# Rosefield Solar Farm

## Environmental Statement

Volume 4
Appendix 16.2: WFD Waterbodies Stage 1 Screening Assessment
(Clean)

EN010158/APP/6.4.3
Revision 3
Deadline 2
April 2026
Rosefield Energyfarm Limited

APFP Regulation 5(2)(a)
Planning Act 2008
Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009

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# 1. Introduction

## 1.1. Purpose of the Report

1.1.1. This document has been updated at Deadline 2 in response to further engagement with the Environment Agency in relation to waste and foul water discharge. The document references have not been updated from the original submission. Please refer to the **Guide to the Application [EN010158/APP/1.2.7]** for the list of current versions of documents.

1.1.2. This Water Framework Directive (WFD) Screening Assessment has been prepared on behalf of Rosefield Energyfarm Limited ('the Applicant') to identify the extent to which the Development Consent Order (DCO) application for the construction, operation (including maintenance) and decommissioning of Rosefield Solar Farm (hereafter referred to as the 'Proposed Development') is likely to affect WFD waterbodies. This report will identify the zone or zone of influence based on specific activities and / or characteristics the Proposed Development that could result in both detriment and/or benefit to the achievement of WFD objectives; as well as conclude if it is appropriate for these activities/characteristics to be screened out. The land within the Site boundary comprises approximately 684 hectares (ha) of land and is hereafter referred to as the 'Site'.

1.1.3. The assessment has been undertaken in accordance with guidance issued by the Planning Inspectorate (PINS) and the Environment Agency (EA). Further details of relevant guidance is provided in **Section 2**.

## 1.2. The Proposed Development

1.2.1. The Proposed Development falls within the definition of a 'nationally significant infrastructure project' (NSIP) under Section 14(1)(a) and 15(2) of the Planning Act 2008 as the construction of a generating station in England with a capacity of more than 50MW.

1.2.2. The principal components of the Proposed Development include:

- Solar PV development consisting of:
  - Ground mounted Solar PV generating station. The generating station would include Solar PV modules and mounting structures; and
  - Balance of Solar System (BoSS) which comprises: Inverters; Transformers; Switchgear; Combiner Boxes; acoustic fencing and cabling.
- A project substation (the 'Rosefield Substation') compound comprising: Transformers; Switchgear; reactive power compensation bays; disconnectors; circuit breakers; busbars; control equipment; lightning surge arrestors; building(s) including office, control, functions, material storage, material laydown areas and welfare facilities; firewalls; fencing

and acoustic fencing; a security cabin; parking as well as wider monitoring, maintenance and emergency equipment;

- A Main Collector Compound and two Satellite Collector Compounds comprising: Switchgear; Transformers; ancillary equipment; operation and maintenance and welfare facilities; material storage; material laydown areas; fencing and acoustic fencing; and security cabins;
- Battery Energy Storage System (BESS) compound comprising: batteries and associated Inverters; Transformers; Switchgear, ancillary equipment and their containers; office, control and welfare buildings; fencing and acoustic fencing; monitoring, maintenance and emergency systems; air conditioning; electrical cables; fire safety infrastructure; operation (including maintenance) security facilities; material storage; and material laydown areas;
- Interconnecting Cabling Corridor(s) to connect the Solar PV modules and the BESS to the Satellite and Main Collector Compounds to the Rosefield Substation;
- A Grid Connection Cable Corridor to connect the Rosefield Substation to the National Grid East Claydon Substation via 400kV cabling;
- Ancillary infrastructure works comprising: boundary treatment; security equipment; lighting; fencing; landscaping; internal access tracks; works to facilitate vehicular access; earthing devices; earthworks; surface water management; utility connections and diversions; and any other works identified as necessary to enable the Proposed Development;
- Green and blue infrastructure, recreation and amenity works comprising: landscaping; habitat management; biodiversity enhancement; the creation of permissive footpaths; and works to permanently divert four PRoW Footpaths in five instances;
- Site-wide operational monitoring and security equipment; and
- Highways infrastructure improvements and safety works comprising: minor junction improvement works; road widening; passing places; and works to facilitate vehicular access to the Site.

1.2.3. During the construction phase, one or more temporary construction compound(s) will be required as well as temporary roadways to facilitate access to all parts of the Site.

1.2.4. The construction phase of the Proposed Development is currently anticipated to occur over a 30-month period. The types of construction activities that may be required include (but are not limited to):

- Importing of construction materials;
- The establishment of the construction compounds – these will likely move over the course of the construction process as each section is built out;

- Creation of a new access points for the Site;
- Installing the security fencing around the Site;
- Importing the PV panels and the energy storage equipment;
- Erection of PV frames and modules;
- Digging of cable trench and laying cables for connection to the Rosefield Substation;
- Installing transformer cabins;
- Construction of on-site electrical infrastructure for the export of generated electricity; and
- New habitat creation including pond creation and reinstatement.

1.2.5. It is proposed that the lifetime of the Proposed Development will be 40 years.

1.2.6. The Proposed Development will be decommissioned at the end of its approved operational phase. All Solar PV modules, mounting poles, energy storage equipment, Inverters, Transformers etc. would be removed from the Site. These items would be recycled or disposed of in accordance with good practice and market conditions at the time. Decommissioning is expected to take approximately 24 months.

1.2.7. Further details of the Proposed Development, including proposed activities during the construction, operational and decommissioning stages can be found in Chapter 3 of the Preliminary Environmental Information Report (PEIR) which is available on the Rosefield Solar Farm website[1]. A preliminary assessment of the effects of the Proposed Development on the Water environment, and Land Soil, and Groundwater can be found in **Chapters 15** and **10 of the Preliminary Environmental Information Report (PEIR)** respectively. This has been undertaken in consultation with the Environment Agency (EA), the Lead Local Flood Authority (LLFA), and Anglian Water (Water Authority). A full assessment will be provided in the Environmental Statement which will accompany the DCO Application.

## 1.3. Study area

1.3.1. For the purposes of this WFD Screening Assessment, the Site and a 1km buffer have been considered as the study area to identify hydrological receptors that could be impacted by construction, operation (including maintenance), and decommissioning of the Proposed Development. A 1km buffer is considered appropriate for water environment assessments, based on professional judgment. This is considered a sufficient distance to

[1] https://rosefieldsolarfarm.co.uk/peir/

enable the deposition of silts in overland flows and dilution of any concentrated pollutants so that waterbodies at a greater distance than 1km would not be at significant risk of being affected.

1.3.2. Within this study area, WFD waterbodies with hydrological connectivity to the Site have been identified as:

- Claydon Brook Tributary (located adjacent to Parcel 3, along the eastern boundary);
- Claydon Brook (located within the Abnormal Indivisible Load Access Corridor);
- Claydon Brook DS of Granborough (Abnormal Indivisible Load Access crossing);
- River Ray (200m south of the Site); and
- Padbury Brook (approximately 2.5km northwest of the Site).

1.3.3. The Padbury Brook has not been included within this screening assessment as the nearest distance of the Site from the watercourse is 2.5km and the hydrological connection to this watercourse is approximately 7.5km downstream. The town of Steeple Claydon and High Speed 2 (HS2) also lie between the watercourse and the Site.

1.3.4. There are no WFD classified groundwater bodies of relevance to the assessment. The Sheephouse Wood SSSI, Finemere Wood SSSI (also a Groundwater Dependent Terrestrial Ecosystem) and Grendon and Doddershall Woods SSSI were identified as protected areas with potential hydrological connectivity to the Site.

1.3.5. Further details of the study area and the water bodies are provided in **Section 4**.

## 1.4. Relevant Legislation, Planning Policy and Guidance

1.4.1. The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (the 'WFD Regulations') implemented the Water Framework Directive 2000/60/EC. The Regulations were retained in UK law after EU Exit via the EU Withdrawal Act 2018. They aim to achieve good qualitative and quantitative health for water bodies by reducing and removing pollution and by ensuring that there is enough water to support wildlife at the same time as human needs. The WFD requires a 6-yearly cycle of river basin management, with the next comprehensive update of classifications for all water bodies due in 2025.

1.4.2. For surface waters, WFD status is assessed with reference to both the ecological and chemical status of the water body. For groundwater, the overall status is dependent on the quantitative and chemical status.

1.4.3. The WFD introduced River Basin Districts and established a requirement for the preparation of River Basin Management Plans (RBMP) which set objectives within each River Basin District in order to achieve WFD targets within the prescribed timeframes.

1.4.4. The PINS "Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive" ('NSIP WFD Advice') published 20 September 2024 (last updated 25 March 2025) is relevant to this WFD Assessment. This advice summarises the requirements of the WFD Regulations in relation to Nationally Significant Infrastructure Project (NSIP) applications.

1.4.5. The advice lists the aims of the WFD Regulations as follows:

- *"to enhance the status and prevent further deterioration of surface water bodies, groundwater bodies and their ecosystem;*
- *to ensure progressive reduction of groundwater pollution;*
- *to reduce water pollution, especially by Priority Substances and Certain Other Pollutants under Annex II of the Environmental Quality Standards Directive 2008/105/EC;*
- *to support mitigating the effects of floods and droughts;*
- *to achieve at least good surface water status for all surface water bodies and good chemical status in groundwater bodies by 2015 (Article 4), or good ecological potential for artificial or heavily modified water bodies; and*
- *to support sustainable water use."*

1.4.6. Under the WFD Regulations, the EA is required to prepare a RBMP for each river basin district (RBD). RBMPs describe:

- *"the current state of the water environment for each river basin district;*
- *the pressures affecting the water environment;*
- *the objectives for protecting and improving it; and*
- *the programme of measures needed to achieve the statutory environmental objectives of the WFD"*

1.4.7. In the context of the Water Framework Directive (WFD), a water body is a discrete, defined unit of the water environment that can be used for assessing water quality and setting environmental improvement targets. These water bodies can include various types of water, such as rivers, lakes, estuaries, coastal waters, and groundwater.

1.4.8. When deciding NSIP applications, the Secretary of State will need to consider the potential effects of any Proposed Development on:

- *"the environmental objectives and measures within River Basin Management Plan and any supplementary plans; and*
- *the ability of the UK to comply with the WFD, including (if applicable) the derogation provisions of Article 4.7"*

1.4.9. The PINS WFD Advice sets out the information to be included within an WFD assessment and how that information should be presented. This guidance has been taken into account during the preparation of this WFD Assessment.

1.4.10. Paragraph 5.16.2 of NPS EN-1 states *"during the construction, operation, and decommissioning phases, development can lead to increased demand for water, involve discharges to water, and cause adverse ecological effects resulting from physical modifications to the water environment. There may also be an increased risk of spills and leaks of pollutants to the water environment. These effects could lead to adverse impacts on health or on protected species and habitats and could result in surface waters, groundwaters or protected areas failing to meet environmental objectives established under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 and the Marine Strategy Regulations 2010".*

1.4.11. Paragraph 5.16.12 states: *"The Secretary of State will need to give impacts on the water environment more weight where a project would have an adverse effect on the achievement of the environmental objectives established under the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017."*

1.4.12. Paragraph 5.16.14 states: *"The Secretary of State should be satisfied that a proposal has regard to current River Basin Management Plans and meets the requirements of the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (including regulation 19)."*

1.4.13. This WFD Assessment takes account of the requirements of NPS EN-1 with respect to the WFD.

1.4.14. The *"Water Framework Directive assessment: estuarine and coastal waters"* guidance was published by the EA in December 2016 and describes how to assess the impact of a development on estuarine (transitional) and coastal waters. Although this focuses on estuarine and coastal waters, as noted above within the NSIP WFD Advice, the guidance sets out general principles and a staged approach to assessment that PINS considers can be used for other water bodies such as rivers, lakes and groundwater in England and Wales.

1.4.15. The EA guidance states that a WFD assessment must show if proposed activities will:

- "Cause or contribute to deterioration of status; or
- Jeopardise the water body achieving good status".

1.4.16. An approach of up to three stages is described in the EA guidance as follows:

- "**Stage 1 Screening** – excludes any activities that do not need to go through the scoping or impact assessment stages.
- **Stage 2 Scoping** – identifies the receptors that are potentially at risk from your activity and need impact assessment.
- **Stage 3 Impact assessment** – considers the potential impacts of your activity, identifies ways to avoid or minimise impacts, and shows if your activity may cause deterioration or jeopardise the water body achieving good status".

1.4.17. The EA guidance advised that all proposed activities should be considered, and all stages of the activity should be assessed (e.g. construction, operation, decommissioning).

## 1.5. Structure of this Report

1.5.1. This WFD Screening Assessment builds on the assessment of water impacts within the PEIR but focuses on identifying the extents of potential impacts of the Proposed Development with specific reference to WFD water bodies in the context of the WFD. It considers how the Proposed Development could result in both detriment and benefit to the achievement of WFD objectives.

1.5.2. Following advice published by PINS and the EA, a staged approach has been taken to the assessment of effects. This screening assessment identifies the location of WFD waterbodies, describes their baseline characteristics and considers whether any proposed activities could result in a deterioration of status of the identified water bodies. Where receptors are identified that are potentially at risk from proposed activities, a screening assessment has been undertaken, taking account of mitigation that has been committed to within the Proposed Development, to determine if there is potential for deterioration of WFD water bodies.

1.5.3. The report aims to identify whether aspects of the Proposed Development could impact WFD status or the objectives of the Anglian River Basin District and the Thames River Basin District RBMP.

# 2. Consultation

## 2.1. Environment Agency

2.1.1. Following review of the PEIR, the EA in their Section 42 response (dated 6 November 2024) highlighted a number of additional points for consideration within the ES and the supporting WFD Screening Assessment. These are provided in full in **Annex A** and have been taken into account in the preparation of this WFD assessment.

2.1.2. This WFD Stage 1 Screening Assessment was issued to the EA on 7 May 2025. **Annex B** sets out the EA's response to this WFD Stage 1 Screening Assessment which was received on the 26 June 2025.

# 3. Methodology

3.1.1. The methodology is based on the advice within the PINS guidance "Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive" and the EA guidance "Water Framework Directive assessment: estuarine and coastal waters" as well as taking into account consultation responses received from the EA during the assessment period.

3.1.2. A staged approach is proposed as advocated within the EA and PINS guidance. The PINS guidance states that *"screening should identify the extent to which the proposed development is likely to affect water bodies. Where impacts are 'screened out' from further assessment, this should be clearly justified."*

3.1.3. The purpose of Stage 1 (WFD screening) is to identify a zone of influence of the Proposed Development and to determine whether that influence has the potential to adversely impact upon WFD water body receptors. The screening stage also identifies specific activities of the Proposed Development that could affect receptor waterbodies' WFD status and carries them forward to subsequent stages of the assessment process. Water body receptors that are screened out will not be carried forward for assessment in Stage 2, and therefore justification is provided.

3.1.4. In line with the PINS advice, the WFD Stage 1 Screening provided within this report includes:

- Relevant WFD water bodies on a map or plan (**Section 4.4**);
- A description of the baseline characteristics of identified water bodies, including classification and sensitivity of that water body to change (**Section 4.5, Section 4.6, Section 4.7** and **Section 4.8**);
- The zone or zones of influence based on specific activities and/or characteristics of the Proposed Development that could affect the identified water bodies (**Section 5.2**); and
- Specific activities and/or characteristics of the Proposed Development that have been screened out and why (**Section 5.6**).

3.1.5. Following the WFD screening stage, where any activities or characteristics have been identified that could affect the identified water bodies, a WFD impact assessment will be made of the risk of deterioration of a WFD element. The assessment will take into account the location and nature of activities, whether they are temporary or permanent and the potential pathways between activities and receptors.

3.1.6. The following data sources have been considered in the preparation of this screening assessment:

- Anglian River Basin District River Basin Management Plan;
- Thames River Basin District River Basin Management Plan;
- EA catchment data explorer Website;
- Defra's MAGIC interactive mapping; and
- British Geological Survey GeoIndex Onshore.

3.1.7. Mitigation measures committed to by the Applicant will be taken into account and the mechanisms for securing this mitigation will be stated. Construction, operation (including maintenance), and decommissioning phases of the Proposed Development will be considered. The assessment will be undertaken based on professional judgement and experience of similar projects.

