Rosefield Solar Farm

Outline Construction Environmental Management Plan (Clean)

EN010158/APP/7.2.5
Revision 5
Deadline 4
June 2026
Rosefield Energyfarm Limited

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

Table of Contents

1. Introduction

1.1. Purpose of this document

1.1.1. This document has been updated at Deadline 4 in response to engagement with Buckinghamshire Council related to arboricultural mitigation measures, further engagement with the Environment Agency, and in response to Preston Farms and TCS Biosciences Ltd response received at Deadline 3. The document references have not been updated from the original submission. Please refer to the **Guide to the Application [EN010158/APP/1.2.10]** for the list of current versions of documents.

1.1.2. This Outline Construction Environmental Management Plan (Outline CEMP) has been prepared on behalf of Rosefield Energyfarm Limited ('the Applicant') to detail management methods to ensures that potential impacts on the environment during construction will be mitigated, in relation to 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').

1.1.3. Detailed CEMP(s) will be produced for the Proposed Development in accordance with Requirement 11 in the **Draft Development Consent Order (DCO) [EN010158/APP/3.1]** prior to the commencement of the construction phase. The detailed CEMP(s) will be required to be substantially in accordance with this Outline CEMP.

1.1.4. The Proposed Development is likely to be constructed in phases or parts, and it is envisaged that the detailed CEMP(s) may be prepared, approved or implemented for individual parts or phases of the Proposed Development. As a result, there could be multiple detailed CEMP(s) prepared in accordance with this Outline CEMP. Each detailed CEMP will be produced in line with this Outline CEMP following granting of the DCO and consulted on and approved by Local Planning Authority in advance of the date of commencement for the relevant phase of the Proposed Development.

1.1.5. To ensure the detailed CEMP(s) remain relevant and effective, updates will be undertaken as necessary, to align with the construction works and environmental conditions.

1.1.6. This document does not address measures for the operational or decommissioning phases, which are provided in the separate **Outline Operational Environmental Management Plan (Outline OEMP) [EN010158/APP/7.3]** and the **Outline Decommissioning Environmental Management Plan (Outline DEMP) [EN010158/APP/7.4]** respectively.

1.1.7. Likely significant effects have been identified through the Environmental Impact Assessment (EIA) process and are reported in the **Environmental Statement (ES) Volume 2 [EN010158/APP/6.2].** A range of best practice mitigation and construction methodology measures were accounted for in the assessments, and these will be implemented during construction of the Proposed Development. This Outline CEMP demonstrates how these measures will be implemented. It also sets out the monitoring activities designed to ensure that mitigation measures are carried out, and that they are effective.

1.1.8. The detailed CEMP(s) to be submitted for approval will be prepared following the appointment of a Principal Contractor, prior to the start of construction of the Proposed Development.

1.1.9. This Outline CEMP has been prepared with the objective of compliance with the relevant legislation and mitigation measures identified through the EIA process. Any additional construction licenses, permits or approvals that are required for the construction phase of the Proposed Development, and that are not disapplied by the DCO, will be set out in the detailed CEMP(s), including any environmental information submitted in respect of them.

1.1.10. This Outline CEMP provides the likely structure of the detailed CEMP(s) and outlines which measures will be included within the detailed CEMP(s) to deliver the construction phase of the Proposed Development.

1.1.11. The appointed Principal Contractor will be responsible for working in accordance with the environmental controls documented in any approved detailed CEMP(s). The overall responsibility for implementation of the detailed CEMP(s) will lie with the appointed Principal Contractor as a contractual responsibility to the Applicant, as the Applicant is ultimately responsible for compliance with the DCO.

1.1.12. This Outline CEMP is set out in the context of the other environmental management plans that are submitted with the DCO Application in **Figure 1** below.

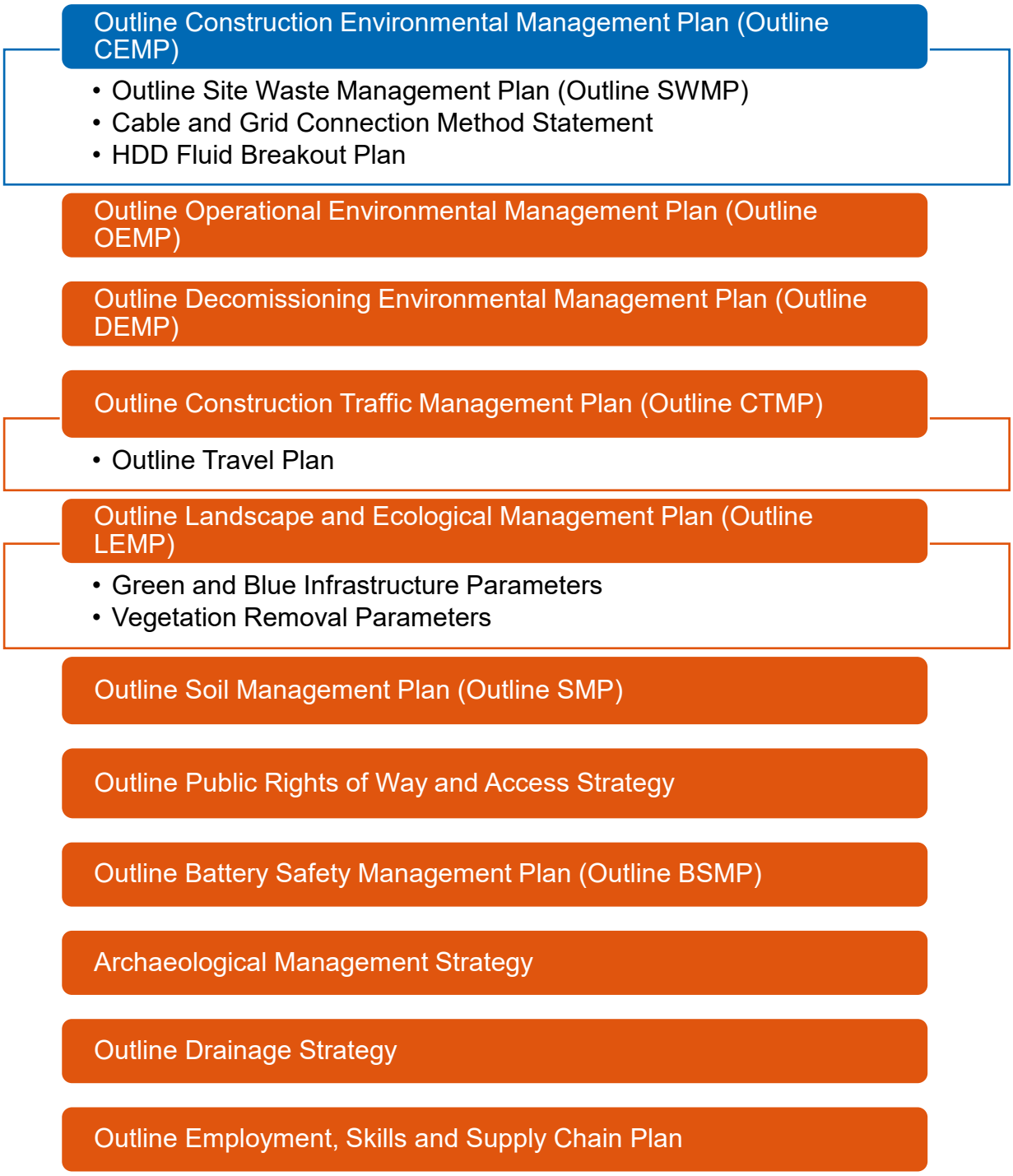


Figure 1: Outline Management Plans

1.1.13. The following additional environmental management plans are secured by this Outline CEMP and will be prepared as part of the detailed CEMP(s) prior to construction of the Proposed Development:

- Dust Management Plan;
- Emergency Preparedness and Response Plan;
- Site Waste Management Plan;
- Materials Management Plan;
- Health and Safety Plan;
- Construction Method Statement(s);
- Flood Management and Evacuation Plan;
- Arboricultural Method Statement (AMS); and
- Biosecurity Method Statement.

1.2. The Proposed Development

1.2.1. The Proposed Development comprises the construction, operation (including maintenance) and decommissioning of solar photovoltaic ('PV') development and energy storage, together with associated infrastructure and Grid Connection Cabling Corridor to the National Grid East Claydon Substation.

1.2.2. The Proposed Development would include a generating station with a total exporting capacity exceeding 50 megawatts ('MW').

1.2.3. The location of the Proposed Development is shown on **ES Volume 3, Figure 1.1: Location Plan [EN010158/APP/6.3]**. The Proposed Development would be located within the Order Limits (the land shown on the **Works Plans [EN010158/APP/2.3]** within which the Proposed Development can be carried out). The Order Limits plan is provided as **ES Volume 3, Figure 1.2: Order Limits [EN010158/APP/6.3]**. Land within the Order Limits is known as the 'Site'.

1.3. The Order Limits

1.3.1. The extent of the Order Limits are shown in **Location, Order Limits and Grid Coordinate Plans [EN010158/APP/2.1]** and the Proposed Development is described in full in **ES Volume 1, Chapter 3: Proposed Development Description [EN010158/APP/6.1]** and shown spatially on the **Works Plans [EN010158/APP/2.3].**

2. Construction Environmental Management

2.1. Roles and Responsibilities

2.1.1. The Principal Contractor shall make available sufficient time and resource for the effective management of environmental risks that could arise during construction work. This includes appointing adequately qualified personnel with knowledge and capability in the environmental management of construction site works. Persons having responsibility for environmental site management, and in particular any persons required to undertake and oversee response to any incidents with potential environmental consequences, shall be empowered to make decision and take appropriate action necessary to avoid or mitigate adverse environmental effects, even when this may lead to delay and/or additional cost to the Principal Contractor.

2.1.2. The Applicant and all appointed contractors will be responsible for ensuring that the potential risks to the environment are adequately avoided or controlled by the application measures as documented within the detailed CEMP(s), which shall be complied with throughout construction. The main organisations and persons involved in the construction stage works are set out in **Table 1**. The key roles and responsibilities during the construction phase in managing environmental impacts will likely include, but are not limited to:

- **Project Director** – Overall responsibility for legal compliance. Responsible for providing appropriate resources in the team including competent staff and training.
- **Project Manager** – Responsible for the management of the planning and delivery of the project in accordance with the requirements of the detailed CEMP(s). Collaborating with the environment team to seek advice and facilitate assurance inspectors and implement corrective action.
- **Site Manager** – Overall responsibility for activity onsite and will be based onsite full time.
- **Construction Project Manager** – Responsible for ensuring all elements in the DCO, detailed CEMP(s) and all environmental legal and other requirements are implemented, and appropriately resourced, managed, reviewed and reported.
- **Environmental Manager** – Responsible for ensuring environmental legislation and best practices are complied with, and environmental mitigation and monitoring measures identified are implemented. The Environmental Manager will oversee environmental monitoring on site and carry out regular environmental site inspections, reporting and responding to any incidents or non-compliance. The Environmental

Manager will liaise with the local planning authority, relevant environmental bodies and other third parties as appropriate.

- **Ecological Specialist** – Responsible for advising on ecological matters and overseeing construction activities, mitigation measures and monitoring to ensure that construction activities minimise environmental impacts, particularly on protected species and habitats.
- **Health and Safety Manager** – Responsible for the monitoring and controlling of health and safety compliance and related rules and regulations on site.
- **Community Liaison Officer** – A Community Liaison Group will be set up in accordance with the relevant DCO requirement prior to construction and will continue through until final commissioning of the Proposed Development as a formal forum for local issues to be raised. A Community Liaison Officer will be appointed to lead discussions with local communities, and also act as the primary point of contact should there be any queries or complaints.

2.1.3. These roles and responsibilities are indicative and will be confirmed in the detailed CEMP(s).

Table 1: Project roles and environmental responsibilities

Process Task	Role[1]					
	Project Manager/ Director	Site Manager	Construction Project Manager	Environmental Manager	Health and Safety Manager	Community Liaison Officer
Developing and maintaining the CEMP	A	C	M	R	C	I
Monitor environmental aspects through review of construction method statement, identify and control issues	I	A	M	R	C	I

[1] **RACIM DETAILS** –

R – Responsible: The individual(s) who perform an activity responsible for action/implementation – although usually only one, R's can be shared.

A – Accountable: The individual who is ultimately accountable including yes/no decision and power of veto – only one (A) can be assigned.

C – Consulted: The individual(s) to be consulted prior to a final decision being made or action taken – two-way communication.

I – Informed: The individual(s) who need to be informed after a decision is made or action is taken – one-way communication.

