikely scenario that they either are not constructed, or are constructed after the Proposed Development. This assessment is provided in Sections 1.2-1.4 below.
- 1.1.2 In addition, NSDC have requested consideration of sequential effects on local road and PRow users between Moorhouse and Skegby given the close proximity of the Development, Egmonton Solar Farm, Tuxford Road Solar Farm and One Earth solar Farm in that area. Effects on landscape character arising from these sequential views were also discussed during ISH3. These matters are considered in Section 2 below. The assessment provided extends beyond the scope of the **ES Volume 2, Chapter 7: Landscape and Visual Impact Assessment (LVIA) [EN010162/APP/6.2.7] [REP2-022]** to effects outside of the LVIA study area.
- 1.1.3 The Applicant's position is that neither of these additional assessments is necessary to the LVIA, which considers all likely significant effects arising from the Development.

## 1.2 CONSENTED PROJECTS INCLUDED IN THE BASELINE

- 1.2.1 The LVIA provided in **ES Volume 2, Chapter 7: LVIA [EN010162/APP/6.2.7] [REP2-022]** was prepared before Kelham solar farm and the SSE BESS were consented, as a result it includes the following consented projects as part of the future baseline, as noted at paragraph 78:

*“Consented developments of particular relevance to the effects reported in this chapter are the consented solar farms near Winkburn, Knapthorpe Lodge, Muskham Wood and at Tuxford Road. Other consented developments on the shortlist, including the Staythorpe BESS will have a more limited influence on the landscape and views within the study area and/or a more limited influence on the effects arising from the Development.”*

- 1.2.2 Winkburn solar farm is now constructed and forms part of the current landscape baseline, so is excluded from this analysis.

## 1.3 CHANGES TO EFFECTS IF CONSENTED PROJECTS ARE OMITTED

- 1.3.1 The analysis provided below sets out how effects would differ if consented projects are omitted from the future baseline. In providing this analysis, Knapthorpe Lodge and Muskham Wood are considered together given their close association (adjacent sites and same developer).
- 1.3.2 Effects after decommissioning would not be altered in this scenario and are not considered further.

### ***Knapthorpe Lodge and Muskham Wood***

- 1.3.3 If these two solar farms were not present near Knapthorpe the extent of effects arising from the Proposed Development would differ from those set out in the **ES Volume 2, Chapter 7: LVIA [EN010162/APP/6.2.7A] [REP2-022]** as follows:

#### *Mid-Nottinghamshire Farmlands / Village Farmlands with Ancient Woodlands LCT*

- 1.3.4 During construction and early operation there would be additional Medium to Small scale changes to character within the area of slightly higher ground to the west of Muskham Woodhouse Farm (part of the Muskham Wood solar farm site) where there would be close views of the solar arrays within the Proposed Development, seen over hedges to the east. Woodland to the south would screen the solar arrays in that direction. There would also be additional Medium to Small scale changes to character across the fields to the southwest of Knapthorpe, extending to the edge of the village, the southern part of the Knapthorpe Lodge site and the field north of the GNR solar arrays and west of the Knapthorpe Lodge site.
- 1.3.5 During operation and decommissioning the effects to the south and west of Knapthorpe would reduce as planting matures to reduce visibility of the solar arrays, but the effects to the west of Muskham Woodhouse Farm would remain.
- 1.3.6 These changes to effects in a limited area would not alter the overall assessment for this LCT.

#### *Visual Receptor Group B: Caunton to A617*

- 1.3.7 As shown on the versions of Figure 6.6 and 6.7 provided at the PEIR stage, during construction, operation and decommissioning there would be Medium (rather than Small) scale changes to views at the northern end of the footpath south of Knapthorpe, and Small/negligible changes to views from parts of the footpaths which pass through the Knapthorpe Lodge and Muskham Wood sites.
- 1.3.8 These minor differences to effects in a limited area would not alter the overall assessment for this visual receptor group.

### ***Tuxford Road***

- 1.3.9 If this solar farm were not present north of Weston the extent of effects arising from the Proposed Development would differ from those set out in the LVIA as follows:

#### *Mid-Nottinghamshire Farmlands / Village Farmlands with Ancient Woodlands LCT*

- 1.3.10 As shown by **ES Volume 3, Figure 7.4 Landscape Character and Visibility [EN010162/APP/6.3.7A] [AS-035]**, there would be very limited visibility of the Proposed Development from the landscape within 1km of the Site and close to Tuxford Road solar farm.
- 1.3.11 Effects would be the same as set out within the **ES Volume 2, Chapter 7: LVIA [EN010162/APP/6.2.7A] [REP2-022]**.

