UK Government

Habitats Regulations Assessment for an Application Under the Planning Act 2008

Botley West Solar Farm

Regulation 63 of the Conservation of Habitats and Species Regulations 2017

Department for Energy Security and Net Zero November 2026

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List of abbreviations

Term	Abbreviation
Adverse Effect on Integrity	AEoI
Appropriate Assessment	AA
Average Annual Daily Traffic	AADT
Construction Environmental Management Plan	CEMP
Development Consent Order	DCO
Environmental Statement	ES
European Economic Area	EEA
Examining Authority	ExA
Functionally Linked Land	FLL
Habitats Regulations Assessment	HRA
Interested Parties	IPs
Invasive Non-Native Species	INNS
Likely Significant Effect	LSE
Nationally Significant Infrastructure Project	NSIP
National Site Network	NSN
Natural England	NE
Process Contribution	PC
Predicted Environmental Concentration	PEC
Report on the Implications for European Sites	RIES
Special Areas of Conservation	SAC
Special Protection Area	SPA
Statement of Common Ground	SoCG
Statutory Nature Conservation Body	SNCB
Supplementary Advice on Conservation Objectives	SACO
The Planning Inspectorate	PINS

1 Introduction

1.1 Background

This is a record of the Habitats Regulations Assessment ("HRA") that the Secretary of State for Energy Security and Net Zero ("the Secretary of State") has undertaken under the Conservation of Habitats and Species Regulations 2017[1] ("the Habitats Regulations") as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 in respect of the Development Consent Order ("DCO") application for Botley West Solar Farm and its associated infrastructure (the "Project"). For the purposes of these Regulations, the Secretary of State is the competent authority.

The Project, as applied for in the original submission to the Planning Inspectorate, comprises the construction, operation, maintenance, and decommissioning of a photovoltaic array spread across three linked sites in Western Oxfordshire, with a total capacity exceeding 50 megawatts ("MW'') within the 1,400-hectare Order Limits.

This Project constitutes a Nationally Significant Infrastructure Project ("NSIP'') as defined by sections 14 and 15 of the Planning Act 2008 ("PA2008'').

The Project was submitted by Photovolt Development Partners on behalf of Solar Five Limited (the Applicant) to the Planning Inspectorate ("PINS") on 14 November 2024 and accepted for Examination on 13 December 2024, under PINS reference EN010147. On 28 January 2025, David Wallis (lead), Helen Cassini, Katharine Metcalfe and Mukhtar Shaikh were appointed as the Examining Authority ("ExA'') for the Application.

The Examination began on 14 May 2025 and concluded on 13 November 2025. The ExA submitted its report of the Examination including its recommendation ("the ExA's Report") to the Secretary of State on 10 February 2026. Numbered references to the ExA's Report are presented in the format "[ER *.*.*]".

1.2 Habitats Regulations Assessment

The Habitats Regulations aim to ensure the long-term conservation of certain species and habitats by protecting them from possible adverse effects of plans and projects. In the UK, the Habitats Regulations apply as far as the 12 nautical miles limit of territorial waters.

The Habitats Regulations provide for the designation of sites for the protection of habitats and species of international importance. These sites are called Special Areas of Conservation

[1] https://www.legislation.gov.uk/uksi/2017/1012/contents

("SACs"). The Regulations also provide for the classification of sites for the protection of rare and vulnerable birds and for regularly occurring migratory species within the UK and internationally. These sites are called Special Protection Areas ("SPAs"). SACs and SPAs together, referred to as European sites in legislation, from part of the UK's National Site Network ("NSN").

The Convention on Wetlands of International Importance 1972 ("the Ramsar Convention") provides for the listing of wetlands of international importance. These sites are called Ramsar sites. Government policy is to afford Ramsar sites in the UK the same protection as sites within the NSN (collectively referred to in this HRA as "protected sites").

Regulation 63 of the Habitats Regulations provides that:

…before deciding to undertake, or give any consent, permission or other authorisation for, a plan or project which (a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in-combination with other plans or projects), and (b) is not directly connected with or necessary to the management of that site, [the competent authority] must make an appropriate assessment of the implications for that site in view of that site's conservation objectives.

And that:

In the light of the conclusions of the assessment, and subject to regulation 64, the competent authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site or the European offshore marine site (as the case may be).

The Project is not directly connected with, or necessary to, the management of a protected site. The Habitats Regulations require that, where the Project is likely to have a significant effect ("LSE") on any such site, alone or in-combination with other plans and projects, an appropriate assessment ("AA") is carried out to determine whether or not the Project will have an adverse effect on the integrity ("AEoI") of the site in view of that site's conservation objectives. In this document, the first stage assessment of LSE and, where required, the second stage assessment of AA to determine whether there is an AEoI of a protected site, are collectively referred to as the Habitats Regulations Assessment ("HRA'').