M – Monitor: Monitor the delivery of the proposed development on behalf of third parties and report on compliance

Process Task	Role[1]					
	Project Manager/ Director	Site Manager	Construction Project Manager	Environmental Manager	Health and Safety Manager	Community Liaison Officer
Monitoring construction works to ensure any necessary environmental issues and control measures are in place; ensuring they are effectively communicated, appropriate and implemented on site	-	A	M	R	C	I
Ensuring the work is performed by trained and qualified staff; and providing training where necessary	A	R	C	M	I	I
Ensuring the adequate resources are allocated for environmental management	A	R	M	M	I	I
Ensuring that all relevant environmental documentation and information (including permission, consents, permits and assessments) is communicated	A	R	M	M	C	I
Regular site inspections and maintaining a record of environmental performance, and reporting performance and monitoring environmental performance.	A	C	M	M	R	I

Process Task	Role[1]					
	Project Manager/ Director	Site Manager	Construction Project Manager	Environmental Manager	Health and Safety Manager	Community Liaison Officer
Following good practice and minimising impact on the environment	C	A	M	M	R	I
Understanding project environmental obligations and mitigation measures	I	A	M	M	R	I
Liaison with local authority, other statutory bodies, members of the public, press and the media	C	A	M	M	C	R
Supporting all site staff with environmental management including reviewing and commenting on method statements and risk assessments	A	R	M	M	R	-
Ensuring that the environmental policy of the Applicant is delivered	C	A	M	M	R	-
Providing information on waste management/reduction procedures to relevant staff	R	A	M	M	R	-

2.2. Construction Programme

2.2.1. The construction phase is anticipated to occur over a 30-month period. Subject to being granted consent, the earliest the Proposed Development's construction phase is anticipated to commence is mid to late 2029.

2.2.2. The final programme will depend on the detailed design and potential environmental constraints on the timing of construction activities. The final programme will be included within the detailed CEMP(s).

2.3. Construction Activities

2.3.1. The Proposed Development is described in **ES Volume 1, Chapter 3: Proposed Development Description [EN010158/APP/6.1]** and Schedule 1 of the **Draft DCO [EN10158/APP/3.1]** where the "authorised development" is divided into work packages. The work numbers for those packages are identified below and correspond to the **Works Plans [EN010158/APP/2.3].** Note that there is overlap of Work Areas in some locations:

- Work No. 1: Ground Mounted Solar PV Generating Station
- Work No. 2: Rosefield Substation Compound
  - Work No. 2A: Rosefield Substation Compound
  - Work No. 2B: Abnormal Indivisible Load Corridor
- Work No. 3: Satellite Collector Compounds
  - Work No. 3A: Satellite Collector Compounds
  - Work No. 3B: Satellite Collector Compound Transformer
- Work No. 4: Battery Energy Storage System Compound
- Work No. 5: Main Collector Compound
- Work No. 6: Grid Connection Cabling Corridor
- Work No. 7: Interconnecting Cabling Corridor(s)
- Work No. 8: Temporary Construction and Decommissioning Compounds
  - Work No. 8A: Primary Construction Compounds; and
  - Work No. 8B: Secondary Construction Compounds
- Work No. 9: Highways Works (Facilitate access)
- Work No. 10: Green and Blue Infrastructure

2.3.2. The **Draft DCO [EN010158/APP/3.1]** also allows for the following works to occur in connection with and in addition to the Work Nos. set out above within the Order Limits for those work areas:

- fencing, gates, boundary treatment and other means of enclosure;
- bunds, embankments, trenching and swales;
- works to the existing irrigation system(s) and works to alter the position and extent of such irrigation system(s);
- surface water drainage systems, storm water attenuation systems including storage basins, oil water separators, including channelling and culverting and works to existing drainage networks;
- electrical, gas, water, foul water drainage and telecommunications infrastructure connections, diversions and works to, and works to alter the position of, such services and utilities connections;
- works to alter the course of, or otherwise interfere with, non-navigable rivers, streams, or watercourses;
- works for the provision of security and monitoring measures such as CCTV columns and CCTV, security cabins, lighting columns and lighting and weather stations;
- improvement, maintenance, repair and use of existing streets, private tracks, and access roads;
- laying down, maintenance and repair of new internal access tracks, ramps, means of access, permissive footpaths and roads, crossings of drainage ditches and watercourses, including signage and information boards;
- temporary and permanent public rights of way diversions and closures and new and/or improvements to infrastructure (e.g., gates and stiles) along temporarily or permanently diverted public rights of way Footpaths;
- landscaping and biodiversity mitigation and enhancement measures including planting;
- tunnelling, boring and drilling works;
- earthworks, site establishments and preparation works including site clearance (including vegetation removal); earthworks (including soil stripping and storage and site levelling) and excavations; the alteration of the position of services and utilities; and works for the protection of buildings and land; and
- other works to mitigate any adverse effects of the construction, operation (including maintenance) or decommissioning of the authorised development.

Permitted preliminary works

2.3.3. 'Permitted preliminary works' are clearly defined, preparatory works. The permitted preliminary works as defined in the **Draft DCO [EN10158/APP/3.1]** means any or all of the following activities (not necessarily in order):

(a) environmental surveys, geotechnical surveys, intrusive archaeological surveys and other investigations for the purpose of assessing ground conditions;

(b) removal of plant and machinery;

(c) above ground site preparation for temporary facilities for the use of contractors;

(d) remedial work in respect of any contamination or other adverse ground conditions;

(e) diversion of existing services and the laying of temporary services;

(f) the provision of temporary means of enclosure and site security for construction;

(g) the temporary display of site notices or advertisements;

(h) site clearance (including vegetation removal, demolition of existing structures or buildings);

(i) Work No. 9 (works to facilitate access to Work Nos. 1 to 8 and 10);

(j) diversion of existing public rights of way; or

(k) early establishment of ecological mitigation including for badgers.

2.3.4. Some of the permitted preliminary works require measures in the CEMP to be approved before those works can be carried out. The CEMP will only be needed for the following permitted preliminary works:

- intrusive ground investigations for the purpose of assessing ground conditions included in part (a) of the permitted preliminary works (environmental surveys, geotechnical surveys, intrusive archaeological surveys and other investigations for the purpose of assessing ground conditions);
- part (d) of the permitted preliminary works (remedial works in respect of any contamination or other adverse ground conditions); and
- part (i) of the permitted preliminary works (Work No. 9, being works to facilitate access to Work Nos. 1 to 8 and 10).

2.3.5. With respect to the intrusive ground investigations for the purposes of assessing ground conditions included in part (a) of the permitted

preliminary works, a CEMP is only required so that the methodology for those investigations is approved by the relevant local authority and in consultation with relevant statutory consultees.

Construction activities

2.3.6. The construction activities will be undertaken in accordance with any approved detailed CEMP(s), which must be in substantial accordance with the principles set out within this Outline CEMP, and which will be prepared prior to the commencement of the construction activities. The indicative construction activities that would be required comprise (not necessarily in order):

- Site preparation, including minor localised site levelling, vegetation clearance, landscape planting and establishment of perimeter fencing and security measures;
- Import of construction materials, plant, and equipment to Site. Plant required will include HGV delivery vehicles, excavators, telehandlers, pilling rigs, unloading cranes, Mobile Elevated Working Platforms (MEWPs);
- Establishment of Site construction compounds and welfare facilities;
- Appropriate storage and capping of soil;
- Management of waste;
- Establishment of drainage systems;
- Site access works and construction of new Site tracks and points of access from the public highway;
- Installation of bridges and culverts across watercourses and ditches;
- Off-site highway works;
- Installation of PV module frames, PV modules, ITS, cabling, and fencing within each PV field;
- Installation of Rosefield Substation, Main and Satellite Collector Compounds, BESS and associated foundations and cabling within Interconnecting Cabling Corridor(s);
- Trenching in sections;
- Installation of HDD launch and reception compounds and drilling of HDD crossings;
- Testing and commissioning; and
- Site reinstatement (i.e., returning any land used during construction for temporary purposes to its previous condition).

2.3.7. The erection of the mounting structures and the mounting of the Solar PV modules to the mounting structures within **Work No. 1** would include the following activities (not necessarily in order):

- Import and delivery of materials to the Site;
- Where appropriate, piling or pre-cast concrete foundations and installation of the mounting structures (see **ES Volume 1, Chapter 3: Proposed Development Description, Plate 3.13** and **Plate 3.14**);
- Mounting of the Solar PV modules; and
- The installation of cabling between Solar PV modules.

2.3.8. The installation of **Work Nos. 2 - 7** would include the following activities (not necessarily in order):

- Import and delivery of materials to the Site;
- Trenching and installation of Interconnecting Cabling Corridor(s);
- Transformer, Inverter and Switchgear installation and construction. Lorry mounted cranes would be used to lift the equipment into position;
- Foundation excavation and construction for the BESS, Rosefield Substation and Transformer, Inverter and Switchgear (if required);
- Pouring of the concrete foundation base, where required;
- Installation of equipment that form part of the BESS;
- Construction of control and other buildings that form part of the Main Collector Compound, Satellite Collector Compounds, BESS compound and Rosefield Substation compound;
- Installation and construction of equipment in the Main Collector Compound, Satellite Collector Compounds, BESS compound and Rosefield Substation compound. Cranes would be used where necessary to lift equipment into position; and
- Installation of control, monitoring, and communication systems.

2.4. Cabling

2.4.1. The maximum dimensions of cable trenches during the grid connection cabling works are as detailed below:

- A width of 6m;
- A depth of 1.5m (BGL, post-earthworks), except where cabling would need to cross under roads, utilities, watercourses or ditches where depths may be greater. In these cases, cabling would be laid at least:
  - 1.5m below roads;
  - 0.5m below utilities; and

– 2m below the bed of watercourses and ditches.

2.4.2. The maximum construction working widths would be 25m, except where hedgerows are crossed which would be a maximum width of 12.5m.

2.4.3. The Interconnecting Cabling Corridor(s) between Parcels 1 and 2 would be up to 25m in width and up to 50m in width between Parcels 2 and 3.

2.4.4. Further details are provided in **Appendix 2: Cabling and Grid Connection Method Statement**.

2.5. Working Hours

2.5.1. The normal (or core) hours of working on any part of the Proposed Development during the construction period will be:

- 7am to 7pm Mondays to Fridays; and
- 7am to 12pm on Saturdays.

2.5.2. The following controls will also apply to the works:

- No work would be undertaken on Sundays or Bank Holidays without prior agreement with Buckinghamshire Council as the host Local Planning Authority.
- Working days would consist of one 12-hour shift, with employees travelling to and from Site an hour on either side of these times (i.e. between 6am - 7am and 7pm - 8pm).
- Where onsite works are to be conducted outside the core working hours, they will comply with the restrictions pursuant to the DCO consenting process.
- Between 07:00 - 08:00 and 18:00 - 19:00 Monday to Friday and 07:00 – 08:00 on Saturdays, noisier activities (such as piling) would be restricted depending on the construction activity proposed to take place and its proximity to sensitive receptors.
- Further detail is outlined in **Section 2.8: Control of Noise** within this Outline CEMP.

2.6. Site Set Up and Compounds

2.6.1. During the construction phase, three Primary Construction Compounds would be provided on Site (**Work No. 8A**), with three Secondary Construction Compounds (**Work No. 8B**) being provided at different locations throughout the Solar PV development. The locations of the Primary and Secondary Construction Compounds are shown respectively as **Work No. 8A** or **Work No. 8B** on the **Works Plans [EN010158/APP/2.3.5]** and have been indicatively identified in **ES**

Volume 3, Figure 3.8: Indicative Location of Primary and Secondary Construction Compounds [EN010158/APP/6.3.5].

2.6.2. A Primary and Secondary Construction Compound would be located in each of Parcels 1, 2 and 3. Each Primary Construction Compound would be no greater than 25,000m^2 in plan. The Primary Construction Compound within Parcel 2 may be split but the in-plan areas of the split Primary Compound would not cumulatively be greater than 25,000m^2 in plan. Each Secondary Construction Compound would be no greater than 1,250m^2 in plan.

2.6.3. Each Primary Construction Compound would be located at or as close to access points and tracks as practicable within the Order Limits to minimise the extent of ground disturbance outside of the Solar PV development.

2.6.4. A dedicated construction car park would be located within and/or adjacent to each Primary Construction Compound with some parking, where required, at Secondary Construction Compounds.

2.6.5. As part of **Work Nos. 8A** and **8B** within Schedule 1 of the **Draft DCO [EN010158/APP/3.1],** the potential activities occurring within the Primary and Secondary Construction and Decommissioning Compounds include the following:

- areas of hardstanding with haul road areas comprising stone laid on a geotextile membrane;
- car parking;
- site and welfare offices and facilities, canteens, and workshops;
- area to store materials, plant, and equipment;
- storage and waste skips;
- area for download and turning;
- security infrastructure, including cameras, perimeter fencing, security gatehouse(s) and lighting;
- site drainage and waste management infrastructure (including sewerage); and
- electricity, water, wastewater, and telecommunications connections.