3.1.8. Any enhancements or positive contributions to the RBMP objectives will be identified together with details of how their implementation would be secured.

3.1.9. The report will provide a clear conclusion as to the extent to which to Proposed Development is likely to affect water bodies and whether any impacts require further assessment.

# 4. Environmental Setting and Identification of Water Bodies

4.1.1. This section provides a description of the baseline characteristics of the Site and identified water bodies including classification and sensitivity of the waterbodies potentially impacted by the Proposed Development.

## 4.2. Site Location

4.2.1. The Site is located approximately 10km to the southwest of Milton Keynes in the county of Buckinghamshire and is comprised almost entirely of agricultural land, with small areas of woodland in the south and western areas.

4.2.2. The Site is centred approximately at National Grid Reference 472102 E, 223552 N and postcode MK18 2EZ.

4.2.3. The Site covers an area of approximately 684ha and comprises primarily agricultural fields, with the field boundaries defined by hedgerows and individual trees.

4.2.4. The settlements of Calvert, Middle Claydon, Botolph Claydon, East Claydon and Hogshaw lie within 1.5km of parts of the Site boundary. Further afield (within 3km of the Site boundary) lie the settlements of Steeple Claydon, Edgecott, Shipton Lee, Quainton, Granborough and Winslow. The National Grid East Claydon Substation is the closest major infrastructure, located within Parcel 3. Traversing from this Substation are three overhead power lines (400 Kilovolt (kV) transmission line), carried by pylon structures, that run across Parcel 3 to the east and south. An HS2 works area is located in close proximity to the western edge of Parcels 1 and 1a. It is approximately 100m from Parcel 1 and 1a and less than 500 m from Parcel 2. This section of HS2 is currently under construction.

4.2.5. Figure 1.2 of the PEIR indicates the current zonal masterplan for the Site.

## 4.3. Topography

4.3.1. Parcels 1 and 1a within the Site are gently undulating with the highest point being Knowl Hill at around 116m Above Ordnance Datum (mAOD) as shown on **Figure 2.3: Topography Plan**, **Volume 2 of the PEIR**. The rest of Parcel 1 is at an elevation of 80-90mAOD. Parcel 2 is located on a low ridge crest at 136mAOD. Parcel 3 is located on relatively flat ground at 90-94mAOD on the northeast of the ridge.

## 4.4. Surface Watercourse

4.4.1. This section identifies water bodies that are classified under the WFD within a 1km radius of the Site. This radius is the anticipated zone of influence of Site activities (1km radius is also used within the ES) and has been chosen as a precautionary approach to ensure all relevant water bodies are assessed and screened in or out for further assessment. Each WFD water body within a 1km radius of the Site has been assessed to determine whether it is hydrologically linked to the Site and therefore whether activities associated with the Proposed Development could impact that water body. Water bodies that are not hydrologically linked to the Site have been screened out and will not be assessed further. Any water bodies that could feasibly be hydrologically linked to the Site have been taken forward for assessment, with baseline details provided in the following sections. These water bodies are shown in **Figure 4.1,** with their respective baseline information and WFD objectives in **Table 4.1** and **Table 4.2,** and subsequent text in the sections below.

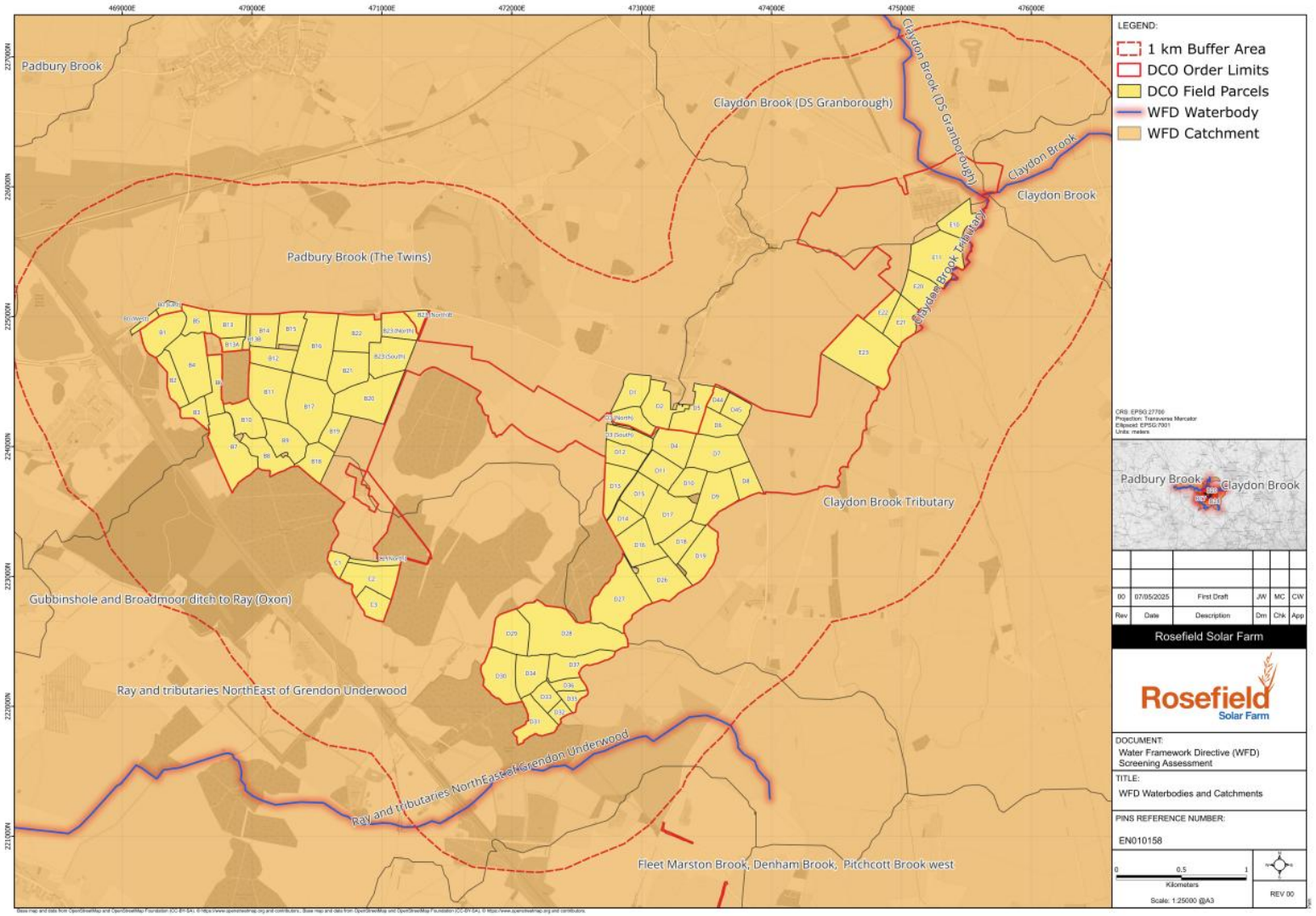


Figure 4.1: WFD Waterbodies and Catchments

## 4.5. Claydon Brook Tributary

4.5.1. The Claydon Brook Tributary flows from southwest to northeast along the eastern boundary of Parcel 3, where it discharges into the Claydon Brook/Claydon Brook (DS Granborough) at the northernmost area of the Parcel 3.

4.5.2. It falls within the Anglian River Basin District. This watercourse is managed by the LLFA and Buckingham and River Ouzel Internal Drainage Board (BOIDB). As this Ordinary Watercourse flows within the vicinity of the Site, it is possible it could be impacted by Site activities. It is noted particularly that the proposed Rosefield Substation and BESS are within the catchment of this watercourse, with drainage strategies for these Proposed Development components proposing a discharge to the Claydon Brook Tributary.

4.5.3. Baseline characteristics are given in **Table 4.1**. In summary, the Claydon Brook Tributary is a heavily modified watercourse that was classified as 'moderate' overall ecological status under the WFD in 2022. Chemical quality status did not require assessment.

4.5.4. Reasons for not achieving 'good' status are listed on the Catchment Data Explorer website as:

- Physical modification – land drainage;
- Point Source – sewage discharge (continuous);
- Diffuse Source – poor soil and nutrient management; and
- Awaiting recovery following measures to address polybrominated diphenyl ethers (PBDE) and mercury and its compounds.

4.5.5. Pressures affecting the watercourse are recorded as physical modification (e.g. for land drainage) and rural pollution (phosphate and chemicals).

4.5.6. Objectives under the WFD are given in **Table 4.2** below. An ecological target of 'moderate' was set for 2021 and a chemical target of 'good' was set for 2063, due to the natural recovery time of the watercourse following remedial measures for mercury and its compounds and polybrominated diphenyl ethers (PBDE).

4.5.7. The watercourse falls within a Nitrate Vulnerable Zone (NVZ).

## 4.6. Claydon Brook

4.6.1. The Claydon Brook flows from east to west past the northernmost area of Parcel 3, where it is discharges into the Claydon Brook (DS Granborough), which then flows to the west away from the Site.

4.6.2. It falls within the Anglian River Basin District. This watercourse is managed by the LLFA and BOIDB. As this watercourse flows close to the Site, it is possible it could be impacted by Site activities. It is noted particularly that the proposed Rosefield Substation and BESS are within the catchment of this watercourse, with drainage strategies for these areas proposing a discharge to the Claydon Brook Tributary, which ultimately discharges to the Claydon Brook.

4.6.3. Baseline characteristics are given in **Table 4.1**. In summary, it is a heavily modified watercourse that was classified as 'moderate' overall ecological status under the WFD in 2022. Chemical quality status did not require assessment.

4.6.4. Reasons for not achieving 'good' status are listed on the Catchment Data Explorer website as:

- Point Source – sewage discharge (continuous);
- Diffuse Source – poor nutrient management; and
- Awaiting recovery following measures to address polybrominated diphenyl ethers (PBDE) and mercury and its compounds.

4.6.5. Pressures affecting the watercourse are recorded as pollution from wastewater (e.g. for untreated wastewater being discharged into the watercourse) and rural and urban pollution (phosphate and chemicals).

4.6.6. Objectives under the WFD are given in **Table 4.2**. An ecological target of 'moderate' was set for 2015 and a chemical target of 'good' was set for 2063, due to the natural recovery time of the watercourse following remedial measures for mercury and its compounds and polybrominated diphenyl ethers (PBDE).

4.6.7. The watercourse falls within a Nitrate Vulnerable Zone (NVZ).

## 4.7. Claydon Brook (DS Granborough)

4.7.1. After the Claydon Brook Tributary discharges into the Claydon Brook, is it reclassified as the Claydon Brook (DS Granborough) WFD waterbody. This watercourse flows from east to northwest from the northern most area of Parcel 3.

4.7.2. It falls within the Anglian River Basin District. This watercourse is managed by the LLFA and BOIDB. As this watercourse flows close to the Site, it is possible it could be impacted by Site activities. It is noted that the proposed Rosefield Substation and BESS are within the catchment of this watercourse, with drainage strategies for these areas proposing a discharge to the Claydon Brook Tributary, which is upstream of this section of watercourse.

4.7.3. Baseline characteristics are given in **Table 4.1** below. In summary, it is a heavily modified watercourse that was classified as 'moderate' overall ecological status under the WFD in 2022. Chemical quality status did not require assessment.

4.7.4. Reasons for not achieving 'good' status are listed on the Catchment Data Explorer website as:

- Point Source – sewage discharge (continuous);
- Diffuse Source – poor nutrient and livestock management; and
- Awaiting recovery following measures to address polybrominated diphenyl ethers (PBDE) and mercury and its compounds.

4.7.5. Pressures affecting the watercourse are recorded as pollution from wastewater (e.g. for untreated wastewater being discharged into the watercourse) and rural and urban pollution (phosphate and chemicals).

4.7.6. Objectives under the WFD are given in **Table 4.2**. An ecological target of 'moderate' was set for 2015 and a chemical target of 'good' was set for 2063, due to the natural recovery time of the watercourse following remedial measures for mercury and its compounds and polybrominated diphenyl ethers (PBDE).

4.7.7. The watercourse falls within a Nitrate Vulnerable Zone (NVZ).

## 4.8. River Ray

4.8.1. The River Ray flows from east to west to the south of the Site, with the closest point being approximately 200m south of the southernmost point of Parcel 2.

4.8.2. It falls within the Thames River Basin District. This watercourse is managed by the Lead Local Flood Authority (LLFA). As this watercourse flows close to the Site, and one of its tributaries (Muxwell Brook) is located within the Site boundary, it is possible it could be impacted by Site activities.

4.8.3. Baseline characteristics are given in **Table 4.1** below. In summary, it is not designated artificial or heavily modified watercourse and was classified as 'moderate' overall ecological status under the WFD in 2022. Chemical quality status did not require assessment.

4.8.4. Reasons for not achieving 'good' status are listed on the Catchment Data Explorer website as:

- Physical modification – arable land use;
- Natural – drought;

- Point Source – sewage discharge (continuous);
- Diffuse Source – poor soil and nutrient management; and
- Awaiting recovery following measures to address polybrominated diphenyl ethers (PBDE) and mercury and its compounds.

4.8.5. Pressures affecting the watercourse are recorded as physical modification (e.g. for land drainage and flood protection) and rural and urban pollution (phosphate and chemicals).

4.8.6. Objectives under the WFD are given in **Table 4.2**. An ecological target of 'moderate' was set for 2021 and a chemical target of 'good' was set for 2063, due to the natural recovery time of the watercourse following remedial measures for mercury and its compounds and polybrominated diphenyl ethers (PBDE).

4.8.7. The watercourse falls within a Nitrate Vulnerable Zone (NVZ) and Safeguard Zone.

## Table 4.1: Watercourse Baseline Information (2022)

| Water body name & ID | Water body type | Artificial or heavily modified? | Overall ecological status | Biological quality | General chemical and physio-chemical quality | Hydromorphological quality | Specific pollutants with UK EQS | Overall chemical status | Priority hazardous substances | Priority substances |
|---|---|---|---|---|---|---|---|---|---|---|
| **Claydon Brook Tributary Water Body GB10503 3030550** | River | Heavily modified | Moderate | Moderate | Moderate | Supports Good | Good | Does not require assessment | Does not require assessment | Does not require assessment |
| **Claydon Brook Water Body GB10503 3030570** | River | Heavily modified | Moderate | High | Moderate | Supports Good | Good | Does not require assessment | Does not require assessment | Does not require assessment |
| **Claydon Brook (DS Granbor** | River | Heavily modified | Moderate | Good | Moderate | Supports Good | Good | Does not require assessment | Does not require assessment | Does not require assessment |

| Water body name & ID | Water body type | Artificial or heavily modified? | Overall ecological status | Biological quality | General chemical and physio-chemical quality | Hydromorphological quality | Specific pollutants with UK EQS | Overall chemical status | Priority hazardous substances | Priority substances |
|---|---|---|---|---|---|---|---|---|---|---|
| **ough) Water Body**<br>**GB10503 3030580** | | | | | | | | | | |
| **Ray and tributaries Northeast of Grendon Underwood Water Body**<br>**GB10603 9030100** | River | Not designated artificial or heavily modified | Moderate | Moderate | Moderate | Supports Good | N/A | Does not require assessment | Does not require assessment | Does not require assessment |

## Table 4.2: Watercourse Objectives

| Water body name & ID | Water body type | Artificial or heavily modified? | Overall ecological status objective | Biological quality | General chemical and physico-chemical quality | Hydromor-phological quality | Specific pollutants with UK EQS | Overall chemical status | Priority hazardous substances | Priority substances |
|---|---|---|---|---|---|---|---|---|---|---|
| **Claydon Brook Tributary Water Body GB10503 3030550** | River | Heavily modified | Moderate 2021 | Moderate 2021 | Moderate 2015 | Supports Good 2015 | Not assessed | Good 2063 | Good 2063 | Good 2015 |
| **Claydon Brook Water Body GB10503 3030570** | River | Heavily modified | Moderate 2015 | Good 2015 | Moderate 2015 | Supports Good 2015 | Not assessed | Good 2063 | Good 2063 | Good 2015 |
| **Claydon Brook (DS Granbor** | River | Heavily modified | Moderate 2015 | Good 2015 | Moderate 2015 | Supports Good 2015 | Not assessed | Good 2063 | Good 2063 | Good 2015 |

| Water body name & ID | Water body type | Artificial or heavily modified? | Overall ecological status objective | Biological quality | General chemical and physico-chemical quality | Hydromor-phological quality | Specific pollutants with UK EQS | Overall chemical status | Priority hazardous substances | Priority substances |
|---|---|---|---|---|---|---|---|---|---|---|
| **ough) Water Body GB10503 3030580** | | | | | | | | | | |
| **Ray and tributaries Northeast of Grendon Underwood Water Body GB10603 9030100** | River | Not designated artificial or heavily modified | Moderate 2021 | Moderate 2021 | Good 2015 | Supports Good 2015 | Not assessed | Good 2063 | Good 2063 | Good 2015 |

## 4.9. Geology

4.9.1. Based on published geological records for the area (British Geological Survey online mapping):

- The majority of the Site is not underlain by superficial geology. There are small pockets of Glaciofluvial Deposits (Sand and Gravel), Glacial Deposits (Clay, Sand and Silt) and Till (Diamicton) throughout the Site and areas of Alluvium (Clay, Sand, Silt and Gravel) and River Terrace Deposits (Sand and Gravel) around the Claydon Brook and Claydon Brook Tributary to the north.
- The bedrock geology of the Site consists of areas of West Walton Formation (Mudstone) and Weymouth Member (Mudstone) in the south and eastern areas of the Site; and Stewartby Member (Mudstone) and Peterborough Member (Mudstone) in the northern and western regions of the Site.