The Secretary of State has had regard to relevant guidance on the application of the HRA including the PINS (2024) Advice Note 10[2], European Commission guidance[3], as well as joint guidance by Defra, Natural England ("NE"), the Welsh Government, and Natural Resources Wales (2021) on 'Habitats Regulations Assessment: protecting a European site'[4].

[2] https://infrastructure.planninginspectorate.gov.uk/legislation-and-advice/advice-notes/advice-note-ten/

[3] https://op.europa.eu/en/publication-detail/-/publication/11e4ee91-2a8a-11e9-8d04-01aa75ed71a1

[4] https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site

1.3 Site conservation objectives

Where an AA is required in respect of a protected site, Regulation 63(1) of the Habitats Regulations requires that it be an AA of the implications of the plan or project for the site in view of its conservation objectives. Government guidance also recommends that in carrying out the LSE screening, applicants must check if the proposal could have a significant effect on a protected site that could affect its conservation objectives.

Defra Guidance indicates that disturbance to a species or deterioration of a protected site must be considered in relation to the integrity of that site and its conservation objectives[5]. It states that *"the integrity of a site is the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was designated"*.

Conservation objectives have been established by NE. When met, each site will contribute to the overall favourable conservation status of the species or habitat feature across its natural range. Conservation objectives outline the desired state for a protected site, in terms of the interest features for which it has been designated. If these interest features are being managed in a way which maintains their nature conservation value, they are assessed as being in a 'favourable condition'. An AEoI is likely to be one which prevents the site from making the same contribution to favourable conservation status for the relevant feature as it did at the time of its designation. There are no set thresholds at which impacts on site integrity are considered adverse. This is a matter for interpretation on a site-by-site basis, depending on the designated feature and nature, scale, and significance of the impact.

NE has issued generic conservation objectives, which should be applied to each interest feature of the site. Supplementary advice on conservation objectives ("SACOs") for each site underpins these generic objectives to provide site-specific information and give greater clarity to what might constitute an adverse effect on a site interest feature. SACOs are subject to availability and are currently being updated on a rolling basis.

Where supplementary advice is not yet available for a site, NE advises that HRAs should use the generic objectives[6] and apply them to the site-specific situation. For SPAs, the overarching objective is to avoid the deterioration of the habitats of qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Habitats Regulations. This is achieved by, subject to natural change, maintaining and restoring:

- the extent and distribution of the habitats of the qualifying features;
- the structure and function of the habitats of the qualifying features;
- the supporting processes on which the habitats of the qualifying features rely;
- the populations of the qualifying features; and
- the distribution of the qualifying features within the site.

[5] https://www.gov.uk/guidance/appropriate-assessment

[6] http://publications.naturalengland.org.uk/publication/6734992977690624?cache=1656417868.31

For SACs, the overarching objective is to avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving favourable conservation status of each of the qualifying features. This is achieved by, subject to natural change, maintaining and restoring:

- the extent and distribution of the qualifying natural habitats and habitats of qualifying species;
- 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.

The conservation objectives and, where available, supplementary advice on conservation objectives have been used by the Secretary of State to consider whether the Project has the potential to have an AEoI of sites, either alone or in-combination with other plans or projects.

1.4 The Report on the Implications for European Sites and statutory consultation

Under Regulation 63(3) of the Habitats Regulations the competent authority must consult the appropriate Statutory Nature Conservation Body ("SNCB") and have regard to any representation made by that body within such reasonable time as the authority specifies. NE is the SNCB for England and for English waters within the 12 nautical mile limit.

The ExA, with the support of the PINS' Environmental Services Team, produced a Report on the Implications for European Sites ("RIES") [PD-016]. The purpose of the RIES is to set out the ExA's understanding of HRA-relevant information and the position of the Interested Parties ("IPs'') in relation to the effects of the Project on protected sites. The RIES considers information up to Deadline 5 (12 September 2025). Consultation on the RIES took place between 18 September 2025 and 20 October 2025.

The RIES was completed prior to the finalisation of the Applicant's HRA. Consequently, the RIES records the Applicant's assessment of air quality impact during construction and impacts to site improvement plans as unresolved. The ExA's final HRA findings are summarised in section 4 of the ExA's report, by which point further information had been provided by the Applicant.

1.5 Documents referred to in this HRA

This HRA has taken account of, and should be read in conjunction with, the documents produced as part of the Application and Examination, which are available on the PINS NSIP website[7]. In particular:

- The ExA's Report
- The RIES [PD-016]
- The Applicant's HRA report [REP6-022]
- The Statement of Common Ground ("SoCG") with NE [REP7-040]
- Environmental Statement Chapter 12 - Traffic and Transport (Rev 1) [REP5-016]
- Environmental Statement Chapter 19 - Air Quality (Rev 1) [REP5-020]

Plus, all other relevant information submitted during the Examination and during the Secretary of State's consideration of the Application at the decision-stage.

