Great North Road Solar and Biodiversity Park

Habitats Regulations Screening Report

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Contents

1 INTRODUCTION

1 This Technical Appendix (TA)Report presents a Habitats Regulations Assessment (HRA) Screening and has been prepared on behalf of the Applicant who is seeking consent for the development of Great North Road Solar and Biodiversity Park (the Development), an 800 MW solar park in Newark and Sherwood. A detailed description of the Development is provided in ES Chapter 5 Development Description [EN010162/APP/6.2.5].

2 This report draws on the assessment and information set out in ES Chapter 8, Ecology and Biodiversity [EN010162/APP/6.2.8] and its other Technical Appendices (TAs) [EN010162/APP/6.4.8.1–14].

1.1 LEGISLATIVE CONTEXT

3 The assessment of the Development is required to consider potential effects to 'International Sites' which collectively form the UK's 'national site network'. These sites are legally protected under the Conservation of Habitats and Species Regulations 2017[1] (as amended), commonly termed the 'Habitats Regulations'.

4 International Sites include Special Areas of Conservation (SAC) and Special Protection Areas (SPA). It is also a matter of policy that HRA procedures apply to listed or proposed Ramsar Sites identified through the Ramsar Convention 1976[2], possible SACs (pSACs), potential SPAs (pSPAs) and sites identified, or required, as compensatory measures for adverse effects on the aforementioned sites[3].

5 Under the terms set out in the European Union (Withdrawal Agreement) Act 2020 ("the Withdrawal Act"), the body of existing EU-derived law is retained in our domestic law and so the HRA takes account of relevant EU case law.

2 METHODS

6 The HRA has been carried out with reference to the Planning Inspectorate advice for Nationally Significant Infrastructure Projects[4]. HRA follows a stepwise process:

- Stage 1 – Screening: assessing whether or not the project would have a 'likely significant effect' (LSE) on an International Site, either alone, or in combination with other plans or projects. If the Screening procedure cannot conclude that there will not be a LSE on a International Site, then an Appropriate Assessment (Stage 2) would apply. Otherwise, the project may be authorised.
- Stage 2 – Appropriate Assessment (AA): the AA is undertaken by the competent authority responsible for determining the application. Its purpose is to assess the implications of the project in respect of the International Sites' conservation objectives, which should enable the competent authority to determine whether or not the project would

[1] Available at: https://www.legislation.gov.uk/uksi/2017/1012/contents [accessed on 11/02/2025]
[2] https://www.ramsar.org/
[3] National Planning Policy Framework (December 2024). Paragraph 194, available at: https://www.gov.uk/government/publications/national-planning-policy-framework--2 [accessed on 11/02/2025]
[4] Available at: https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-habitats-regulations-assessments#legislation-and-guidance [accessed on 11/02/2025]

adversely affect the integrity of the International Site. If it can be ascertained beyond reasonable scientific doubt that the project would not adversely affect the integrity of the International Site, then it can be authorised. If not, Stages 3 and 4 would apply.

- Stage 3 – Alternative Solutions: where the project would damage the integrity of a International Site, alternative solutions which would deliver the project objective(s) need to be considered. If there are no alternatives that do not also affect the integrity of the International Site, Stage 4 applies.
- Stage 4 – Imperative Reasons of Overriding Public Interest (IROPI): projects that adversely affect the integrity of a International Site may proceed for imperative reasons of overriding public interest, subject to compensatory measures being secured.

2.1.1 Case Law

2.1.1.1 Mitigation

7 The Court of Justice of the European Union (CJEU) published their decision in the matter of People Over Wind and Sweetman v Coillte Teoranta[5]. Within this case the CJEU ruled that:

"Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects [mitigation] of the plan or project on that site."

8 This ruling effectively determined that the previous domestic case law that allowed mitigation measures to be taken into account during Screening is no longer valid. The screening stage of the HRA must be completed in the absence of mitigation, to determine which, if any, International Sites would be impacted. Should an impact be identified, an AA will be required.

9 However, the 2023 ruling in Eco Advocacy CLG v An Bord Pleanála[6] clarified that standard design features intended to mitigate environmental impacts should be considered at the screening stage and does not automatically require a full AA. Therefore, embedded good practice and design features will be considered during the screening of LSEs.