4.9.2. British Geological Society (BGS) borehole logs have been reviewed for geological information, with a sample of these described in **Table 4.3**.

Table 4.3: BGS Borehole Records

| BGS Borehole Ref | Location in relation to Site | Geology Recorded | Groundwater Recorded |
|---|---|---|---|
| **SP72SW25** | Located to the south of the Site along the proposed East-West Rail development. | -Topsoil to 0.1mBGL.<br>-Made Ground to 1.20mBGL.<br>-Oxford Clay to 2.70mBGL | Not indicated. |
| **SP62SE39** | Located to the west of the Site along the proposed East West Rail development. | -Topsoil to 0.05mBGL.<br>-Glacial Deposits to 3.00mBGL.<br>-Oxford Clay to 8.00mBGL | Not indicated. |
| **SP72SW28** | Located in the centre of the Site. | -Topsoil to 0.1mBGL.<br>-Oxford Clay to 4.60mBGL | Not indicated. |

| BGS Borehole Ref | Location in relation to Site | Geology Recorded | Groundwater Recorded |
|---|---|---|---|
| **SP72NW184** | Located to the north of the Site. | -Sand and Gravel to 8.00mBGL.<br>-Clay to 65.00mBGL.<br>-Limestone to 75.00mBGL.<br>-Mudstone to 96.00mBGL | 3.0mBGL |

4.9.3. The BGS borehole logs confirm the underlying geology to be Sand, Silt Gravel and Clay over Mudstone.

## 4.10. Hydrogeology

4.10.1. Hydrogeological information was obtained from the online Magic Maps service.

4.10.2. These maps indicate that the Glaciofluvial Deposits, Glacial Deposits and Till are classified as Secondary (Undifferentiated) superficial aquifers. Whilst the Alluvium and River Terrace Deposits are classified as a Secondary A superficial aquifer.

4.10.3. The West Walton Formation, Weymouth Member, Stewartby Member and Peterborough Member Mudstone bedrock geology are classified as Unproductive.

4.10.4. As shown in **Table 4.3**, groundwater is absent (or not recorded) in three of the on-site boreholes. It is considered likely that groundwater levels within the Site vary significantly, with areas of shallower groundwater within the areas where Alluvium or River Terrace Deposits (sand and gravels) are present and some potentially deeper groundwater located within the Mudstone.

4.10.5. It is likely that isolated pockets of groundwater are beneath the Site within bands of permeable deposits (superficial sands and gravels and / or permeable bands within the Mudstone) rather than a continuous shallow groundwater body. However, it is acknowledged that the BGS borehole logs do not provide sufficient Site coverage to draw firm conclusions. Where present, shallow groundwater is likely to flow locally towards the Ordinary Watercourses in the vicinity of the Site.

## 4.11. Groundwater Bodies

4.11.1. Groundwater bodies are classified as either 'good' or 'poor' under the WFD. They must achieve good quantitative status and good chemical status by the objective year. Groundwater bodies within the Site that have been classified under the WFD have been identified via the Catchment Data Explorer website.

4.11.2. There are no WFD Groundwater Bodies within the immediate vicinity of the Site, as indicated in **Figure 4.2**.

## 4.12. Groundwater Designations

4.12.1. Defra's MAGIC maps confirm that the Site is not located within 1km of a groundwater Source Protection Zone or within 1km of a Drinking Water Safeguard Zone (groundwater). However, the Site falls within a Drinking Water Safeguard Zone (surface water). These protected areas are indicated in **Figure 4.3.**

## 4.13. Abstractions

4.13.1. There are currently no licensed groundwater abstractions or surface water abstractions within 1km of the Site.

## 4.14. Sensitive Habitats

4.14.1. Defra's MAGIC maps indicate that there are a number of Sites of Special Scientific Interest (SSSI) ecological habitats within 2km of the Site (as shown in **Figure 4.4**). These include:

- Sheephouse Wood SSSI adjacent to the southern boundary of Parcel 1;
- Finemere Wood SSSI is located adjacent to the southern boundary of Parcel 2 (a Groundwater Dependent Terrestrial Ecosystem); and
- Grendon and Doddershall Woods SSSI - approximately 1.5km southwest of Parcel 2 and 2.0km south of Parcel 1.

4.14.2. Defra's MAGIC maps also indicate that there are no Special Protection Areas, Special Areas of Conservation, or Ramsar sites within the vicinity of the Site.

## 4.15. Waterbodies Screened In – Summary

4.15.1. The following WFD water bodies and associated sensitive habitats have been screened in for further assessment due to potential hydrological links between them and the Site:

- Claydon Brook;
- Claydon Brook Tributary;

- Claydon Brook (DS Granborough);
- River Ray;
- Sheephouse Wood SSSI;
- Finemere Wood SSSI (Groundwater Dependent Terrestrial Ecosystem); and
- Grendon and Doddershall Woods SSSI.

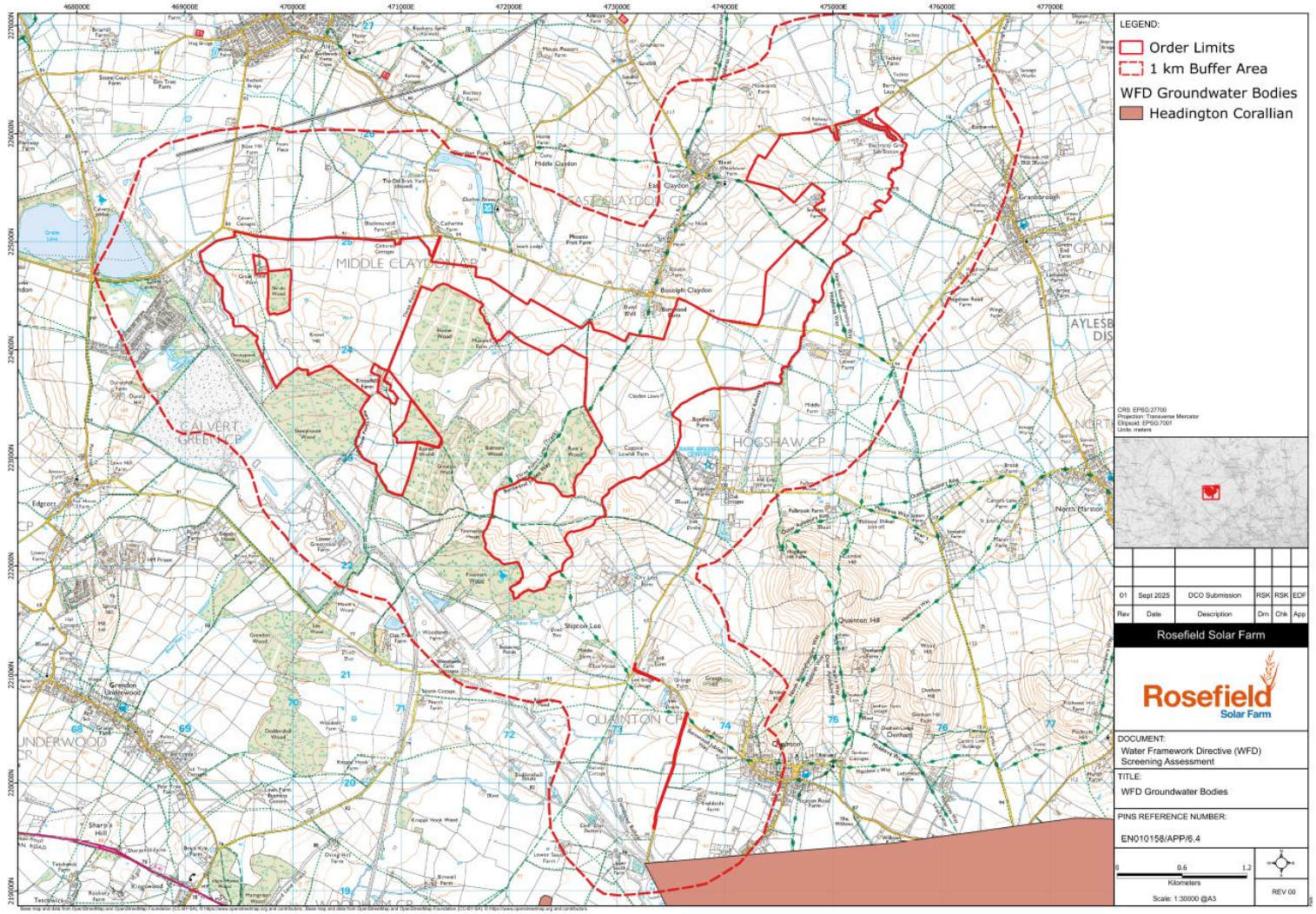


Figure 4.2: WFD Groundwater Bodies


Figure 4.3: Groundwater Protected Areas

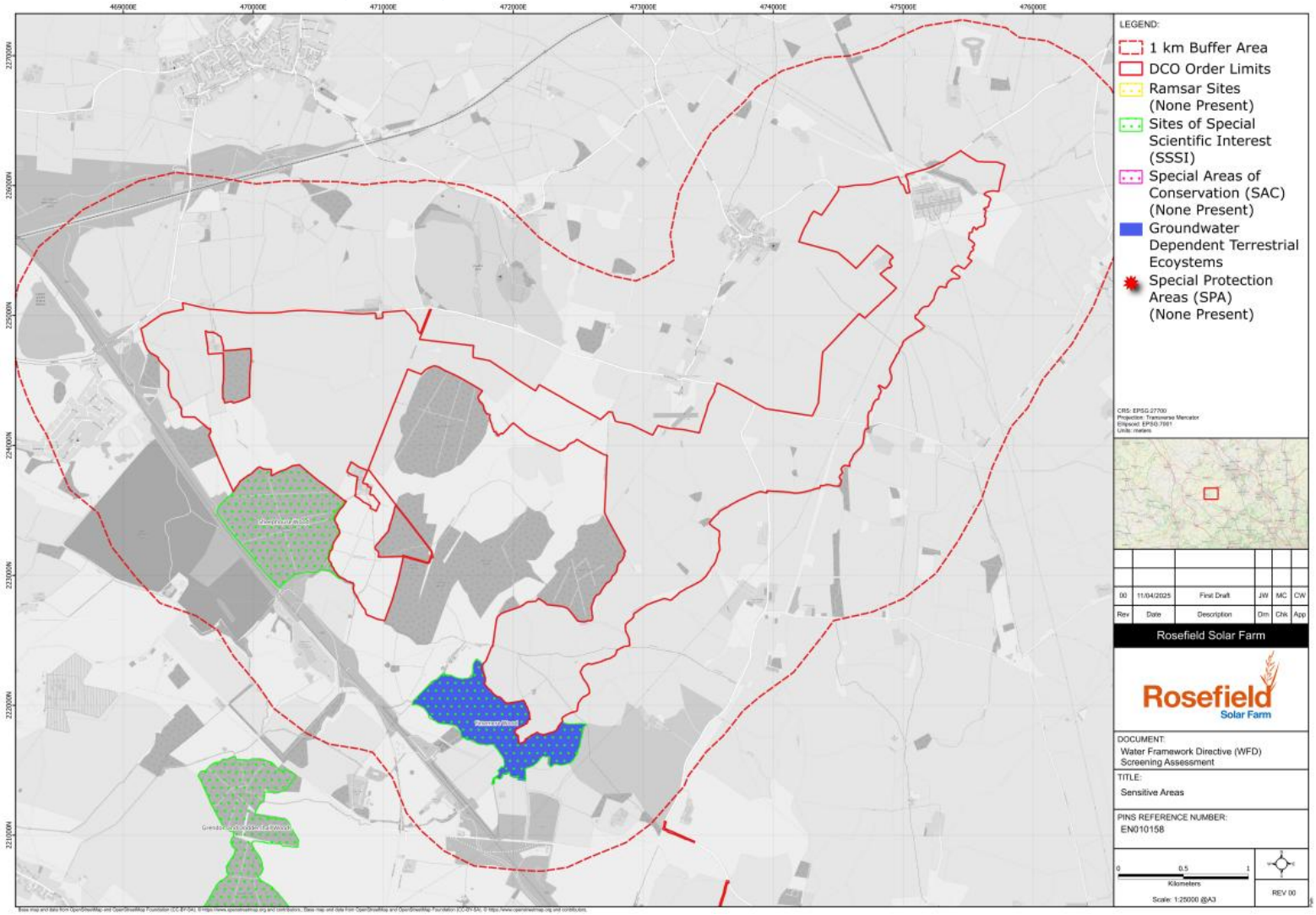


Figure 4.4: Sensitive Areas

# 5. Assessment of Effects of Proposed Activities

5.1.1. This section considers the activities and infrastructure associated with the Proposed Development (see **Section 1**) and assesses their potential effects on the WFD water bodies identified within **Section 4**. The assessment considers the Anglian RBMP and the Thames RBMP objectives and considers whether the Proposed Development could be detrimental to those objectives and whether a deterioration of WFD status could occur as a result of the Proposed Development. The potential for beneficial effects is also assessed.

## 5.2. Key Challenges for the Water Environment

5.2.1. The Anglian RBMP and the Thames RBMP have been reviewed to identify the key challenges affecting the water environment. Each of the challenges identified in the RBMPs is considered below in **Table 5.1**, with an initial assessment as to whether the Proposed Development could exacerbate these challenges and consequently result in impacts for local water bodies. Specific impacts for each water body are discussed in detail following this initial screening exercise.