[7] https://national-infrastructure-consenting.planninginspectorate.gov.uk/projects/EN010147

2 Project description

The Project as applied for comprises the construction, operation, maintenance and decommissioning of a photovoltaic array spread across three linked sites running north to south, connected by underground cabling [APP-043]. The Project as applied for would have a generating capacity of 840 MW from an approximately 839 ha solar array situated within Order Limits of 1,400 ha. The Order Limits are situated within Oxfordshire County, West Oxfordshire, and the District of Cherwell and Vale of White Horse. The Order Limits comprise primarily arable land, interspersed with settlements and woodlands, situated northwest of Oxford. A new substation for National Grid Electricity Transmission PLC may be delivered within the Order Limits as associated development, alongside a substation solely for the benefit of the Project.

The Project works would comprise:

- Work No 1 - a ground mounted solar photovoltaic generating station with a gross electrical output capacity of over 50 megawatts.
- Work No 2 - development of a New National Grid Substation.
- Work No 3 - development of onsite Substations and associated work.
- Work No 4 - works in connection with high voltage electrical cabling.
- Work No 5 - sensitive archaeological site protection and management.
- Work No 6 - electrical cabling and site establishment works.
- Work No 7 - temporary construction and decommissioning compounds.
- Work No 8 - areas of landscape management, protection and enhancement.
- Work No 9 - works to facilitate access to Work No. 1 to Work No. 8.
- Ancillary works.

2.1 Changes to the Application during Examination

Two formal change requests were made by the Applicant, seeking to address points raised by IPs and the ExA. Change Request 1 (3 February 2025) proposed a minor reduction in the Order Limits and decrease in the panelled area within the Order Limits, totalling an array reduction of approximately 0.47 ha. Change Request 2 (11 July 2025) proposed a significant reduction of the Order Limits by 84 ha, and a reduction in the panelled area within the Order Limits by approximately 20 ha. The ExA agreed with the Applicant that neither of the proposed changes was so material that it constituted a materially different project. No HRA-relevant matters arose from these change requests [PD-016a].

The Applicant updated its HRA at DL6 [REP6-022] in response to a request from NE and the ExA to undertake a precautionary assessment of changes in air quality at the Oxford Meadows SAC. The final signed SoCG between the Applicant and NE [REP7-040] was submitted at DL7. The SoCG confirmed that all matters relating to HRA and otherwise were agreed between the two parties, and that there were no HRA matters outstanding.

2.2 Changes to the Application after the Examination

The Applicant made several changes to the Proposed Development during the decision-making stage which resulted in reductions to the extent of the solar array. However, the extent of the reductions are not clearly established within the information provided in response to the Secretary of State's information request, including in late submissions to the request. For instance, in its letter dated [16 July 2026] [C1-094], the Applicant refers to an array reduction of 130 hectares. However, design refinements set out in the ES Addendum [C1-106] [16 July 2026], appear to amount to a reduction of 138.7 hectares, excluding refinement 1, which had already been implemented at Deadline 7. More significantly for the size of the final project, the Applicant intends to rely on post-consent processes in the form of a proposed requirement ("Requirement 15") to define the final size of the Proposed Development. Consequently, these discrepancies and reliance on post-consent processes have presented challenges to the Secretary of State in being able to understand the size and extent of the Proposed Development and, in some instances, the subsequent effects of certain aspects of the Proposed Development on the environment.

Requirement 15 in the draft DCO stipulates that no part of the Project may commence until a written Residential Visual Amenity Plan ("RVAP'') has been submitted to and approved by the relevant planning authority (or authorities, where applicable). Requirement 15 also outlines that the RVAP must set out justification for the inclusion or exclusion of dwellings from that plan and justification for the minimum distance proposed. The minimum distance must be no less than 100m and the maximum distance must not exceed 250m, unless otherwise stated in a written agreement between the undertaker and the owners of the residential dwellings. The Applicant claims the inclusion of the minimum distance ensures suitable landscape mitigation is secured under the DCO [C1-099], with the inclusion of the maximum distance necessary to protect Project viability. The Applicant states the tailpiece is to retain necessary flexibility in the event that a private agreement has been entered between the Applicant and the owner of a dwelling that a buffer outside of that range is agreeable.