### *Visual Receptor Group G: East of A1*

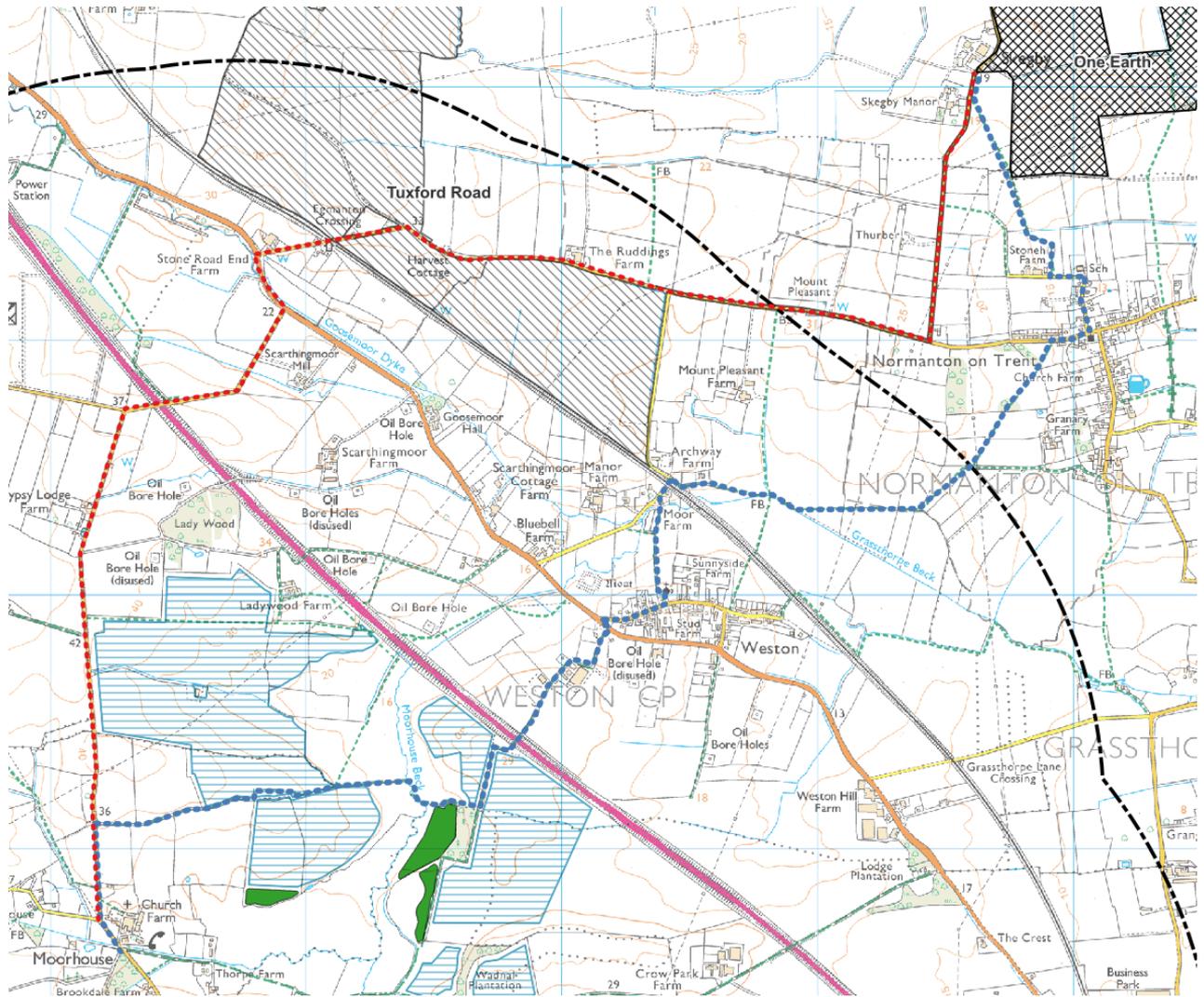
- 1.3.12 As can be seen by comparing the versions of Figure 6.6 and 6.7 provided at the PEIR stage with those provided for the EIA in **ES Volume 3, Figure 7.4 Landscape Character and Visibility [EN010162/APP/6.3.7A] [AS-035]**, there would be very limited visibility of the Proposed Development from the landscape within 1km of the Site and close to Tuxford Road solar farm and the effects would remain the same in this area. There would be visibility of the Proposed Development from the footpaths and local road near Mount Pleasant Farm and Ruddings Farm as illustrated by Viewpoint 52. Given the distance (1.5-2 km) and intervening features in the landscape effects would remain Negligible scale in this area in the absence of Tuxford Road solar farm.
- 1.3.13 Effects would be the same as set out within the **ES Volume 2, Chapter 7: LVIA [EN010162/APP/6.2.7A] [REP2-022]**.

## **1.4 SUMMARY**

- 1.4.1 The effects of the Proposed Development if consented developments included in the future baseline for the **ES Volume 2, Chapter 7: LVIA [EN010162/APP/6.2.7A] [REP2-022]** were not constructed have been considered in detail. Whilst there would be some minor differences in a limited area near Knapthorpe, if Knapthorpe Lodge and/or Muskham Wood solar farms were not constructed, these would not alter the overall assessment of effects for the relevant landscape and visual receptors.

## 2 SEQUENTIAL EFFECTS – MOORHOUSE TO SKEGBY

### *Inset 1 – Routes between Moorhouse and Skegby*



### 2.1 ROUTES CONSIDERED

2.1.1 The two routes considered are shown in Inset 1 above. A driving route between Moorhouse and Skegby (both hamlets) is shown in red – via Moorhouse Road, Weston Road, Tuxford Road and Skegby Road. A walking route is shown in blue, mainly following Public Rights of Way, but where necessary short sections of local roads north of Moorhouse, through Weston and through Normanton on Trent. Parts of both routes are outside the LVIA study area shown as a black dashed line above.