2.6.6. Whilst temporary, the structures within the Primary and Secondary Construction Compounds may also include roof-mounted solar panels and/or rain and/or grey water harvesting and recycling systems. These elements have not been factored into the assessments as the Proposed Development is not committing to or relying upon roof-mounted solar panels and/or rain and/or grey water harvesting and recycling systems.

2.6.7. Towards the end of the Proposed Development's construction phase, the temporary Primary and Secondary Construction Compounds would be removed, and these locations could be utilised for other development as identified on the **Works Plans [EN010158/APP/2.3.5]**.

2.6.8. The set up, layout and use of compounds will be confirmed by the Principal Contractor with further details described in the detailed CEMP(s).

2.7. Site Security

2.7.1. Site security during construction will be managed by the Principal Contractor. The Site security fencing will remain in place throughout the duration of the construction period. Any storage of materials will be kept secure to prevent theft or vandalism. A safe storage system for accessing the materials storage areas would be implemented by the Principal Contractor.

2.7.2. Site security and fencing to be installed during the construction phase will be confirmed by the Principal Contractor and included in the detailed CEMP(s).

2.8. Control of Light

2.8.1. Construction temporary site lighting, in the form of mobile lighting towers will be required in areas where natural lighting is unable to reach (sheltered/confined areas) and during core working hours within winter months. Artificial lighting would be provided to maintain sufficient security and health and safety for the Order Limits, whilst adopting the mitigation principles to avoid excessive glare and minimise spill of light to nearby receptors (including ecological and residential) outside of the Order Limits as far as reasonably practicable.

2.8.2. All construction lighting will be deployed in accordance with the following recommendations to prevent or reduce the impact on human and ecological receptors:

- The use of lighting will be minimised to that required for safe Site operations;
- Lighting will conform to best practice guidelines with respect to minimising light spill into adjacent ecologically sensitive habitats (refer to the **Outline Landscape and Ecological Management Plan (Outline LEMP) [EN010158/APP/7.6]** and minimise disturbance to bats and other species during construction;
- Lighting will utilise directional fittings to minimise outward light spill and glare (e.g. via use of light hoods/cowls which direct light below the horizontal plane, preferably at an angle greater than 20° from horizontal);

- Lighting will be directed towards the interior of the Order Limits rather than towards the boundaries; and
- CCTV security lighting would use Passive Infra-red Detector (PID) systems to avoid impacts to sensitive ecological species such as bats, otters and badgers.

2.8.3. Lighting design will be confirmed at the detailed design stage and will be included in the detailed CEMP(s).

2.9. Control of Noise

2.9.1. Between 07:00 - 08:00 and 18:00 - 19:00 Monday to Friday and 07:00 – 08:00 on Saturdays, noisier activities (such as piling) would be restricted depending on the construction activity proposed to take place and its proximity to sensitive receptors.

2.9.2. Noise thresholds have been identified for nearby sensitive receptors during construction, presented in **ES Volume 1, Chapter 13: Noise and Vibration [EN010158/APP/6.1]** (and based off Annex E of BS5228-1), and the applicable noise thresholds will be defined in each of the detailed CEMP(s). Thus, where onsite works are to be conducted outside of the core working hours, they will comply with any restrictions agreed with the relevant planning authority and reflected in the detailed CEMP(s), in particular regarding the control of noise and traffic. Compliance with these noise limits will ensure adverse effects are unlikely. Abnormal or emergency construction traffic movements may occur outside of normal working hours. In the event of these occurrences, specific noise mitigation measure will be put in place to reduce potential noise impacts at nearby noise sensitive receptors as set out in **Section 3** of this Outline CEMP.

2.9.3. Potential disturbance to livestock would be managed through appropriate consultation with the relevant land interests so that they are aware of the construction works that will be taking place close to particular fields. In addition, the control measures with regards to noise set out in The British Horse Society document ‘Advice on Construction sites and horses’ **[Ref. 8]** would be implemented, where applicable.

2.10. Temporary noise barriers

2.10.1. Where there is potential for the construction works to give rise to **medium** or **high** magnitudes of impact at noise sensitive receptors (as set out within **ES Volume 2, Chapter 13: Noise and Vibration [EN010158/APP/6.2]**), temporary noise barriers may be installed close to noise-producing plant to minimise construction induced noise levels (where practicable).

2.10.2. Potential disturbance to livestock would be managed through appropriate consultation with the relevant parties. Where specific concerns are raised,

temporary measures would be introduced to reduce the construction induced noise levels experienced by livestock, where appropriate.

2.10.3. BS 5228-1 **[Ref. 1]** advises that the approximate acoustic attenuation provided by a barrier will be 5 dB when the top of the plant is just visible to the receiver over the noise barrier and 10 dB when the barrier completely hides the noise sources from the receiver.

2.10.4. Temporary noise barriers could comprise a well-constructed site hoarding or a proprietary temporary barrier system that can be rapidly installed and modified on Site to screen specific construction activities. In all instances, the hoarding/barrier should be free from gaps, holes, slits or cracks, with no gaps between the barrier and the ground.

2.11. Piling

2.11.1. There are mitigation measures that can be applied to minimise noise levels from piling activities in instances where the piling works are predicted to give rise to medium magnitudes of impact at noise sensitive receptors.

2.11.2. Mitigation measures for piling works are typically applied at the source in the form of shrouds and/or resilient pads between the pile and the driver. Noise reduction from these measures should be expected to be in the range of 10-15 dB.

2.12. Horizontal Directional Drilling (HDD) and Abnormal Indivisible Load (AIL)

2.12.1. Activities such as trenchless/Horizontal Directional Drilling and Abnormal Indivisible Load (AIL) deliveries could be required outside of the assumed day-time construction hours (i.e. evening, Sundays, Bank Holidays or at night), which will be agreed upon with the Local Planning Authority prior to these works.

2.12.2. If night-time operation is required, the closest residents to the works shall be notified of the start and completion of the works. The horizontal directional drilling plant would be installed and operated such that noise levels do not exceed a level of 45dB LA_{eq} at the closest neighbouring noise-sensitive locations during night-time operation of equipment. Depending on the plant used, location, pit depth, etc., this may require the use of acoustic screening using temporary solid barriers with a height of at least that of the drilling equipment located in proximity (around 10m or less) of the trenchless drilling work.

2.12.3. Trenchless HDD methods would be undertake in accordance with a HDD Fluid Breakout Plan (as provided **Appendix 3** of this Outline CEMP).

2.13. Construction Traffic Management and Access Routes

2.13.1. During construction, the appointed contractor(s) will ensure that the impacts from construction traffic on the local community (including local residents and businesses and users of the surrounding transport network) and livestock are minimised, where reasonably practicable by implementing the measures set out in **ES Volume 1, Chapter 14: Traffic and Access [EN010158/APP/6.2],** and the **Outline Construction Traffic Management Plan (Outline CTMP) [EN010158/APP/7.5]**.

2.13.2. The **Outline CTMP [EN010158/APP/7.5]** includes details on construction logistics and construction worker travel; alongside controls to guide the delivery of material, plant equipment and staff during the construction phase. A detailed CTMP will be required to be produced by the contractor(s) and agreed with the relevant highways authorities prior to the commencement of construction activities.

2.13.3. An **Outline Travel Plan** has been prepared as part of **Appendix 1** of the **Outline CTMP [EN010158/APP/7.5].** The Outline Travel Plan sets out strategies to encourage the use of sustainable transport for the construction workforce.

2.13.4. The contractor will implement measures to control and mitigate and dust tracking onto the highway, including vehicle wheel cleaning. Additionally, a road sweeper will be deployed when required, to remove any mud and dust that has tracked onto the highway.

2.13.5. Access along all private accesses within the Order Limits, including Muxwell Farm and Pond Farm, will be maintained for the duration of the works. Where cable installation activities cross existing access routes, a temporary diversion may be required for a short duration (anticipated to be 2–3 days) to allow for construction of the crossing and curing of the tarmac surface.

2.13.6. During any temporary diversion, the Contractor will be responsible for ensuring that safe and suitable access to both properties is maintained at all times. Temporary access arrangements will be clearly defined, communicated in advance to affected parties, and appropriately signed.

2.13.7. The temporary diversion will facilitate the construction of the vehicle crossing point, including excavation, cable installation, and reinstatement. Cable installation beneath access routes will be undertaken using either:

- Horizontal Directional Drilling (HDD), or
- Open trenching with the use of steel plates to maintain access across the trench where practicable.

2.13.8. Following completion of the works, all affected access routes, including the crossing point, will be fully reinstated to a specification and quality equal to or better than their pre-construction condition.

2.13.9. Following completion of the works, all affected access routes, including the crossing point, will be fully reinstated to a specification and quality equal to or better than their pre-construction condition.

2.13.10. The selected method will ensure continuity of access while maintaining safety and minimising disruption.

2.14. Parking provisions

2.14.1. As detailed in the **Outline CTMP [EN010158/APP/7.5]**, a dedicated construction car park would be located within and/or adjacent to each Primary Construction Compound with some parking, where required, at Secondary Construction Compounds. Adequate parking spaces will be provided for the maximum number of personnel at each Primary Construction Compound applying a ratio of 1.5 workers per vehicle. Car parking will also be provided at the Secondary Construction Compounds with up to 10 parking spaces.

2.14.2. Parking will be managed/minimised to seek to avoid disruption to bats (e.g. away from woodland and other sensitive areas).

2.14.3. Further details of parking provision will be confirmed by the Principal Contractor with further details described in the detailed CTMP(s).

2.15. Construction Waste Management

2.15.1. Waste arising from construction is not anticipated to consist of substantial amounts of waste electrical or electronic equipment. Where this does arise, this would be recovered and recycled by an authorised reprocessor as required by the Waste Electrical and Electronic Equipment (WEEE) Regulations 2013 **[Ref. 2]**.

2.15.2. Prior to construction works commencing, a Site Waste Management Plan (SWMP) will be prepared by the contractor which will identify waste streams, plan appropriate arrangements and procedures accordingly, ensure legal requirements are identified and complied with and identify opportunities for waste minimisation and sustainable material use. The SWMP will be based on the **Outline Site Waste Management Plan (Outline SWMP)** contained in **Appendix 1** of this Outline CEMP and finalised with specific measures to be implemented prior to the start of construction.

2.15.3. All waste to be removed from the Order Limits will be undertaken by fully licensed waste carriers and taken to licensed waste facilities. The waste

hierarchy will be applied, in priority order: prevention, preparation for reuse, recycled, other recovery and disposal.

2.16. Environmental Incidents and Emergencies

2.16.1. An Emergency Preparedness and Response Plan and Flood Management and Evacuation Plan will be developed in consultation with the relevant local authority emergency planning officer, emergency services including the local fire service, as well as the Environment Agency in relation to responding to flood warnings and events.

2.16.2. The plan will also detail the procedures for responding to incidents (such as spills, leaks or generation of silt laden runoff as to prevent pollution) and emergencies (such as flooding) onsite, and any reporting. This will also include the arrangements for all incidents, including environment incidents, and will include the procedures for the immediate response, reporting, stakeholder communications, and incident investigation.

2.16.3. The **Outline Battery Safety Management Plan [EN010158/APP/7.9]** and **Outline Drainage Strategy [EN010158/APP/7.11.2]** set out the key safety provisions for the Battery Energy Storage System (BESS) proposed to be installed at the Proposed Development including fire protection measures and mitigation to reduce fire risk and contamination.

2.16.4. In the event that a battery becomes damaged or requires replacement, the operator will develop a post-incident recovery plan that addresses the potential for reignition of the BESS and de-energising the system, as well as removal and disposal of damaged equipment. Further detail will be set out at a later stage in the Emergency Response Plan located in the **Outline BSMP [EN010158/APP/7.9.3]**.

2.17. Watercourse crossings

2.17.1. All watercourse crossings will be either clear span bridges or a culvert of appropriate size convey flood flows and also have no detrimental impact on ecology. Any temporary structures will be removed with the watercourse reinstated. A crossing register will be provided as part of the detailed CEMP.

2.17.2. Cable crossing depths would take account of potential deepening of watercourse channels over the lifetime of the Proposed Development.

2.17.3. The Abnormal Indivisible Loads (AIL) access located in the north of Parcel 3 would not be used during flood events.

2.18. Protection of Below Ground Utilities

2.18.1. Engagement with Anglian Water Services, and other utilities services where necessary, will be undertaken on a regular basis to ensure their

access to their existing and new assets is available throughout the construction period.