## Table 5.1: Key challenges for the water environment (Anglian and Thames RBMPs)

| Key challenge | How impacts arise | Potential impacts from Proposed Development without Mitigation | Explanation | Challenge discussed further |
|---|---|---|---|---|
| **Climate emergency** | Climate change results in raised temperatures and reduced flows in watercourses, impacting habitats and species. Droughts place increased demand on water resources. Less water is available for dilution and dispersion of pollutants. Increased flooding can cause release of polluted runoff and storm overflows from combined sewerage systems. | Yes - beneficial | The Proposed Development will help combat climate change because it is a clean and renewable energy source that generates no greenhouse emissions and helps reduce reliance on fossil fuels which are major contributors to climate change. | Yes |
| **Biodiversity crisis** | Habitats and species face pressures due to loss or degradation of habitat, lack of quality water to sustain them, invasive non-native species, and loss of connectedness. | Yes - adverse | Without mitigation, construction and operation activities could adversely impact habitats and species. | Yes |
| **Physical modifications** | Diversion, culverting and straightening of watercourses can damage habitats | Yes - adverse | During construction without careful design / mitigation, physical disturbance could result from | Yes |

| Key challenge | How impacts arise | Potential impacts from Proposed Development without Mitigation | Explanation | Challenge discussed further |
|---|---|---|---|---|
| | and reduce resilience to flooding, erosion and drought. | | laying of cables beneath watercourses and creation of crossings over watercourses. Siltation could also impact river morphology. | |
| **Pollution from agriculture and rural areas** | Management of land, livestock and use of fertilisers and pesticides can result in river and groundwater pollution. | Yes - beneficial | Intensive farming practices are not proposed as part of the Proposed Development.<br>Cessation of agricultural activities could reduce inputs of agricultural chemicals and farming by-products to surface water and groundwater | Yes |
| **Pollution from water industry waste water** | Untreated sewage can be released to watercourses, particularly from storm overflows from combined sewerage systems | No | Proposed Development does not relate to the water industry | No |

| Key challenge | How impacts arise | Potential impacts from Proposed Development without Mitigation | Explanation | Challenge discussed further |
|---|---|---|---|---|
| **Invasive non-native species** | Introduction of non-native species through spread of animals or plants can damage water environment | Yes - adverse | Without mitigation, construction activities could facilitate the spread of material e.g. attached to equipment or vehicles. | Yes |
| **Pollution from towns, cities and transport** | Pollution from urbanisation and transport in urban areas can damage water quality | No | Proposed Development not within urban environment | No |
| **Changes to water levels and flows** | Over-abstraction of surface/groundwater can result in damage to rivers, springs, aquifers, lakes and wetlands | Yes - adverse | Construction and operational phases have an associated water demand, inappropriate abstraction could result in degradation of water supplies from surface water and groundwater | Yes |
| **Chemicals in the water environment** | Release of chemicals to the water environment could impact aquatic life, human health and surface/groundwater water supplies | Yes - adverse | Without mitigation, chemicals could be released to surface water or groundwater through leaks / spills of substances during construction and decommissioning | Yes |

| Key challenge | How impacts arise | Potential impacts from Proposed Development without Mitigation | Explanation | Challenge discussed further |
|---|---|---|---|---|
| | | | works, within contaminated runoff or as a result of releases through accident or emergency during the operational phase. | |
| **Pollution from abandoned mines** | Pollution from abandoned mines impacts surface water and groundwater quality and habitats | No | No activities relating to abandoned mines | No |
| **Plastics pollution** | Input of plastics and micro-plastics to water environment | No | No activities considered to contribute to release of plastics or micro-plastics | No |

5.2.2. **Table 5.1** identifies that without mitigation the Proposed Development could result in adverse effects through exacerbation of the following key RBMP(s) challenges:

- Biodiversity crisis;
- Physical modifications;
- Invasive non-native species;
- Changes to water levels and flows; and
- Chemicals in the water environment.

5.2.3. The Proposed Development is also considered to offer beneficial effects with respect to the following key RBMP challenges:

- Climate emergency; and
- Pollution from agriculture and rural areas.

5.2.4. The Proposed Development activities identified in **Table 5.1** as potentially impacting key RBMP(s) challenges are assessed further below with specific reference to any anticipated impacts on the identified relevant WFD water bodies. Mitigation measures committed to as part of the Proposed Development are considered, and details are provided of how these mitigation measures will be secured.

5.2.5. Although not considered directly relevant to RBMP objectives, a Flood Risk Assessment will be prepared to support the DCO Application, the aim of which will be to ensure that there will be no increase in flood risk as a result of the Proposed Development. This document should be referred to for full details of flood risk to and from the Proposed Development.

## 5.3. Activities Screened Out

5.3.1. The following activities are to be screened out of further assessment, on the basis they are not considered to result in impacts to the 'key challenges for the water environment' as identified in the RBMPs and are unlikely to result in a deterioration of WFD status of surface or groundwater bodies.

5.3.2. Operational phase screened out comprise:

- Fencing and security measures; and
- Access tracks.

5.3.3. Access tracks have been screened out as they will be infrequently trafficked during the operational phase and have a low pollution potential when not in use.

5.3.4. All other structures during the operational phase have been screened in, so that further assessment can be made of any impact on natural river dynamics or water quality in line with consultation responses received from the EA.

5.3.5. It is noted that the use of fluid/oil filled cables is not proposed as part of the Proposed Development, therefore associated risks have not been assessed.

5.3.6. All construction and decommissioning phase activities have been screened in due to the associated potential use and transport of materials; excavation works; use and storage of fuels and oils associated construction equipment; and water usage during the proposed works. Habitat creation works have been screened in due to their proximity to existing watercourses and their potential for enhancement/benefit to RBMP objectives.

## 5.4. Assessment of Activities Screened In

5.4.1. Activities that could potentially be screened in for further assessment are considered further below. Activities with potential adverse effects are considered in **Section 5.7,** and activities with potential to make a positive contribution to RBMPs objectives are discussed in **Section 5.8.**

## 5.5. Mitigation Commitments

5.5.1. As part of the Proposed Development, the following mitigation measures will be implemented with respect to protection of the water environment:

- A Construction Environmental Management Plan (CEMP) will be prepared for the construction phase to ensure best practice is followed to minimise the risk of release of pollution or sediment (an Outline CEMP will be submitted with the DCO Application, with the CEMP to be secured post-planning). The CEMP will include:
  - A procedure for actions to be taken if unexpected contamination is identified on Site;
  - A procedure in the case of a new pollution incident occurring;
  - Best practice measures for the storage of oils, fuels and chemicals during the construction phase, including requirements for bunding and spill kits; and
  - Measures for the prevention of release of silt laden sediment.
- Construction compounds will be located at least 9m from existing watercourses;

- Trenchless Horizontal Directional Drilling (HDD) methods to be use for laying cables beneath all IDB water bodies, and will be supported by a drilling fluid breakout plan (forming part of the CEMP);
- A Flood Management Plan will be prepared for the construction and decommissioning phases to ensure the works are scheduled to avoid periods of increased flood risk;
- Any applicable consents or permits for works within or near watercourses will be applied for and adhered to;
- Existing watercourse crossings will be re-used where practicable;
- Any new bridges or culverts will be designed to ensure flow capacity is maintained and access is retained to the watercourse for maintenance;
- A leak detection system and alarm will be fitted to the BESS cooling system;
- The drainage strategy for the BESS area will include provision for the automatic retention of any contaminated fire-fighting runoff in the event of a fire;
- A minimum 9m development-free easement has been allowed for either side of the LLFA Ordinary Watercourses, as stipulated by the LLFA;
- Cable crossing depths will take account of potential deepening of watercourse channels over the lifetime of the Proposed Development;
- A temporary drainage strategy will be implemented during construction works to control runoff rates and sediment mobilisation;
- An outline Operation Environment Management Plan (OEMP)/Soil Management Plan (SMP)/Battery Safety Management Plan (BSMP) will be prepared detailing how potentially harmful materials will be controlled and how emergency releases will be managed;
- A targeted ground investigation will be undertaken (with remedial works where necessary) and any unexpected contamination identified during construction will be remediated where appropriate with advice from a suitably qualified geo-environmental consultant; and
- An outline Decommissioning Environmental Management Plan (DEMP) will be prepared prior to the decommissioning phase to ensure best practice is followed to minimise the risk of release of pollution or sediment.

## 5.6. Risk of Deterioration

5.6.1. Activities not screened out associated with the construction, operational (including maintenance) and decommissioning stages of the Proposed Development have been assessed to determine whether they could cause a risk of deterioration of status of the identified water bodies. The

assessment, in **Table 5.2**, takes into account the mitigation measures that have been incorporated into the Proposed Development for the protection of the water environment as outlined above.

5.6.2. The assessment considers potential pathways between activities and receptors. Where there is no pathway for an activity to impact a receptor, there will be no impact on that receptor. As described within the PEIR, a 1km zone of influence has generally been applied for effects on the water environment in line with the EIA process. A similar approach has been taken to the assessment of effects on WFD water bodies, although each activity has been assessed on an individual basis.

5.6.3. “Deterioration of status” refers to at least one of the quality elements falling by one class. This is even if the change does not result in a fall in classification of the water body as a whole. This applies unless the water body is already in the lowest status class, in which case any deterioration is deterioration in status under the WFD.

## Table 5.2: Assessment of impact of activities on WFD surface water bodies and associated sensitive habitats

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| **Biodiversity crisis** | Works to watercourses during construction, which, in the absence of mitigation, may lead to:<br>Temporary loss / damage of riparian habitat or small amounts of permanent habitat loss.<br>Temporary impediment to fish and mammal passage.<br>Potential mortality of notable invertebrates.<br>Potential disturbance or mortality of fish. | No | No | No | No direct impact to River Ray as it lies outside zone of influence. There will be no physical impact to habitats within these water bodies.<br>Works to the Claydon Brook Tributary are limited to the installation of a headwall for the discharge of surface water runoff.<br>Measures to minimise the impact of these works will be detailed within a CEMP and will include standard methods such as avoiding times at which species are particularly sensitive (such as fish spawning/migration), protected species licencing, | Outline CEMP | No |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | Potential disturbance or mortality of riparian mammals. | | | | silt and pollution control measures (discussed further below), pre-commencement surveys, or ecological watching briefs. | | |
| **Biodiversity crisis** | Presence of construction/ decommissioning machinery and operational infrastructure that may introduce changes such as:<br>Potential spillages, leakages and pollutants affecting protected Sites of nature conservation.<br>Potential changes to hydrology affecting | No | No | No | Sheephouse Wood and Finemere Wood SSSIs are located on the southern boundaries of Parcel 1 and Parcel 2. Grendon and Doddershall Wood SSSI is located ca. 2.0km southwest of the Site. Finemere Wood is also a groundwater dependent terrestrial ecosystem.<br>Sequential approach to the placement of proposed infrastructure has located the majority of development away from these sensitive | Works Plans<br>Outline CEMP<br>Outline OEMP<br>Outline DEMP | No |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | protected Sites of nature conservation | | | | areas, to provide a buffer area to help limit potential impacts of the Proposed Development during the construction/decommissioning phase. Additional BNG and ecological enhancements will also be located within the areas surrounding the SSSIs to provide further mitigation.<br><br>Any input of pollutant or sediment into watercourses on-site during the construction/decommissioning phase will be controlled via measures within the Outline CEMP and Outline DEMP. Similarly, leak detection systems and appropriate management plans will be in place during the operational phase to control any | | |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | | | | | accidental releases of pollutants. The magnitude of impact on water quality within the Site is considered to be low. Given the low magnitude of impact and the significant distance between the Site and the protected sites, with associated dilution and dispersion of any pollutants / sediments, no detectable impact is anticipated on the SSSIs.<br><br>Any changes to hydrology are likely to be imperceptible at the designated sites due to the distances and volume of flows within the intervening watercourses.<br><br>A full assessment of the effects to designated sites of | | |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | | | | | nature conservation will be detailed within the Environmental Statement. | | |
| **Physical modifications** | Laying of cables beneath watercourses during construction phase | No | No | No | No direct physical impact to River Ray as outside zone of influence.<br>It is not anticipated that any cabling works crossing the Claydon Brook would be required. Should HDD be required all drilling will be set back from the edge of watercourses.<br>There will be no physical impact on LLFA waterbodies as a result of this activity. | Works Plans | No |
| **Physical modifications** | Creation of river crossings for access (construction phase) and the retention of the | No | No | No | No direct physical impact to River Ray and Claydon | Outline CEMP | No |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | physical crossing structures during the operational phase | | | | Brook as they lie outside of the zone of influence.<br>Abnormal Indivisible Load (AIL) access may be required over the Claydon Brook DS of Granborough Brook. The access bridge will be clear span over the watercourse and constructed above the top of bank level as to not impede flows within the channel. Crossings over the channel will only be when required to limit potential interaction with water within the watercourse. | | |
| **Physical modifications** | Infrastructure development (above ground aspects) during construction and decommissioning | No | No | No | The Zonal Masterplan indicates that Solar Panels will have a minimum of 10m offset from the Claydon Brook Watercourse. The | Works Plans | No |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | | | | | closest section of major infrastructure is the siting zone for the main collector compound, which is 25m offset from the Claydon Brook Tributary, with the Proposed Substation offset at a fractionally larger distance at 27m.<br><br>There will be no physical modification from the works which will alter the WFD watercourses.<br><br>The proposed structures will not impact on natural fluvial processes (taking account of the potential for lateral geomorphological changes over the lifetime of the Proposed Development) and are not considered to restrict | | |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | | | | | future river restoration projects. The Claydon Brook Tributary is an engineered / modified channel further reducing the potential for natural processes with significant lateral spread from the watercourses' current position.<br><br>A 9m development-free easement has been allowed either side of the Claydon Brook Tributary and all other watercourses within the Site. This watercourse is heavily modified as it flows through the Site. The potential for lateral geomorphological changes over the 40 year lifetime of the Proposed Development is low, therefore the 9m easement is | | |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | | | | | considered appropriate to avoid impacts on natural fluvial processes. | | |
| **Physical modifications** | Disturbance of soils during construction / decommissioning resulting in release of silt to watercourses | No | No | No | Without mitigation, the watercourses could be impacted due to migration of silt from construction works via onsite watercourses to downstream WFD watercourses.<br>Mitigation measures to minimise silt input will be committed to via the Construction Environmental Management Plan (CEMP) and Decommissioning Environmental Management Plan (DEMP).<br>A temporary drainage strategy will be implemented during construction works to | Outline CEMP<br>Outline DEMP | No |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | | | | | control runoff rates and sediment mobilisation.<br>There will be negligible to no impact on the hydromorphology of LLFA watercourses as a result of this activity and there will be no physical modification from the works which will alter the WFD waterbodies. | | |
| **Invasive non-native species** | Movement of equipment and vehicles around the Site during construction, operation and decommissioning could result in spread of non-native species, particularly during works close to | No | No | No | The biodiversity background desk study (**Chapter 7 of the PEIR**) did not identify any records of invasive nonnative floral or faunal species within the Site boundary.<br>The study did identify several invasive non-native floral species within 2km of the Site boundary, comprising: Indian Balsam (*Impatiens* | Outline CEMP<br>Outline OEMP<br>Outline DEMP<br>Outline LEMP | No |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | watercourses (e.g. crossing creation) | | | | *glandulifera*); Canadian Waterweed (*Elodea canadensis*); Variegated Yellow Archangel (*Lamiastrum galeobdolon subsp. Argentatum*); and Wall Cotoneaster (*Cotoneaster horizontalis*).<br><br>During the preliminary ecological appraisal surveys undertaken in 2023 and 2024, no evidence of invasive non-native species was identified within the Site boundary; however, a pond located 9m from the cable route search area boundary was found to contain New Zealand Pigmyweed (*Crassula helmsii*). | | |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | | | | | Measures to prevent the spread of invasive non-native species during construction and decommissioning will be specified in the CEMP and DEMP respectively. Throughout operation, monitoring of invasive plant species will be undertaken as specified in the Landscape Ecological Management Plan (LEMP), and corrective actions taken if invasive plants are found to spread. | | |
| **Changes to water levels and flows** | Abstraction of surface water during construction and operational phases | No | No | No | Abstraction from groundwater not proposed.<br>Domestic water supply for welfare uses (construction and operation) will be via an Anglian Water connection. Non-domestic requirements | Water Act 2003 limits abstraction without licence | No |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | | | | | during construction and operation (e.g. wheel washing, dust suppression, process water for cooling, fire water supply and panel cleaning) will either be met via an Anglian Water connection, provision of water from offsite via mobile bowser, or through abstraction of water from the Claydon Brook Tributary below the daily volume for which an abstraction licence is required. As such, abstraction from WFD watercourses will be either null or negligible in terms of volumes extracted. | | |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| **Chemicals in the water environment** | Storage and use of fuels, oils and chemicals during construction and decommissioning works | No | No | No | Without mitigation, the watercourses could be impacted due to migration of pollutants from construction works via onsite watercourses to downstream WFD watercourses.<br><br>Appropriate best practices measures will be stipulated within the Outline CEMP and DEMP to ensure construction compounds are located away from watercourses and spills / leaks are minimised with a plan in place for dealing with accidental releases. The residual risk associated with release of pollutants during construction and decommissioning is considered to be low. | Outline CEMP<br><br>Outline DEMP | No |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| **Chemicals in the water environment** | HDD operations during construction works (drilling fluid breakout) | No | No | No | Without mitigation, the watercourses could be impacted due to migration of pollutants from construction works via onsite watercourses to downstream WFD watercourses.<br>A drilling fluid breakout plan will form part of the Outline CEMP and will specify measures to minimise any risk of release of fluids. The residual risk is considered to be low. | Outline CEMP | No |
| **Chemicals in the water environment** | Release of contaminated fire water in the event of fire during operation | No | No | No | Without mitigation, the watercourses could be impacted due to migration of pollutants in the event of a fire via onsite watercourses to downstream WFD watercourses. | Outline Drainage Strategy<br>Outline Battery Safety | No |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | | | | | The drainage strategy for the BESS area will include provision for the automatic retention of any contaminated fire-fighting runoff in the event of a fire. Attenuation features will be suitably sized to contain a worse-case event (fire water combined with rainfall runoff). | Management Plan<br>Outline OMEP | |
| **Chemicals in the water environment** | Accidental release of chemicals or release of contaminated surface water runoff during operational phase | No | No | No | Without mitigation, the watercourses could be impacted due to migration of pollutants via onsite watercourses to downstream WFD watercourses. The risk is relatively low due to the nature of the proposed use.<br>To mitigate the risk, a leak detection system and alarm will be fitted to the cooling | Outline OEMP<br>Outline BSMP<br>Outline SMP | No |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | | | | | system of the BESS. An Outline OEMP / SMP / BSMP will be prepared detailing how potentially harmful materials will be controlled and how emergency releases will be managed.<br><br>A surface water outfall is proposed to the Claydon Brook Tributary. However, the drainage system will include appropriate stages of treatment to ensure discharged runoff does not impact the quality of the receiving watercourse. The outfall structure will be designed in line with the latest guidance and will have minimal impact on the watercourse. | | |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | | | | | Waste/foul water discharge during the construction, operational and decommissioning phases of the Proposed Development could be achieved through three possible disposal options:<br>1. a potential connection to the local foul sewer network;<br>2. waste/foul water would be collected across the welfare areas of the Site and stored in cesspits. These would then be managed, inspected and drained by a licensed carrier who would then dispose of the waste/foul water discharge off-site | | |

