



ARCUS

**REPORT TO INFORM A HABITAT REGULATIONS ASSESSMENT:
SCREENING OF LIKELY SIGNIFICANT EFFECTS**

SOAY SOLAR FARM AND GREENER GRID PARK

STATKRAFT UK LTD

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EXECUTIVE SUMMARY

This Report to Inform a Habitat Regulations Assessment (HRA) Screening has been produced for Statkraft UK LTD in support of a planning application for Soay Solar Farm and Greener Grid Park (the Development) on land at Thornton, near York, East Riding of Yorkshire (the Site).

HRA is a stepwise process for determining the Likely Significant Effects (LSEs) of a project on the favourable conservation status of the qualifying features of sites in the National Site Network (NSN) and thus undermining the integrity of such sites. The Development has the potential to impact four NSN Sites:

- Lower Derwent Valley Special Area of Conservation (SAC);
- Lower Derwent Valley Special Protection Area (SPA);
- Lower Derwent Valley Ramsar site; and
- River Derwent SAC.

The Development has been screened and will not give rise to any LSEs to the favourable conservation status of the qualifying features of NSN sites, either alone or in combination with other projects and plans. Consequently, there is no requirement for any further stages of the HRA, including AA.

1 INTRODUCTION

Arcus Consultancy Services Limited (Arcus) has been instructed by Statkraft UK LTD (the Applicant) to undertake a Report to Inform a Habitat Regulations Assessment (HRA) Screening (the Report) of land at Thornton, near York, East Riding of Yorkshire (the Site), approximately centred on National Grid Reference SE 76204 46514.

The Report is submitted as part of a planning application for a proposed Soay Solar Farm and Greener Grid Park (the Development) which includes associated soft and hard landscaping. A full description of the Development is included in the Planning, Design and Access Statement (PDAS) which accompanies the planning application.

As part of the planning application, a range of ecological studies have been undertaken to establish the baseline conditions against which to assess the potential ecological impacts of the Development. These studies, notably the Ecological Impact Assessment (EcIA) and Ornithological Impact Assessment (OIA), identified four designated sites that are part of the National Site Network (NSN) within the potential Zone of Influence (ZoI) of the Development:

- Lower Derwent Valley Special Area of Conservation (SAC);
- Lower Derwent Valley Special Protection Area (SPA);
- Lower Derwent Valley Ramsar site; and
- River Derwent SAC.

Given the proximity of the above sites, the Development is to be assessed under the provisions of the Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitat Regulations^{1,2}).

¹ UK Government (2017) The Conservation of Habitats and Species Regulations 2017 [Online] Available at: <https://www.legislation.gov.uk/ukksi/2017/1012/contents/made> (Accessed 21/07/21)

² UK Government (2019) The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 [Online] Available at: <https://www.legislation.gov.uk/ukdsi/2019/9780111179512/contents> (Accessed 21/07/21)

2 LEGISLATIVE CONTEXT

2.1 Habitat Regulations Assessment

HRA refers to the several distinct stages of assessment which must be undertaken in accordance with the Conservation of Habitats and Species Regulations 2017 (as amended) to determine if a plan or project may affect the protected features of an NSN site before deciding whether to undertake, permit or authorise it. The NSN includes SACs and SPAs designated to fulfil the requirements of the Wildlife and Countryside Act 1981³ (as amended) and the Habitat Regulations (as amended). It is also a matter of Government policy that HRA procedures apply to listed or proposed Ramsar Sites (designated through the Ramsar Convention 1976⁴), candidate SACs (pSAC), potential SPAs (pSPA) and sites identified (or required) as compensatory measures for adverse effects on NSN Sites, pSPAs, pSACs and Ramsar sites⁵. Such sites are considered as part of the NSN for the purposes of this Report⁶.

HRA follows a stepwise process described in guidance within the Natural England (NE) HRA Standard⁷:

"For all plans and projects, which are not wholly directly connected with, or necessary to, the conservation management of the site's qualifying features, this will include formal screening for any Likely Significant Effects (either alone or in combination with other plans or projects). Where these effects cannot be excluded, assessing them in more detail through an Appropriate Assessment (AA) is required to reach a conclusion as to whether an adverse effect on the integrity of the site can be ruled out. Where such an adverse effect on the site cannot be ruled out, and no alternative solutions can be identified, then the project can only proceed if there are imperative reasons of overriding public interest and if the necessary compensatory measures can be secured".

Having ascertained that the Development is not connected with the management of any NSN site, the HRA comprises four stages:

- Stage 1 – Screening: Assessing whether or not the project would have a 'likely significant effect' (LSE) on a NSN Site, either alone, or in combination with other plans or projects. If the Screening procedure cannot conclude that there will not be an LSE on a NSN Site, then Stage 2 – Appropriate Assessment (AA) – would apply. Otherwise, the project may be authorised.
- Stage 2 – AA: The AA is undertaken by the competent authority responsible for determining the application. The purpose is to assess the implications of the project in respect of the NSN Sites' conservation objectives, which should enable the competent authority to determine whether or not the project would adversely affect the integrity of the NSN Site. If it can be ascertained beyond reasonable scientific doubt that the project would not adversely affect the integrity of the NSN 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 NSN 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 NSN Site, Stage 4 applies.

³ UK Government (1981) Wildlife and Countryside Act 1981 [Online] Available at: <https://www.legislation.gov.uk/ukpga/1981/69> (Accessed 21/07/21)

⁴ Information available from: <https://jncc.gov.uk/our-work/ramsar-convention/> (Accessed 21/07/21)

⁵ Paragraph 176 of National Planning Policy Framework, 2018

⁶ Before the UK exited the EU, triggering various legislative acts, these sites were collectively called European Sites or Natura 2000 Sites.

⁷ Natural England (2013) *Natural England Standard. Habitat Regulations Assessment (HRA) Operational Standard.*

- Stage 4 – Imperative Reasons of Overriding Public Interest (IROPI): Projects that adversely affect the integrity of a NSN Site may proceed for imperative reasons of overriding public interest, subject to compensatory measures being secured.