In alignment with Requirement 15, the Applicant initially provided an outline Masterplan (rev 4) accounting for a proposed 250m buffer from residential properties. This Masterplan was superseded by Masterplan (rev 5), which showed reduced buffers which the Applicant stated were informed by the outline Residential Visual Amenity Plan ("oRVAP"). Both the Masterplan (rev 5) and oRVAP were submitted as late submissions for the information request. Alongside these documents, the Applicant provided an update to Requirement 15 in its late submission to the information request [C1-094], including additional information [C1-099] that the RVAP must set out minimum distances between adjacent residential dwellings and the following works:

(a) Work No. 1 (solar panels);

(b) Work No. 2 (NGET substation);

(c) Work No. 3 (main project substation);

(d) fencing gates boundary treatment and other means of enclosure (i.e. Work No. 5(d), Work No. 6(c) and Work No. 8(g));

(e) Work No. 6(d) (works for the provision of security and monitoring measures such as CCTV columns, cameras, lighting columns and lighting, weather stations, perimeter fencing and communication infrastructure); or

(f) any of the following further ancillary or related development: (i) works for the provision of fencing and security measures such as CCTV, columns, lighting, communication boxes, lightning protection masts and weather stations; or

(ii) bunds, embankments, trenching and swales;

(iii) surface water drainage systems, storm water attenuation systems including storage basins, oil water separators, including channelling and culverting and works to existing drainage systems.

In relation to the HRA, the Secretary of State considers that the post-examination changes to the extent of the solar array due to Requirement 15 are not so material that they constitute a different Project and would not give rise to impacts on any additional protected sites, or new Likely Significant Effect ("LSE'') pathways or differing conclusions on either LSEs or adverse effects on integrity than what was assessed during Examination. The Secretary of State observes that the Illustrative Masterplan [C1-118] is likely the most up to date design of the Project, and has based the HRA on this design.

3 Stage 1: Screening for Likely Significant Effects

Under Regulation 63 of the Habitats Regulations, the Secretary of State must consider whether the Project will have an LSE on a protected site, either alone or in-combination with other plans or projects. The purpose of this section is to identify any LSE on protected sites that may result from the Project and to record the Secretary of State's conclusions on the need for an AA.

The Applicant agreed the scope of the sites to be considered within the HRA with NE during pre-submission engagement [REP6-022, 1.3.6]. Section 4 [REP6-022] details the protected sites scoped in for screening. The protected sites and their qualifying features are stated in Table 1 below. Cothill Fen SAC was scoped in on the basis that it could have a hydrological connection to the Project site given its location downstream of the Project, and water quality/quantity sensitive features. Oxford Meadows SAC was scoped in on the basis of hydrological connection via the River Evenlode and River Thames, in addition to being within 200m of a road where an increase in construction traffic was predicted to occur. No other additional protected sites were identified by the Applicant or were raised by IPs for inclusion within the screening assessment [ER 4.3.2].

Table 1: Protected sites and qualifying features considered in the assessment of LSE.

Protected site	Qualifying feature(s)	SACOs
Oxford Meadows SAC	- H6510 Lowland hay meadows (*Alopecurus pratensis, Sanguisorba officinalis*). - S1614 creeping marshwort (*Apium repens)*.	See Footnote[8]
Cothill Fen SAC	- H7230 Alkaline fens; calcium-rich springwater-fed fens. - H91E0 Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion, Alnion incanae, Salicion albae*) (alder woodland on floodplains).	See Footnote[9]