2.1.2 These routes would have the most intense concentration of effects from multiple solar developments included in the shortlist and are not considered to be likely to be used for longer distance journeys.

2.1.3 The visibility of the Development and the scale of visual effects arising from the Development during construction and early operation in this area are illustrated by **ES Volume 3, Figure 7.8 Cumulative Effects with One Earth Solar Farm [EN010162/APP/6.3.7A] [AS-035]**.

### *Road users between Moorhouse and Skegby*

- 2.1.4 As shown by **ES Volume 3, Figure 7.8 Cumulative Effects with One Earth Solar Farm [EN010162/APP/6.3.7A] [AS-035]**, there would be a short stretch of visibility giving rise to Medium/small scale changes to views of the solar arrays within the Development from Moorhouse Road, both as the road passes the adjacent solar area to the east and for southbound road users looking ahead of their direction of travel towards the solar arrays across the valley to the south. These effects would reduce in extent to affect only southbound road users approaching Moorhouse once planting has matured.
- 2.1.5 Egmonton solar farm can be glimpsed above roadside hedges near the junction of Moorhouse Road and Weston Road – by road users travelling towards Moorhouse as they approach the junction. Road users travelling towards Skegby have views of Egmonton solar farm screened by the roadside hedges.
- 2.1.6 Road users heading east have an open and slightly elevated eastward outlook once they cross the A1 and will see Tuxford Road solar Farm 0.9 km ahead of their direction of travel as they travel along Weston Road. This visibility would be restricted by roadside trees and rising ground as they travel along the B1164 and would further reduce between the B1164/Tuxford Road junction and the level crossing, at which point the road will pass through Tuxford Road solar farm and continue alongside the solar arrays on the south side of the road. Through this stretch, road users in both directions will see close views of the adjacent Tuxford Road solar arrays above hedges and through gates. This visibility will reduce as hedges increase in height.
- 2.1.7 Between Tuxford Road solar farm and Normanton on Trent, road users heading towards Skegby would initially see some glimpsed views of One Earth solar farm (at distances of 0.2 to 0.2 km) through gaps in hedges after they turn north onto Skegby Road north towards Skegby. In these views the glimpsed views of One Earth would be seen through layers of hedges and subsidiary to the clutter of pylons, and visibility would reduce as mitigation planting matures. Road users heading towards Moorhouse through this part of the route would see some close views of One Earth through gaps in hedges as they leave Skegby, and then occasional distant glimpsed views of GNR through hedgerow gaps (similar to those shown for Viewpoint 52, but less expansive due to being constrained by roadside hedges) between Normanton on Trent and Tuxford Road solar farm.
- 2.1.8 The solar development which will most affect users of this route is the consented Tuxford Road solar farm. The other three are, or would be, briefly visible as the route passes them along the route. The Development would be a very minor addition in this context, only giving rise to effects on a very short stretch of the local road north of Moorhouse.

### *PRoW users between Moorhouse and Skegby*

- 2.1.9 As shown by **ES Volume 3, Figure 7.8: Cumulative Effects with One Earth Solar Farm [EN010162/APP/6.3.7A] [AS-035]**, the Development would give rise to Medium/small scale effects for walkers heading towards Moorhouse along Moorhouse Road, due to views of solar arrays across the valley looking in the direction of travel. These would reduce in some stretches as planting matures (see **ES Volume 3, Figure 7.7 Effects on Visual Receptors after Mitigation [EN010162/APP/6.3.7A] [AS-035]**), but some open views of solar arrays and Large scale changes to views would remain.
- 2.1.10 For walkers in both directions, Large and Large/medium scale changes to views would arise from close views of the Development where the footpath passes through and around the solar arrays between Moorhouse Road and the A1.
- 2.1.11 Traversing the lower-lying area between the A1 and Normanton on Trent, via Weston there would be limited visibility of all of the solar areas. There would be views of both the Development (2 km to the southwest) and Tuxford Road solar farm (1.4km to the west) for walkers heading downhill from Normanton on Trent towards Weston (similar to, but more distant than the views illustrated by Viewpoint 52).
- 2.1.12 Walkers between Normanton on Trent and Skegby would have some close views of One Earth solar Farm where panels are seen in the adjacent field over and/or through the sparse hedge around that part of the One Earth site. This visibility would reduce as mitigation planting matures.
- 2.1.13 The solar development which would most affect users of this route is the Development (GNR) as walkers would pass through the solar arrays to the west of the A1. Tuxford Road and One Earth will or would be, visible at close quarters for short stretches to the east of the A1 as the route passes them.