Many projects do not need to progress beyond Stage 1 where it can be identified that there is no causal link between a project and a NSN Site or that the probability of a significant effect is negligible; however, where LSE cannot be discounted, the AA in Stage 2 is necessary.

The planning application for the Development will be determined by East Riding of Yorkshire Council (ERYC) as the competent authority. It is also the responsibility of ERYC to undertake any AA that may be required under the terms of the Habitat Regulations, with statutory advice provided by NE. Whilst the competent authority will ultimately undertake the AA, it is the responsibility of the Applicant to provide the relevant information to enable them to do so. This Report is intended to provide ERYC with the relevant information to discharge their duties under the Habitat Regulations.

2.2 Case Law

The Court of Justice of the European Union (CJEU) published their decision in the matter of *People Over Wind and Sweetman v Coillte Teoranta*⁸. 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."

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, NSN Sites would be impacted from the proposals. Should an impact be identified, an AA will be required.

However, it is recognised that the ruling permits scope within the Screening stage to consider whether an aspect of a project may be an essential element of the plan or project and not simply concerned with avoiding impacts to NSN Sites. For example, standard manufacturing and operating mitigation to reduce noise and dust emissions from construction machinery associated with a development are driven by a combination of factors including good practice, Health and Safety of the workforce and general public, and legislation. These mitigation measures are not explicitly intended to reduce disturbance to sensitive ecological features but clearly have this effect and thus, can be considered as part of the Development design. An important, early part of the screening process is to distinguish between measures within a project intended to avoid or reduce harmful effects on a NSN Site and elements that may incidentally provide some degree of mitigation but which are intrinsic or essential parts of the plan or project itself.

The Outline Construction Environmental Management Plan (CEMP) accompanying the planning application includes a range of measures to be applied during construction to avoid and mitigate potential adverse environmental impacts, including those with potential to cause adverse ecological effects. Although the Outline CEMP represents prevailing good practice, it is not considered at the Screening stage of this HRA.

⁸ EU Case Law 2018 [Online] 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 12/07/21)

2.3 East Riding of Yorkshire Council

The Development is wholly within the East Riding of Yorkshire and the East Riding Local Plan⁹ and has been subject to HRA¹⁰ Screening to assess LSEs to NSN Sites arising from strategic spatial planning policies.

The Screening of the Local Plan helps to identify NSN Sites that might be sensitive to the implementation of relevant Local Plan policies – such as housing, employment, recreation and energy – and how avoidance and mitigation measures might be implemented to address associated LSEs on NSN Sites.

The policies and their potential effects and mitigation are important considerations in the HRA of the Development and they have been used to identify potential effect pathways and in the assessment of in-combination effects.

⁹ Available from: <https://www.eastriding.gov.uk/planning-permission-and-building-control/planning-policy-and-the-local-plan/east-riding-local-plan/> [Accessed June 2021]

¹⁰ Atkins (2013) *East Riding of Yorkshire Local Plan Allocations Document. Habitat Regulations Assessment Stage 1 (Screening)*

3 Screening of Likely Significant Effects

3.1 Overview

This screening exercise is designed to identify the types of effects that the Development may have on the qualifying interests of NSN Sites and assess whether an LSE can be discounted with respect to its qualifying interest features. NE guidance¹¹ on determining LSEs states that:

"Likely significant effect is, in this context, any effect that may reasonably be predicted as a consequence of a plan or project that may affect the conservation objectives of the features for which the Site was designated, but excluding trivial or inconsequential effects".

This Report does not include an exhaustive review of all potential impacts that may arise from the Development; rather, it seeks to identify only those with the potential to cause effects to the favourable conservation status of qualifying features that are both likely and significant. Effects that are not explicitly addressed have been scoped out.

3.2 NSN Sites Scoping

The potential effects of a development are not always limited to its boundaries. In order for a Development to have an effect outside of its boundary, there needs to be a source of impact, a pathway, and a receptor.

For example, a potential impact source may include a fuel spillage on a site, with a nearby stream providing an off-site pathway and a downstream watercourse becoming the receptor of the effects. The 'source-pathway-receptor' assessment has therefore been used within this Report to determine potential effects on NSN Sites.

During the assessment process, information has been gathered to identify potential effects on the NSN Sites that may fall within the ZoI of the Development. The ZoI for the Development has been defined as 5 kilometres (km) which is considered to be highly precautionary for the scale and character of the Development. NSN Sites within 5 km of the Development are shown in Figure 1 (Appendix A) and summarised in Table 1.

¹¹ English Nature (1999) *The Determination of Likely Significant Effect under The Conservation (Natural Habitats &c.) Regulations 1994*. Guidance Note HRGN3.

Table 1: Summary of NSN Sites for Screening in the HRA

Site	Qualifying Interest Features	Conservation Objectives	Threats and Pressures ¹²
<p>Lower Derwent Valley SAC [UK0012844]</p> <p><i>1.0 km south-west</i></p>	<p>The Lower Derwent Valley contains a greater area of high-quality examples of lowland hay meadows than any other UK site. The abundance of the rare narrow-leaved water-dropwort <i>Oenanthe silaifolia</i> is a notable feature.</p> <p>Traditional management has ensured that ecological variation is well-developed, particularly in the transitions between this grassland type and other types of wet and dry grassland, swamp and fen vegetation.</p> <p>Additionally, there is an area of damp alder woodland at Thornton Ellers adjoining marsh and tall fen communities.</p> <p><u>Annex I (Habitats Directive 92/43/EEC¹³) habitats that are a primary reason for selection:</u></p> <ul style="list-style-type: none"> • Lowland hay meadows (<i>Alopecurus pratensis</i>, <i>Sanguisorba officinalis</i>). <p><u>Annex I habitats present as a qualifying feature, but not a primary reason for selection:</u></p> <ul style="list-style-type: none"> • Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, Alnion incanae, Salicionalbae). <p><u>Annex II species present as a qualifying feature, but not a primary reason for site selection</u></p> <ul style="list-style-type: none"> • Otter. <p>Source: https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0012844.pdf [Accessed June 2021]</p>	<p>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:</p> <ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including typical species) of qualifying natural habitats. Attributes include: <ul style="list-style-type: none"> ○ Vegetation community composition; ○ Key defining species; ○ Undesirable species; ○ Community transitions; ○ Soils, substates and nutrients; ○ Water quality; ○ Hydrology; and ○ Adaptation and resilience. • The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. Attributes include: <ul style="list-style-type: none"> ○ Air quality; and ○ Conservation measures. • The populations of qualifying species; and • The distribution of qualifying species within the site. <p>Source: http://publications.naturalengland.org.uk/publication/5660734323163136 [Accessed June 2021]</p>	<p>The most important negative impacts and activities with high negative effects on the site:</p> <ul style="list-style-type: none"> • H04* Air pollution, air-borne pollutants; • G01 Outdoor sports and leisure activities, recreational activities; • I01* Invasive non-native species; • K02 Biocenotic evolution, succession; and • A04 Grazing. <p>Source: https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0012844.pdf [Accessed June 2021]</p>