| Key challenge | Activity | Deterioration of status | | | Discussion taking into account mitigation committed to by applicant | How mitigation is secured | Further assessment required? |
|---|---|---|---|---|---|---|---|
| | | Claydon Brook | Claydon Brook Tributary | River Ray | | | |
| | | | | | and there would be no discharge to local watercourses; or<br>3. foul/waste water stored in cesspits within the immediate vicinity of the welfare facility areas. The cesspits would be managed, inspected and drained by a licensed carrier who would then dispose of the waste offsite. | | |

5.6.4. Overall, the assessment within **Table 5.2** shows that taking into account the proposed mitigation, no aspects of the Proposed Development have the potential to cause a deterioration in status of WFD surface water bodies or groundwater bodies or prevent RBMP objectives being met.

5.6.5. No further assessment is considered necessary in relation to the effects on WFD water bodies.

## 5.7. Positive Contributions to RBMP Objectives

5.7.1. In addition to ensuring no deterioration of status of water bodies, the Proposed Development will have a positive effect on the 'key challenges for the water environment' as identified within the Anglian and Thames RBMPs. The cessation of agricultural activities would have an overall benefit to the status of WFD water bodies, and a positive improvement in biodiversity will be achieved through the proposed creation of grasslands in place of cultivated land, which is anticipated to result in an enhancement for aquatic invertebrates, macrophytes and phytobenthos through reduction of nutrient inputs and pesticides. The riparian zones of all watercourses will be avoided and managed to promote biodiversity where possible. Additionally, the Proposed Development as a whole will help combat climate change by helping reduce reliance on fossil fuels which are major contributors to climate change. These enhancements are intrinsic within the Proposed Development and therefore do not require an external mechanism to secure their implementation.

# 6. Conclusions and Recommendations

6.1.1. In line with PINS and EA guidance, this assessment has identified WFD water bodies that could be hydrologically linked to the Site. For each relevant water body, baseline characteristics have been identified together with WFD targets, and pressures facing those water bodies have been recorded.

6.1.2. Activities associated with all stages of the Proposed Development have been considered, with any activities considered to have the potential to impact 'key challenges of the water environment' taken forward for more detailed assessment. This included both activities with a potential adverse effect and those that may be beneficial to RBMP objectives.

6.1.3. Activities were assessed to determine whether they could result in a deterioration of status, i.e. at least one of the quality elements falling by one class. This assessment took into account the zone of influence of activities, pathways between activities and receptors, mitigation that has been committed to by the applicant and the characteristics of the watercourses under consideration.

6.1.4. Overall, the assessment concluded that none of the activities associated with the Proposed Development have the potential to cause a deterioration in status of WFD surface water bodies or groundwater bodies. The Proposed Development is not considered to jeopardise the attainment of 'good' overall status of WFD water bodies. No further assessment is therefore considered to be required in relation to the WFD.

6.1.5. Notably, the Proposed Development will have a positive effect on a few of the 'key challenges for the water environment' as identified within the RBMPs. The cessation of agricultural activities during the lifetime of the Proposed Development will have an overall benefit to the status of WFD water bodies, and a positive improvement in biodiversity will be achieved through the proposed grassland creation and watercourse avoidance buffers. Additionally, the Proposed Development will help combat climate change by helping reduce reliance on fossil fuels.

6.1.6. As the Proposed Development is not considered to cause the deterioration of the status of a body of water, a derogation under Article 4.7 is not required. Therefore, the Applicant is seeking agreement with the Environment Agency that a further WFD Assessment is not required.

# 7. References

**Ref. 1** Nationally Significant Infrastructure Projects: Advice on the Water Framework Directive - https://www.gov.uk/guidance/nationally-significant-infrastructure-projects-advice-on-the-water-framework-directive

**Ref. 2** Water Framework Directive assessment: estuarine and coastal waters - https://www.gov.uk/guidance/water-framework-directive-assessment-estuarine-and-coastal-waters

**Ref. 3** Anglian River Basin District River Basin Management Plan - https://www.gov.uk/guidance/anglian-river-basin-district-river-basin-management-plan-updated-2022

**Ref. 4** Thames River Basin District River Basin Management Plan - https://www.gov.uk/guidance/thames-river-basin-district-river-basin-management-plan-updated-2022

**Ref. 5** EA catchment data explorer website - https://environment.data.gov.uk/catchment-planning/

**Ref. 6** Defra's MAGIC interactive mapping - https://magic.defra.gov.uk/

**Ref. 7** British Geological Survey GeoIndex Onshore - https://mapapps2.bgs.ac.uk/geoindex/home.html?_ga=2.15207478.1054941605.1660058459-1946525719.1660058459

# Annex A: Environmental Agency Section 42 Response

[redacted]

**Our ref:** XA/2024/100163/01
**Your ref:** EN010158

**Date:** 6th November 2024

To Whom It May Concern,

**ROSEFIELD SOLAR FARM. STATUTORY PRE-APPLICATION CONSULTATION: SECTION 42 OF THE PLANNING ACT 2008.**

Thank you for consulting us on the above proposed development which was received on 18th September 2024.

We are generally satisfied with the scope and content of the Preliminary Environmental Information Report (PEIR) (documents listed in Appendix A). There are, however, areas which we consider require further clarification, additional information and/ or assessment. Our key issues are listed below, further detailed comments are listed in Appendix B, and general comments in Appendix C.

**Flood Risk and Flood Modelling**

The proposal should remain operational in the design flood event. Ideally development should be built away from areas prone to flooding. If this is not possible then sensitive equipment should have a finished floor level 600mm above the design flood.

Please note Environment Agency models are not designed to assess third-party developments. You should not assume that the model is suitable for assessing the flood risk associated with the proposed development.

Fluvial flood risk for the catchment(s) should be assessed within the study area which have a surface area less than 3km$^2$. This should inform the placement of components and appropriate design in the context of flood risk.

**Environmental Legislation & Guidance**

In some areas not all relevant legislation has been identified. Development must comply with all current environmental legislation and guidance applicable to your proposal.

**Environmental Permitting Regulations**

The PEIR does not appear to refer to environmental permits which may be required to carry out works during the various phases of the development. It is possible that a variety of permits/licences may be required and should be noted that if the correct permits are not applied for at an early stage in the development, delays may be encountered. A consent strategy document is required in your Development Consent Order (DCO) submission. We recommend that you engage with the Environment Agency's National Permitting Service as soon as possible to discuss this.

**Biodiversity Net Gain (BNG)**

There could be opportunities for environmental betterment and BNG through supporting the delivery of local projects within the Cherwell and Ray and Upper and Bedford Ouse catchments.

**Culverting**

The Environment Agency opposes the culverting of any watercourses and instead prefers the installation of a temporary clear-span bridge crossing. This is in line with our policy regarding culverts. We will normally only grant a permit for a culvert if there is no reasonably practical alternative, and if the detrimental effects would be sufficiently minor that a more costly alternative would not be justified or there are reasons of overriding public/economic interest. You should consider the effects of proposed crossings on hydrology, biodiversity and geomorphology.

**Protective Provisions**

Any requests to disapply any permits or consents should be sent to us in writing as soon as possible to allow us sufficient time to consider them (minimum 6 months). Depending on the outcome, this will have implications on the content of the DCO.

Please note this response does not represent our final view in relation to any future planning application, or any environmental permit applications made to us. Our final views will be based on all relevant information including applications and guidance available at the time of submission.

Yours faithfully,

[redacted]

**National Infrastructure Team**

[redacted]

**List of Appendices**

## Appendix A – Reviewed Documents

In order to inform our response, we have reviewed the following documents:

- Rosefield Solar Farm Preliminary Environmental Information Report Volume 1: Main Report
- Rosefield Solar Farm Preliminary Environmental Information Report Volume 2: Supporting Figures
- Rosefield Solar Farm Preliminary Environmental Information Report Volume 3: Supporting Reports
- Rosefield Solar Farm Preliminary Environmental Information Report Volume 4: Visualisations
- Rosefield Solar Farm Preliminary Environmental Information Report Volume 5: Non Technical Summary

## Appendix B – Detailed Environment Agency Comments

## Flood Risk

### Future flood extent

| | |
|---|---|
| **Issue** | Future flood extent has not been considered in the placement of components. |
| **Impact** | An inaccurate assessment of flood risks and Flood Zones / design flood within the lifetime of the development. Therefore, development may be placed in a position which is vulnerable to future flooding. |
| **Solution** | Considering projections of climate change, assess future flood zones and adjust the placement of infrastructure accordingly to conform with the proposed primary mitigation(s).<br>Flood risk assessments: climate change allowances - GOV.UK |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.4.12. | |

### Placement of components

| | |
|---|---|
| **Issue** | A lack of certainty in the placement of components e.g., Balance of Solar System (BoSS), Main and Satellite Collector Compounds, Battery Energy Storage System (BESS) and Rosefield Substation. |
| **Impact** | It is unclear whether the proposal presented represents the worst-case likely scenario in terms of flood risk if the placement presented and assessed is only indicative. |
| **Solution** | Commit to the placement of components and clarify how what has been assessed is the worst-case likely scenario in terms of the placement of infrastructure in the context of the design flood throughout the lifetime of the development. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.4.17, 3.5.1, 3.5.6, 3.11.21, 3.6.9 & 3.7.3. | |

### Crossing Register

| | |
|---|---|
| **Issue** | Crossing Register not provided. |
| **Impact** | Uncertainty in proposed positioning of crossings in the assessment of flood risk. |
| **Solution** | Provide a Crossing Register. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.8.3. | |

### Open-cut trenching

| | |
|---|---|
| **Issue** | Open-cut methods for crossing watercourses. |
| **Impact** | An increase in flood risk, especially during a flood event by limiting discharge rate and inhibiting flood flow routes. |

| | |
|---|---|
| **Solution** | Consider trenchless methods for the crossing of watercourses for the cable routing or demonstrate how flood risk will not be increased with the open-cut method during the design flood. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.8.4, 3.8.13. | |

**Runoff from impermeable surfaces**

| | |
|---|---|
| **Issue** | Runoff from any increase in impermeable area should be considered e.g., jointing bays, or access tracks if not permeable. |
| **Impact** | Increase in runoff. |
| **Solution** | Assess and mitigate an increase in the rate of runoff from all proposed impermeable surfaces for all phases of the development. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.8.6, 3.9.17. | |

**Vertical displacement**

| | |
|---|---|
| **Issue** | It is not defined how deep works will be below the bed level of watercourses. An indicative depth has been suggested of two metres. |
| **Impact** | The cable may become exposed due to erosion. This is especially concerning if the cables/ ducts are to be left in situ after the decommissioning phase. |
| **Solution** | Define and justify a vertical displacement below bed level. Note that this may need to account for future management of flood risks and future adaptation e.g., the installation of sheet pile flood defences. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.8.12. | |

**Fencing**

| | |
|---|---|
| **Issue** | Fencing must not inhibit flood flow routes. |
| **Impact** | Potential increase of flood risk. |
| **Solution** | Assess proposed fencing to ensure appropriate design. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.9.2 & 3.9.7. | |

**Temporary compounds**

| | |
|---|---|
| **Issue** | Placement of temporary compounds undefined. |
| **Impact** | Potential increase in flood risk. |
| **Solution** | Position temporary compounds within Flood Zone 1 where possible. If they are not to be located within Flood Zone 1 an appropriate assessment of flood risk and mitigation methods must be undertaken. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.11.16. | |

**Laydown areas**

| | |
|---|---|
| **Issue** | Placement of laydown areas. |
| **Impact** | Potential increase in flood risk. |
| **Solution** | Position laydown areas within Flood Zone 1 where possible. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.11.22. | |

**Spoil**

| | |
|---|---|
| **Issue** | Spoil may inhibit flood flow routes. |
| **Impact** | Potential increase in flood risk. |
| **Solution** | Position spoil outside of the design flood extent. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.11.33. | |

**Decommissioning**

| | |
|---|---|
| **Issue** | Insufficient detail on the proposed decommissioning phase, particularly pertaining to below ground elements. |
| **Impact** | Below ground elements at watercourses may become exposed if left in situ in perpetuity. |
| **Solution** | There should be consideration of the removal of all elements, including below ground infrastructure (e.g., cables and ducts). We may seek this to be included within the Requirement(s) pertaining to decommissioning (see section 3.13.3). |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.13.1. | |

**Design life**

| | |
|---|---|
| **Issue** | The operational life is not certain. |
| **Impact** | The assessment of flood risk is insufficient. |
| **Solution** | A design life of at least 75 years should be assumed when assessing flood risk or a time-limited agreement should be committed to. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.12.1.<br>PEIR Volume 1: Main Report, Chapters: 8, Section/ pages/ table reference: 8.11.7. | |

**Offset from watercourses**

| | |
|---|---|
| **Issue** | Insufficient offset from watercourses and it is unclear from where offset will be measured from. |
| **Impact** | Inhibits access and future maintenance and upgrade of the watercourse and flood assets. |

| | |
|---|---|
| **Solution** | Provide a minimum offset of at least eight metres for all watercourses for maintenance purposes. Define from where this would be measured. |
| **Additional narrative/explanation:**<br>This comment is subject specific and does not negate the distances required under other discipline areas.<br><br>PEIR Volume 1: Main Report, Chapters: 5, Section/ pages/ table reference: Table 5.2 – Embedded (primary) environmental mitigation measures. | |