2.1.1.2 Functional Links

10 The Holohan v An Bord Pleanala judgment[7] in 2018 stated that:

"Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that an 'appropriate assessment' must, on the one

[5] Available from: http://curia.europa.eu/juris/document/document.jsf?text=&docid=200970&pageIndex=0&doclang=EN&mode=lst&dir=&occ=first&part=1&cid=14842188 [accessed on 07/04/2025]
[6] Available from: EUR-Lex - 62021CJ0721 - EN - EUR-Lex [accessed on 07/04/2025]
[7] Available from: https://curia.europa.eu/juris/document/document.jsf?text=&docid=207428&doclang=EN#:~:text=Article%206(3)%20of%20Council,%2C%20and%2C%20on%20the%20other%2C [accessed on 07/04/2025]

hand, catalogue the entirety of habitat types and species for which a site is protected, and, on the other, identify and examine both the implications of the proposed project for the species present on that site, and for which that site has not been listed, and the implications for habitat types and species to be found outside the boundaries of that site, provided that those implications are liable to affect the conservation objectives of the site."

11 Consequently, the potential for offsite impacts, such as through impacts to functionally linked land, and/or species and habitats located beyond the boundaries of International Sites, but which may be important in supporting the ecological processes of the qualifying features, should be considered.

2.2 INTERNATIONAL SITES SCOPING

12 International Sites within 30 km of the Order Limits were identified from Multi-Agency Geographic Information for the Countryside (MAGIC[8]). This distance is precautionary given the character of the Development, but is sufficient to capture potential effects to highly mobile or sensitive features. International Sites are shown in Figure A8.2.1 in TA A8.2 Ecology and Biodiversity Designated Sites Baseline [EN010162/APP/6.4.8.2] and summarised in Table A8.2.114.1 of the same ES technical appendixTA A8.2 Ecology and Biodiversity Designated Sites Baseline [EN010162/APP/6.4.8.2]. Table 1 of this Report provides a detailed description of the scoped-in International Sites. There are only two International Sites within 30 km of the Order Limits, the furthest at 7.0 km, and so Figure A8.2.1 shows only a 10 km radius for ease of reference.

13 The Environment Agency requested (see Table A8.1.1 in TA A8.1 Ecology and Biodiversity Consultation [EN010162/APP/6.4.8.1]) that the Humber Estuary SAC/Ramsar be scoped in due to a potential functional link, via the River Trent and its tributaries, for river lamprey, a qualifying feature of the SAC. The Environment Agency commented (see Table A8.1.3 in TA A8.1 Ecology and Biodiversity Consultation [EN010162/APP/6.4.8.1]) that it is likely that lamprey species are present in Moorhouse Beck, The Beck and Pingley Dyke, the principal watercourses in the Order Limits. Effects to other qualifying features of the SAC/Ramsar are scoped out of this assessment and are therefore excluded from Table A8.14.12.1 of TA A8.2 Ecology and Biodiversity Designated Sites Baseline [EN010162/APP/6.4.8.2] and from Table 1 of this Report. The Humber Estuary SAC is 43 km to the north of the Development, approximately 80 km by watercourse, and is not shown on Figure A8.2.1.

14 The geographic boundaries of the Humber Estuary SAC and Ramsar are congruent, and the qualifying features of interest, lamprey species, are features of both. The conservation advice for the Humber Ramsar states[9]:

For Ramsar sites, a decision has been made by Defra and Natural England not to produce Conservation Advice packages, instead focussing on the production of High Level Conservation Objectives. As the

[8] Available at: https://magic.defra.gov.uk/ [accessed on:07/04/2025]
[9] Available at: https://designatedsites.naturalengland.org.uk/ConservationAdvice.aspx?SiteCode=UK11031&SiteName=humber&SiteNameDisplay=Humber%20Estuary%20Ramsar&countyCode=&responsiblePerson=&SeaArea=&IFCAArea=&HasCA=0&NumMarineSeasonality=0&SiteNameDisplay=Humber%20Estuary%20Ramsar [accessed on 07/04/2025]

provisions on the Habitats Regulations relating to Habitat Regulations Assessments (HRAs) extend to Ramsar sites, Natural England considers the Conservation Advice packages for the overlapping European Marine Site designations to be, in most cases, sufficient to support the management of the Ramsar interests.

For these reasons, the SAC and Ramsar will be assessed together in this HRA Screening.