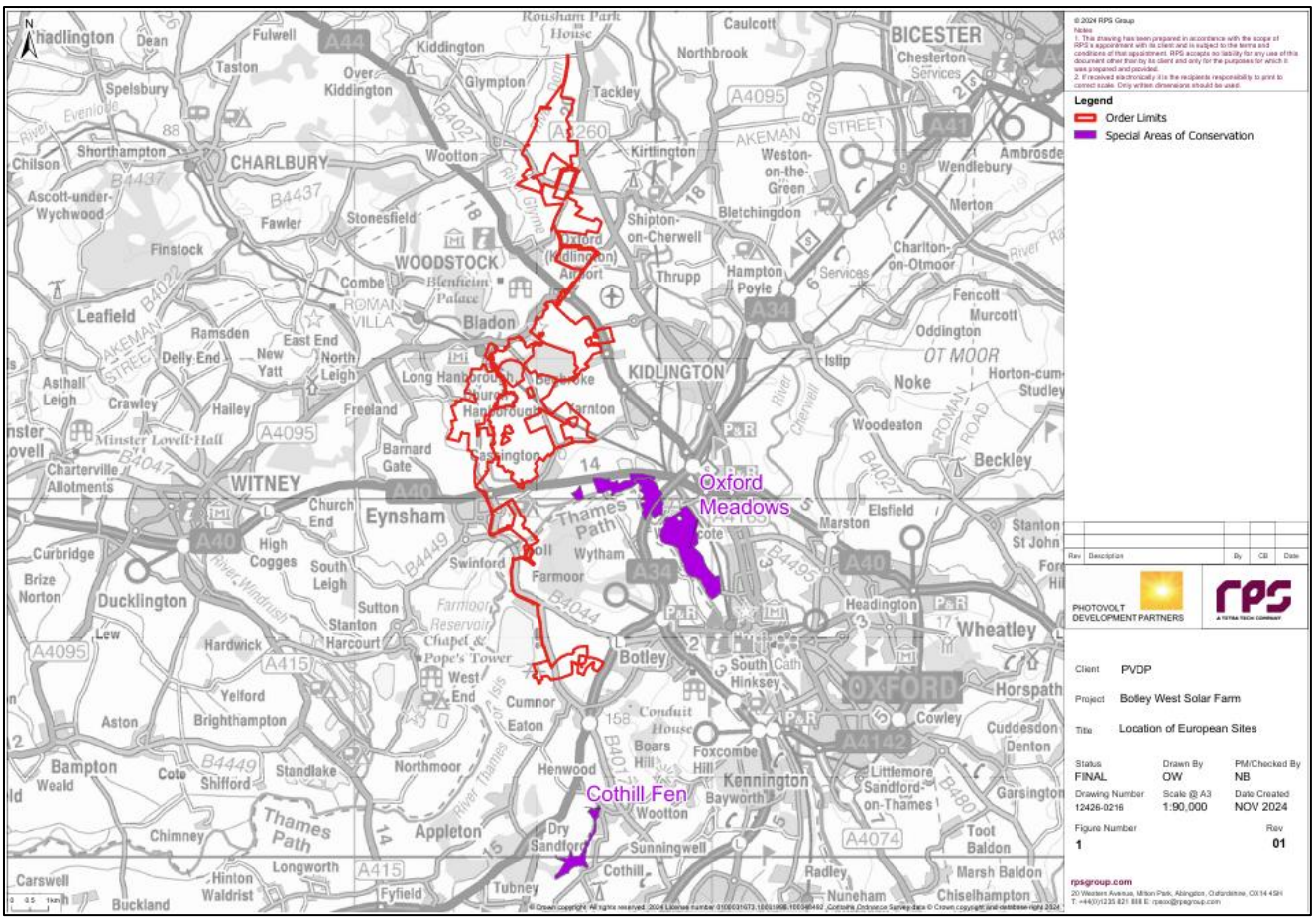
The spatial relationship between the Order Limits of the Project and the protected sites are shown in Figure 1. The Applicant did not identify any LSE on non-UK protected sites in its HRA, and there were no additional potential LSE identified by any IP during the Examination.

Based on the information before them, the views of IPs and NE, as well as the recommendations of the ExA, the Secretary of State is content to adopt the rationale of the Applicant, NE, and the ExA that the correct protected sites and qualifying features have been identified.

[8] European Site Conservation Objectives for Oxford Meadows SAC - UK0012845

[9] European Site Conservation Objectives for Cothill Fen SAC - UK0012889

Figure 1: The Project's Order Limits in relation to Oxford Meadows SAC and Cothill Fen SAC.



3.1 Likely Significant Effects

The Applicant identified potential LSE, from the Project alone, in Section 4 and Annex A of [REP6-022]. The HRA matters raised by the ExA and NE during examination related primarily to the Applicant's conclusions in respect to the impact pathways it had identified [PD-016, Table 2.2]. The ExA and NE sought clarity on aspects of the effect pathways which had been screened out, or not considered further, by the Applicant. The central pathways to LSE queried by the ExA and NE were the potential for nitrogen deposition from construction traffic and changes to water quality during construction to potentially cause the degradation of the Oxford Meadows SAC.

The other pathways to LSE explored by the Applicant were ruled out within section 4 of [REP6-022]. The Secretary of State agrees with the conclusions of the ExA in the RIES [PD-016, Table 2.2] and that LSE can be ruled out in relation to these pathways. The Secretary of State notes that the RIES was completed prior to the submission of the Applicant's HRA report, and is therefore not reflective of the final conclusions regarding all LSE.

Oxford Meadows SAC

The Applicant's first draft HRA report [APP-163] concluded potential LSE from changes in water quality and spread of INNS during construction, both alone and in-combination, on the qualifying features of Oxford Meadows SAC [APP-163].

Water quality impacts were screened in on the basis that potential pollution events within the Project site during construction that reach the River Evenlode could ultimately impact the SAC via the River Thames. INNS were screened in due to the increase in potential vectors for transmission introduced by the construction process, and the hydrological connection between the Project site and the SAC. NE confirmed agreement with the Applicant's conclusions on these matters [RR-0761].

Air quality impacts on Oxford Meadows SAC during construction were initially screened out from further assessment as the peak change in HGV Average Annual Daily Traffic (AADT) on roads adjacent to the SAC was predicted to total 192 vehicles, below the significance threshold of 200. At ExQ1 [PD-008] the ExA proposed further consideration of the impact pathway given the proximity to the threshold, and the sensitivity of lowland hay meadows to deposition. NE agreed a more precautionary assessment was required [REP2-057].