## **2.2 CUMULATIVE SEQUENTIAL EFFECTS ON LANDSCAPE CHARACTER**

### *Baseline*

- 2.2.1 **As shown by ES Volume 3, Figure 7.3 Landscape Character [EN010162/APP/6.3.7A] [AS-035]**, the Development and the landscape within 1-1.5 km northeast in this area are located within the Village Farmlands with Ancient Woodlands LCT in the Mid-Nottinghamshire Farmlands RCA within NSDC. The host LCTs for the other solar farms between Moorhouse and Skegby are as follows:
- Egmanton – same as the Development;
  - Tuxford Road –One Earth
  - One Earth (see [EN010159 Figure 11.8: District Landscape Character Areas and Policy Zones](#)) -Mid-Nottinghamshire Farmlands and a small area of Trent Washlands.

2.2.2 As can be seen from the base maps for the two figures referenced above, the undulating arable farmland within the Mid-Nottinghamshire Farmlands to the east of the A1 lacks the woodland blocks that are characteristic of the Village Farmlands with Ancient Woodlands LCT and is more similar to the more open Village Farmlands LCT.

*Effects of the Development (GNR) against the current baseline*

2.2.3 At present, Egmanton solar farm has a limited influence on character in this area, affecting only the Village Farmlands with Ancient Woodlands LCT in the immediate vicinity of that development. People passing through the area regularly by road will have seen the solar farm and be aware of its presence.

2.2.4 Adding the Development (GNR) to this context, would give rise to effects only on the host Village Farmlands with Ancient Woodlands LCT in this area; the few relatively distant views of the solar arrays from the area east of the A1 would give rise to negligible changes to character in that area due to distance, separation by the A1 corridor and the slightly different baseline character. People who know that the Development is present (when they are in areas of no visibility) would also be aware of the presence of Egmanton solar farm and the perception of being in a landscape near a solar farm would be only marginally increased. Effects would be the same as set out in the LVIA ES Volume 2, Chapter 7: Landscape and Visual Impact Assessment (LVIA) [EN010162/APP/6.2.7] [[REP2-022](#)].

*Effects of the Development (GNR) against the future baseline*

2.2.5 This is the development scenario considered in the LVIA.

2.2.6 In future, Tuxford Road solar farm will have a notable influence on character to the east of the A1 – seen in close views from the local road that passes it and more distant, elevated views from the footpaths to the east of that development. People travelling the routes between Moorhouse and Skegby will perceive the area they pass through as including nearby solar farms.

2.2.7 Adding the Development (GNR) to this context, would give rise to effects only on the host Village Farmlands with Ancient Woodlands LCT in this area; the few relatively distant views of the solar arrays from the area east of the A1 would give rise to negligible changes to character in that area due to the influence of the more nearby solar arrays at Tuxford Road, distance, separation by the A1 corridor and the slightly different baseline character. People who know that the Development is present (when they are in areas of no visibility) would also be aware of the presence of both Egmanton and Tuxford Road solar farms and the perception of being in a landscape near a solar farm would be unchanged.

*Effects of the Development (GNR) against a baseline that also includes One Earth solar farm*

2.2.8 This is one of the development scenarios considered in the cumulative assessment provided within the LVIA.

2.2.9 In this scenario, One Earth solar farm would be present to the northeast of Tuxford Road and Egmanton solar farm and the area between the A1 and Skegby would be perceived as a landscape that includes solar farms. The effects of adding the Development would be negligible, for the reasons set out at 2.2.7 above.

*Summary and Conclusion*

2.2.10 As the assessment above sets out, the landscape to the east of the A1 will, in future, already be perceived as including nearby solar farms as a result of the presence of Egmanton and Tuxford Road solar farms. Adding relatively distant views (and knowledge) of the Development to this would give rise to a negligible change to character (with or without One Earth).

2.2.11 It is understood that local and NSDC concerns focus more on the process of landscape change that has, will and would be brought about by successive consents for solar farms in this area. However, as agreed by NSDC, considering such effects is not the function of cumulative assessment for any one development, which should focus on the effects of that development.

## **APPENDIX B: HEDGES ASSUMED TO BE REMOVED AT DECOMMISSIONING**



- Proposed Development**
- Solar Areas
  - 400 kV Substation
  - BESS
  - Intermediate Substations
  - Mitigation Areas
- Proposed Hedges**
- Second hedges alongside permissive routes in arable
  - Second hedges alongside permissive routes in pasture
  - Other Proposed Hedges

**NOTES:**

All new hedges proposed as part of the Development are shown.

'Second hedges' are those that would be planted alongside proposed permissive access routes, creating a double boundary to a field.

Once the permissive routes are removed at decommissioning, 'second hedges' are assumed to be likely to be removed to allow the full size of the fields to once again be used for agriculture. This is considered to be more likely in areas used for arable farming, and less likely in pasture.

1:23,000 Scale @ A1

0 0.5 1 2 km

ABS-0014-ISH-1 v1 Date: 10/02/2026

**Hedges Assumed to be Removed at Decommissioning**

**Great North Road Solar and Biodiversity Park Examination - ISH3 Actions**



## **APPENDIX C: BREEDING BIRDS MITIGATION**

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**[EN010162/APP/6.4.5.3C]** also includes a method statement for breeding birds (section A5.3.11.6), itself part of a wider Construction Ecological Management Plan (CEcMP; section A5.3.11), which sets out measures specific to the protection of breeding birds. These measures broadly include pre-construction nesting bird checks and the implementation of construction exclusion buffers around active nests. These measures are also well established good practice and demonstrably effective so it reasonable to consider them as embedded mitigation.