2.18.2. Offsets around major utilities will be implemented, as agreed with each utility owner, to avoid impacts.

2.19. UXO

2.19.1. A UXO Risk Assessment has been undertaken for the Site, as detailed in **ES Volume 3, Appendix 11.2: UXO Risk Assessment [EN010149/APP/6.4]**, which deemed the majority of the Site as being at a low risk from items of UXO. A Detailed Desk Study has been recommended and will be undertaken for Parcel 3. Following the results of the Detailed UXO Desk Study, if necessary, the risk of UXO will be managed by the implementation of a UXO Risk Management Plan for intrusive works and site-specific awareness briefings, alongside attendance by a UXO specialist and onsite support for intrusive works in areas of medium risk.

2.20. Housekeeping and Site Maintenance

2.20.1. Good housekeeping is an important part of good environmental practice and helps to maintain a more efficient and safer site. The Site should be tidy, secure, and have clear access routes that are well signposted. The appearance of a tidy, well-managed site can reduce the likelihood of theft, vandalism, complaints and/or specific hazards that could affect the safe operation of the other businesses in the area, such as bird hazards and wind-blown litter.

2.20.2. As outlined in the fifth edition of Construction Industry Research and Information Association's (CIRIA) 'Environmental good practice on site guide' (C811) **[Ref. 3]**, when considering good housekeeping, the appointed Contractor should implement the following recommendations:

- Adequately plan the Site with designated areas of materials and waste storage;
- Segregate and label different types of waste as it is produced and arrange frequent removal;
- Keep the Site tidy and clean;
- Ensure that no wind-blown litter or debris leaves the site, use covered skips to prevent wind-blown litter;
- Keep hoarding tidy - repair and repaint when necessary, removing any fly posting or graffiti;
- Frequently brush-clean wheel washing facilities and keep haul routes clean from site derived materials;

- Keep roads free from mud by using a road sweeper; and
- Ensure the Site is secure.

2.20.3. In addition, Site personnel should uphold site etiquette, which includes maintaining personnel cleanliness, such as keeping personal protective equipment (PPE) clean, and using respectful and professional language whilst on and offsite.

2.21. Best Practice Measures

2.21.1. The Considerate Constructors Scheme (CCS) will be adopted to assist in reducing pollution and nuisance from the Proposed Development, by employing good practice measures which go beyond statutory compliance.

2.22. Community Liaison and External Communication

2.22.1. A Community Liaison Group (CLG) (including a Community Liaison Officer(s)) will be established for the duration of the construction period.

2.22.2. Prior to the commencement of the construction phase, the Applicant will submit to the relevant planning authority for approval of the terms of reference for a Community Liaison Group whose aim is to facilitate liaison between representatives of people living in the vicinity of the Order Limits and other relevant organisations in relation to the construction of the Proposed Development.

2.22.3. Any complaints will be directed toward the Community Liaison Lead, who will ensure that all necessary action/ investigation is undertaken.

2.22.4. The Applicant will liaise with all agricultural tenants and Preston Farms Ltd and TCS Biosciences Ltd (together, the 'Prestons') during the preparation of the detailed Construction Environmental Management Plan(s) and subsequently during the construction phase. Measures to be included in the detailed Construction Environmental Management Plan(s) will include:

- providing at least six months advance notification of the location and timing of any construction activities in proximity to the agricultural tenants' and the Prestons' grazing land;
- appropriate biosecurity measures reflective of the agricultural tenants' and the Prestons' own biosecurity practices, to minimise any potential disruptions and biosecurity risks to their business operations (see Preliminary Biosecurity Statement **[EN010158/APP/8.28]**); and
- Provision of toolbox talks to relevant site staff about the sensitive nature of the agricultural tenants' and the Prestons' specialist operations, and the processes around the measures above.

2.22.5. In addition, the Applicant will consult with other developments (HS2, Grendon Underwood Prison, East Claydon BESS and East Claydon Greener Grid Park) prior to construction, on programmes and at the discharge of requirements phase to manage interactions and reduce any associated potential cumulative impacts, where practicable.

3. Construction Environmental Management and Mitigation Procedures

3.1. Topic-specific mitigation

3.1.1. A summary of the mitigation and management measures to be included as minimum in the detailed CEMP(s), using information presented in **Environmental Statement [EN010158/APP/6.1]**, is provided below. It also identifies where monitoring is proposed to assess the effectiveness of the mitigation measures.

Table 3.1: Air quality

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Dust and particulate matter emissions during construction phase	*Communications* • Develop and implement a stakeholder communications plan that includes community engagement before work commences on Site. Develop and implement a stakeholder communications plan that includes community engagement before work commences on Site. • Display the name and contact details of people accountable for air quality and dust issues with respect to the Proposed Development at the Primary Construction Compound. This may be the Environment Manager/engineer or the Site Manager.	Undertake regular on Site and off Site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to Buckinghamshire Council when asked. Monitoring will, where possible, should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100m of the Order Limits in agreement with the relevant homeowners/landowners.	Responsibility The Applicant. Principal Contractor. Responsibilities will be confirmed within the CEMP(s).
	Site management		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measures taken. • Make the complaints log available to the Local Planning Authority when asked. • Record any exceptional incidents that cause dust and/or air emissions, either on or off Site and the action taken to resolve the situation in the logbook. *Preparing and maintaining the Site* • Plan the Site layout so that machinery and dust causing activities are located away from sensitive receptors, as far as is possible. • Erect solid screens or barriers around activities where there is a high potential for dust production. • Avoid runoff of water or mud from the Site. This may includes measures such as diverting run-off, installing sediment traps and/or swales. • Keep Site fencing, barriers and scaffolding clean. • Remove materials that have a potential to produce dust from Site as soon as possible, unless being re-used on Site. If they are being re-used on Site cover as described below.	Carry out regular Site inspections to monitor compliance with the Construction Environmental Management Plan, record inspection results, and make an inspection log available to the Local Planning Authority when asked. Increase the frequency of Site inspections by the person accountable for air quality and dust issues on Site when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions. During the construction, agree dust deposition, dust flux, or real-time PM10 continuous monitoring locations with the Local Planning Authority. Where possible, commence baseline	

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Cover, seed or fence stockpiles to prevent wind whipping. *Operating vehicle/machinery and sustainable travel* • Ensure all vehicles switch off engines when stationary - no idling vehicles. • Impose and signpost a maximum speed limit of 15 mph on surfaced and 10 mph on unsurfaced haul roads and work areas. • Implement a Travel Plan (part of the **Outline CTMP [EN010158/APP/7.5]**) that supports and encourages sustainable travel. *Construction operations* • Only use cutting, grinding or sawing equipment fitted or in conjunction with suitable dust suppression techniques such as water sprays or local extraction, e.g. suitable local exhaust ventilation systems. • Ensure an adequate water supply on the Site for effective dust/particulate matter suppression/mitigation, using non-potable water where possible and appropriate. • Use enclosed chutes and conveyors, and covered skips. • Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling	monitoring at least three months before work commences on Site. Continuous dust monitoring results will be shared with Buckinghamshire Council on a three-monthly basis.	

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	equipment and use fine water sprays on such equipment wherever appropriate. • Ensure equipment is readily available on Site to clean any dry spillages, and clean up spillages as soon as reasonably practicable after the event using wet cleaning methods. *Measures specific to earthworks* • Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. • Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. • Only remove the cover in stages during work and not all at once. *Measures specific to construction* • Avoid scabbling (roughening of concrete surfaces) if possible. • Ensure sand and other aggregates are stored in bunded areas and are not allowed to dry out, unless this is required for a particular process, in which case ensure that appropriate additional control measures are in place. • Ensure bulk cement and other fine powder materials are delivered in enclosed tankers and		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	stored in silos with suitable emission control systems to prevent escape of material and overfilling during delivery. • For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust. *Measures specific to trackout* • Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the Site. • Avoid any dry sweeping of large areas. • Ensure vehicles entering and leaving Site are covered to prevent escape of materials during transport. • Record all inspections of haul routes and any subsequent action in a Site logbook. • Implement a wheel washing system. *Measures specific to non-road mobile machinery* Ensure that any plant used on Site comply with the nitrogen oxides, particulate matter and carbon monoxide emissions standards specified in the Regulation (EU) 2016/1628 of the European Parliament and of the Council (as amended) **[Ref. 4]** as a		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	minimum, where they have net power of between 37kW and 560kW. The emissions standards vary depending on the net power the engine produces.		