Table ~~A8.14.1~~1: International Sites Scoped In[10]

Site Name	Qualifying Features	Conservation Objectives	Threats and Pressures
Birklands and Bilhaugh SAC *7.0 km NW of Order Limits*	The most northerly site for old acidophilous oak woods. Smaller areas of dry heath. Habitats support rich invertebrate and fungal assemblages. Qualifying features: Annex I habitats that are a primary reason for selection: • old acidophilous oak woods with *Quercus robur* on sandy plains. No other qualifying features.	The broad conservation objectives for the SAC are ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring: • The extent and distribution of qualifying natural habitats; • The structure and function (including typical species) of qualifying natural habitats; and • The supporting processes on which qualifying natural habitats rely.	The Site Improvement Plan summarises key threats and pressures as: • Public access/disturbance and planning permission relating to the visitor centre; • Change in land management; • Physical modification relating to coal mining; • Air pollution from atmospheric nitrogen deposition; • Disease from plant pathogens; and • Invasive species.
Sherwood Forest ppSPA *4.5 km W and NW of Order Limits*	'Possible' pSPA for breeding populations of nightjar *Caprimulgus europaeus* and woodlark *Lullula arborea*. The site has no formal recognition but for the purposes of this assessment, and in line with	No conservation objectives have been published.	Projects should be accompanied by robust assessment of: • Disturbance to breeding birds from people, their pets and traffic;

[10] All information has been sourced from Natural England's Designated Sites View https://designatedsites.naturalengland.org.uk/SiteSearch.aspx [accessed on 14/04/2025]

Site Name	Qualifying Features	Conservation Objectives	Threats and Pressures
	Natural England advice[11] advocating a precautionary, 'risk-based' approach, it will be considered in the same way as other SPAs. Nightjar and woodlark are listed in Annex I of the Birds Directive[12] which requires member states to designate SPAs for their protection.		• loss, fragmentation and/or damage to breeding and/or feeding habitat; • Bird mortality arising from domestic pets and/or predatory mammals and birds; • Bird mortality arising from road traffic and/or wind turbines; and • Pollution and/or nutrient enrichment of breeding habitats.
Humber Estuary SAC and Ramsar *43 km N of Order Limits*	The second-largest coastal plain estuary in the UK, and the largest coastal plain estuary on the east coast of Britain. Qualifying features: Annex II species present as a qualifying feature, but not a primary reason for site selection: • Sea lamprey *Petromyzon marinus;* and • River lamprey *Lampetra fluviatilis* Ramsar criterion 8:	The broad conservation objectives for the SAC are ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring: • The extent and distribution of qualifying natural habitats and habitats of qualifying species;	The Site Improvement Plan identified two key threats and pressures to lampreys: • Water pollution; and • Change in species distributions.

[11] Natural England (2014) Advice Note to Local Planning Authorities regarding the consideration of likely effects on the breeding population of nightjar and woodlark in the Sherwood Forest region.
[12] Available at: https://environment.ec.europa.eu/topics/nature-and-biodiversity/birds-directive_en

Site Name	Qualifying Features	Conservation Objectives	Threats and Pressures
	• The Humber Estuary acts as an important migration route for both river lamprey and sea lamprey between coastal waters and their spawning areas.	• The structure and function (including typical species) of qualifying natural habitats; • The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and habitats of qualifying species rely; • The populations of qualifying species; and • The distribution of qualifying species within the site. Supplementary advice for lampreys includes specific targets for the River Trent catchment.	

3 POTENTIAL EFFECTS OF THE DEVELOPMENT

15 A range of ecological studies have been undertaken to inform the assessment of ecological effects associated with the Development. A summary of the baseline is presented in Chapter 8 Ecology and Biodiversity [EN010162/APP/6.2.8] and supported by detailed methods and results in TA A8.2–A8.15 [EN010162/APP/6.4.8.2–15]. Where relevant, a summary of the baseline as it relates to the International Sites is presented below and includes references to the relevant Technical Appendices in which more detail is provided.

3.1 LIKELY SIGNIFICANT EFFECTS ON BIRKLANDS AND BILHAUGH SAC

16 There are no direct hydrological links between the Development and the SAC and the intervening distance (7.0 km) and agricultural landscape limit the potential for effect pathways, which are further reduced due to the characteristics of the Development. The Order Limits are not in the Impact Risk Zone (IRZ) for the SAC.

17 The qualifying feature of the SAC is old acidophilus woodland and its associated biophysical properties. This feature has a limited distribution in the region and has not been recorded in the Order Limits. It is unlikely, therefore, that the habitats and plants in the Order Limits have any functional link to the SAC.

18 Most of the recognised threats and pressures (Table 1) relate to activities arising within or very close to the boundary of SAC. The Development will not contribute to these. The possible exception is air pollution from atmospheric nitrogen deposition which can arise from off-site sources. Nitrogen deposition has the potential to modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it.