2.2.3 Consequently, it is appropriate to consider the **ES Volume 4, Appendix A5.3: Outline CEMP [EN010162/APP/6.4.5.3C]** as part of the Development design (i.e., as embedded mitigation) when assessing the effects of the Development. The oCEMP principally mitigates direct harm to breeding birds and so this effect is not considered further.

## 2.3 OUTLINE LEMP

2.3.1 The **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]** describes the measures required to implement, manage, monitor and remediate habitats during the lifetime of the Development. The Masterplan (**ES Volume 4, Appendix A5.1.1: oLEMP Appendix [EN010162/APP/6.4.5.1.1A] [REP1-027]**) shows the locations of the habitats described by the **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]**. The **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]** and **ES Volume 4, Appendix A5.1.1: oLEMP Appendix [EN010162/APP/6.4.5.1.1A] [REP1-027]** are essential parts of the Development design and so the mitigation they provide has been considered as embedded when assessing the effects of the Development.

2.3.2 Some of the habitats in the **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]** are included, either explicitly or incidentally, to mitigate for the loss of habitats for ground-nesting open farmland birds, principally the large areas of grassland and arable land. This mitigation requirement was identified at an early stage in the Development design process and incorporated into the design so that the potential effects of habitat loss on breeding birds could be avoided. In this respect, the mitigation can be considered to be embedded.

2.3.3 However, if some elements of the mitigation relevant only to ground-nesting farmland birds were to be considered as applied mitigation (i.e., to address an unmitigated adverse effect) rather than as embedded, as suggested by NSDC, then the assessment of effects would be presented differently (although the residual effects, after mitigation has been applied, would necessarily be the same).

2.3.4 The **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]** includes the following mitigation for the open farmland assemblage:

- The provision of large areas of grassland and arable land, and the phasing of this provision, to provide alternative nesting habitat during construction;

- Additional measures in the arable land to increase its value to ground-nesting farmland birds including:
  - Rotation of cereal crops with fallow;
  - Spring sowing of cereal crops;
  - Winter stubble;
  - Skylark plots;
  - Lapwing plots;
  - Wild bird seed crop;
  - Headlands;
  - Beetle banks; and
  - Supplementary feeding for farmland birds.

### **3 ASSESSMENT OF CONSTRUCTION EFFECTS WITHOUT THE OLEMP**

#### **3.1 INTRODUCTION**

3.1.1 Prior to the application of mitigation, the potential adverse effects of the construction on the breeding open farmland assemblage include temporary habitat loss and disturbance, habitat fragmentation, and direct disturbance of animals.

3.1.2 The following sections present an assessment of the effects in the absence of the mitigation secured in the **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]**. It is intended to provide clarity about the characterisation of effects and the conclusions in section of 8.8.15 of **ES Volume 2, Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8B]**.

#### **3.2 DIRECT DISTURBANCE**

3.2.1 Noise and visual disturbance during the breeding season (March to August) has the potential to displace and dissuade breeding birds from otherwise from habitats in and around work activities generating disturbance. The phasing of construction will limit disturbance to a approximately one quarter of the Order Limits and so birds will have large areas of undisturbed habitats within and outside the Order Limits into which they can be displaced. However, without additional habitat creation/enhancement and the phasing of this before and during construction, there may be insufficient high-quality undisturbed habitat available to compensate for the effects of disturbance. This could lead to a loss of breeding and foraging habitats and a reduction in the reproductive success of the affected population in a given season. In the absence of additional mitigation, the effect on the open farmland assemblage would be characterised as adverse, low magnitude, temporary and reversible at a local scale. This would constitute a significant adverse effect on a feature of regional value.

#### **3.3 HABITAT LOSS, DISTURBANCE AND FRAGMENTATION**

3.3.1 The effects of habitat loss, disturbance and fragmentation are similar to those of the direct disturbance of birds in that habitat availability is reduced, albeit permanently and directly. Unlike direct noise and visual disturbance, the effects of habitat loss would be additive over the duration of construction

as each phase of the Development is completed in turn. Without additional habitat creation/enhancement and the phasing of this before and during construction, there may be insufficient high-quality habitat available to compensate for the loss of habitats. This could lead to a loss of breeding and foraging habitats and a reduction in the reproductive success of the site population. The effect on the open farmland assemblage would be characterised as adverse, moderate magnitude and permanent at a local scale. This would constitute a significant adverse effect on a feature of regional value.

### 3.4 MITIGATION

- 3.4.1 **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]** specifies a range of measures (as set out in section 2.2) to mitigate some of the potential adverse effects arising during construction, specifically those relating to a reduction in habitat availability, by providing compensatory habitats. These measures are considered to be effective and proportionate to the predicted adverse effects.

### 3.5 RESIDUAL EFFECTS

- 3.5.1 With the implementation of the mitigation in the **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]**, there will be no significant adverse effects on the open farmland breeding bird assemblage. The residual effects, in the event that the measures in the **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]** are considered to be additional mitigation, are as described in Section 8.8.15 of **ES Volume 2, Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8B]**.