Table 3.2: Biodiversity

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Impact on biodiversity features and non-compliance with environmental legislation	A suitably qualified ecologist would be appointed during construction to advise on protecting important biodiversity features and provide advice on how to achieve compliance with environmental legislation. Relevant site staff would receive toolbox talks on the ecological risks present, legal requirements and working arrangements necessary to comply with legislation. Toolbox talks would be repeated as necessary over the duration of the relevant works.	N/A	Responsibilities will be confirmed within the CEMP(s).
Habitat loss or gain **Fragmentation of population or habitats**	For certain species, pre-construction surveys will be required to identify any new constraints and to identify the requirement for protected species licensing.		
Change in normal conditions (light, noise, vibration, human activity)	Legally Protected Species Protection Plans will be produced, as appropriate, by the ecologist in conjunction with the Principal Contractor if required, based on pre-construction surveys. This is likely to include bats, badgers and GCN. Each Species Protection Plan would be a live document subject to		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
impacting flora and fauna **Habitat degradation** **Species mortality**	review and update. The Species Protection Plans would assist site personnel in the protection of species during construction, under the guidance of the suitably qualified ecologist. In the event protected species are found to be a constraint during the pre-construction surveys, and if a protected species licence is deemed to be required by the ecologist, then applications would be submitted to Natural England. These would be submitted sufficiently in advance of the works to meet with the optimum time for mitigation and to minimise any changes to the construction programme. Control measures that will be implemented during construction to protect designated sites, ancient woodland and habitats are: • Using demarcation fencing and signage where appropriate to establish and maintain appropriate buffer zones. • Mitigation for habitat degradation from potential construction related effects including dust deposition, air pollution, pollution incidents and water quality, would be provided through the adoption of construction industry good practice and environmental protection legislation during construction. For example, prevention of surface and		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	ground water pollution, soil removal and appropriate re-instatement. Any hedgerow sections that require removal would be reinstated in the same location where practicable. If reinstatement is not possible on the original alignment, then planting a mixture of native species would be undertaken within an appropriate location within the Order Limits as directed by a suitably qualified ecologist. For Site access, new hedgerows would be planted along new highway boundaries and visibility splays as soon as possible after works. *Black hairstreak and brown hairstreak butterfly* • Pre-construction surveys of hedgerow sections that will require removal will be undertaken during the winter months to assess for the presence of black hairstreak and brown hairstreak eggs. Blackthorn that is found to contain black hairstreak or brown hairstreak eggs would be translocated to an appropriate location within the Order Limits to enable the eggs to survive the winter and hatch the following spring. • Management of woodland, hedgerows and scrub habitat that contain Blackthorn would be undertaken in such a manner to ensure maintenance works do		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	not damage or destroy Blackthorn that could support black or brown hairstreak eggs. *Great Crested Newts* • Works with the potential to affect GCN would be carried out either under the Buckinghamshire District Level Licensing Scheme through NatureSpace Partnership or under a European Protected Species licence from Natural England. The licensable works would encompass clearance, and construction works required within the intermediate and distant habitat zones of ponds (likely up to 250m) within the Order Limits. *Reptiles* • Any vegetation clearance or ground clearance proposed within areas of habitat suitable for reptiles will be supervised by a suitably qualified ecologist. • A vegetation removal regime will be followed whereby any animals present are encouraged away from the cutting into retained habitats and not isolated in an unsuitable area. Each area will be walked by the ecologist to disturb reptiles prior to works commencing. • Vegetation is to be cleared at a minimum 150mm from the ground in the first pass.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Subsequent to this, a suitable period of time as decided by the ecologist will be given to allow for any reptiles present at the time of works to move away from the cut areas. • The vegetation will then be cut to as close to ground level as possible with vegetation cuttings being stored/used in habitat piles. • Any suitable reptile sheltering features (e.g. log piles, compost heaps or debris) will be identified by the on-site ecologist. These will be avoided if possible, if not they will be checked by the ecologist before their removal (should this be required). Any removal of sheltering habitats will be supervised by the ecologist. These will be dismantled by hand; this should be overseen by the ecologist. If a reptile is found, the ecologist will decide whether or not it is appropriate to relocate the animal. Shelter features that require removal must be reinstated near the clearance area in a quiet, sheltered location. This will ensure that no net loss of potential reptile shelter features takes place. *Ground nesting birds, non-ground nesting birds and wintering birds* • Appropriate pre-construction nesting bird surveys will be undertaken. A suitably qualified ecologist will		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	supervise all work during the nesting bird season and ensure appropriate measures are undertaken to prevent disturbance, injury and/or death to ground nesting and non-ground nesting birds. • Any vegetation clearance or ground clearance proposed within the nesting bird period (March to August inclusive) would be checked for the presence of any nests by a suitably experienced ecologist within 48 hours prior to vegetation removal or ground clearance. If active nests are found, appropriate buffer zones will be put in place and the area monitored until the young birds have fledged. Cleared ground would be maintained in a disturbed state in the run up to construction commencing to minimise the risk of ground nesting birds attempting to nest.		
	Barn owl, red kite, hobby and peregrine falcon (listed in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)) • These species are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) **[Ref. 5]** and are protected against disturbance when they are nesting and/or have dependent young. Due to this pre-construction surveys would be undertaken.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• If active nests are identified, then construction works would either be timed to avoid disturbance or suitable measures, including appropriate buffers from nests and demarcation during the breeding season, would be delivered to ensure disturbance is avoided to ensure legislative compliance. *Bats* • For 'key' hedgerows where sections of 10m or more in length are proposed to be removed, mitigation would be required in the bat activity season (April to October) to maintain linear connectivity for foraging/commuting bats. This would involve the temporary installation of structures in hedgerow gaps mimicking the hedgerow which bats could use for echolocation when commuting e.g. a double row of 'heras' type fencing with camouflage type netting on top or filled with brash; or shrubs/trees in movable planters every 5m. • This mitigation would be installed immediately after hedge removal (if undertaken in the bat activity season April to October) and left in place until works are completed. If the mitigation needs to be removed for works such as construction traffic access, the mitigation would be re-instated at the end of each day and retained until any new or replacement		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	hedgerow is sufficiently established as an effective flightline. • Preliminary bat roost assessment surveys of trees have been undertaken, as detailed in **ES Volume 4, Appendix 7.2: Bat Preliminary Roost Assessment Report (2022) [EN010158/APP/6.4]** and **Appendix 7.14: Bat Preliminary Roost Assessment Report (2025) [EN010158/APP/6.4]**. Prior to construction, further bat roost assessment surveys of trees will be undertaken. Trees that have been identified with bat roost potential will be protected by a buffer and demarcation fencing. • If it is found that any trees with bat roost potential would experience direct impacts, they would be surveyed prior to impact to determine presence/or likely absence of a roost. If a Bechstein's bat or barbastelle roost is identified within a tree that requires removal, the tree would be left in situ and retained in its entirety with an appropriate buffer. If a roost that is not a Bechstein's bat or barbastelle is identified, in the first instance the design of the Proposed Development would be amended to ensure retention and protection of the tree and roost with an appropriate buffer. If this is not possible, depending on the roost type and species using the roost, loss of a confirmed bat roost would be		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	mitigated and compensated under a European Protected Species licence from Natural England. • Proportionate noise considerations in relation to indirect/disturbance impacts will take into account the likely or confirmed value of any tree that could support roosts (bearing in mind structure and location within bat CSZ/home ranges), distance from works and time of year. Proportionate measures could include undertaking works under a Precautionary Working Method Statement (PWMS), buffer distances or timing restrictions whilst noting that, if bats are not in occupation, they cannot be disturbed. • The noise assessment within **Bat Technical Study [EN010158/APP/8.5]** [REP1-105] will be updated at detailed design stage prior to construction once the actual plant is confirmed. • A variety of bat boxes would be installed in suitable locations on hedgerow trees or in woodland to increase roosting opportunities. *Otters* • Pre-construction otter surveys will be undertaken to confirm any active holts, including further monitoring of resting places through the use of camera traps to		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	determine use by otters, with appropriate buffers maintained to prevent disturbance. *Badgers* • Pre-construction badger surveys will be undertaken to confirm status of existing badger setts and to identify the presence of any new setts with appropriate buffers maintained to prevent disturbance or damage to setts. • In the unlikely event that a sett cannot be avoided, then set closure will be considered under the appropriate licensing regime. *Invasive species* • Biosecurity procedures will be followed to ensure that no invasive species are brought onto the Site. • An invasive non-native species walkover survey will be undertake pre-construction that will cover both aquatic and terrestrial habitats and conducted by an appropriately experienced individual at an appropriate time of year. The pre-construction survey will be used to inform a biosecurity protocol if required. • In the event that any invasive non-native species are identified prior to and/or during construction, exclusion zones would be established and the		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	suitably qualified ecologist contacted for advice as required.		
Damage to trees and their structure	A site specific Arboricultural Method Statement (AMS) will be compiled, detailing the exact location and nature of protective fencing, tree pruning, signage, timings and methods of works and other protection measures. All site operatives must be made aware of the nature of the protection detailed in the AMS and it should remain in place throughout construction.		
	Minor works to vegetation such as lateral pruning or crown lifting will be undertaken where required as part of the permitted preliminary works to avoid damage to trees by construction activities. Some vegetation and tree clearance/pruning may also be required. These works will be undertaken by a qualified arborist and in accordance with an agreed specification set out within an Arboricultural Method Statement (AMS).		
	Any tree works or tree removals required to facilitate construction should be carried out before construction begins and be in accordance with the British Standard, BS 3998:2010 Tree Work – Recommendations.		
	It is proposed that tree protection fencing be installed around retained trees and groups of trees where they are in close proximity to areas of active construction		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	such as new highway junctions, internal access routes, construction of the Rosefield Substation, Main Collector Compound, BESS and cable corridors.		
	A indicative tree protection fence alignment is shown as a purple polyline on the plan at **Annex 5** and must be installed before any site mobilisation works such as installation of site offices or any ground works and before any construction begins. This alignment of tree protection fencing will need to be reassessed during the detailed design stage to reflect any new changes in layout, provide linear measurements, and ensure trees can be protected adequately.		
	The tree protection fencing should comprise c.2m high heras panels being fixed to a driven scaffold framework with supports on the rear facing side. Signs should then be fixed to every third panel informing operatives of the need to respect and not move fencing and this must be relayed in any site inductions. A fence specification and example of signage is shown at **Annex 6**.		
	Group G98, suspected to be black poplar, will remain unaffected by works and will be fenced to beyond its projected RPA.		
	A site induction must include information on trees and tree protection for all operatives. The induction must		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	include the simple instruction that tree protection fencing must not be moved and the fenced area remain unaltered. Trees must not be damaged, either directly or indirectly, by attaching anything to any part of its structure to erect the protective fencing. Additionally, the following points should be firmly communicated during the induction: • Any inadvertent damage to trees or their protective elements must be reported to a site foreman and corrected immediately, to ensure that it remains effective in protecting the area around trees. If there is any doubt an appointed arboriculturist should be contacted to gain clarification on how to proceed. No materials, fuel, large volumes of water or chemicals to be discharged or mixed where they are likely to flow toward trees in the event of spillage. • Wheel wash stations should be self-contained units where they are sited near retained trees or resultant water must be directed well away from areas where they may flow toward tree root areas. • Any concrete mixing stations must have protective bunds constructed around them to ensure containment of resulting debris or contaminants (see **Table 3.6** for further detail around managing concrete).		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Any spillages of potential contaminants near trees must be reported immediately to the site manager or arboricultural consultant and action taken to either flush the soil with large volumes of water or create a bund to avoid contaminants flowing toward tree protection areas.		
	Excavation works (including the installation of Solar PV fencing, drainage and cabling) • Where installation of Solar PV security fencing within retained tree Root Protection Areas (RPAs) cannot be avoided through detailed design, works shall be undertaken under the supervision of a suitably qualified arboriculturist. Fence alignments shall be micro-sited where practicable to avoid significant roots, excavation shall be undertaken using hand-dig methods only, and any roots encountered shall be retained wherever possible. Where significant roots are identified, fence post locations shall be adjusted to avoid root severance. No storage of materials, spoil, plant or construction traffic shall be permitted within RPAs unless suitable tree protection measures have first been implemented in accordance with BS 5837:2012. Access • Where temporary access during the construction phase is required within the retained woodland buffers, these shall be minimised as far as reasonably practicable and undertaken under the supervision of a suitably qualified arboriculturist and/or ecologist, where appropriate. Any temporary access required within woodland buffers shall utilise ground protection measures where necessary to prevent soil compaction and damage to retained trees, woodland edge habitats and rooting environments.		
Impacts to aquatic invertebrates during the installation of the	• The clear span bridge crossing of the existing Claydon Brook watercourse will be designed to promote longitudinal connectivity for flora and fauna along the riparian corridor.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
headwalls for the outfall locations	• Schedule in-water work outside of fish spawning and migration windows (e.g., March to September in many salmonid habitats). • Implement strict measures to prevent the spread of invasive species (e.g., cleaning tools, waders, and machinery). • Maintain riparian vegetation and use silt fencing/sediment mats to prevent runoff into the water. • Install cofferdams, sandbags, or sheet piles to isolate the working area. Where necessary, divert water around the Site using flumes or pipes to maintain downstream flow. • Pump water from the contained area to a settlement lagoon or filter system before returning it to the watercourse. • Install floating silt curtains or turbidity barriers around the outfall construction area to contain suspended solids. • Conduct daily visual monitoring of turbidity upstream and downstream of the works. • Adopt stages method where work stops to allow sediment to disperse. • Use biodegradable hydraulic oil in any machinery operating in or near water, where practicable. • All concrete pours must be done in the dry. Sealants should be used to prevent cement/grout leakage (see **Table 3.6** for further detail around managing concrete). • Ensure temporary structures, such as cofferdams, do not block the entire channel, allowing for continued fish migration. • In the event of a spill, work will stop immediately, and pollution will be contained using on-site spill kits. • If heavy rain is forecast, suspend any in-water works and secure all materials to prevent them from being washed downstream.		

Table 3.3. Climate

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Release of greenhouse gas (GHG) emissions during construction	Lean design to minimise use of concrete, steel, aggregates, etc.	Weather forecasts to be monitored on a daily basis. Forecasts would be used to inform the sequencing of activities and the use of appropriate personal protective equipment (PPE); Increased requirements for monitoring and maintenance due to enhanced severity and frequency of extreme rainfall events.	The Applicant
	Implementing measures to decrease fuel use by maximising energy efficiencies in vehicles and plant, for example to ensure all vehicles switch off engines when stationary and ensure vehicles are well maintained and conform to current emissions standards;		Principal Contractor Responsibilities will be confirmed within the CEMP(s).
	Promoting the use of sustainable fuels in vehicles, and where possible making use of electric vehicles to reduce fuel consumption;		
	Using locally sourced and/or produced materials. The use of recycled aggregates, where appropriate, for foundations, subbases, hard-standings and pavement materials		
	Actions to meet the waste hierarchy in accordance with the principles of the Government's Resources and waste strategy for England 2018 **[Ref. 6]**. Promoting the recycling of materials by segregating construction waste to be re-used and recycled where practical.		
	Members of the procurement team will explore opportunities to reduce emissions associated with the supply chain and, where practicable, will look to propose		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	environmentally friendly options to minimise emissions and benefit the local environment.		
Failure of assets due to changes in climate	The condition and integrity of assets would be regularly assessed, and maintenance undertaken as early as required, giving consideration to materials with enhanced tolerance to fluctuating temperatures and exposure to rainfall.		
The risks presented by climate hazards	Provision of welfare facilities including breaks, shade, and hydration facilities, as well as first aid amenities; Provision of an Incident Response Plan that identifies flooding as a key site risk and identifies the correct policies and procedures to follow in the event of such; Monitoring and maintenance of plant and equipment to ensure compliance of machinery with design specifications and flexibility in the construction activities programme to account for climatic variation; and Appropriate on-site storage of plant and equipment;		
An increase in the magnitude and frequency of wildfire occurrences may prevent the undertaking of some construction activities.	An Emergency Response Plan will be developed which clearly establishes the procedures to be followed in the event of a wildfire, which will include on-site fire prevention, suppression, and evacuation procedures		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Extended periods of increased rainfall have the potential to cause pluvial flood risk.	Ensure alternative access routes are provided in the event of flooding in nearby areas. Ensure safe access is always available to key assets with consideration given to ground conditions	Monitor changing weather forecasts and river levels on a daily basis, or more frequently if adverse weather is forecast.	

Table 3.4: Cultural heritage

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Dust and noise from construction activities	Best practice mitigation will be used to minimise dust and noise from activities and vehicles that might impact on cultural heritage assets.	N/A	Principal Contractor Responsibilities will be confirmed within the CEMP(s).
Accidental damage to sensitive archaeological remains and heritage assets	Protection measures for any archaeological remains preserved in situ through the detailed design and heritage assets will be added to the detailed Construction Environmental Management Plan(s) including detail on the location and vulnerability of these assets. Mitigation measures within the final Archaeological Management Strategy will be agreed with Buckinghamshire Council in consultation with Historic England and will be included in the detailed Construction Environmental Management Plan(s).		