¹² Asterisk (*) denotes a factor acting both inside and outside the boundary of the designated site. Factors without an asterisk are recognised as acting mainly inside the designated site.

¹³ Available from: <https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:31992L0043&from=EN>

Site	Qualifying Interest Features	Conservation Objectives	Threats and Pressures ¹²
<p>Lower Derwent Valley SPA [UK9006092]</p> <p><i>1.0 km south-west</i></p>	<p>Floodplain meadows supporting a rich breeding bird community during the summer and internationally important populations of waterfowl during the winter when the meadows are flooded.</p> <p><u>Qualifying species:</u></p> <ul style="list-style-type: none"> • Shoveler (breeding); • Bewick's swan (non-breeding); • Wigeon (non-breeding); • Teal (non-breeding)¹⁴; • Golden plover (non-breeding); and • Ruff (non-breeding). <p>The wintering waterfowl assemblage is also a qualifying feature of the SPA. In winter, the area supports 40,616 waterfowl, including Bewick's swan, wigeon, teal, golden plover and ruff.</p> <p>Source: https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9006092.pdf [Accessed June 2021]</p>	<p>Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring:</p> <ul style="list-style-type: none"> • The extent and distribution of the habitats of the qualifying features: <ul style="list-style-type: none"> ○ Non-breeding habitat • The structure and function of the habitats of the qualifying features: <ul style="list-style-type: none"> ○ Landscape structure ○ Vegetation characteristics • The supporting processes on which the habitats of the qualifying features rely: <ul style="list-style-type: none"> ○ Air quality; ○ Connectivity with supporting habitats; ○ Food availability; ○ Hydrology/flow; ○ Water area and depth; ○ Water quality; and ○ Minimise disturbance. • The population of each of the qualifying features: <ul style="list-style-type: none"> ○ Non-breeding population (abundance) • The distribution of the qualifying features within the site. <p>Source: http://publications.naturalengland.org.uk/publication/6223883187257344 [Accessed June 2021]</p>	<p>The most important negative impacts and activities with high negative effects on the site:</p> <ul style="list-style-type: none"> • K02 Biocenotic evolution, succession; • G01 Outdoor sports and leisure activities, recreational activities; • J02* Human induced changes in hydraulic conditions; • I01* Invasive non-native species; and • A04 Grazing. <p>Source: https://jncc.gov.uk/jncc-assets/SPA-N2K/UK9006092.pdf [Accessed June 2021]</p>

¹⁴ Note, there is an apparent error on the Natura 2000 Standard Data Form, that states teal as a wintering interest, but cites a population of 10 breeding females. The 5-year average wintering population, is 8,381 birds (2014/15–2018/19, WeBS data)

Site	Qualifying Interest Features	Conservation Objectives	Threats and Pressures ¹²
<p>Lower Derwent Valley Ramsar [GB301]</p> <p><i>1.0 km south-west</i></p>	<p>The Lower Derwent Valley represents one of the most important examples of traditionally managed species-rich alluvial flood meadow habitat remaining in the UK.</p> <p>These grasslands, which were formerly widespread, are now very restricted in distribution due to agricultural improvement.</p> <p>The river and these floodlands play a substantial role in the hydrological and ecological functioning of the internationally important Humber basin.</p> <p><u>Qualifying criteria:</u></p> <ol style="list-style-type: none"> 1. Traditionally managed species-rich flood meadow supporting rare plant species. 2. Rich assemblage of wetland invertebrates, including rare species. 4. Passage birds, including notable numbers of ruff and whimbrel. 5. Waterfowl assemblage (wintering) of international importance. 6. Species/populations of international importance: <ul style="list-style-type: none"> • Wigeon (winter) • Teal (winter) <p>Source: https://rsis.ramsar.org/RISapp/files/RISrep/GB301RIS.pdf [Accessed June 2021]</p>	<p>Ramsar sites are part of an international network of wetlands which are important for the conservation of global biological diversity and for sustaining human life through the maintenance of their ecosystem components, processes and benefits/services.</p> <p>The citation does not explicitly provide conservation objectives as it assumed that these are addressed by national-level designations and authorities. As such, it can be assumed that the conservation objectives for the Lower Derwent Valley SAC/SPA and the River Derwent SAC, which together are congruent with the boundaries of the Ramsar site, fully address the conservation objectives.</p>	<p>Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:</p> <ul style="list-style-type: none"> • Water diversion; and • Reservoir/dam impact – flooding. <p>Source: https://rsis.ramsar.org/RISapp/files/RISrep/GB301RIS.pdf [Accessed June 2021]</p>