19 Vehicle emissions are the principal potential source of atmospheric nitrogen pollution from the Development. Section A16.2 in Chapter 16 Miscellaneous Issues [EN010162/APP/6.2.16] concludes that, in the absence of mitigation, there would be limited impacts on air quality during the construction, operation and decommissioning phases. The predicted increases in traffic movements (in Volume 2, Chapter 14 Traffic and Access, section 14.7 and table 14.15 [EN010162/APP/6.2.14]) in all phases of the Development are sufficiently small and distant from the SAC that associated emissions increases will have negligible effect on the nitrogen loading of the qualifying features.

20 No likely significant effects have been identified. The Development will not undermine the conservation objectives of the Birklands and Bilhaugh SAC.

3.2 LIKELY SIGNIFICANT EFFECTS ON SHERWOOD FORST ppSPA

21 A thorough assessment of likely significant effects is made difficult by the lack of information that would normally be available for a SPA including conservation objectives and the data (e.g., population estimates) for the qualifying features.

22 The two potential qualifying features, breeding European nightjar and woodlark, are very closely associated with woodland and heathland habitats. In Nottinghamshire, these species are almost exclusively associated with these habitats in the area of the ppSPA[13]. The species have not been recorded during the breeding bird surveys and the Order Limits does not include sufficiently extensive or well-connected (to the ppSPA) areas of suitable woodland and heathland breeding habitats.

23 Given the restricted distribution of these species and their specialist habitat requirements, it is extremely unlikely that they will depend on or utilise the Order Limits, such that it is not considered to be functionally linked. There are no direct hydrological links and the intervening distance (4.5 km) and agricultural landscape limit the potential for effect pathways to the birds or their habitats, which are further limited by the characteristics of the Development.

24 Most of the recognised threats and pressures (Table ~~A8.14.1~~1) relate to activities arising within or very close to the boundary of ppSPA. The Development will not contribute to these. The possible exception is air pollution from atmospheric nitrogen deposition which can arise from off-site sources and degrade habitat quality.

25 Vehicle emissions are the principal potential source of atmospheric nitrogen pollution from the Development. Section A16.2 in Chapter 16 Miscellaneous Issues [EN010162/APP/6.2.16] concludes that, in the absence of mitigation, there would be limited impacts on air quality during the construction, operation and decommissioning phases. The predicted increases in traffic movements (in Volume 2, Chapter 14 Traffic and Access, section 14.7 and table 14.15 [EN010162/APP/6.2.14]) in all phases of the Development are sufficiently small and distant from the SAC that associated temporary emissions increases will have negligible effect on the nitrogen loading of the qualifying features.

26 No likely significant effects have been identified. The Development will not undermine the conservation objectives of the on Sherwood Forest ppSPA.

3.3 LIKELY SIGNIFICANT EFFECTS ON HUMBER ESTUARY SAC/Ramsar

27 The desk study (TA A8.9 Other Notable and Protected Species [EN010162/APP/6.4.8.9]) returned no records of lampreys in the local stretch of the River Trent or its tributaries within the Order Limits. Evidence suggests that the majority of the river lamprey population of the Humber Estuary is associated with the River Ouse catchment, which supports one of the largest populations in the UK[14], whereas sea lamprey occurs at very low abundance throughout the wider Humber catchment and may also be strongly associated with the Ouse catchment[15].

[13] Reece, J., Crouch, N., Parkin, D., du Feu, Chris and Ellis, B. (2019) The Birds of Nottinghamshire.
[14] Jang, M. H. and Lucas, M. C. (2005). Reproductive ecology of the river lamprey. Journal of Fish Biology 66: 499–512.
[15] Nunn, A. D., et al. (2025) Impacts of Cromwell Weir on the fish populations of the River Trent. University of Hull International Fisheries Institute.

28 Cromwell Weir is located 950 m east of the Order Limits and is the main factor limiting the river lamprey population in the River Trent[16]. Sea lamprey is likely to be even more severely impacted as they immigrate in late spring when river levels are typically low. Consequently, river lamprey is now almost exclusively limited to the tidal river (i.e. below the weir), although even here numbers are substantially lower than historically, with few captured in targeted surveys in 2020[17]. Only two sea lampreys were captured in recent surveys in the River Trent over two recent spawning seasons and the dearth of other records suggests the species is rare[15].

29 The Development has direct hydrological connectivity to the Humber Estuary via watercourses within the Order Limits that are tributaries of the River Trent, which flows north for 80 km into the Humber. Moorhouse Beck, The Beck and Pingley Dyke are the three principal watercourses in the Order Limits and those with greatest potential to support lamprey. The linear distance between the Development the Humber Estuary SAC/Ramsar is 43 km, but the distance by watercourse is approximately 80 km. There is limited evidence to suggest that the local part of the River Trent, and more especially the small tributaries within the Order Limits, are a stronghold or critical resource for lampreys. There is a very low likelihood of occurrence of lamprey as a result of the very large separation distance between the Development and the SAC and the physical obstructions to lamprey distribution in the Trent catchment.