**Panel Height and Design**

| | |
|---|---|
| **Issue** | Minimum panel height above the design flood and solar PV module design uncertain. |
| **Impact** | This may lead to the proposed infrastructure not being operational in the design flood as required by the National Policy Statements and lead to increased flood risk on and off site. |
| **Solution** | Complete site-specific hydraulic modelling. Ensure a 600mm vertical offset from panels to the design flood. Consider impact from debris in a flood event to inform the proposed design. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15**,** Section/ pages/ table reference: 15.8.4.<br>PEIR Volume 1: Main Report, Chapters: 5, Section/ pages/ table reference: Table 5.2 – Embedded (primary) environmental mitigation measures. | |

**Flood Map for Planning**

| | |
|---|---|
| **Issue** | The Flood Map for Planning (FMfP) is insufficient for the design of the development. |
| **Impact** | Uncertainty in the assessment of flood risk. |
| **Solution** | Carry out site-specific hydraulic modelling. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15**,** Section/ pages/ table reference: 15.5.1 & 15.6.32. | |

**Assessment of flood risk**

| | |
|---|---|
| **Issue** | Flood risk has not been assessed for catchments less than 3km$^2$ which are not represented by the FMfP. Satellite Collector Compounds, Main Collector Compound, BESS, Construction Compounds, Cable Route and the substation are stated to be outside of Flood Zone 2 and 3; however, this does not account for flood risk throughout the lifetime of the development. |
| **Impact** | Inappropriate placement of components (see Table 15.2) and an increase in flood risk. |
| **Solution** | Assess fluvial flood risk for all catchments within the study area for the design life of the development for all phases with consideration of climate change. |

| |
|---|
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15**,** Section/ pages/ table reference: Table 15.3 & 15.8.3.<br>PEIR Volume 1: Main Report, Chapters: 15**,** Section/ pages/ table reference: 15.12.1.<br><br>The proposed positioning should consider the design flood extent i.e., the future flood zones. We require a commitment to the proposed mitigations (e.g., placement of components) which have been assumed to accurately assess the significance of effects.<br><br>Note from section 15.10.1 that the assessment includes mitigations which may or may not be included. |

**Outline Construction Environmental Management Plan**

| | |
|---|---|
| **Issue** | It is unclear whether the Outline Construction Environmental Management Plan will include measures to mitigate the risk of increased runoff during construction and what these could be. |
| **Impact** | Increase of flood risk during construction phase is not sufficiently mitigated. |
| **Solution** | Commit to mitigation(s) and describe how this will be achieved. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15**,** Section/ pages/ table reference: 15.11.1. | |

**Site-specific hydraulic modelling**

| | |
|---|---|
| **Issue** | Assessment of flood risk is based off the FMfP and you have concluded that the impacts on flood risk are negligible for the PV modules within Flood Zone 3. |
| **Impact** | Inadequate assessment of flood risk. |
| **Solution** | Complete site-specific hydraulic modelling and consider the loss of floodplain storage volume from structures proposed within the design flood extent throughout the lifetime of the development. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15**,** Section/ pages/ table reference: 15.12.2. | |

**Best practice principles**

| | |
|---|---|
| **Issue** | Best practice principles should be committed to rather than assumed. |
| **Impact** | If best practice principles are not followed, then this may lead to adverse circumstances in terms of the management of flood risk. |
| **Solution** | Commit to best practice principles. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15**,** Section/ pages/ table reference: 15.14.1. | |

**Floodplain storage**

| | |
|---|---|
| **Issue** | It has been assumed that the flood plain volume lost from the supports of Solar PV modules is negligible and no further mitigation is required. |

| | |
|---|---|
| **Impact** | Without a quantitative assessment this cannot be agreed. |
| **Solution** | Carry out an assessment of the loss of floodplain storage within the design flood extent for all phases of the development. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15**,** Section/ pages/ table reference: 15.10.6 & 15.14.1. | |

## Flood Modelling

### Flood depth analysis

| | |
|---|---|
| **Issue** | There are some limitations within the flood depth analysis. |
| **Impact** | Panels could be placed in areas of heightened flood risk and could be designed inappropriately such that they are not resilient to climate change. Calculated compensatory storage volumes could be inaccurate. |
| **Solution** | We would recommend undertaking more detailed site-specific hydraulic modelling to more accurately define the design water levels where solar panels are being placed in areas of fluvial flood risk. Panel areas E, D and to a lesser extent B, are of particular concern as these areas are within the existing Flood Zones and/or the Risk of Flooding from Surface Water mapped outputs. The guidance on modelling for Flood Risk Assessments provides some useful information and signposts other relevant guidance, such as the Flood Estimation Guidelines and river modelling standards. This is available online here: Using modelling for flood risk assessments - GOV.UK (www.gov.uk) |

**Additional narrative / explanation**
PEIR Volume 1: Main Report, Chapters: 15, Section/ pages/ table reference: 15.6.8 page 7, & PEIR Volume 3: Appendix 15.1 – Flood Depth Analysis.

The flood depth analysis mentioned in paragraph 15.6.8 and reported in Appendix 15.1 is a good starting point for understanding the water depths associated with Flood Zone 3. It is important however, to note some limitations with the analysis and why this would not be appropriate for more detailed design and setting the heights of the proposed solar panels which are located within the Flood Zones. Firstly, the Flood Zones do not take in account the effects of climate change. As the development would be classed as essential infrastructure climate change for the higher central scenario should be applied to the 1% (1 in 100) Annual Exceedance Probability (AEP) flow to establish the design water level. Climate change for a credible maximum scenario should also be considered as a sensitivity test. In this case this would be the upper scenario.

A second limitation is that as noted in the PEIR, the existing Flood Zones within the order limits for the development are based on broad scale modelling using Tuflow 2d modelling software (Upper Great Ouse Broadscale Modelling Domain B1, Capita Symonds, 2012). Only the 1% (1 in 100) and 0.1% (1 in 1000) AEP events were considered as part of this modelling, the hydrological assessment is old, and the modelling uses Lidar data which was flown in 2009.

### Climate change

| | |
|---|---|
| **Issue** | Climate change assumptions may be incorrect. |
| **Impact** | The effects of climate change could be underestimated for some catchments where a sole reliance on the existing Flood Zones or the Risk of Flooding from Surface water outputs is made. |
| **Solution** | When making the assumption that the 0.1% (1 in 1000) AEP scenario flood extent is greater than the 1% plus climate change flood extent it is important to provide supporting evidence that this is the case, for example comparing the 0.1% (1 in 1000) AEP growth factors with the relevant climate change allowances for the development. |

| |
|---|
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15**,** Section/ pages/ table reference: 15.6.31 page 12 Future Baseline.<br><br>This section describes how climate change may exacerbate future baseline flood risk and notes that based on professional judgement the 1% AEP event with the inclusion of climate change rarely exceeds the extents and depths represented by the 0.1% AEP event. Whilst this may often be the case, it is important to note that there may be instances where this assumption is not correct. When making such assumptions it is important to check the fluvial flows for the catchment of interest and in particular the growth factors between the 1% AEP and 0.1% AEP peak fluvial flows comparing this with the respective climate change uplifts. |

**Solar panel design**

| | |
|---|---|
| **Issue** | The design of the arrays may not fully take into account climate change. |
| **Impact** | More detail is required with respect to the design flood level and the associated displaced volume from the solar panel mounting supports. |
| **Solution** | The solar panels should be designed so that they are above the 1% (1 in 100) AEP water level with an allowance of higher central climate change. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15**,** Section/ pages/ table reference: Table 15.2 – Panel design and panel height of Solar PV modules within Flood Zone 3 page 13.<br><br>Considering the operating life of the development of 40 years, the 2080's epoch should be used as the climate change horizon. A minimum freeboard of 600 millimetres should also be included to allow for uncertainties associated with estimating water levels from modelled data. With regards to the displacement of panel supports, as a starting point we would suggest that once the design flood level is determined the displaced volume from the panel mounting supports is calculated up to that level so that volume lost can be understood. An increase in flood risk to third parties must be avoided. This should be considered in the context of climate change throughout the lifetime of the development. An alternative to the volumetric assessment approach would be to represent the solar panel frames within any detailed hydraulic modelling, for example, using flow constriction approaches or increasing Manning's roughness in the locations where solar panels are placed. | |

**BESS siting**

| | |
|---|---|
| **Issue** | The indicative siting zone for the BESS at locations D8 and D9 whilst outside of Flood Zone 2 is located in an area which is shown to be at risk of flooding within the Risk of Flooding from Surface Water outputs. |
| **Impact** | Flood risk could be underestimated where a sole reliance on the Flood Zones is used for siting of the BESS, sub-station, and collector compounds. |
| **Solution** | Detailed hydraulic modelling should be undertaken for the watercourses in the vicinity of the proposed BESS, substation, and collector compounds. This would allow these elements of the development to be designed appropriately so that they are resilient to flooding throughout their lifetime |

| | |
|---|---|
| | considering the effects of climate change. It would also allow for compensatory storage requirements to be accurately determined. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15**,** Section/ pages/ table reference: Table 15.3 – Optionality scenarios assessed page 15, & PEIR Volume 2: Supporting Figures, Figure 1.2 Zonal Masterplan.<br><br>This flood risk appears to be associated with an ordinary watercourse which runs along the southern boundary of the indicative BESS location (D8 and D9). Similarly, for the indicative location shown in location E, the BESS encroaches into areas of flood risk associated with the tributary of the Claydon Brook. Furthermore, the indicative locations for the substation and collector compounds also appear to be in flood risk areas. | |

**Construction compounds**

| | |
|---|---|
| **Issue** | Construction materials and compounds should be sited sequentially to avoid areas of increased flood risk. |
| **Impact** | Construction materials and compounds which are in flood risk areas could have an adverse impact on flood flow routes, floodplain storage, and impacts to third parties. |
| **Solution** | Ensure construction materials and compounds are sequentially sited to avoid areas of increased flood risk bearing in mind that the Flood Map for Planning generally only covers watercourses which have a catchment area of 3 $km^2$ where no detailed hydraulic modelling is available. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15, Section/ pages/ table reference: 15.11.1. | |

## Biodiversity

### Ecological buffer zones

| | |
|---|---|
| **Issue** | Project principle to improve habitats along the margins of watercourses "to provide semi-natural buffers" is vague, and design principles do not provide specific details on how this will be accomplished. |
| **Impact** | Absence of specific details relating to buffer establishment. |
| **Solution** | Buffers should measure from the bank-top of all watercourses, to ensure a suitable distance between the watercourse and infrastructure.<br><br>The establishment of a "semi-natural" buffer could be facilitated by sowing a native species-rich grass and wildflower mix. This would protect the watercourse from sediments, reduce nutrient load and enable bank stabilisation through vegetation establishment. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: Table 3.10 – Strategic Principle: Manage water, improve quality, reduce pollution. | |

### Watercourse crossings

| | |
|---|---|
| **Issue** | The design principle to "minimise effects on floodplain and any biodiversity interest" through a considerate design of main river and ordinary watercourse crossing points requires further detail. The design principles do not provide specific details on how this will be accomplished. |
| **Impact** | Some watercourse crossings (such as culverts) can fragment habitats and reduce connectivity, making dispersal and commuting for some species difficult. This has potential to negatively impact riparian mammals, fish and aquatic invertebrates. |
| **Solution** | Clear-span bridges should be considered if watercourse crossings are required, as these maintain habitat connectivity and allow species to commute freely. We strongly encourage removal of any existing culverts to further enhance watercourses and oppose the creation of any new culverts unless there is not a feasible alternative. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: Table 3.10 Strategic Principle: Manage water, improve quality, reduce pollution. | |

### Ecological related legislation

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| **Issue** | Environmental legislation does not list some recent (2024) legislation and amendments. |
| **Impact** | There is a risk of not considering new environmental definitions in legislation in respect of planning policy and BNG, such as 'irreplaceable habitat' and 'important hedgerows', along with related offences to said habitats. |

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| **Solution** | Please include and ensure proposals meet the requirements of the following legislation, policy and guidance: Biodiversity Gain Requirements (Irreplaceable Habitat) Regulations 2024. In addition, the new Management of Hedgerows (England) Regulations 2024 have officially become law, therefore please include this with the Hedgerows Regulations 1997. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 7, Section/ pages/ table reference: 7.3.1. | |

**Ecological enhancement opportunities**

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|---|---|
| **Issue** | Areas of the Claydon Brook and its tributary have been highlighted as a "potential enhancement area" to undertake habitat improvements or to create wetlands. However, details of these proposed enhancements have not been provided within Volume 1: Main Report. |
| **Impact** | There is a lack of ambition and detail with regards to enhancing the condition and scale of watercourses within the site boundary considering the scale of the project. |
| **Solution** | Further detail should be provided with regards to the considered opportunities to enhance watercourses. Enhancements would also adhere to the Vale of Aylesbury Local Plan, by improving a 'priority habitat'. |
| **Additional narrative/explanation:**<br>PEIR Volume 2: Supporting Figures, Section/ pages/ table reference: Figure 3.4 Landscape and Ecological Mitigation and Enhancements. | |

**Wetland habitats**

| | |
|---|---|
| **Issue** | Three areas of wetland were identified in Parcel 3, within the indicative siting zones for BESS, and a patch of reedbed was identified within the cable route search area. However, mitigation and avoidance of said habitats have not been detailed in Volume 1: Chapter 7. |
| **Impact** | Potential for construction to reduce the value and extent of wetland habitats. Lack of ambition regarding the creation and enhancement of wetland habitats. |
| **Solution** | The siting of the BESS should avoid wetlands, and the siting of the cable route should avoid reedbeds. If possible, the existing wetland and reedbed habitats could be enhanced and expanded, providing further habitat for species assemblages such as wetland birds and amphibians. |
| **Additional narrative/explanation:**<br>PEIR Volume 3: Appendix 7.7: Preliminary Ecological Appraisal Report 2024, Section/ pages/ table reference: 3.2.17. | |

**Invasive non-native species (INNS)**

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| **Issue** | Anecdotal evidence of signal crayfish found along parts of the Claydon Brook Tributary, in the form of burrows, yet this INNS has not been mentioned in Volume 1: Chapter 7. Similarly, Section 2.5.1 (Volume 3: Appendix 7.7) states |

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| | as a habitat survey limitation, that INNS may have been missed due to surveying outside the ideal survey season. |
| **Impact** | Potential to omit INNS and therefore risk accidental species spread (and spread of crayfish plague, in the case of signal crayfish) during construction and decommissioning, which is an offence under the Wildlife and Countryside Act 1981 (as amended). |
| **Solution** | A dedicated INNS survey should be produced at an appropriate time of year. Appropriate biosecurity measures should be established (such as check, clean and dry) if works require access to the Claydon Brook tributary. |
| **Additional narrative/explanation:**<br>PEIR Volume 3 – Appendix 7.8: Otter and Water Vole Report 2023, Section/ pages/ table reference: Table 2. | |

## Groundwater Protection

### Trenchless cable installation methods

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| **Issue** | Details have not been provided regarding trenchless technology that may be required, such as Horizontal Directional Drilling (HDD). |
| **Impact** | HDD requires use of chemicals and drilling mud which, without mitigation, could pose a risk to groundwater and surface water. |
| **Solution** | Include further consideration of this in the Environmental Statement (ES) and CEMP. A Hydrogeological Risk Assessment might also be required. A drilling fluid breakout will also be required for any HDD activities. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.8.4 & 3.8.13. | |

### Outline Construction Environmental Management Plan (OCEMP)

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|---|---|
| **Issue** | Limited information on the contents of the OCEMP. |
| **Impact** | Risk that insufficient controls are established to manage risks to groundwater during the construction phase. |
| **Solution** | Confirm what will be included within the OCEMP as part of the ES. For groundwater protection, assurance is required that the chosen construction methods will be risk assessed. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.11.23 & 3.11.24. | |

### Effluent management

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| **Issue** | Strategy for managing effluent requires clarification. Septic tank discharge to a watercourse is not acceptable. Discharge via sewage treatment plant discharge would be subject to permitting requirements. |
| **Impact** | Release of untreated, or insufficiently filtered, sewage into surface watercourses may cause unacceptable pollution. |
| **Solution** | You should engage with the Environment Agency's National Permitting Service as soon as possible to seek permitting advice and requirements. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 3, Section/ pages/ table reference: 3.12.13. | |