At DL6 an updated HRA report was provided by the Applicant which set out additional air quality modelling work undertaken to determine LSE on Oxford Meadows SAC during construction [REP6-022, Annex E]. In line with NE guidance[10], a process contribution ("PC'') significance threshold of >1% of the relevant critical load/level was used by the Applicant to determine LSE from road traffic emissions. The updated HRA concluded potential LSE on the

[10] Natural England (2018) Natural England's Approach to Advising Competent Authorities on the assessment of road traffic emissions under the Habitats Regulations.

SAC from changes to air quality from construction traffic in the in-combination scenario for nitrogen deposition only, as the maximum PC, and predicted environmental concentration ("PEC''), was projected to exceed 1% of the lower critical load threshold at certain locations along the planned HGV route. For emissions derived from the Project's construction traffic alone, all modelled points recorded a process contribution <1% of the relevant critical load/level for all pollutants and were therefore screened out.

Cothill Fen SAC

The Applicant's HRA report concluded no LSE from the Project alone or in-combination on any of the qualifying features of Cothill Fen SAC [REP6-022, 4.5.2]. The conclusion of no LSE was determined by the distance, lack of hydrological connection, and isolation from any road to be used during construction between the Project and the SAC, with the Project's nearest point being approximately 3.5km from the SAC. NE [RR-0761] confirmed agreement with the conclusion of no LSE on Cothill Fen SAC.

3.2 Likely Significant Effects conclusion

The Secretary of State has considered the potential effects of the Project on all qualifying features of the protected sites raised during the Examination, taking into account their conservation objectives, to determine whether there would be LSE in the context of the Habitats Regulations. The Secretary of State considers that sufficient information has been provided to inform an assessment in line with their duties under the Habitats Regulations.

Based on the information before her, the views of IPs and NE [RR-0761], as well as the recommendations of the ExA [ER, 4.4], the Secretary of State concludes that LSE from the Project, alone and in-combination with other plans or projects, could occur during the construction phase of the Project.

Therefore, potential LSE from changes in water quality, the spread of INNS, and in-combination air quality impacts are to be taken forward to the Appropriate Assessment stage, to determine whether the Project would result in an AEoI on Oxford Meadows SAC. No LSE were identified for Cothill Fen SAC.

4 Appropriate Assessment Methodology

The requirement to undertake an AA is triggered when a competent authority, in this case the Secretary of State, determines that a plan or project is likely to have a significant effect on a protected site either alone or in-combination with other plans or projects. Guidance issued by Defra[11] states that the purpose of an AA is to assess the implications of the plan or project in respect of the site's conservation objectives, either individually or in-combination with other plans and projects, and that the conclusions should enable the competent authority to ascertain whether the plan or project will adversely affect the integrity of the site concerned. The focus is therefore specifically on the species and/or habitats for which the protected site is designated.

In line with the requirements of Regulation 63 of the Habitats Regulations:

"*In considering whether a plan or project will adversely affect the integrity of the site, the competent authority must have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which it proposes that the consent, permission or other authorisation should be given*."

The purpose of this AA is to determine whether an AEoI on the features of the protected sites screened in for potential LSE, as a result of the Project alone or in-combination with other plans or projects, can be excluded in view of the site's conservation objectives and using the best scientific evidence available.

In accordance with the precautionary principle embedded in the integrity test and established through case law, the Secretary of State may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the protected site, and this must be demonstrated beyond all reasonable scientific doubt.

If the Secretary of State cannot exclude AEoI of the affected protected sites beyond all reasonable scientific doubt, then they can only agree to a plan or project if it complies with the requirements of Regulation 64 of the Habitats Regulations. Regulation 64 provides that the Secretary of State may agree to the plan or project only if satisfied that there are no alternative solutions, and that the plan or project must be carried out for imperative reasons of overriding public interest ("IROPI"). Where a plan or project is agreed to under Regulation 64, Regulation 68 of the Habitats Regulations requires compensatory measures to be secured which maintain the overall coherence of the NSN.

11 https://www.gov.uk/guidance/habitats-regulations-assessments-protecting-a-european-site

5 Stage 2: Appropriate Assessment

The Secretary of State has undertaken an objective scientific assessment of the implications of the Project on the qualifying features of the protected sites identified in their screening assessment, using the best scientific evidence available. The assessment has been made in light of the site's conservation objectives, which are set out in Table 1.

5.1 Air quality impacts during construction – Oxford Meadows SAC

In Section 5.3 of [REP6-022], the Applicant assessed the potential for AEoI on Oxford Meadows SAC as a result of air quality changes leading to increased nitrogen deposition within the protected site. The additional air quality modelling undertaken by the Applicant, at the request of the ExA and NE, determined that cumulative nitrogen deposition from construction traffic emissions, in-combination with other plans and projects, was projected to exceed the lower critical load for the Oxford Meadows SAC. The nitrogen PEC exceeded the lower critical load (10kgN/ha/yr), but not the upper critical load (20kgN/ha/yr), recording a PEC of 14.3 kgN/ha/yr.