Site	Qualifying Interest Features	Conservation Objectives	Threats and Pressures ¹²
<p>River Derwent SAC [UK0030253]</p> <p><i>4.7 km west</i></p>	<p>The River Derwent is one of the best British examples of the classic river profile. This lowland section, stretching from Ryemouth to the confluence with the Ouse, supports diverse communities of aquatic flora and fauna.</p> <p><u>Annex I habitats present as a qualifying feature, but not a primary reason for selection:</u></p> <ul style="list-style-type: none"> • Watercourses of plain to montane levels with the Ranunculion fluitantis and Callitriche-Batrachion vegetation. <p><u>Annex II species that are a primary reason for selection of this site</u></p> <ul style="list-style-type: none"> • River lamprey. <p><u>Annex II species present as a qualifying feature, but not a primary reason for site selection</u></p> <ul style="list-style-type: none"> • Sea lamprey; • Bullhead; and • Otter . <p>Source: https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0030253.pdf [Accessed June 2021]</p>	<p>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:</p> <ul style="list-style-type: none"> • The extent and distribution of qualifying natural habitats and habitats of qualifying species; • The structure and function (including typical species) of qualifying natural habitats. Attributes: <ul style="list-style-type: none"> ○ Riparian zone; ○ Woody debris; ○ Water course flow; ○ Sediment and thermal regimes; ○ Biological connectivity; ○ Invasive, non-native species; ○ Key defining species; ○ Fisheries; ○ Vegetation structure (riparian); ○ Submerged macrophytes; ○ Screening intakes and discharges; and ○ Supporting off-site habitats. • The structure and function of the habitats of qualifying species; • The supporting processes on which qualifying natural habitats and the habitats of qualifying species rely. Attributes include: <ul style="list-style-type: none"> ○ Water chemistry – alkalinity; ○ Water quality – nutrients, organic pollution, other pollutants; ○ Air quality; and ○ Adaptation and resilience. • The populations of qualifying species; and • The distribution of qualifying species within site. <p>Source: http://publications.naturalengland.org.uk/publication/4824082210095104 [Accessed June 2021]</p>	<p>The most important negative impacts and activities with high negative effects on the site:</p> <ul style="list-style-type: none"> • J02* Human induced changes in hydraulic conditions; • I01* Invasive non-native species; • A02 Modification of cultivation practices; and • H02* Pollution to groundwater (point sources and diffuse sources). <p>Source: https://jncc.gov.uk/jncc-assets/SAC-N2K/UK0030253.pdf [Accessed June 2021]</p>

3.3 Potential Effects of the Development

The River Derwent SAC is close to the furthest limit for which impacts to NSN Sites are considered in this Report. The qualifying features of the River Derwent SAC include the freshwater habitats and associated species of the main channel of the River Derwent. The Site has no clear or direct hydrological connectivity to the River Derwent and supports none of its qualifying features. The intervening 4.7 km of landscape comprises predominately agricultural land and minor roads, which greatly reduce meaningful ecological connectivity, although the Lower Derwent Valley and Pocklington Canal provide pathways for potential impacts. However, such impacts are likely to be mediated by the intervening areas (including designated sites) and large distance such that downstream effects to the River Derwent are extremely unlikely and more appropriately assessed for the intervening and connected designated sites i.e., the Lower Derwent Valley SAC and Ramsar.

Consequently, it can be concluded that there are no effect pathways between the Development and the River Derwent SAC, and so LSEs to the River Derwent SAC can be screened out from further assessment.

The Lower Derwent Valley SAC, SPA and Ramsar are approximately 1.0 km south-west of the Site and their qualifying features include both habitats and species for which effect pathways are conceivable. The Lower Derwent Valley SAC, SPA and Ramsar are, therefore, the only NSN Sites to be considered further in this HRA.

3.3.1 Lower Derwent Valley SAC

It is possible to determine the scope of the potential effects based on the description of the Development, the sensitivity of the qualifying features within the ZoI, and the principal threats and pressures to the SAC (Table 1). The following impacts are considered appropriate for further consideration:

- Habitat loss, change and fragmentation (during construction and operation);
- Noise and visual disturbance (during construction and operation); and
- Air and surface water pollution (during construction).

3.3.1.1 Habitat Loss, Change and Fragmentation

The Development will give rise to temporary and permanent habitat changes. Direct, permanent habitat loss will occur in locations where site infrastructure is constructed, principally associated with the Greener Grid Park, new access tracks and inverters.

The majority of the remaining habitats in the construction footprint will be subject to temporary disturbance and damage throughout the construction period. Upon commissioning, the solar farm will enter its 37-year operational phase whereupon it will have a range of impacts on habitats, principally through the cessation of prevailing agricultural practices and conversion of habitats.

The Site is located outwith the Lower Derwent Valley SAC and thus direct impacts to qualifying habitat features will not occur.

The Site is outwith the extent of the floodplain and the predominately intensive agriculture habitats are typical of the local landscape. The Site does not include any of the qualifying habitat features (floodplain meadows and alder woodland) nor any that could be considered functionally linked or providing supporting value to the favourable conservation status of these qualifying features.

The agricultural fields within which the Development will be sited are subject to a frequent and regular disturbance of moderate to high magnitude. It is reasonable to conclude that the construction of the Development will fall within the usual background regime of disturbance (albeit temporary) after which the disturbance will cease. Thus, there will be a

large net decrease in disturbance over the lifetime of the Development (i.e., during the operation of the Development, agricultural disturbance will largely cease).

Habitat loss, change and fragmentation arising from the construction and operation of the Development will not undermine the conservation objectives of qualifying habitat features, and no LSEs are predicted.

Habitat loss, change and fragmentation can also affect species that depend on those habitats. Otter is the only qualifying species feature of the SAC and the maintenance of its favourable conservation status depends on a range of habitats with which the species is associated. Otter is very closely associated with freshwater habitats within a home range that may extend for many kilometres. Consequently, the watercourses and associated riparian habitats within Site may provide supporting value to the otter population of the SAC.

Baseline studies (survey and desk study) recorded no evidence of otter within the Site and surrounds. The Development will involve limited in-channel works, and exclusion buffers from watercourses have been designed into the Development. Freshwater habitats will not be lost or changed, nor will higher value terrestrial habitats (principally riparian woodland) be lost or changed. Furthermore, as discussed above in relation to habitats, the agricultural fields within which the Development will be sited will be subject to a net decline in disturbance due to the cessation of agricultural practices.