Table 3.5: Landscape and Visual

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Damage to existing and established hedgerows, trees and woodland.	Ensure that construction is undertaken in a sensitive manner with regard to the existing landscape fabric within the Site. All existing hedgerows, trees and woodland would be retained and protected during construction. (except where removal is indicated on the vegetation removal plans shown in **Outline LEMP, Appendix 3: Vegetation Removal Parameters [EN010158/APP/7.6]**).	N/A	Principal Contractor Responsibilities will be confirmed within the CEMP(s).
Impact to visual receptors	Ensure that construction compounds are maintained in a neat and tidy appearance.		

Table 3.6: Land and groundwater

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Impact to land and groundwater from concrete, trenches and foundations	Minimise the use of concrete, trenches and foundations. See 'contamination of soil/groundwater' below for how concrete will be managed to mitigate impacts to groundwater.	The activities undertaken during the construction phase will be audited against the requirements of the detailed	The Applicant Responsibilities will be confirmed within the CEMP(s).

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		Construction Environmental Management Plan(s) by the Principal Contractor to ensure adherence.	
Contamination of soil/groundwater **Impacts to human health and the environment due to contamination during construction works.** **Contamination of soil/groundwater (including groundwater abstraction points)/surface water**	A ground investigation and accompanying interpretative report is required. The scope and methodology should be confirmed and agreed with the relevant local authority and statutory consultees before commencement of any works. This will include the following requirements: • The investigation should target potential sources of contamination identified within the Preliminary Risk Assessment and determine whether sensitive receptors are at risk from potentially complete pollutant linkages. Should viable pollutant linkages be identified further investigation and assessment and/or a remediation strategy should be developed, with the results confirmed and agreed with the relevant statutory consultees (i.e. local authority and Environment Agency).	The activities undertaken during the construction phase will be audited against the requirements of the CEMP(s) and the Soil Management Plan (SMP) by the Principal Contractor to	The Applicant Principal Contractor Responsibilities will be confirmed within the CEMP(s).

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Obtain information on the underlying ground conditions and collect geotechnical data to inform the foundation requirements of the development. • Obtain sufficient information on the underlying ground conditions to inform the piling risk assessment, if required. • Ground gas and groundwater monitoring will be undertaken if required, and any associated mitigation would form part of the detailed Construction Environmental Management Plan(s). • Collect representative information on the underlying ground conditions to confirm the nature of the soils present and determine if these are in agreement with the assumed conditions that have informed the selection of the mineral safeguarding areas, as set out in the Buckinghamshire Minerals and Waste Local Plan. This work will be completed prior to construction works commencing and the report will be issued to the Local Planning Authority. This will provide further information relating to potential pollutant linkages that were identified by **ES Volume 4, Appendix 11.1: Preliminary Risk Assessment [EN010158/APP/6.4].** If any further mitigation is required, this will be set out in the detailed Construction Environmental Management Plan and detailed Decommissioning Environmental Management Plan and in agreement with the Local Planning Authority.	ensure adherence. Groundwater monitoring will be undertaken (if required) and agreed in advance with Buckinghamshire Council and the Environment Agency.	

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	Following the completion of the ground investigation works, the Mineral Safeguarding Assessment will be updated and issued to the Local Planning Authority. Before any construction activities occur near the identified wells, further investigation as to the status of these wells will be undertaken and, if they remain operational, appropriate mitigation put in place and the detailed Construction Environmental Management Plan updated accordingly. The Environment Agency assign a default 50m radius groundwater Source Protection Zone 1 to any point where groundwater is abstracted for domestic supply or for food production purposes. Procedures to avoid damage to human health due to contamination, and to avoid, minimise or mitigate effects on the environment during construction works. This includes managing risks from former agricultural activities such as foot and mouth burial pits, waste pits, pesticides and asbestos containing material, ensuring that land and groundwater receptors are protected from effects of contamination associated with historical usage of the land. These measures shall include the following: • Good housekeeping and site maintenance, including management of materials and waste; • Maintain records relating to routine inspections, investigations, corrective actions and action schedules;		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Procedures to mitigate against erosion; • Procedures to prevent disturbance of contamination; • Emergency procedures to manage accidental spillages and leaks in order to minimise any risk to the land and groundwater during the construction phase; and • Management plans to cover the use of HDD, including the use of drilling muds. With specific reference to uncovering unexpected existing animal burial pits, the following steps should be taken: • Stop work in the immediate area and cordon off the affected area to prevent access to the pit; • Do not handle the remains; • Report the findings to the Environment Agency, Buckinghamshire Council and the Animal and Plant Health Agency; • If excavation and disposal of remains is required in order to proceed with the Proposed Development, a licence will be required under the Control of Pollution Act 1974, and disposal will be conducted in line with Animal By-Products Regulations, and in accordance with the Animal and Plant Health Agency guidance document on Exhumation and Disposal of Animal Carcases (AB142, revision 02/18).		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	Water Pollution • Surface water and drains must be protected from silt run-off: use drain guards to protect drains. Use straw bales, gravel traps or silt fencing to protect surface waters. All silt protection measures must be inspected frequently and maintained throughout the works. • Stockpiles of contaminated materials must be situated on an impermeable surface at least 10m from any surface waters or drains, and run-off collected within a bund. If required, these would be covered, or stored in a suitable container, to prevent leaching of contaminants. • Tracking or washing out next to drains/surface waters must be avoided. • When dewatering, any pump shall be switched off before removing the last potion of water and suspended solids will be allowed to settle out before discharging. • All drains located adjacent or near to generators to be covered with drain guards. • Potentially contaminated water must be tested before dewatering. Contaminated water must be treated or discharged offsite. Specification for testing and assessment of potentially contaminated water will be confirmed within the detailed Construction Environmental Management Plan(s).		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Road sweepers shall be utilised where necessary. • Silty water and associated run-off to surface water and drains must be avoided: minimise any areas of soil stripping and stockpiling, control water volumes used to supress dust, batter/sheet stockpiles where required. • If a discharge consent is required, then all conditions within the consent must be understood before commencement of dewatering. • The transformers will be bunded and placed on an impermeable base and will have separate oil interceptors and an emergency shut off system to prevent fire risk and the contamination of firewater and surface water runoff. All bunds will have 110% capacity of oil in the transformers as per the relevant requirements. *Fuel storage* • Fuel levels shall be monitored and recorded regularly (sudden changes may be a sign of leaks). • Fuel tanks, secondary containers and storage compounds shall be inspected regularly for damage, corrosion, leaks, faults and vandalism. Repair defects/faults immediately and retain records. • The secondary containment system must provide storage for at least 110% of the tank's maximum capacity and ensure that any valves, filters, sight gauges, vent pipes or other ancillary		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	equipment are also situated within the secondary containment system and arranged so that any discharges would be contained. • Fully lockable and labelled 'Fuel Safe Static Tank' will be deployed. • Sufficient spill kits will be provided. Spill kit supply to be monitored regularly to ensure adequate stock remains full. • Spill kits will be available within each plant onsite and located close to identified pollution sources or sensitive receptors (fuel storage areas, water course crossings, etc.). • All drains located adjacent or near to refuelling points shall be covered by a drain guard before commencing transfer. All fuel transfers to be supervised. • Drums must be stored in a secure interceptor drum store within the designated refuelling area. • Oil spill and oil impacted water must be collected in a fuel safe container with fuel tags. Fuel spills must be contained using the spill kits provided, spills should be reported to the contractor's Site Manager immediately. • Records must be maintained of all environmental incidents, mitigation works, clean up method and validation. • A suitable container for hazardous wastes must be provided within the waste compound.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	Refuelling • Where possible, refuelling should only be carried out in a designated area, which will be secured/locked out of hours. • The refuelling area shall be located away from drains and watercourses (>10m from a watercourse and >50 meters from a spring, well or borehole) and should not be undertaken near any standing water (such as puddles etc.). • Areas of permanent waste oil/fuel/chemical storage will be located 50m away from watercourses or drainage paths. Where this is not possible, advice will be sought from the Environmental Manager and a minimum distance will be agreed with the Applicant. • Drip trays or equivalent should be used for all refuelling plant. • Refuelling will always be supervised by a competent supervisor. • Mobile plant must be refuelled away from surface waters, drains, permeable pavements and open excavations. A fuel drip tray must be used. *Use and storage of hazardous materials/substances* • Concrete will be required for the construction of the Independent Outdoor Equipment (standalone central inverter, transformer and switchgear), Satellite Collector Compound, Main Collector Compound, Rosefield Substation and Battery Energy Storage System which will be cast in-situ or precast. For in-situ concrete		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	pours, these should be minimised during heavy precipitation events, where practicable. • Any concrete mixing stations must have protective bunds constructed around them to ensure containment of resulting debris or contaminants. • Concrete wash-out onsite shall only be permitted when the Principal Contractor has provided a designated, suitably prepared wash-out area with signage identifying the area as suitable for wagon wash-out. • Designated concrete wash-out areas should be sealed to prevent loss of fluid to ground or water. • Concrete wash-out may be dried and crushed to be re-used on Site or disposed of in accordance with a Site Waste Management Plan. • Surplus dry concrete, cement and grout is to be collected and reused where possible e.g., as inert rubble; reuse of dried materials may require environmental permits or exemptions. • Areas of permeable pavements are not to be used for the temporary storage of cement bags. If unavoidable ensure adequate protection measures are in place to prevent the pavement from becoming blocked. • The Principal Contractor is responsible for carrying out a risk assessment of each substance and ensuring that all appropriate		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	storage, protective equipment and if necessary, emergency procedures are put in place on Site. • All hazardous materials shall be labelled, sealed and stored with their COSHH assessment in a bunded and lockable container away from drains and watercourses when not in use. • COSHH datasheet will be read and understood before using any hazardous materials. • Any spent (contaminated) spill kits, absorbent granules, sheets or fibres must be disposed of in accordance with COSHH regulations and Site Waste Management Plan requirements. • Hazardous liquids shall be transferred using a funnel and drip tray and sealed and returned to the container immediately after use. Damaged containers shall be reported to the Site Manager. • All usages of hazardous liquids shall comply with its requirements for safe handling and storage. • Hazardous liquids must be re-sealed after use. Empty containers are to be disposed of to the designated container within the waste compound. *Site set up, groundwork and construction* • Minimise the use of builders skips and inspect lifting and locking points, doors and door locks and general condition weekly as minimum.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Ordered materials shall be adequately managed to avoid spoilage or overordering and surplus materials shall be minimised: provide a suitable and sufficiently sized materials storage compound that is lockable and provides an above-ground covered area, protected from wind and rain. Encourage the reuse of cut-offs and arrange for suppliers to take back unused surplus materials and packaging. • Storage compounds will be located away from any identified water features. • Surplus materials are to be reused onsite where possible. All reuse and recycling to be carried out in accordance with the terms of a valid waste exemption or voluntary codes of practice/protocols. • Excavated material surplus shall be minimised so far as practicable; details of all inert material reuse onsite including composition and disposal location must be mapped and records retained. Refer to CL:AIRE DoW:CoP, which is outlined in **Appendix 1** (Outline SWMP) **Section 3.5**, of this document. • If necessary temporary bunding will be installed to allow for isolation and onsite treatment of any sediment laden or contaminated water prior to discharge to the drainage system. • Spill kits capable of dealing with hydrocarbon and chemical spills shall be available at all worksites. Each storage location shall be		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	clearly visible to the workforce, for instance by deploying clear signage. • If a construction compound, fuel storage point or COSHH store is provided then additional spill kits will need to be available at each separate location. • The spill kit contents shall include absorbent pads, absorbent booms, absorbent granules and hazardous waste disposal sacks as a minimum. Regular checks of the spill kits shall be completed to ensure they remain adequately stocked to deal with environmental incidents. • Spill drills shall be performed periodically to confirm that the workforce can effectively contain and clear up potentially polluting spillages. All drills will be documented and details kept on record for the duration of the works. • Water wheel washing or 'dry brush' wheel washing will be undertaken, if required. If water wheel washing is undertaken, it will be undertaken within a contained designated impermeable or lined area and should not be allowed to discharge into a watercourse or infiltrate to groundwater. The site of the wheel washing facilities should be a minimum of 10m from the top of bank of watercourses / ditches. *Spillages and Leaks*		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility

	All pollution incidents should be managed through the STOP – CONTAIN – NOTIFY concept.
	