## 4 SUMMARY

- 4.1.1 The effects of the construction of the Development on breeding birds and the open farmland assemblage have been assessed in the absence of oLEMP mitigation which was otherwise considered to be embedded mitigation in the assessment presented in **ES Volume 2, Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8B]**. The assessment in this Technical Note identifies potentially significant adverse effects arising from a reduction in habitat availability and demonstrates how the **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]** will mitigate them. The conclusions and the significance of residual effects are the same as presented in **ES Volume 2, Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8B]**.

## 1 PURPOSE OF THIS DOCUMENT

- 1.1.1 Newark and Sherwood District Council (NSDC) has raised concerns relating to the assessment of the effects of construction on breeding birds, specifically the open farmland assemblage, in Section 8.8.15 of **Environmental Statement (ES) Volume 2, Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8B]**.
- 1.1.2 It is a matter of common ground that the overall conclusions and assessment of residual significance in **ES Volume 2, Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8B]** are sound, but NSDC requested clarification about how the assessment would change if some elements of the embedded mitigation were instead considered to be applied mitigation.
- 1.1.3 This document describes an assessment based on a different premise to that used consistently in the ES, and hence does not form part of the ES. The conclusions on residual effects are the same as set out in the ES, however.

## 2 EMBEDDED MITIGATION

- 2.1.1 Section 8.6 Development Design of **ES Volume 2, Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8B]** describes features of the Development that have been designed to avoid and reduce potential adverse effects. These 'embedded' mitigation measures have been considered as part of the Development when determining its potential effects. In instances where the embedded mitigation is not sufficient to avoid significant adverse effects, further mitigation and compensation would have been proposed, although this situation did not arise, as is set out in **ES Volume 2, Chapter 8: Ecology and Biodiversity [EN010162/APP/6.2.8B]**.
- 2.1.2 Many of these design elements are applicable to breeding birds, such as the avoidance of high-value habitats, sensitive programming and the reduction in arable farming. Embedded mitigation is also taken to include the **ES Volume 4, Appendix A5.3: Outline Construction Environmental Management Plan (CEMP) [EN010162/APP/6.4.5.3C]** and the **ES Volume 4, Appendix A5.1: Outline Landscape and Ecological Management Plan (LEMP) [EN010162/APP/6.4.5.1C]**. These two management plans include general and specific measures to safeguard breeding birds during construction.

### 2.2 OUTLINE CEMP

- 2.2.1 The **ES Volume 4, Appendix A5.3: Outline CEMP [EN010162/APP/6.4.5.3C]** sets out measures to protect environmental features during the construction of the Development. The measures in the **ES Volume 4, Appendix A5.3: Outline CEMP [EN010162/APP/6.4.5.3C]** are well established good practice in the construction industry and demonstrably effective so it reasonable to consider them as embedded mitigation. They include general measures that provide broad environmental safeguards, including to breeding birds, such as pollution prevention and the control of noise.
- 2.2.2 The **ES Volume 4, Appendix A5.3: Outline CEMP**



## **APPENDIX D: DRAFT FRAMEWORK FOR THE BIODIVERSITY DESIGN STRATEGY**

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## 1 INTRODUCTION

### 1.1 PURPOSE OF THIS DOCUMENT

1.1.1 This document has been prepared to demonstrate a framework for the Biodiversity Design Strategy specified in Requirement 8 of the **Draft Development Consent Order [EN010162/APP/3.1D]**, which states:

*8. – The authorised development must not commence until a biodiversity design strategy has been submitted to and approved by the planning authority, such approval to be in consultation with the Environment Agency, the county authority and the statutory nature conservation body.*

*1. The biodiversity design strategy must include details of how the strategy will secure a biodiversity net gain for all of the authorised development during the operation of the authorised development of at least 42% in area-based habitat units, at least 17% in hedgerow units, and at least 10% in watercourse units, using the Department of Environment, Food and Rural Affairs' statutory biodiversity metric (version 1.0.3) to calculate those percentages.*

*2. The biodiversity design strategy must be substantially in accordance with the outline landscape and ecological management plan, must be implemented as approved and maintained throughout the operation of the relevant part of the authorised development to which the plan relates.*

1.1.2 The aim of the biodiversity design strategy is to separate the BNG commitments of the whole Development from the phased implementation of the **ES Volume 4, Appendix A5.1: Outline Landscape and Ecological Management Plan (LEMP) [EN010162/APP/6.4.5.1C]**, and to demonstrate how the LEMP for each phase will contribute to the overall BNG requirements. This approach also provides flexibility during the future development and implementation of the LEMP whilst ensuring that the BNG commitments of the DCO are achieved.

1.1.3 The biodiversity design strategy shares key elements with Defra's Biodiversity gain plan templates<sup>1</sup> but tailored to meet the unique requirements of the Development.

1.1.4 This document sets out the likely content and structure of the final biodiversity design strategy as a series of headings with bullet-point contents, although detail is provided for some sections to provide context.