Under the cumulative scenario model, the maximum annual-mean process contribution (PC) of other airborne pollutants associated with construction traffic NOx (nitrous oxide), NH3 (ammonia), and acid deposition were found to not exceed 1% of the critical level and were therefore screened out by the Applicant as insignificant. NE raised no issue with this position.

The modelling methodology overlaid a grid of points at 10m intervals within 200m of the roads to be used by construction traffic crossing the SAC, recording 4,059 individual data points. The modelling sought to determine if any part of the SAC would exceed the critical load/level threshold for each airborne pollutant, 1% being the point at which a more detailed assessment of the potential for effects should be undertaken. Two points recorded nitrogen deposition >1% of the lower critical load for the SAC (measuring at 2%). These exceedances were predicted to occur as a result of increased construction traffic caused by the Project along the A40 and A34.

The points were investigated to determine whether the projected increase in nitrogen deposition in those locations might result in AEoI. Figure 2 shows the location of the two points for which the change in nitrogen deposition was >1% within the SAC. Figure 3 shows that where these points were located, the boundary of the SAC includes the underpass beneath the A34.

The Applicant observed that the points were situated on the hardstanding of the underpass, and that therefore the lowland hay meadow SAC feature is not present and would be unaffected by the increase in nitrogen deposition. The Applicant stated that the underpass is necessary for vehicles to move between fields without use of the A34, and that given its supporting role and material permanence, is unlikely to be restored to SAC feature status.

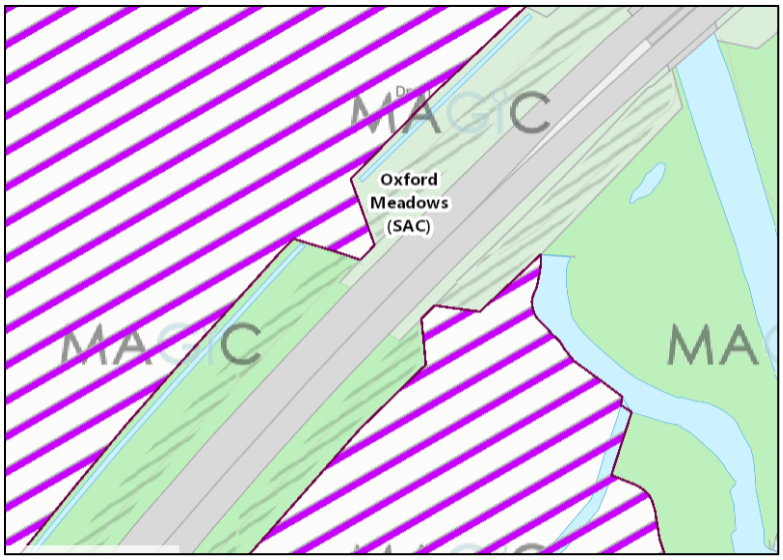
On the basis that the area of the SAC where nitrogen deposition was predicted as >1% of the minimum critical load does not support the qualifying features of the SAC, the Applicant determined no AEoI from air quality impacts in combination with other plans or projects. NE confirmed agreement with the conclusion of no AEoI on Oxford Meadows SAC, following the completion of the updated Appropriate Assessment [REP7-040].

In line with NE and the ExA [ER C1.4.3], the Secretary of State sees no reason to disagree with the Applicant's position and is content to conclude that AEoI on Oxford Meadows SAC from air quality impacts during construction, alone or in-combination with other plans or projects can be excluded.

Figure 2: The location of the two modelled points within Oxford Meadows SAC which recorded exceedances of the lower critical load for nitrogen deposition, in-combination [REP6-022, Annex E].



Figure 3: The Oxford Meadows SAC boundary, the underpass area visible in the centre of the map [Magic Map, Natural England].



5.2 Changes in water quality – Oxford Meadows SAC

In Section 5.2 of the HRA [REP6-022], the Applicant assessed the potential for AEoI on Oxford Meadows SAC as a result of water quality changes during construction leading to the degradation of habitats within the protected site. The Project site is hydrologically linked to the Oxford Meadows SAC via the River Evenlode, and subsequently the River Thames. Consequently, there exists the potential for water quality impacts to occur during construction and operation from pollution events, the contaminants of which may be transported from the Project site to the SAC via the connecting watercourses.

The construction impact pathways considered by the Applicant included small-scale events, relating to fuel spills, leaks from plant etc, and larger scale events related to horizontal directional drilling (HDD). The Applicant determined that these impacts could be adequately mitigated via the adoption of a Code of Construction Practice (CoCP) [REP7-025], which would include a Pollution Prevention Plan and Bentonite Breakout Plan to manage the most significant potential HDD impacts.

The operational impact pathways considered related to small scale pollution events which may occur during maintenance activity. The Applicant determined that these impacts could be adequately mitigated via the adoption of an Outline Operational Management Plan [REP6-032] which would ensure that any pollution event is prevented or controlled via a detailed Pollution Prevention Plan.