	STOP: Immediately stop the discharge to prevent further spread to drainage, waterbody or ground.
	
	CONTAIN: Control the spill to prevent environmental impact, such as by stopping works or using containment material. Personal safety take priority, especially if the spill substance is unknown.
	
	NOTIFY: Promptly inform the appropriate authorities and contacts e.g. Environment Agency and the Applicant.
	
	• Oil, Fuel or Chemical Spill to Ground:
	  ○ Wearing protective clothing, stop release at the source and secure the area.
	  ○ Create temporary bunds to contain the spill if it is migrating.
	  ○ Protect nearby drains/ditches using drain seals or spill kit materials.
	  ○ Absorb the spill with granules or pads from the spill kit.
	  ○ Notify the Environment Agency with details on time, type/quantity, location, and site contact information.
	  ○ Inform the Applicant and Local Planning Authority if required under Environmental Damage Regulations.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	○ Keep containment in place until contamination is assessed and a remediation strategy is developed ensuring this is undertaken as soon as practicable. • Oil, Fuel or Chemical Spill to Waterbody: ○ Wearing protective clothing, prevent further release at source and contain the spill. ○ Deploy booms from the spill kit across the water to stop spread; tie them to banks and add more as needed. ○ Notify the Environment Agency with discharge details and inform the Applicant. • Oil, Fuel or Chemical Spill to Drainage System: ○ Wearing protective clothing, stop further release and deploy drain covers to affected gullies. ○ Supplement containment with booms around the gully to control migration. ○ Notify the Environment Agency and relevant water company with details on discharge time, type/quantity, specific drain location, and contact information. ○ Notify the Applicant and Environment Agency as needed. • Silt Discharge		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	○ Cease dewatering or other activity causing silt release. ○ Use drain seals, hay bales, silt fencing, or bunds to contain and direct silt away from sensitive areas. ○ If the silt discharge enters drains or surface waters without prior approval, notify the Environment Agency and relevant water company. • Contamination involving Waste Materials ○ Evacuate the area if necessary, especially if fumes are present. ○ Assess whether segregation of waste can mitigate the issue. ○ Conduct a risk assessment including COSHH considerations. ○ If segregation is unsafe, classify the entire waste volume as hazardous. ○ Report the incident to the Applicant. ○ Dispose of waste according to standard site procedures. Development has not yet begun so the specific panel makeup, cabling and firefighting products, is not known. The Applicant shall prioritise the procurement and installation of cables and construction materials that are free of PFAS. The use of PFAS-containing		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility

materials (including fluoropolymers such as PTFE, PFA, and PVDF) will be considered where PFAS-free alternatives are not technically feasible, do not meet required safety and performance standards, or are not commercially available at a reasonable cost. The Applicant will request from contractors a justification for any necessary use of PFAS-containing components.

- Discovery of Unexpected Contamination
    1. In the event that land contamination, including groundwater, is found at any time when carrying out the authorised development, which was not previously identified in the environmental statement, then no further development (unless otherwise approved in writing by the relevant authorities) shall be carried out within the identifiable perimeters of the area in which the suspected contamination is located. It must be reported as soon as reasonably practicable to the Local Planning Authority, and where necessary, the Environment Agency, and the Applicant must complete a risk assessment of the contamination in consultation with the Local Planning Authority, and where necessary, the Environment Agency.
    2. Where the Applicant determines that remediation of the contaminated land is necessary, a written scheme and programme for the remedial measures will be taken to render the land fit for its intended purpose must be

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
		submitted to and approved in writing by the Local Planning Authority, following consultation with the Environment Agency. 3. Remediation must be carried out in accordance with the approved scheme under sub paragraph (2). 4. Following the implementation of the remediation strategy approved under sub-paragraph (2), a verification report, based on the data collected as part of the remediation strategy and demonstrating the completion of the remediation measures must be produced and supplied to the relevant Local Planning Authority and the Environment Agency.	
Changes to land drainage as a result of piling activities, earthworks, access tracks and excavation.	Along with preventing damage to the quality of groundwater, any potential impacts on the existing groundwater levels and flow directions during construction will be minimised by ensuring the mitigation measures in this table are adhered to.		
	Completion of a piling risk assessment prior to construction works commencing.		
	Land drainage system which are damaged would either be reinstated or diverted prior to handing the land back to the land owner to ensure that there would be no lasting impact from the baseline.		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	Trenchless HDD methods would be undertaken in accordance with a HDD Fluid Breakout Plan (as provided **Appendix 3** of this Outline CEMP).		

Table 3.7: Soil

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Compaction, damage and deterioration of soil and agricultural land as a result of trafficking of agricultural land by construction vehicles, compounds, installation of the cable route and earthworks.	Stripping of topsoil at start of construction and track matting laid	The activities undertaken during the construction phase will be audited against the requirements of the CEMP(s) and the Soil Management Plan (SMP) by the Principal Contractor to ensure adherence.	Principal Contractor Responsibilities will be confirmed within the CEMP(s).
	Storage of topsoil within bunds and seeded for periods greater than six months		
	Management of vehicle movements		
	The timing of works will be managed carefully to consider weather conditions, particularly heavy and persistent rain to minimise vehicles travelling across the Site when soil conditions are wet.		
	Monitoring of soil stockpiles		
Intermixing of soils	Spreading of stone on Construction Compound locations		

Table 3.8: Noise and vibration

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Noise impact at the nearest noise sensitive receptors/residential properties is reduced.	Use of equipment with low noise emissions, where feasible. Orientating noise emitting equipment to reduce noise level beyond the Order Limits.	Targeted short-term attended monitoring to be undertaken at key sensitive receptors to ensure noise levels remain within defined acoustic criteria. This would consider periods when construction works are being undertaken in the vicinity of off-site receptors where targeted mitigation measures have been introduced to avoid potential exceedances of the defined acoustic criterion.	Principal Contractor Responsibilities will be confirmed within the CEMP(s).
Potential noise and vibration impacts at receptors in the vicinity of the construction works.	Best Practicable Means as defined by the Control of Pollution Act 1974 **[Ref. 7]** would be adopted, which would serve to minimise		
Noise level impact from the construction	A number of measures that may be employed where reasonably practicable to mitigate the noise level impact from the construction phases are outlined below: • Where practicable, temporary enclosures will be used to screen all static or semi-static plant from noise sensitive receptor locations; • All engine compartments or acoustic enclosures are closed whilst engines are running; • Minimising drop heights of materials i.e. carefully depositing materials; • Avoiding vehicle movements over irregular surfaces (which tends to create more noise/vibration emissions)		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• At all times, workers' shouting or raised voices to be kept to a minimum; • All plant, equipment and noise control measures applied to plant and equipment to be maintained in good and efficient working order and operated such that noise emissions are minimised as far as reasonably practicable • Any plant, equipment or items fitted with noise control equipment found to be defective will not be operated until repaired • Machines in intermittent use to be shut down or throttled down to a minimum during periods between works • A quiet working ethic will be employed to ensure that all members of the workforce have consideration for the nearby residents and businesses • Prohibit sounding of vehicle horns to gain access to the Primary and Secondary Construction Compounds • The delivery routes set out in the **Outline CTMP [EN010158/APP/7.5]** will be communicated to and adhered to by all suppliers • Design the Primary Construction Compound and Secondary Construction Compound layouts to reduce		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility

	the need for reversing vehicles and ensure that drivers are familiar with the worksite layout
	• Utilise reversing alarms incorporating one or more of the features listed below (or other comparable system):
	  • Highly directional sounders
	  • Use of broadband sounders
	  • Self-adjusting output sounders
	  • Flashing warning lights; and
	  • Reversing alarms that are set to the minimum output noise level required for health and safety compliance.
	• Toolbox talks carried out by the Principal Contractor to ensure that all members of the workforce are aware of potential noise impacts on the sensitive receptors in the surrounding area.
	• Potential disturbance to livestock would be managed through appropriate consultation with the relevant land interests so that they are aware of the construction works that will be taking place close to particular fields.
	• The control measures with regards noise set out in The British Horse Society document 'Advice on		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	Construction sites and horses' **[Ref. 8]** would be implemented, where applicable.		

Table 3.9: Water

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Pollution discharge to watercourses and degradation to water quality during construction	The protection of water quality would be focused on reducing the mobilisation of silt and pollutant chemicals from entering watercourses, usually via rainfall runoff. The measures outlined in **Table 3.6** in relation to groundwater will also be adhered to in order to protect surface water quality. The measures set out in **Table 3.2** to protect biodiversity will also be applied here to protect surface water quality. Further pollution prevention management measures, above those mentioned in **Table 3.6** are outlined below: • No vehicle, equipment or material storage is permitted within the Flood Zone 2 or Flood Zone 3 or within 20m of watercourses, where practicable. • The placement of stockpiled materials as far away as practically possible from sensitive receptors (including watercourses and within Flood Zone 2 or Flood Zone 3).	Water monitoring regime will be undertaken 6 months pre-construction, during the construction phase, and 12-months post-construction. Further details of the monitoring would be set out at detailed design stage and in agreement with the Environment Agency and Buckinghamshire Council.	Principal Contractor Responsibilities will be confirmed within the CEMP(s).

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	• Vegetation removal to be undertaken on a phase-by-phase basis to avoid excessive exposure of bare soil. • Silt fencing or straw bales to be placed downslope of construction works to prevent silt entering watercourses. • Additional silt fencing kept on site for deployment at short notice. • A wheel wash at the Site access to reduce silt migration across the Site. • Vehicles to be inspected at the start of each day, and vehicles showing signs of fuel/oil drips, missing fuel caps, or damaged hydraulics would be rejected and not used on Site before repair. • Fuels would be stored in a double skinned locked and bunded fuel bowser as far away from watercourses as reasonably practicable. Refuelling would be carried out over a drip tray. These would be regularly maintained and inspected for rainwater. Rainwater would be removed by specialist removal. A spill kit would be located next to any bowser. • Spill kits would contain as a minimum: spill booms, granules, mats and gully covers. • All surface waters and drains must be protected from silt runoff using gully guards, straw bales, gravel traps		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	or silt fencing. These measures must be inspected daily.		
	If uncontaminated firewater is captured, it is recognised that a water discharge activity permit or other environmental permit may be required to release uncontaminated firewater to the local drainage network and this may take several months. Section 6.7 of the **Outline Drainage Strategy [EN010158/APP/7.11.3]** sets out that firewater is able to be retained on site for an extended period prior to discharge. Further detail on firewater containment, storage capacity and operational controls will be confirmed at detailed design to ensure continued safe and resilient operation of the BESS during any period of retained storage		
	A temporary drainage strategy would be implemented during construction works to control runoff rates and sediment mobilisation to ensure water does not enter surface water drains without treatment. This would include identifying all land drains and waterbodies in the Order Limits and ensuring that they are adequately protected using drain covers, sand bags, earth bunds, geotextile silt fences, straw bales, or proprietary treatments (e.g. lamella clarifiers). Site drainage, including surface runoff and dewatering effluents, will be discharged to sewers where practicable and relevant permissions will be obtained from the		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	sewerage or statutory undertaker. Discharge to watercourses will only be permitted where discharge consent or other relevant approval has been obtained (where necessary). The drainage during construction will receive appropriate pollution control measures as agreed with the sewerage undertaker or the Environment Agency as appropriate. Holding or settling tanks, separators, and other measures may be required, will be provided and maintained. The relevant sections of BS 6031: Code of Practice for Earthworks will be followed for the general control of site drainage. Appropriately sized runoff storage areas for the settlement of excessive fine particulates in runoff will be provided. Construction site runoff will either be treated on-site or discharged under a Water Discharge Activity Permit from the Environment Agency to Controlled Waters (potentially also including infiltration to ground) or to the nearest public sewer with sufficient capacity for treatment following discussions with Anglian Water, or removed from site for disposal at an appropriate and licensed waste facility. Trenchless HDD methods would be undertaken in accordance with a HDD Fluid Breakout Plan (as provided **Appendix 3** of this Outline CEMP).		