## 2 RELATIONSHIP TO OTHER PLANS

### 2.1 LANDSCAPE AND ECOLOGICAL MANAGEMENT PLAN

2.1.1 **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]** describes the measures required to implement, manage, monitor and remediate habitats during the lifetime of the Development across the entirety

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<sup>1</sup> Available from: <https://www.gov.uk/government/publications/biodiversity-gain-plan-phased-development-templates> [accessed on: 12/02/2026]

of the Order Limits. The Masterplan (**ES Volume 4, Appendix A5.1.1: oLEMP Appendix [EN010162/APP/6.4.5.1.1A] [REP1-027]**) shows the locations of the habitats described by the oLEMP. The oLEMP will be developed, post-consent, in parallel with the wider Development design and in consultation with Newark and Sherwood District Council and members of the Steering Group.

- 2.1.2 Requirement 8 of the **Draft Development Consent Order [EN010162/APP/3.1D]** specifies that a separate LEMP will be approved for each phase of the Development, in accordance with the oLEMP and biodiversity design strategy. The biodiversity design strategy will demonstrate how each phase of the Development contributes to the overall BNG. The content of the LEMPs (i.e., the management and monitoring prescriptions) will not be reproduced in the biodiversity design strategy, although key information will be cross referenced or summarised as necessary.

## 2.2 BIODIVERSITY NET GAIN ASSESSMENT

- 2.2.1 The **BNG Assessment [EN010162/APP/6.4.8.13B]** for the overall Development is based on the **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]**, the illustrative Development design and Work Areas, and is therefore subject to change as these designs and plans are developed following consent. The BNG commitments (in terms of percentage gains in habitat, hedgerow and watercourse units) in the **Draft Development Consent Order [EN010162/APP/3.1D]** are lower than the values currently calculated in the **BNG Assessment [EN010162/APP/6.4.8.13B]** (Table 1) to allow for this future uncertainty. However, **ES Volume 4, Appendix A5.1: Outline LEMP [EN010162/APP/6.4.5.1C]** as it is currently written will deliver biodiversity net gains across all three units types in excess of the DCO commitment. The Development will not require off-site units or statutory credits to meet the BNG commitments of the DCO.
- 2.2.2 The overall **Draft Development Consent Order [EN010162/APP/3.1D]** includes all details about methods, assumptions, compliance with guidance, data sheets and the metric, and this detailed information will not be reproduced in the biodiversity design strategy. Separate BNG assessments will be calculated for each phase and the results cross referenced or summarised as necessary in the biodiversity design strategy.

## 3 DESCRIPTION OF THE AUTHORISED DEVELOPMENT AND PHASING

- Summary description of the project.
- Phase boundaries (plans to be appended).
- Sequence and indicative timescales for each phase.
- Overview of biodiversity opportunities and constraints per phase.

## 4 BIODIVERSITY UNITS FOR EACH PHASE

- 4.1.1 Table 1 summarises the number of post-development biodiversity units delivered by each phase of the LEMP, their percentage contribution to the

total number of units for the overall Development, and any relevant assumptions.

#### **4.1 MINIMUM DELIVERY REQUIREMENTS PER PHASE**

- Minimum required delivery thresholds (e.g., Phase 1:  $\geq 20\%$  of total habitat uplift).
- Explanation of how cumulative delivery remains compliant at each phase.
- Controls to secure reconciliation and ensuring delivery.

#### **4.2 BIODIVERSITY REQUIREMENTS FOR EACH DETAILED LEMP (PHASE SPECIFIC)**

- Phase-specific metric outputs
- Updated habitat maps
- Condition assessments
- Habitat creation/enhancement schedule
- Monitoring requirements
- Dependencies and constraints

### **5 SUPPORTING DOCUMENTATION**

- Baseline biodiversity metric calculation
- Post-development metric calculation
- Phase-specific metric sheets
- Baseline habitat map
- Proposed post-development habitat plan
- Cross-reference table with the oLEMP
- Consultation record with specified bodies

**Table 1: Biodiversity Units for each Phase.**

Unit Type	Overall BNG Assessment				DCO Req.	Phase 1	Subsequent Phases	Cumulative Delivery Notes
	Baseline Units	Post-Dev Units	Net Change	% Net Gain				
Habitat	4044.91	6409.62	2364.71	58.46%	≥42%	<ul style="list-style-type: none"> <li>• May deliver e.g., 10–20% of total</li> <li>• Focus on early grassland creation</li> </ul>	Final delivery of ≥42%	Later phases must demonstrably “top-up” any shortfall from Phase 1
Hedgerow	1,232.54	1,558.72	326.18	26.46%	≥17%	<ul style="list-style-type: none"> <li>• May deliver 5–10% of total</li> <li>• Early planting in accessible fields</li> </ul>	Final delivery of ≥17%	Hedgerow establishment trajectory must show connectivity + cumulative gain
Watercourse	307.84	341.85	34.01	11.05%	≥10%	<ul style="list-style-type: none"> <li>• Early delivery may be modest (3–5%)</li> <li>• Initial buffer zones established</li> </ul>	Final delivery to ≥10%	Shortfalls can be rectified by works in subsequent phases