Habitat loss, change and fragmentation arising from the construction and operation of the Development will not undermine the conservation objectives for otter, and so no LSEs are predicted.

3.3.1.2 Noise and Visual Disturbance

There are no impact pathways for noise and visual disturbance effects of qualifying habitat features.

Otter is sensitive to anthropogenic noise and visual disturbance, principally arising during construction, which has the potential to adversely affect otter. The movement of personnel, large plant and vehicles, and the operations that are undertaken, are potential sources of disturbance. Lighting will be limited during both the construction and operation of the Development and is not considered a likely source of disturbance.

The Development is located 1.0 km from the SAC, between which there is no clear line of sight due to the flat topography and intervening habitat and landscape features such as hedgerows, woodland/trees and buildings.

Despite covering a large area, construction activities associated with the Development are relatively small scale in terms of site activities which in turn are phased over a large area, further reducing their point-source impact.

The construction of the Development will take place over approximately 14 months however, much of the solar installation will be complete in approximately six months. Construction methods will have generally low magnitude noise emissions. It is reasonable to assume that the magnitude of noise and visual disturbance arising from the Development during construction will be of a similar magnitude, but of greater frequency, than prevailing agricultural activities, although these will greatly reduce during operation.

The distance and landscape between the Site and the SAC, as well as the background level of disturbance arising from agriculture and minor roads, will moderate construction disturbance effects to such an extent that they would have no adverse effect on otters within the SAC.

Otters have large home ranges and it is possible that the watercourses and riparian habitats in the Site form part of home ranges for otters associated with the SAC. However, recent

surveys and desk study records suggests that the Site does not support otter and the available habitats are generally of low quality, and so a clear functional link with the SAC is not evident. It is possible that small watercourses and field drains in the Site occasionally support otter, but this would be infrequent and it is reasonable to conclude that the Site is not a core resource for the species.

Consequently, disturbance impacts to otters during construction are very unlikely, and any effects would be temporary and reversible and would not affect the favourable conservation status of the species or lead to LSEs on this qualifying species.

Operational disturbance will be limited to occasional maintenance of the infrastructure and the running of the Greener Grid Park. Noise disturbance from the Greener Grid Park has been assessed¹⁵ as not exceeding background levels at nearby residential receptors, all of which are closer to the Site than the SAC. Maintenance activities of the Development are expected to be infrequent and low magnitude and below background levels, and there is some evidence that otters can habituate to low levels of disturbance¹⁶. Neither source of disturbance is likely to be of a magnitude that would constitute an LSE on otter.

3.3.1.3 Air and Surface Water Pollution

Different forms of pollution are recognised as pressures to the favourable conservation status of the SAC qualifying features. The Site has hydrological connectivity with the SAC and therefore, surface water pollution is a potential impact-pathway affecting both qualifying habitats and species.

The Development has the potential to generate a limited amount of fugitive dust emissions during construction. However, at a distance of 1 km from the SAC, a clear impact-pathway is unlikely, and so LSEs from dust emissions during construction can be screened out.

The Development includes a number of construction good practice measures that are set out in the Outline CEMP with the specific aim of avoiding adverse effects caused by increased sediment loading or pollution into the water environment. However, at the HRA Screening stage, such mitigation measures cannot be taken into account since they are explicitly intended to mitigate adverse effects on the environment. Notwithstanding this applied mitigation, the sensitive design of the Development has sought to minimise environmental effects, including an approximate 6 – 9 m separation from field drains and watercourses for all works (excluding watercourse crossings), which will greatly limit the potential for the pollution of surface water. Furthermore, in-channel works have been limited to six new watercourse crossings. All new watercourse crossings are located in watercourses with some degree of hydrological connectivity to the Lower Derwent Valley SAC, but at a distance of approximately 2.5 km via uninterrupted watercourses.

A precautionary assessment would conclude that the probability of a pollution event occurring during any phase of the Development, to such an extent that it undermines the conservation objectives of SAC, is negligible, even in the absence of the preventative measures. Nonetheless, a catastrophic spillage of fuel or other contaminants could occur, but would, by definition of the small scale of impact (due to the limited number of vehicles/plants and associated fuel) and associated construction methods, be of relatively small magnitude.

Under such a scenario, the potential for contamination of the qualifying features is further reduced by the intervening distance and land type, which would help to mediate contaminant dispersal on land; and weak hydrological connectivity, with only one surface water pathway (>2 km of stream linking the Site downstream to the SAC) mediating surface water pollution.

¹⁵ Arcus (2021) *Soay Solar Farm and Greener Grid Park Noise Impact Assessment*

¹⁶ Chanin, P. (2003) *Ecology of the European Otter. Conserving Natura 2000 Rivers Ecology Series No. 10*

The field drains and watercourses have been, and continue to be, subject to a degree of ongoing disturbance from agricultural land use including occasional disturbance, sediment loading, dust and fertiliser/pesticide drift. It is reasonable to assume, therefore, that further, temporary disturbance of the arable land during construction will be of a similar type and magnitude to which the watercourses are already subjected. During operation, the cessation of the current agricultural regime will most likely lead to reduction in disturbance and a reduced likelihood of pollution impacts. The operation of the Development is also associated with potential changes to flood risk and surface water run-off, but the Flood Risk Assessment¹⁷ concludes that neither will be significantly altered by the Development.

No LSEs from air and surface water pollution are predicted.

3.3.1.4 Summary

LSEs arising from the following impacts have been screened for the qualifying features of the Lower Derwent Valley SAC:

- Habitat loss, change and fragmentation;
- Noise and visual disturbance; and
- Air and surface water pollution.

No LSEs are predicted.