30 Notwithstanding this conclusion, the principal impacts of the Development with the potential to adversely affect lampreys arise from construction activities in or near to watercourses which may support the species. Degradation of lamprey habitat from pollution and temporary or permanent obstacles could affect the survivorship of individuals as well as their ability to migrate freely, and these are the principal factors driving the decline of the species in the Britain[15]. These potential effects would contribute to the recognised threats and pressures to the species and potentially undermine the conservation objectives of the SAC/Ramsar.

31 Embedded designed-in mitigation, which can be considered as part of the design or standard good practice for such developments, includes the following design features to safeguard freshwater habitats and their associated fish species:

- 10 m construction exclusion buffers from the edge of watercourses and waterbodies, reduced to 5 m for small, artificial field drains;
- HDD cables under the most sensitive watercourse i.e., those most likely to support fish (see Figure A5.3.1 Cable Crossings in TA A5.3 [EN010162/APP/6.4.5.3];
- Open-span bridges of the most sensitive watercourses;
- Burying and insulating cables under watercourses to minimise in-channel EMFs; and

[16] Foulds, W. L. (2013). Anthropogenic factors affecting European river lamprey *Lampetra fluviatilis* in the Humber River Basin, north-east England. Unpublished MSc thesis, Durham University.
[17] Jubb, W. M. et al. (2023a). Using acoustic tracking of an anadromous lamprey in a heavily fragmented river to assess current and historic passage opportunities and prioritise remediation. *River Research and Applications* 39:1054–1066.

- The improvement in watercourse quality due to land use change, such as a reduction in agricultural run-off.

32 New watercourse crossings for cabling and vehicle access are the activities with the greatest potential to impact watercourses and are the only ones to encroach in the 10 m separation buffer from watercourses. The method of watercourse crossing and the sensitivity of the watercourse (i.e., its potential to support lamprey) are the two main factors that determine the magnitude of effects. Consequently, watercourse crossings have been designed such that the most sensitive watercourses will have the least invasive crossings.

33 The cable route crosses the three named watercourses in four separate locations and at each location Horizontal Directional Drilling (HDD) will be used to pass the cable underneath the channels. At all other watercourse crossings, HDD will be the preferred option for the cable route and open-span structures will be the preferred option for new vehicle access. Culverts and open cut trenching are proposed only on watercourses of the lowest sensitivity and where no other viable alternative exists. These design principles are sufficient to avoid likely significant effects to lamprey and the Humber SAC.

34 Electrical cables emit electromagnetic fields (EMF) which, if located underneath or near watercourses, could disturb fish. All cables will be buried and insulated, the two main ways to limit EMFs. TA A8.14~~5~~ Electromagnetic Fields and Fish [EN010162/APP/6.4.8.14~~5~~] provides information about EMF from underground cables and the potential behavioural responses of fish and demonstrates that adverse effects are highly unlikely.

35 There is a very low likelihood of occurrence of lamprey as a result of the very large separation distance between the Development and the SAC and the physical obstructions to lamprey distribution in the Trent catchment. Furthermore, the embedded designed-in mitigation (see paragraph 31, above) ensures that in the very unlikely event that lamprey are present, there is no potential for likely significant effects in any event. The Development will not undermine the conservation objectives of the Humber Estuary SAC.

3.4 IN-COMBINATION ASSESSMENT

36 This assessment has not identified likely significant effects from the Development to any International Sites. The potential effects to Birklands and Bilhaugh SAC and Sherwood Forest ppSPA and are so extremely unlikely that the Development has no potential to contribute to effects in combination with other plans or projects.

37 The cumulative assessment in section 8.9 of Chapter 8 Ecology and Biodiversity [EN010162/APP/6.2.8] identified only one other development, the A46 Bypass, which had scoped fish and the Humber Estuary SAC into its assessment of effects, including an HRA. The HRA identified several potential impact pathways, including from works directly affecting the River Trent, which could give rise to likely significant effects on fish, including lampreys, over a large area and multiple watercourses in the River Trent catchment. The Appropriate Assessment considered a range of mitigation measures and concluded that the development would not adversely affect the integrity of the Humber Estuary SAC.

38 This assessment has not identified likely significant effects from the Development to the Humber SAC. The potential effects of the Development are of such negligible magnitude that they have minimal potential to contribute to in-combination effects.

4 CONCLUSIONS

39 There will be no likely significant effects arising from the Development on any International Site either alone or in combination with other plans or projects.