## **APPENDIX E: NOISE EXTRACTS TECHNICAL NOTE**

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## 1 INTRODUCTION

- 1.1.1 This document has been produced in response to actions from Issue Specific Hearing 3. Action 12 in **Written Summary of Oral Submissions from Issue Specific Hearing 3 and Response to Action Points [EN010162/APP/8.26]** states '*Applicant to consider providing relevant extracts from the noise standards referred to in BS5228.*'
- 1.1.2 BS 5228:2009+A1:2014 *Code of practice for noise and vibration control on construction and open sites – Part 1 (Noise) and Part 2 (Vibration)* (referred to as '*BS 5228-1 Noise*' and '*BS 5228-2 Vibration*' respectively) contain guidance for the assessment of construction noise and vibration.
- 1.1.3 British Standards are protected by copyright, as such this document provides relevant excerpts where BS 5228- and BS 5228-2 are referenced in the noise assessment of **ES Volume 2, Chapter 12: Noise and Vibration [EN010162/APP/6.2.12]** [[APP-055](#)].

## 2 BS 5228-1 NOISE

### 2.1 SCOPE

- 2.1.1 With regards to the scope, BS 5228-1 states:

*'This part of BS 5228 gives recommendations for basic methods of noise control relating to construction sites, including sites where demolition, remediation, ground treatment or related civil engineering works are being carried out, and open sites, where work activities/operations generate significant noise levels, including industry-specific guidance.'*

### 2.2 SIGNIFICANCE OF NOISE EFFECTS

- 2.2.1 With regards to the assessment of construction noise, BS 5228-1 states:

*'Noise levels generated by site activities are deemed to be potentially significant if the total noise (pre-construction ambient plus site noise) exceeds the pre-construction ambient noise by 5 dB or more, subject to lower cut-off values of 65 dB, 55 dB and 45 dB LAeq, T from site noise alone, for the daytime, evening and night-time periods, respectively; and a duration of one month or more, unless works of a shorter duration are likely to result in significant effect.'*

*These evaluative criteria are generally applicable to the following resources:*

*residential buildings;*

*hotels and hostels;*

*buildings in religious use;*

*buildings in educational use;*

*buildings in health and/or community use.'*

## 2.3 HAUL ROAD METHOD

2.3.1 With regards to the calculation of noise from intermittent vehicle movements, BS 5228-1 states:

*‘For mobile items of plant that pass at intervals (such as earth-moving machinery passing along a haul road), it is possible to predict an equivalent continuous sound level using the following method.*

*The general expression for predicting the LAeq, T alongside a haul road used by single engined items of mobile plant is:*

$$LA_{eq, T} = LWA - 33 + 10\log_{10}Q - 10\log_{10}V - 10\log_{10}d$$

*where:*

*LWA is the sound power level of the plant, in decibels (dB);*

*Q is the number of vehicles per hour;*

*V is the average vehicle speed, in kilometres per hour (km/h);*

*d is the distance of receiving position from the centre of haul road, in metres (m).’*

## 3 BS 5228-2 VIBRATION

### 3.1 SCOPE

3.1.1 With regards to the scope of the assessment of vibration from construction activities, BS 5228-2 states:

*‘This part of BS 5228 gives recommendations for basic methods of vibration control relating to construction and open sites where work activities/operations generate significant vibration levels, including industry-specific guidance.’*

### 3.2 HUMAN RESPONSE TO VIBRATION

3.2.1 With regards to the human response to vibration, BS 5228-2 states;

*‘Human beings are known to be very sensitive to vibration, the threshold of perception being typically in the PPV range of 0.14 mm·s<sup>-1</sup> to 0.3 mm·s<sup>-1</sup>. As vibrations increase above these values they can disturb, startle, cause annoyance or interfere with work activities.’*

3.2.2 In addition, BS 5228-2 states;

*‘Some guidance is given in Table B.1.*

Table 1 Guidance on effects of vibration levels

Vibration Level	Effect
0.14 mm·s <sup>-1</sup>	Vibration might be just perceptible in the most sensitive situations for most vibration frequencies associated with construction. At lower

	<i>frequencies, people are less sensitive to vibration.</i>
<i>0.3 mm·s<sup>-1</sup></i>	<i>Vibration might be just perceptible in residential environments</i>
<i>1.0 mm·s<sup>-1</sup></i>	<i>It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents.</i>
<i>10 mm·s<sup>-1</sup></i>	<i>Vibration is likely to be intolerable for any more than a very brief exposure to this level in most building environments.</i>

### **3.3 STRUCTURAL RESPONSE TO VIBRATION**

3.3.1 Regarding the response of buildings to vibration, BS 5228-2 states:

*‘Extensive studies carried out in the UK and overseas have shown that documented proof of actual damage to structures or their finishes resulting solely from well-controlled construction and demolition vibrations is rare. There are many other mechanisms which cause damage, especially in decorative finishes, and it is often incorrectly concluded that vibrations from construction and demolition sites are to blame.*

*In some circumstances, however, it is possible for the vibrations to be sufficiently intense to promote minor damage. Typically this damage could be described as cosmetic and would amount to the initiation or extension of cracks in plasterwork, etc., rather than the onset of structural distress. In more severe cases, falls of plaster or loose roof tiles or chimney pots can occur.’*