3.3.2 Lower Derwent Valley SPA

It is possible to scope the potential effects of the Development based on a review of the Development description, the sensitivity of the qualifying features within the ZoI, and the principal threats and pressures to the SPA (Table 1). The following impacts are considered appropriate for further consideration:

- Habitat loss, change and fragmentation (during construction and operation); and
- Noise and visual disturbance (during construction and operation).

3.3.2.1 Habitat Loss, Change and Fragmentation

The Development will give rise to temporary and permanent changes to habitats on which functionally linked Lower Derwent Valley SPA qualifying species may depend.

No species associated with the Lower Derwent Valley SPA were recorded within the Site or Ornithology Survey Area (OSA). With the exception of golden plover, the arable habitat throughout most of the Site is unsuitable for qualifying species and the likelihood of them occurring is very low. Subject to crop types and timings, golden plover could occur within the farmland habitats on-site; however, the lack of observations, both within the OSA and wider area, suggest that it is not used frequently by this species.

Several ephemeral flooded areas were present off site to the west, south-west and south of the Site during the non-breeding season, each lasting for a very limited time and unlikely to support qualifying bird species.

The only flooded area with notable numbers of wetland birds at was Melbourne and Thornton Ings SSSI, part of the SPA, located approximately 1 km south-east of the Site. This flood supported qualifying species features, notably wigeon and teal, peak counts of which represented >1% of the SPA populations: wigeon peak count = 350 / 3.75%; teal peak count = 150 / 1.70%).

¹⁷ Arcus (2021) *Soay Solar Farm and Greener Grid Park Flood Risk Assessment*

No qualifying species and very few other wetland bird species were recorded within the Site, OSA or immediate surrounds, and the habitats are generally unsuitable for these species. Consequently, no LSEs from habitat loss/change are predicted.

3.3.2.2 Noise and Visual Disturbance

The construction and operation of the Development will give rise to visual and aural stimuli that could disturb qualifying bird species.

Birds are sensitive to anthropogenic disturbance, and both noise and visual disturbance, principally arising during construction, have the potential to adversely affect qualifying breeding and non-breeding bird species, leading to reductions in survival and reproduction rates. The degree of disturbance will depend on the following:

- The timing of works. Effects are likely to occur throughout the year but may vary depending on season and time of day;
- The magnitude of the disturbance (e.g., a vehicle driving slowly along the access track is likely to cause a relatively low or negligible magnitude of disturbance, whereas a period of prolonged and noisy operations is likely to be of high magnitude);
- The extent of displacement (both spatially and temporally);
- The availability of suitable habitats in the wider area for displaced birds to occupy; and
- The behavioural sensitivity of birds using the Site and surrounds (which will vary between species).

No qualifying species and very few other wetland bird species were recorded within the Site, OSA or immediate surrounds, and the habitats are generally unsuitable for these species. Furthermore, the Development is located 1.0 km from the Lower Derwent Valley SPA, between which there is no clear line of sight due to the flat topography and intervening habitat and landscape features such as hedgerows, woodland/trees and buildings.

Despite covering a large area, construction activities associated with the Development are relatively small scale in terms of site activities which in turn are phased over a large area, further reducing their point-source impact.

The construction of the Development will take place over approximately 14 months (although much of the solar installation will be complete in approximately 6 months) using methods that have generally low magnitude noise emissions. It is reasonable to assume that the magnitude of noise and visual disturbance arising from the Development during construction will be of a similar magnitude, but of greater frequency, than prevailing agricultural activities, although these will greatly reduce during operation.

Operational disturbance will be limited to occasional maintenance of the infrastructure and the running of the Greener Grid Park. Noise disturbance from the Greener Grid Park has been assessed¹⁵ as not exceeding background levels at nearby residential receptors, all of which are closer to the Site than the SPA. Maintenance activities of the Development are expected to be infrequent and low magnitude and below current background levels.

The distance and landscape between the Site and the SPA, as well as the background level of disturbance arising from agriculture and minor roads, will reduce disturbance effects to such an extent that they would have no adverse effect on qualifying bird species.

3.3.2.3 Summary

LSEs arising from the following impacts have been screened for the qualifying features of the Lower Derwent Valley SPA:

- Habitat loss, change and fragmentation;
- Noise and visual disturbance.

No LSEs are predicted.

3.3.3 Lower Derwent Valley Ramsar

It is possible to scope the potential effects of the Development based on a review of the Development description, the sensitivity of the qualifying features within the ZoI, and the principal threats and pressures to the Ramsar (Table 1). The following impacts are considered appropriate for further consideration:

- Habitat loss, change and fragmentation (during construction and operation);
- Noise and visual disturbance (during construction and operation); and
- Air and surface water pollution (during construction).

The designated features of the Lower Derwent Valley Ramsar include those of the Lower Derwent Valley SAC and SPA and so it is reasonable to base the Screening of LSEs on those undertaken for the SAC and SPA.

3.3.3.1 Habitat loss, change and fragmentation

The screening of LSEs associated with habitat loss and change are fully addressed in the screening of such effects for the Lower Derwent Valley SAC and Lower Derwent Valley SPA in Sections 3.3.1.1 and 3.3.2.1, respectively.

3.3.3.2 Noise and Visual Disturbance

The screening of LSEs associated with noise and visual disturbance are fully addressed in the screening of such effects for the Lower Derwent Valley SAC and Lower Derwent Valley SPA in Sections 3.3.1.2 and 3.3.2.2, respectively.

3.3.3.3 Air and Surface Water Pollution

The screening of LSEs associated with surface water pollution are fully addressed in the screening of such effects for the Lower Derwent Valley SAC in Section 3.3.1.3.

The diverse wetland invertebrate assemblage, a qualifying criterion of the Ramsar, is not a qualifying feature of the Lower Derwent Valley SAC, but LSEs can be considered in the same way as to sensitive off-site habitats. The weak connectivity between the Site and the Ramsar, combined with the low likelihood and magnitude of pollution impacts, reduces the potential for adverse effects to such as level that LSEs can be discounted.