### Groundwater protection guidance

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| **Issue** | Omission to include Environment Agency 2018 'The Environment Agency's approach to groundwater protection'. |
| **Impact** | Insufficient mitigation to pollution incorporated into project design. |

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| **Solution** | Follow the Environment Agency's approach to groundwater protection, Groundwater protection - GOV.UK (www.gov.uk); The Environment Agency's approach to groundwater protection (publishing.service.gov.uk). |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 10, Section/ pages/ table reference: 10.3.1. | |

**BESS and management of firewater**

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| **Issue** | Firewater and drainage for the BESS design have not been considered in the design phase. |
| **Impact** | If firewater and drainage are not considered in the design phase, the final construction may pose unacceptable risk to controlled waters. |
| **Solution** | Fire water and drainage should be included in the Outline Battery Safety Management Plan mentioned in 10.11.5. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 4 & 10, Section/ pages/ table reference: 4.5.13, 10.11.4 & 10.11.5.<br><br>10.11.4 states: fire water "would be collected within a designated bund or suitable container, and then removed from site by tanker to prevent its release to the surrounding environment". Such a system would need to be fail safe and no mechanism for this is included. | |

**Ground investigation**

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|---|---|
| **Issue** | There are no previous ground investigations available for the site. Details of groundwater depth and flow direction are unknown. |
| **Impact** | Without understanding ground conditions and the presence of groundwater, the risks to groundwater cannot be adequately assessed. |
| **Solution** | Ground investigations are proposed, and contaminant linkages will be reassessed following this (section 10.15.1). The proposed ground investigations should be completed prior of the Environmental Impact Assessment (EIA) and ES, so that those reports can be adequately informed. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 10, Section/ pages/ table reference: 10.14.2. | |

**Foundations**

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| **Issue** | Foundations for the panel mounting structures will be up to 2.5m deep. Shallow foundations will be required for the BESS, substations, and other infrastructure, with indicative depths not yet given. The impact of foundations on groundwater flow is not mentioned in the PEIR. During decommissioning, it is proposed to only remove infrastructure up to 1m depth; as such, deeper foundations may be left in the ground permanently. |

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| **Impact** | Foundations can impact groundwater flow. Chemicals in foundation materials, such as cement, can affect groundwater quality. This is especially relevant where the foundations are in superficial soils designated as Secondary A aquifer. |
| **Solution** | If contamination is identified as part of the land contamination assessment works a foundation works risk assessment may be required to identify different foundation options and the potential impacts on groundwater – especially where foundations will be in a Secondary A aquifer. This could be included within the CEMP. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 10, Section/ pages/ table reference: 3.3.10, 10.7.1 & 10.10.20. | |

## Fisheries

### Fisheries legislation

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|---|---|
| **Issue** | The Salmon and Freshwater Fisheries Act 1975 has not been included in the list of legislation that is relevant to biodiversity. The legal responsibility on the developer pertaining to this fish specific legislation has not been considered. |
| **Impact** | This infers that the impacts on fish from the construction, operation and decommissioning have not been fully considered. |
| **Solution** | It should be ensured the requirements of the Salmon and Freshwater Fisheries Act 1975 be incorporated into designs proposals. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 7.<br><br>Parts of The Salmon and Freshwater Fisheries Act 1975 relevant to this type of development and that should be considered, are (but not exhaustive) Part 1, Sections 2 and 4. | |

### Fine sediment runoff mitigation measures

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|---|---|
| **Issue** | Mitigation is insufficient for the prevention of fine sediment runoff into the Claydon Brook during construction and decommissioning. |
| **Impact** | An increase in fine sediment running into the Claydon Brook could have a negative impact on spawning grounds of protected fish species. |
| **Solution** | Mitigation must be detailed in the OCEMP and submitted in the DCO application. This mitigation must ensure that any fine sediment/silt as a result of construction and decommissioning does not have a negative impact on the Claydon Brook. Given the notable fish present in the Claydon Brook, the buffer strip should be extended 10m as opposed 6m which is suggested in the PEIR for ordinary watercourses. |
| **Additional narrative/explanation:**<br>PEIR Volume 1: Main Report, Chapters: 7.<br><br>The Claydon Brook runs through the proposed red line boundary. Our records show bullhead (*Cottus gobio*) (Annex II Habitats Directive) and spined loach (*Cobitis taenia*) (Annex II Habitats Directive and NERC s21 priority species) are present in the Claydon Brook upstream and downstream of the red line boundary. An increase in fine sediment/silt in the Claydon Brook would smother important spawning gravels, clog interstitial spaces in gravel, impact on fish egg and larval development and reduce all fish's ability to respire by the clogging of gills. The CEMP must detail robust silt control measures such as buffer strips, barriers, SuDS ponds, and a method of works which make sure construction is stopped if unacceptable silt run off were to occur. | |

## Water Quality and Water Resources

### Catchment Water Framework Directive (WFD) waterbodies

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|---|---|
| **Issue** | Not all WFD elements have been incorporated into assessments. The development will be located within the catchments for two further WFD waterbodies, which have not been identified (these are: Techwick Brook, Source to Ray and tribs Water Body, and Padbury Brook (The Twins)). |
| **Impact** | Aspects of the development within these catchments could have an impact on their respective designated waterbodies or their tributaries. If they are not incorporated into the assessment, then impacts to these catchments could go unreported. |
| **Solution** | These waterbodies should be incorporated into the assessment. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters:15, Section/ pages/ table reference: 15.6. | |

### WFD waterbody classification

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|---|---|
| **Issue** | This section suggests that, because the waterbodies identified have an overall status of 'moderate', sources of pollution have not significantly impacted water quality. This is incorrect, and potentially misleading. |
| **Impact** | Water quality elements (i.e. Physico-chemical or Chemical) can only bring a waterbody's overall status down to 'Moderate', even if individual elements are classified as 'Poor' or 'Bad'. For instance, the Claydon Brook waterbody has an overall status of 'Moderate', but a phosphate status of 'Poor' and a chemical status of 'Fail'. Phosphate pollution from the water industry, as well as agricultural and rural land management, has been identified as a Reason for Not Achieving Good status. The description provided in section 15.6.26 risks underestimating the potential significance of water quality impacts. |
| **Solution** | This section should be revised, and consideration should be given to the potential sources of pollution within each WFD catchment. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapter: 15, Section/ pages/ table reference: 15.6.26. | |

### Operational impacts

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|---|---|
| **Issue** | Potential operational impacts on water quality from routine runoff, and firewater in the event of a fire, have not been identified within this section. |
| **Impact** | If these impacts are not recognised, there is a risk that appropriate mitigation will not be secured and therefore the development could result in greater impacts than those described in the ES. |
| **Solution** | These impacts should be incorporated into the ES and appropriate mitigation secured. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapter: 15, Section/ pages/ table reference: 15.10. | |

### Sources of supply

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|---|---|
| **Issue** | No assessment of water resources. |
| **Impact** | There is insufficient information in the preliminary assessment to establish what the exact water demands of the construction and operational phases of the project are, and which sources of supply are intended to supply them. |

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| | The horizontal directional drilling activity described in section 3.8.4 may have significant water demands for bentonite clay mixing and often requires a continuous uninterrupted supply.<br><br>Dust suppression techniques described in the Air Quality chapter are often water based and are considered to be a high loss consumptive water use. |
| **Solution** | Developers should produce a simple Water Resources Assessment or Water Supply Strategy with the ES which sets out all water demands (such as those listed above) and includes an options appraisal of potential sources of supply.<br><br>This can include mains water supply; raw water supply; abstraction from surface water or groundwater or local licence trades.<br><br>Surface water supply or licence trading may come with restrictive conditions, more information can be found in the abstraction licensing strategies for the catchment or through further consultation.<br><br>This kind of assessment at this stage of the process can help to identify and resolve supply problems early on and may expedite any permitting requirements post DCO issue. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15.<br><br>The water management section of the project description part of the report (chapter 3) identifies sources of water supply which include bowser delivery, mains supply and use of existing local irrigation abstraction licence(s). The report states that an exact approach is yet to be determined, and a reasonable worst-case scenario has been assessed for the purposes of the assessment. | |

## Geomorphology

### BNG watercourse metric: omission

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| **Issue** | BNG watercourse metric (based on geomorphology/ hydromorphology) has not been mentioned. |
| **Impact** | Potential damage to environment and miscalculation of BNG as WFD assessment may not reflect local impacts that may be deemed insignificant at a designated WFD waterbody scale. |
| **Solution** | BNG watercourse metric and the use of accredited BNG surveyors (carrying out MoRPH surveys) should be included to capture data and inform value of watercourses within and close to the site that may otherwise be missed if only using a WFD assessment desk study. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15. | |

### BNG watercourse metric: offset

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|---|---|
| **Issue** | Minimum offset from watercourses – 6m from ditches/ordinary watercourses. |
| **Impact** | Under the BNG watercourse metric anything within 10m of the bank-top of a watercourse can be considered as encroachment. This may have an impact on BNG values of the development and lead to increased difficulty in achieving onsite uplift. |
| **Solution** | Minimum offset of 10m from bank tops in line with main rivers. |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15, Section/ pages/ table reference: Table 15.2. | |

### Watercourse crossings

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|---|---|
| **Issue** | Omission to mention watercourse crossing types. The Environment Agency opposes to culverting and instead prefers the use of open span bridges. Trenchless crossing, for installation of cable corridors, is also preferred. |
| **Impact** | Poorly designed crossings can interfere with the natural functioning of a watercourse. Culverts can be blockages to sediment and water transport pathways. Using trenched crossing installation techniques may disturb the hydromorphology of the river, which may take a long time to re-establish. |
| **Solution** | Open span bridges, with setback abutments (i.e. away from riverbank/edge) allow natural river functions to continue. Trenchless techniques should be considered before the use of trenching, with any detrimental effects assessed to inform the decision process (see BNG watercourse metric comments). |
| **Additional narrative / explanation**<br>PEIR Volume 1: Main Report, Chapters: 15, Section/ pages/ table reference: Table 15.2. | |

## Appendix C – General Comments

### Flood Risk Modelling

We acknowledge that a Flood Risk Assessment (FRA) will be produced to inform the ongoing design of the solar farm (section 15.15.2). We note that the Environment Agency will be formally consulted regarding the requirement for detailed hydraulic modelling (section 15.15.6). As previously discussed, there are limitations to the data which is used to inform the Flood Zones and Risk of Flooding from Surface Water Mapping. Detailed modelling should be undertaken, particularly for watercourses in the vicinity of panel areas D and E and the BESS and sub-station.

Section 15.6.8 (p.7) mentions that following consultation with the Environment Agency, it is understood that the Flood Zones are derived from a nationalised modelling dataset named JFLOW. To confirm, the flood zones for the Claydon Brook and tributary of the Claydon Brook are based on broadscale 2d only modelling undertaken using TUFLOW rather than JFLOW modelling software in 2012 (Upper Ouse Broadscale Modelling Domain B1, Capita Symonds, 2012). This modelling uses old hydrology and Lidar which was flown in 2009. Only the 1% (1 in 100) and 0.1% (1 in 1000) AEP flows were considered as part of this modelling.

### Development Lifetime

We acknowledge that the operating life of the proposed development is 40 years; however, we note that this does not take into account the application, construction or decommissioning stages of the development. The parameters for flood risk modelling will vary when including these stages and this will need to be appropriately addressed. The Planning Practice Guidance states that the presumed lifetime for non-residential development is 75 years and supporting information should reflect this. However, we appreciate that a shorter period of time may be acceptable if supported with appropriate evidence.

### Waterbody Classification

It is important to ensure the categorisation of waterbodies is accurate. Main Rivers and Ordinary Watercourses should be identified as such for the purposes of WFD classification and ecological status. There should also be no conflation between these descriptors.

### Horizontal Directional Drilling (HDD)

HDD activities can disturb fish during key periods of migration and spawning and in extreme cases noise may kill fish. If HDD is proposed as a trenchless technique for crossing watercourses, the EIA should include an assessment on the risk of fish populations within main rivers being impacted by noise and vibration from construction and decommissioning. This assessment should be included in the Noise and Vibration chapter of the ES. Mitigation and management of any impacts should

be detailed in the CEMP and Decommissioning Environmental Management Plan (DEMP).

**BNG & Environmental Betterment Opportunities**

There could be opportunities for environmental betterment and BNG through supporting the delivery of local projects within the Cherwell and Ray and Upper and Bedford Ouse catchments.

The Cherwell & Ray catchment partnership is hosted jointly by Thames21 and Berks, Bucks and Oxon Wildlife Trust (BBOWT). The partnership aims to promote awareness and understanding of the River Cherwell and the River Ray and outline objectives for the improvement of both rivers and their tributaries. We advise that you to refer to the Catchment Action Plan which has been produced by the partnership and details actions to improve the catchment.

The Upper and Bedford Ouse catchment partnership is hosted by Bedfordshire Rural Communities Charity (BRCC). It aims to bring together relevant partners to work for the planning and delivery of activities and projects that will improve water quality, channel structure, habitat quality and biodiversity in the Upper and Bedford Ouse Catchment. We also recommend that you refer to this Catchment Plan.

Buckinghamshire Council have been appointed the responsible authority to develop the Local Nature Recovery Strategy (LNRS). The Council is currently in the process of finalising priorities and corresponding measures, and engaging stakeholders to map priorities. They aim to publish the LNRS in early 2025. We advise that you refer to this strategy to help inform decisions on where to site off-site BNG delivery and potential environmental enhancements.

**High Speed 2**

As the proposed development is within proximity to land related to High Speed 2, we recommend that you consult with them as soon as possible.

**Cabling**

It has been suggested that cables would not be buried in fields at a higher risk of flooding (section 3.8.10). It is likely that cable integrity will need to be considered as part of the design, and we would advise against the above ground siting of cables in areas at risk.

**Groundwater Protection**

Dewatering may be needed in the Superficial deposits where groundwater is encountered during construction. Dewatering may require an abstraction licence. This is not mentioned in the PEIR. Dewatering without appropriate controls is an offence and can cause impacts to local water users. You should ensure early

discussions regarding the need for an abstraction licence before dewatering takes place. Further information is detailed below.

**Informatives**

**Dewatering, abstraction and discharges**

If dewatering is required, it may require an environmental permit if it doesn't meet the exemption in The Water Abstraction and Impounding (Exemptions) Regulations 2017 Section 5: Small scale dewatering in the course of building or engineering works.

Temporary dewatering from excavations to surface water: RPS 261 - GOV.UK (www.gov.uk)

If you don't meet the exemption and require a full abstraction licence you should be aware that some aquifer units may be closed for new consumptive abstractions in this area. More information can be found here:

Abstraction licensing strategies (CAMS process) - GOV.UK (www.gov.uk)

Please note that the typical timescale to process a licence application is 9-12 months. You may wish to consider whether a scheme-wide dewatering application rather than individual applications would be beneficial. We suggest talking to our National Permitting Service early in the project planning.

You may also need to consider discharge of groundwater, especially if it is contaminated. More information can be found here:

Discharges to surface water and groundwater: environmental permits - GOV.UK (www.gov.uk)

The use of drilling muds for the directional drilling may require a groundwater activity permit unless the 'de minimis' exemption applies. Early discussion about this is also recommended.

**Flood Risk Activity Permit (FRAP)**

The Environmental Permitting (England and Wales) Regulations 2016 require a permit or exemption to be obtained for any activities which will take place:

- on or within 8 metres of a main river (16 metres if tidal)
- on or within 8 metres of a flood defence structure or culverted main river (16 metres if tidal)
- on or within 16 metres of a sea defence
- involving quarrying or excavation within 16 metres of any main river, flood defence (including a remote defence) or culvert

- in the floodplain of a main river if the activity could affect flood flow or storage and potential impacts are not controlled by a planning permission

For further guidance please visit https://www.gov.uk/guidance/flood-risk-activities-environmental-permits.