The Applicant concluded that once these measures had been adopted, no AEoI on the Oxford Meadows SAC would occur due to changes in water quality from the Project, either alone or in combination with other plans/projects. Subject to securing the measures set out in the CoCP, NE agreed [REP7-040] that it is likely that there would be no AEoI on Oxford Meadows SAC.

In line with NE and the ExA [ER C1.4.2), the Secretary of State sees no reason to disagree with the Applicant's position and is content to conclude that AEoI on Oxford Meadows SAC from water quality impacts during construction and operation can be excluded, subject to the application of the mitigation measures identified.

5.3 Spread of INNS – Oxford Meadows SAC

In Section 5.4 of the HRA [REP6-022], the Applicant assessed the potential for AEoI on Oxford Meadows SAC as a result of the introduction and spread of INNS. The Applicant determined that given the hydrological linkage between the Project site and the SAC, there is potential for the spread of INNS during both construction and operation. The Applicant highlighted the presence of giant knotweed *Reynoutria sachalinensis* in one location in the southern site as a potential transmission risk.

The Applicant stated that the potential spread of INNS during construction would be mitigated via the adoption of an Invasive Species Management Plan ("ISMP''), a constituent of the final CoCP. The ISMP will detail the eradication and containment of any INNS found on site during the construction phase.

To contain the spread of INNS during operation, the Applicant stated that the site management will be undertaken according to the principles set out within the outline Landscape and Ecology Management Plan ("oLEMP'') [REP7-027, 12.14]. The relevant measures principally include the requirement to remove INNS identified during routine monitoring.

The Applicant concluded that once these measures had been adopted, no AEoI on the Oxford Meadows SAC would occur due to the spread of INNS from the Project site. In line with NE and the ExA [ER, C1.4.4], the Secretary of State sees no reason to disagree with the Applicant's position and is content to conclude that AEoI on Oxford Meadows SAC from the spread of INNS during construction and operation can be excluded, subject to the application of the mitigation measures identified.

5.4 Appropriate Assessment Conclusion

As the competent authority under the Habitats Regulations for this Application under the Planning Act 2008, the Secretary of State has undertaken an AA in respect of the conservation objectives for the Oxford Meadows SAC to determine whether the Project, either alone or in-combination with other plans or projects, would result in an AEoI on its qualifying features.

The Secretary of State has carefully considered all the information available to her, including the recommendations of the ExA, the advice of NE as the SNCB, the views of all other IPs, and the Applicant's case.

Based on the available information, and with the application of the necessary mitigation measures secured within the oLEMP (draft DCO, Requirement 6) and CoCP (draft DCO, Requirement 8), the Secretary of State is satisfied that the Project, either alone or in-combination with other plans or projects, would not adversely affect the qualifying features of Oxford Meadows SAC. The Secretary of State is satisfied that further tests set out in the Habitats Regulations are therefore not required.

6 Transboundary assessment

The Secretary of State considers that it is important to consider the potential impacts on protected sites in other European Economic Area ("EEA") states, known as transboundary sites. The conclusions of the ExA's considerations and the Secretary of State's own views on this matter are presented below.

PINS undertook transboundary screening of the Project in the Scoping Opinion, which was adopted on 24 July 2023. PINS concluded that the Project was unlikely to have a significant effect either alone or cumulatively on the environment in a European Economic Area State. Commensurately, the Applicant did not assess transboundary effects in its HRA [REP6-022], stating that *'there is no potential for transboundary effects as scoped out at PEIR stage'*. No potential transboundary effects were raised by IPs during the Examination, and transboundary effects were not explored in the ExA Report.

The Secretary of State has not been presented with any substantive evidence to demonstrate that transboundary impacts would have a LSE on any transboundary site. As such, the Secretary of State is satisfied that the Project, either alone or in-combination with other plans or projects, would not have an LSE on any transboundary protected site. The Secretary of State is satisfied that further stages of a transboundary assessment are therefore not required.

7 Conclusion

The Secretary of State has carefully considered all information presented within the Application, during the Examination, and the representations made by NE and all IPs, along with the ExA's Report and relevant material received after the Examination.

The Secretary of State has concluded that LSE cannot be excluded in relation to Oxford Meadows SAC as a result of the construction and operational activities of the Project. The LSE were taken forward to AA to consider whether the Project would result in an AEoI on the protected site.

Having considered the information available to her, and having made a full assessment of the potential for an AEoI of the Oxford Meadows SAC, taking into account the views of the Applicant, NE, all IPs, as well as the ExA, the Secretary of State concludes that an AEoI can be excluded beyond reasonable scientific doubt.

As such, the Secretary of State is satisfied that there is no significant risk to the protected site and its qualifying features as a result of the Project, and considers that no further tests set out in the Habitats Regulations are required.

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