3.3.3.4 Summary

LSEs arising from the following impacts have been screened for the qualifying features of the Lower Derwent Valley Ramsar:

- Habitat loss, change and fragmentation;
- Noise and visual disturbance; and
- Air and surface water pollution.

No LSEs are predicted.

4 IN-COMBINATION EFFECTS

In-combination effects occur when multiple developments have impacts on ecological features, and small, individually non-significant effects can cumulatively become significant.

The NSN sites cover a very large area and are subject to a wide range of pressures. In order to focus the assessment of in-combination effects, a review has been undertaken of the Local Plan as well as planning applications within 5 km of the Site that have been submitted within the last five years (planning applications are presented in Appendix B). This search of planning applications is precautionary and it is highly likely that many of the

approved planning applications have been built and thus form part of the baseline environment. If necessary, individual developments have been explored in more detail for their potential to contribute to the LSEs under consideration.

The HRA¹⁰ of the ERYC Local Plan identified no LSEs from policy allocations, either alone or in combination with other plans and developments, to any of the NSN sites under consideration in this HRA.

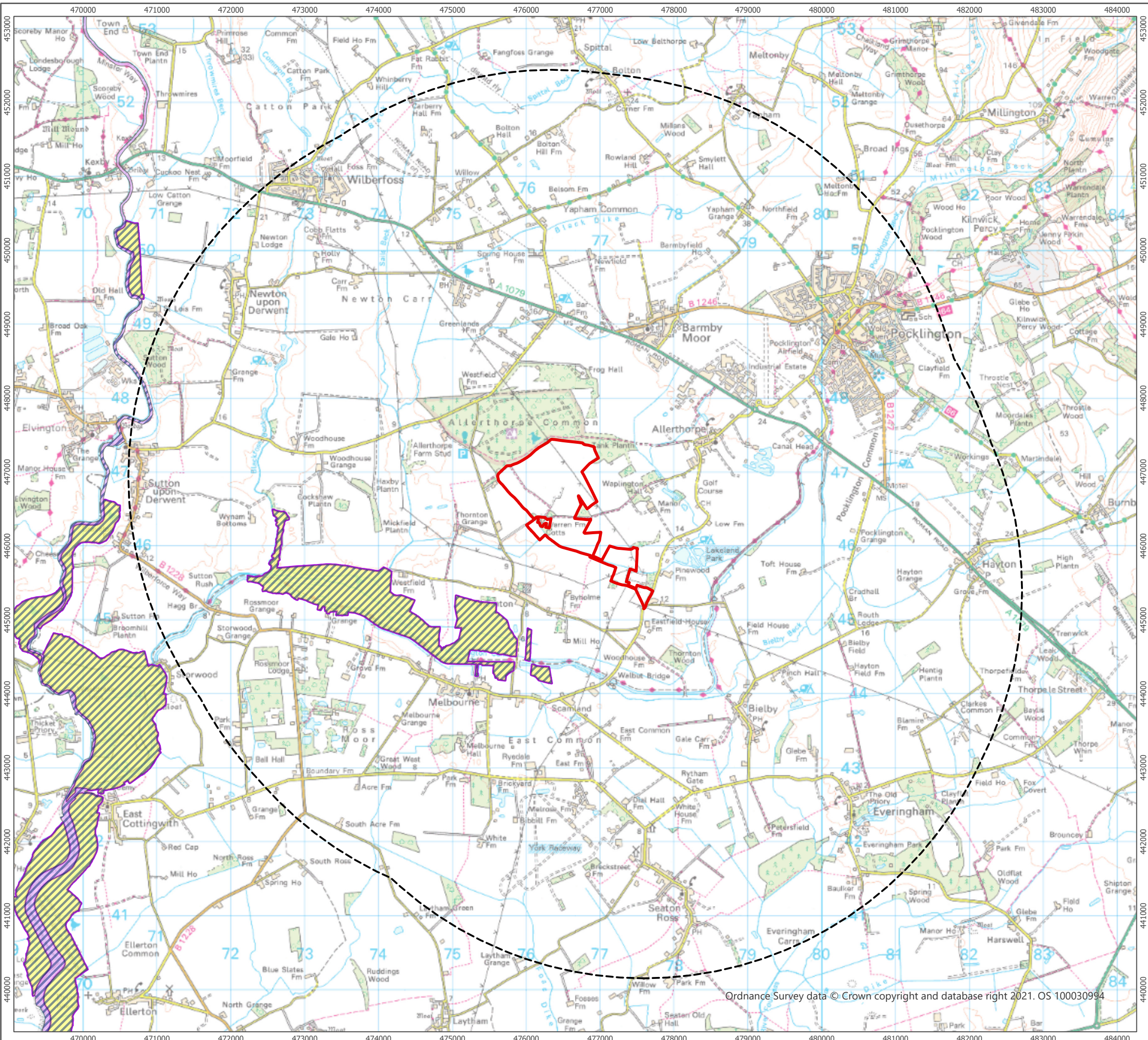
A review of the planning applications in Appendix B reveals that most are relatively small scale, under construction or built, and/or distant from the Site and NSN sites, and thus have limited potential to contribute to in-combination effects.

Given the limited range of impact-pathways arising from the Development, and their low likelihood and/or magnitude, the potential for in-combination LSEs with other developments and plans is extremely unlikely and none are predicted.

5 SUMMARY OF LIKELY SIGNIFICANT EFFECTS

The Development will not give rise to any LSEs to the favourable conservation status of the qualifying features of NSN sites, either alone or in combination with other projects and plans. Consequently, there is no requirement for any further stages of the HRA, including AA.