A Bespoke permit has a determination period of 8 weeks; however, we would recommend you factor in 12 weeks as there may be requirements for additional information and process delays.

**Impounding licence requirement**
If you intend to impound a watercourse then you are likely to need an impounding licence from the Environment Agency. An impoundment is any dam, weir or other structure that can raise the water level of a water body above its natural level. 'On-line' impoundments hold back water in rivers, stream, wetlands and estuaries, and consequently affect downstream flows, sediment transport and migration of fish. Impoundments could be created through works to modify or change existing watercourses. An Impoundment Licence could also be required if you amend, modify or remove existing in channel structures. More information is available on gov.uk: Apply for a water abstraction or impounding licence - GOV.UK (www.gov.uk)

**Flood storage compensation**
Flood storage compensation is required for all proposed structures within the 1 in 100-year plus climate change flood extent. Flood storage compensation should:

- be level for level
- be volume for volume
- be localised
- achieve net gain where possible
- not disrupt flood flow routes

**Discharge of trade effluent**
Effluent discharged from any premises carrying on a trade or industry and effluent generated by a commercial enterprise where the effluent is different to that which would arise from domestic activities in a normal home is described as trade effluent. If you are not able to discharge effluent, it will be classed as waste, and you must then comply with your duty of care responsibilities. If you wish to discharge effluent, after appropriately treating it, to groundwater or surface water a permit under the Environmental Permit Regulations will be required. Full characterisation of the effluent will be required, and modelling may be required at the planning stage to determine the impact of the effluent on the receiving watercourse. A trade effluent consent or a trade effluent agreement with your water and sewerage company must be obtained before you discharge trade effluent to a public foul sewer or a private

sewer that connects to a public foul sewer. Further guidance is available at: Pollution prevention for businesses - GOV.UK (www.gov.uk)

**Waste on site**
Excavated materials that are recovered via a treatment operation can be re-used on-site under the CL:AIRE Definition of Waste: Development Industry Code of Practice. This voluntary Code of Practice provides a framework for determining whether or not excavated material arising from site during remediation and/or land development works are waste.

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically, and that the permitting status of any proposed on-site operations are clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.

The Environment Agency recommends that developers should refer to our:

- Position statement on the Definition of Waste: Development Industry Code of Practice and;
- website at https://www.gov.uk/government/organisations/environment-agency for further guidance

**Waste to be taken off site**
Contaminated soil that is, or must be disposed of, is waste. Therefore, its handling, transport, treatment and disposal is subject to waste management legislation, which includes:

- Duty of Care Regulations 1991
- Hazardous Waste (England and Wales) Regulations 2005
- Environmental Permitting (England and Wales) Regulations 2010
- The Waste (England and Wales) Regulations 2011

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically in line with British Standards BS EN 14899:2005 'Characterisation of Waste - Sampling of Waste Materials - Framework for the Preparation and Application of a Sampling Plan' and that the permitting status of any proposed treatment or disposal activity is clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.
If the total quantity of waste material to be produced at or taken off site is hazardous waste and is 500kg or greater in any 12-month period, the developer will need to register with us as a hazardous waste producer. Refer to our website at www.gov.uk/government/organisations/environment-agency for more information.

**Movement of waste off-site**
The Environmental Protection (Duty of Care) Regulations 1991 for dealing with waste materials are applicable to any off-site movements of wastes.

The code of practice applies to you if you produce, carry, keep, dispose of, treat, import or have control of waste in England or Wales.

The law requires anyone dealing with waste to keep it safe and make sure it's dealt with responsibly and only given to businesses authorised to take it. The code of practice can be found here:
https://www.gov.uk//uploads/system/uploads/attachment_data///waste-duty-care-code-practice-2016.pdf

If you need to register as a carrier of waste, please follow the instructions here:
https://www.gov.uk/register-as-a-waste-carrier-broker-or-dealer-wales

If you require any local advice or guidance please contact the National Enquiries Unit on: 03708 506 506

**Characterisation and classification of waste**
In order to meet your objectives for the waste hierarchy and obligations under the duty of care, it is important that waste is properly classified. Some waste (e.g. wood and wood based products) may be either a hazardous or non-hazardous waste dependent upon whether or not they have had preservative treatments.

Proper classification of the waste both ensures compliance and enables the correct onward handling and treatment to be applied. In the case of treated wood, it may require high temperature incineration in a directive compliant facility. More information on this can be found here: https://www.gov.uk/how-to-classify-different-types-of-waste

**Use of waste on-site**
If materials that are potentially waste are to be used on-site, you will need to ensure you can comply with the exclusion from the Waste Framework Directive (WFD) (article 2(1) (c)) for the use of, 'uncontaminated soil and other naturally occurring material excavated in the course of construction activities, etc…' in order for the material not to be considered as waste. Meeting these criteria will mean waste permitting requirements do not apply.

Where you cannot meet the criteria, you will be required to obtain the appropriate waste permit or exemption from us.

A deposit of waste to land will either be a disposal or a recovery activity. The legal test for recovery is set out in Article 3(15) of WFD as:

- any operation the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy.
- We have produced guidance on the recovery test which can be viewed at https://www.gov.uk/guidance/waste-recovery-plans-and-permits#waste-recovery-activities.

If you require any local advice or guidance please contact the National Enquiries Unit on: 03708 506 506

**The waste hierarchy & resource management in relation to construction wastes**

The developer must apply the waste hierarchy as a priority order of prevention, re-use, recycling before considering other recovery or disposal options. Government guidance on the waste hierarchy in England can be found here:

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69403/pb13530-waste-hierarchy-guidance.pdf

Site Waste Management Plans (SWMP) are no longer a legal requirement, however, in terms of meeting the objectives of the waste hierarchy and your duty of care, they are a useful tool and considered to be best practice.

**Resource efficiency and the circular economy**

The circular economy is a concept designed to keep materials in use as long as possible, thus promoting resource efficient practice and deriving economic benefits. Adherence to the waste hierarchy and adoption of best practice in relation to site waste management planning will help you deliver against circular economy objectives.

Observance of the waste hierarchy objectives and principles of the circular economy will depend upon the selection of the most sustainable option at every phase of a development project, from reduction through design and architecture, to the selection of the most efficient recovery process for the treatment and use of waste.

**Management and reporting systems**

Where a development involves any significant construction or related activities, we would recommend using a management and reporting system to minimise and track the fate of construction wastes, such as that set out in PAS402: 2013, or an appropriate equivalent assurance methodology. This should ensure that any waste contractors employed are suitably responsible in ensuring waste only goes to legitimate destinations.

You can find more information on the Waste Framework Directive here: https://www.gov.uk/government/publications/environmental-permitting-guidance-the-waste-framework-directive

More information on the definition of waste can be found here: https://www.gov.uk/government/publications/legal-definition-of-waste-guidance

More information on the use of waste in exempt activities can be found here: https://www.gov.uk/government/collections/waste-exemptions-using-waste

Non-waste activities are not regulated by us (i.e. activities carried out under the CL:ARE Code of Practice), however you will need to decide if materials meet End of Waste or By-products criteria (as defined by the WFD). The 'Is it waste' tool, allows you to make an assessment and can be found here: https://www.gov.uk/government/publications/isitwaste-tool-for-advice-on-the-by-products-and-end-of-waste-tests

**Sustainable Drainage Systems (SuDS)**

The Government's expectation is that sustainable drainage systems (SuDS) will be provided in new developments wherever this is appropriate. The Environment Agency supports this expectation. Where infiltration SuDS are to be used for surface run-off from roads, car parking and public or amenity areas, they should:

- be suitably designed
- meet Governments non-statutory technical standards for sustainable drainage systems – these standards should be used in conjunction with the National Planning Policy Framework and Planning Practice Guidance
- use a SuDS management treatment train – that is, use drainage components in series to achieve a robust surface water management system that does not pose an unacceptable risk of pollution to groundwater

Where infiltration SuDS are proposed for anything other than clean roof drainage in a SPZ1, a hydrogeological risk assessment should be undertaken, to ensure that the system does not pose an unacceptable risk to the source of supply.

See the Environment Agency's approach to groundwater protection, position statement G13: Groundwater protection position statements - GOV.UK (www.gov.uk)

# Annex B: Environment Agency Water Framework Directive (WFD) Screening Assessment for Rosefield Solar Farm Response

[redacted]

[redacted]

## Appendix A – Key issues to be addressed

### Terminology

| Table 4.2 Watercourse Objectives | |
|---|---|
| **Issue** | Use of incorrect terminology relating to Hydromorphological Supporting elements/regime. |
| **Impact** | Use of old terminology may imply that the hydromorphology of a watercourse does not need improvement and that no actions need to be undertaken to achieve uplift as it already “supports good” habitat status. |
| **Solution** | Re-draft document to reflect the updated terminology. |
| **Additional narrative/ explanation (if necessary)**<br>A recent change in terminology from “Supports Good” to “Not High” has been made to the Hydromorphological Supporting Elements/Regime. This is due to the “Supports Good” terminology implying that the condition of the river was “OK” and nothing needed to be done to improve the hydromorphology. The new term “Not High” shows that the hydromorphology is not “OK” and seeks to encourage actions to improve/uplift the quality of the hydromorphology. | |

### Culverts

| Section 5.5. Mitigation Commitments | |
|---|---|
| **Issue** | Lack of information regarding culverts. |
| **Impact** | Culverts can interfere with the natural flow regime and sediment transport pathways. Installation of box and/or pipe culverts also damage in-channel bedforms and habitats and can also damage the channel banks. |
| **Solution** | Avoid the use of box culverts/pipe culverts and commit to, at a minimum, 3-sided or arched culverts that do not interfere with the channel bed and have minimal impact on bank side structure and habitats. Open span crossings are the preferred option. |
| **Additional narrative/ explanation (if necessary)**<br>Culverts should be the last resort with all other crossing options being adequately discounted. We acknowledge, where proven to be necessary, any new culverts will be designed to ensure flow capacity is maintained. However, the type of culvert is not mentioned, leaving the possibility that box culverts or pipe culverts may be utilised.<br><br>Positioning of crossings is also important, and any crossing location should take into account local conditions and activity of the watercourse being crossed. | |

**Abstraction**

| **Table 5.2 Assessment of impact of activities on WFD surface water bodies and associated sensitive habitats** | |
|---|---|
| **Issue** | Abstraction of water from the Claydon Brook Tributary. |
| **Impact** | Whilst we note that it is below the volume to trigger an abstraction licence, there still remains the risk of entrainment/impingement of fish species, including juveniles and eggs. The chronic effect of continued abstraction could lead to a deterioration in the biological quality element and/or failing to meet Good Ecological Potential. |
| **Solution** | The design of intake should incorporate screening to avoid fish being entrapped. Current best practice would be to install screens with aperture of 2mm. This should be detailed in the CEMP and OEMP. We look forward to reviewing these documents in due course. |

## Appendix B – General considerations

Groundwater Dependent Terrestrial Ecosystems (GWDTE)
The Finemere Wood GWDTE is immediately adjacent to the southwest corner of the site. As noted in Table 5.2, mitigation secured through the various management plans should be sufficient to manage potential risks.

Micro-plastics
Table 5.1 states that there will be “no activities considered to contribute to release of plastics or micro-plastics”. At decommissioning, the Applicant proposes to leave cables buried greater than 1m in situ indefinitely. These cables may degrade over time, leading to some release of micro-plastics to the environment over time. There is also the possibility of some micro-plastic release during construction, such as due to cutting of ducting and cable housing. The volume of plastic released, and effects of these activities on the environment, are unlikely to be significant, but the potential release of plastics or micro-plastics cannot be absolutely ruled out. We do not require any further information at this stage.

Indirect WFD implications for the use of water company supply
Anglian Water Services Ltd (AWS), who supply the region of this development, is subject to licence reductions (caps) on its groundwater licences to manage the risk of deterioration of the associated water bodies, according to the principles set out in the Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (WFD Regulations). The company’s 2024 water resources management plan (WRMP24) has set out that it will be reliant on seeking to defer some licence reductions until new strategic supplies can be developed (e.g. via strategic schemes). This means that until these new sustainable supplies are available, supplies to existing customers and those to supply growth will be as a result of deferring some licence changes under Regulation 19 of the Water Framework Regulations.

AWS’s WRMP also sets out that the company may not be able to supply all new non-domestic demands until new supplies are developed. We advise that the availability of supply to any non-domestic purposes be explicitly checked with them.

Mains water supply connection may also be impractical in more remote areas of the scheme location and tankering water supply (off site bowsers) may not cover quantities adequately and increases the numbers of HGVs to the local road network. It is at the applicants risk if water supply is not secured ahead of construction phases, in addition to the water supply options described under ‘Changes to water levels and flows’ in Table 5.2 of the WFD screening assessment, the scheme should also consider the requirement for a licence for the abstraction described from the Claydon brook tributary should quantities needed exceed 20m3/day as a worst case scenario as this licence would be significantly restricted by hands off flow conditions.

Runoff and drainage

There may be sediment and soil runoff risk from earthworks and excavation work like underground cabling which can indirectly have negative impact on water quality of River Ray. Soil compaction due to machinery and heavy rains might increase more risk of runoff and therefore drainage strategy must be robust to control runoff and mobilise sediment. This could be achieved using mitigation measures like sediment basins, silt fences, and vegetative areas that can be incorporated in the enhancement area plan.

Surface water outfall

The Applicant should ensure that any surface water outfall does not introduce in-channel erosion from focussed flows or become a source of pollution. The Applicant should consider a feature before water flows out of the outfall to intercept diffuse pollution and runoff and manage flows. The maintenance of the feature should also be ensured.

River Ray waterbody

Section 4.8 refers to the River Ray but does not distinguish between the upper section of the Ray and the lower section. For the purposes of WFD, the River Ray is split into '*Ray and tributaries NorthEast of Grendon Underwood'* which is close to the site boundary and '*Oxon Ray (upstream A41 to Cherwell) including Otmoor*'. It is misleading to state that the River Ray "…was classified as 'moderate' overall ecological status" when the lower section (Oxon Ray) is classified as 'bad'. The reasons for not achieving good also appear to be taken from both the upper and lower reaches of the River Ray. The Applicant should clarify what section of the River Ray they are referring to in the WFD screening report. If you are assessing the River Ray in its entirety, please specify the WFD waterbody names and be clear which RNAGs are assigned to each section.

This also applies throughout the report when referring to the 'River Ray'; please clarify whether it is the entirety of the river or just the upper reach and ensure consistent throughout.

Padbury waterbody

Padbury waterbody must be identified in Table 4.2 as the site is in this waterbody catchment. The Applicant should ensure that mitigation is included and considered for Padbury (the twins) as water, sediment and diffuse pollution will still connect to this waterbody.

Upper & Bedford Ouse Catchment Partnership (UBOCP)

Deepening watercourses should be avoided as it can negatively impact ecology and affect the erosion patterns up and down stream and the sediment loads from banks and in channel. We recommend discussing opportunities to improve watercourses

with the UBOCP and IDB particularly if there are bank disturbances and potential to complete river restoration.

Mobilising sediment on previously agricultural land will potential release nutrients bound to the soil. Sediment and associated pesticides and nitrates and phosphate are a big pressure in the top of the catchment. This is also a Drinking Water Protected Area (DrWPA), because too much surface diffuse pollution affects abstractions for public water supply downstream. Water resource is already at risk in the Great Ouse for growth. We must reduce the impact of water quality on abstraction. Although the WFD 'line' is not adjacent to the site the water, and potential pollutants, will drain to the waterbody.

Natural flood management

There are aspirations for natural flood management in the headwaters of catchments that should be considered. We recommend liaising with UBOCP. Consider ways to reduce and slow (intercept) overland flow. Ensure there is land cover at all times and no exposed soils.

# Annex B: Environment Agency Water Framework Directive (WFD) Screening Assessment for Rosefield Solar Farm Response

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Solar Farm

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Application Document Ref: EN010158/APP/6.4.3
Planning Inspectorate Scheme Ref: EN010158