APPENDIX A – NATIONAL SITE NETWORK (NSN) SITES (FIGURE 1)



- Planning Boundary
- Survey Area - 5 km Buffer
- Lower Derwent Valley SAC
- River Derwent SAC
- Lower Derwent Valley SPA
- Lower Derwent Valley Ramsar

1:50,000 Scale @ A3
 0 1 2 km

Produced By: CW	Ref: 3404-REP-060
Checked By: MG	Date: 08/07/2021

NSN Sites
Figure 1

**Soay Solar Farm
and Greener Grid Project
Habitat Regulations Assessment**

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APPENDIX B – PLANNING APPLICATIONS (IN-COMBINATION EFFECTS)

Reference	Description	Area	Distance from Site	Date	Status
20/02915/PLF	Change of use of redundant pasture for the siting of camping pods, erection of storage building and creation of wildlife pond	2.0 ha	Adjacent to E boundary	01/02/2021	Approved
16/01437/PLF	Continued use as general-purpose equestrian facility and use of part of one building for equine rug cleaning business	23.3 ha	0.5 km	11/07/2016	Approved
21/00107/PLF	Change of use of land to allow the siting of 75 additional static caravans and the formalisation of the existing access road and gas tank compound (retrospective permission), with associated landscape and infrastructure works	38.1 ha	0.8 km	04/05/2021	Approved
19/00238/STPLF	Laying of private foul sewer to serve holiday park permitted by APP/E2001/W/16/3151708 at Allerthorpe Golf and Park Retreat	3.8 ha	0.9 km	09/08/2019	Approved
19/01553/PLF	Change of use of land to camping/caravan pitches	0.5 ha	1.1 km	30/08/2019	Approved

Reference	Description	Area	Distance from Site	Date	Status
16/03676/STPLF	Erection of industrial building consisting of warehouse and office, construction of canopy to rear of existing warehouse and a detached single storey building (traffic office), retention of attenuation pond with associated parking, 25m turning circle, landscaping and landscape buffer following change of use of arable land and demolition of existing warehouse (Additional Noise Assessment)	2.7 ha	1.5 km	21/02/2017	Approved
18/03789/STPLF	Erection of a Care Home with associated works	N/A	2.7 km	26/11/2019	Approved
19/02183/TCA	Pocklington Conservation Area – Tree works (felling and lopping).	N/A	2.7 km	03/09/2019	No Objection
19/02416/PLF	Erection of building for additional accommodation and recreational use with car parking in association with existing holiday cottages and glamping site	1.6 ha	2.8 km		Pending Consideration
16/00107/STPLF	Erection of 323 dwellings, landscaping and associated works including provision of highway and drainage infrastructure and open space	17.0 ha	2.8 km	01/12/2016	Approved (under construction)

Reference	Description	Area	Distance from Site	Date	Status
20/03282/STPLF	Erection of 21 dwellings within wider housing scheme (planning permission 16/00107/STPLF – Erection of 323 dwellings, landscaping and associated works including provision of highway and drainage infrastructure and open space) with associated access, parking and infrastructure to be read in conjunction with 20/03281/STVAR	1.4 ha	2.8 km	01/03/2021	Approved (under construction)
20/04278/AGNOT	Erection of an agricultural building for storage of machinery and grain	35.0 ha (entire agricultural holding)	2.9 km	05/02/2021	Required and Granted Prior Approval
18/02144/STREM	Erection of 225 dwellings with associated access, parking, landscaping and infrastructure following approved Hybrid application 15/01180/STPLF (appearance, landscaping, layout and scale to be considered)	9.0 ha	3.1 km	19/10/2018	Approved (under construction)
19/01834/PLF	Change of use of land for the siting of 17 holiday lodges with associated access, onsite road and parking	1.9 ha	3.2 km	22/01/2020	Approved
19/01167/AGNOT	Erection of a grain store	60.0 ha (entire agricultural holding)	3.4 km	26/04/2019	Prior Approval not required

Reference	Description	Area	Distance from Site	Date	Status
17/02653/REM	Erection of 22 dwellings following outline permission 15/01229/OUT (all matters to be considered) (AMENDED PLANS)	N/A	3.4 km	23/03/2018	Approved
18/03691/PLF	Erection of a building and additional use of land as testing area	0.5 ha	3.5 km	03/06/2019	Approved
18/03327/STPLF	Erection of 121 dwellings, erection of 4 detached double garages, associated access, landscaping, open space, infrastructure and ancillary works	4.1 ha	4.0 km	18/10/2019	Approved (under construction)
20/02711/AGNOT	Erection of an open fronted field barn for stock shelter and associated feed storage	19.0 ha	4.0 km	28/09/2020	Planning Permission Required, not granted prior approval
20/00198/AGNOT	Erection of an agricultural building	16.2 ha	4.0 km	09/03/2020	Planning Permission Required, not granted prior approval
19/02259/PLF	Erection of single storey extension to side and re-build front elevation	5.2 ha	4.5 km	06/09/2019	Approved

Reference	Description	Area	Distance from Site	Date	Status
20/03085/PLF	Change of Use of agricultural building to specialist masonry and affiliated trades workshop, change of use of lean-to to form a workshop and bereavement counselling facility, installation of a mezzanine, retention of a mezzanine, external alterations, storage area and associated works	0.5 ha	4.5 km	11/12/2020	Approved
17/02471/CM	Alterations and upgrade to site layout to allow aggregate recycling within existing mineral extraction/in-filling site	3.5 ha	4.7 km	30/05/2018	Approved
17/02332/PLF	Erection of 4 holiday lodges and associated works	1.0 ha	4.7 km	08/09/2017	Approved
18/03403/PLF	Erection of two additional holiday lodges and associated works	0.5 ha	4.7 km	19/12/2018	Approved
17/00723/STPLF	Erection of 207 dwellings with associated access, parking, infrastructure, landscaping and open space	7.1 ha	4.9 km	02/02/2018	Approved (under construction)

Reference	Description	Area	Distance from Site	Date	Status
17/00106/STPLF	Pocklington Flood Alleviation Scheme (PFAS) comprises 1) Construction of a flood attenuation bund (5m high, 600 m in length and 45m wide with a 5.0m wide access/maintenance strip) across Pocklington Beck upstream of Pocklington; 2) a culvert to run through the attenuation bund with a flow control device which would maintain the flow of Pocklington Beck and associated access tracks and fencing	14.0 ha	5.0 km	09/10/2017	Approved