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Increase in flood risk	Fluvial modelling will be updated during the detailed design stage prior to construction activities starting, using the latest EA flood risk maps. Further modelling will be undertaken at detailed design to determine if the detailed design of the Proposed Development would increase flood risk outside of the Order Limits. If there is an increase to flood risk outside of the Order Limits, floodplain compensation will be provided, in consultation with the Environment Agency, to ensure that there is no increase in flood risk outside of the Order Limits. Engagement with the Environment Agency will occur throughout the detailed design stage on the need, method of calculating volumes, modelling and design of any floodplain compensation that may be required. Given the minor nature of the losses this is likely to be provided through localised groundworks with details provided to the Environment Agency at the detailed design stage. In principal, if required, floodplain compensation will be: • Level-for-level. • Volume-for-volume. • Localised. • Shown to achieve net gain where possible. • Demonstrated to not inhibit flood flow routes.	Following a flood event, visual inspections along the fencing will be undertaken to identify any blockage which, if identified, will be cleared and any remedial works undertaken.	The Applicant

Potential impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	If this is not feasible, the Applicant will seek further input from the Environment Agency at detailed design stage. If required, following detailed design, flood compensation will be in place in a suitable location that is hydraulically linked with the floodplain prior to construction of the Solar PV development located within the design flood extent.		
	Fencing installed around the Solar PV development will be standard deer fencing which will be similar to high-tensile, galvanised steel wire that is commonly used for agricultural use. As an indicative, the wire will either be a standard wire netting as used in forestry or have a smaller mesh at the bottom, close to the ground at around 75mmx75mm. The mesh can be larger higher up the fence. Post distance will be around 3-5m as is common for stability, with a maximum post to post distance of 10m. Posts may be closer together when gate or tensioners are required. Further detail on fencing will be provided at detailed design stage.		
	A Flood Management and Evacuation Plan would be produced prior to the construction phase commencing for any areas of the Proposed Development (mainly Internal Access Corridors and Solar PV modules) that intersect areas of flood risk.		

4. Implementation

4.1.1. The detailed CEMP(s) will set out all roles, responsibilities and actions required in respect of implementation of the measures described within this Outline CEMP, including:

- An organogram showing team roles, names and responsibilities;
- Training requirements for relevant personnel on environmental topics;
- Information of onsite briefings and Toolbox Talks that will be used to equip relevant staff with the necessary level of knowledge to follow environmental control procedures;
- Measures to advise employees of changing circumstances as work progresses;
- Communication Strategy (internal and external);
- Procedures for monitoring, inspections and reporting of site operations;
- Document control; and
- Environmental emergency procedures.

4.1.2. Detailed CEMP(s) are also to include further details of the following measures:

- Construction Method Statements;
- Construction programme;
- Hours of work;
- Details of construction lighting;
- Details of site security and fencing arrangements;
- Details of Site set up, layout and use of Construction Compounds, including parking provisions;
- Information regarding procedures for the accidental release of potential pollutants including fuel/oil spillage and surface water release, including pollution incident response plans;
- Monitoring requirements; and
- Accordance with the SWMP.

4.1.3. In addition, the environmental management plans detailed in **Paragraph 1.1.12** are to be prepared as part of the detailed CEMP(s) prior to the construction phase.

5. Monitoring and Reporting

5.1. Process for Monitoring, Inspections and Audits

5.1.1. Monitoring and reporting will be undertaken for the duration of the construction phase in order to demonstrate the effectiveness of the requirements and measures set out in the detailed CEMP(s) and related construction controls and allow for corrective action to be taken where necessary.

5.1.2. As part of the monitoring process the designated Environmental Manager will be present onsite throughout the construction phase and when new activities are commencing. The Environmental Manager will conduct weekly Site inspections, monthly compliance check against the environmental management system including management plans and monitoring. They will also conduct a management system audit in line with the project management plan, engage with senior leadership in line with the project management plan and record assurance activities in line with the contractor's management system; including reporting and analysing data, trends and improvements to the management system.

5.1.3. The Principal Contractor will be informed of any deviations from the detailed CEMP as soon as possible following identification of such issues, and if required further follow up will be sought. The Environmental Manager would also act as day-to-day contact with relevant local authorities and other regulatory agencies such as the Environment Agency.

5.1.4. During construction, the Environmental Manager will conduct walkover surveys to ensure all requirements of the detailed CEMP(s) are being met. Action from these surveys will be documents on an Environmental Action Schedule, discussed with the Site Manager for programming requirements and issued weekly for actioning.

5.1.5. The Environmental Manager will also arrange regular formal inspections and audits to ensure the requirements of the detailed CEMP(s) are being met. Details of monitoring, inspection and audits to be undertaken will be provided in the detailed CEMP(s).

5.1.6. After completion of the works, the Environmental Manager will conduct a final review.

5.2. Records

5.2.1. Records will be managed through the Quality and Safety Management Systems (QMS) and the Environmental Management System (EMS) of the

Principal Contractor which will be certified in line with the ISO 14001 standards.

5.2.2. The Environmental Manager/Project Manager will retain records of all monitoring, inspections and audits and records related to environmental issues at the Site. Documents shall be stored in a suitable manner and backups created to safeguard the records. These records will include:

- Results of routine Site inspections by Environmental Manager/Project Manager;
- Environmental surveys and investigations;
- Environmental Action Schedule;
- Environmental equipment test records;
- Licenses and approvals; and
- Corrective actions taken in response to incidents, breaches of the approved detailed CEMP(s) or complaints received from a third party.

5.2.3. The detailed CEMP(s) will be updated if it is necessary to add additional control measures, with a full review as required throughout the construction period. Existing control measures and mitigation will not be amended without prior agreement with Local Planning Authority.

6. References

- **Ref. 1**: British Standards Institution (2014) British Standard 5228:2009+A1:2014, Code of practice for noise and vibration control on construction and open sites (Part 1: Noise). London: British Standard Institution.

- **Ref. 2**: UK Government (2013). The Waste Electrical and Electronic Equipment Regulations (2013). Available online: https://www.legislation.gov.uk/uksi/2013/3113/contents/made

- **Ref. 3**: CIRIA (2023). Environmental good practice on site guide (fifth edition) (C811).

- **Ref. 4**: Regulation (EU) 2016/1628 of the European Parliament and of the Council. Available online: https://www.legislation.gov.uk/eur/2016/1628/article/4

- **Ref. 5**: The Wildlife and Countryside Act 1981 (as amended). Available online: https://www.legislation.gov.uk/ukpga/1981/69

- **Ref. 6**: Department for Environment, Food and Rural Affairs (2018). Resources and waste strategy for England. Available online: https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england

- **Ref. 7:** Control of Pollution Act 1974. Available online: https://www.legislation.gov.uk/ukpga/1974/40

- **Ref. 8:** The British Horse Society (2024). Advice on Construction sites and horses. Available online: https://www.bhs.org.uk/media/kvbajook/construction-sites-0824.pdf

Appendix 1 - Outline Site Waste Management Plan

Rosefield Solar Farm

Outline Site Waste Management Plan (Clean)

EN010158/APP/7.2.4
Revision 4
Deadline 3
May 2026
Rosefield Energyfarm Ltd

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

Table of Contents

1. Introduction

1.1. Purpose of this document

1.1.1. This document has been updated at Deadline 3 in response to further engagement with the Environment Agency in relation to the management of waste batteries. 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 Outline Site Waste Management Plan (Outline SWMP) has been prepared on behalf of Rosefield Energyfarm Limited ('the Applicant') to provide the details regarding roles and responsibilities of the Applicant and its contractors (including any subcontractors) to ensure that the Proposed Development complies with its waste obligations and current environmental best practice, in relation to 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').

1.1.1. This Outline Site Waste Management Plan (Outline SWMP) is provided as Appendix 1 to the **Outline Construction Environmental Management Plan (Outline CEMP) [EN010158/APP/7.2].** This Outline SWMP should be read in conjunction with the Outline CEMP.

1.1.2. This is an outline document that, by reference to the assessments reported in the **Environmental Statement (ES) [EN010158/APP/6.1-6.4]**, sets out the key elements that will be secured in the detailed Site Waste Management Plan(s) (SWMP) which Rosefield Energyfarm Limited (the Applicant) will be required to submit for approval by Local Planning Authority as part of future detailed CEMP(s).

1.2. Proposed Development

1.2.1. The Proposed Development comprises the construction, operation (including maintenance) and decommissioning of solar photovoltaic ('PV') development and energy storage, together with associated infrastructure and Grid Connection Cabling Corridor to the National Grid East Claydon Substation.

1.2.2. The Proposed Development would include a generating station with a total exporting capacity exceeding 50 megawatts ('MW').

1.2.3. The location of the Proposed Development is shown on **ES Volume 3, Figure 1.1: Location Plan [EN010158/APP/6.3]**. The Proposed Development would be located within the Order Limits (the land shown on the **Works Plans [EN010158/APP/2.3]** within which the Proposed

Development can be carried out). The Order Limits plan is provided as **ES Volume 3, Figure 1.2: Order Limits [EN010158/APP/6.3]**. Land within the Order Limits is known as the 'Site'.

1.3. The Order Limits

1.3.1. The extent of the Order Limits are shown in Location, Order Limits and Grid Coordinate Plans **[EN010158/APP/2.1]** and the Proposed Development is described in full in ES Volume 1, Chapter 3: Proposed Development Description **[EN010158/APP/6.1]** and shown spatially on the Works Plans **[EN010158/APP/2.3]**.

1.4. Scope of this Outline SWMP

1.4.1. The control and management measures presented in this Outline SWMP apply to all waste within the Order Limits, unless otherwise stated.

2. Purpose

2.1.1. This Outline SWMP includes reference to relevant legislation and defines the management responsibilities and procedures that will be in place during the construction phase.

2.1.2. The overall purpose of this Outline SWMP is to:

- Ensure compliance with all legal and contract requirements for waste management;
- Ensure all the necessary paperwork is collated and stored onsite in accordance with UK regulators;
- Minimise the amount of waste disposal from site by aiming to reduce, reuse waste onsite or recycle;
- Ensure that the requirements are understood by all those involved; and
- Identify roles and responsibilities for management the activities of contractors.

2.1.3. Prior to construction a detailed SWMP will be prepared and will be substantially in accordance with this Outline SWMP. This will be developed and implemented throughout the construction phase of the Proposed Development. All waste from the site-based works will be dealt with in accordance with the Environmental Protection Act 1990, the Waste (England & Wales) Regulations 2011, the Hazardous Waste (England and Wales) Regulations 2005 and any other associated waste regulations. All materials will be handled efficiently, and waste managed appropriately.

2.1.4. The Proposed Development is likely to be constructed in phases or parts, and it is envisaged that the detailed SWMP(s) may be prepared, approved or implemented for individual parts or phases of the Proposed Development. As a result, there could be multiple detailed SWMP(s) prepared in accordance with this Outline SWMP. Each detailed SWMP will be produced in line with this Outline SWMP following granting of the DCO and consulted on and approved by Local Planning Authority in advance of the date of commencement for the relevant phase of the Proposed Development.

2.1.5. To ensure the detailed SWMP(s) remain relevant and effective, updates will be undertaken as necessary, to align with relevant phases and environmental conditions.

2.1.6. The Applicant will transmit the details of this Outline SWMP to the various contractors assisting in the construction and will coordinate with all contractors to ensure their activities remain compliant with the overall environmental and legislative waste requirements.

3. Legislative and Policy Context

3.1. Overview

3.1.1. This section contains detail of the national legislation as well as regional and local waste policy and guidance that has relevance to the Proposed Development.

3.2. National Legislation

Waste Framework Directive

3.2.1. The Waste (England and Wales) Regulations 2011 ('the 2011 Regulations') **[Ref. 1]** transposed several aspects of the revised Waste Framework Directive (2008/98/EC) (rWFD) when the UK was a member of the EU. The revised Waste Framework Directive consolidates a number of separate waste Directives and amendments. It establishes the basis for the management of wastes across the European Union (EU). It defines certain terms, such as "waste", "recovery" and "disposal", to ensure that a uniform approach is taken across the EU. Following the UK withdrawal from the EU, this directive still applies as assimilated law in accordance with the Retained EU Law (Revocation and Reform) Act 2023.

Environmental Protection Act 1990

3.2.2. The waste duty of care is a legal requirement, implemented by Section 34 of the Environmental Protection Act 1990 **[Ref. 2]**, to ensure that producers, carriers and holders handle their waste safely and in compliance with the appropriate regulations. One of the fundamental aspects of the duty of care requires the holder of waste to make sure that anyone else dealing with their waste has the necessary authorisation to do so. If the holder does not do this and their waste is subsequently found to have been illegally disposed, the holder could be held responsible and may face prosecution.

Environmental Act 2021

3.2.3. The Environment Act 2021 acts as a framework of environmental protection in the UK, and aims to improve air and water quality, biodiversity and waste reduction. The Environment Act also established the Office for Environmental Protection. The Office for Environmental Protection's principal function is to contribute to environmental protection and the improvement of the natural environment by holding the UK Government and other public authorities to account.

3.2.4. The Act empowers the government to set long term targets to priority areas – being air, water, biodiversity, resource efficiency and waste –

supported by an Environmental Improvement Plan outlining steps to improve the natural environment over a 15-year period.

3.2.5. Part 3 of the Act focusses upon waste and resource efficiency and empowers Ministers to create regulations to place responsibilities upon producers (known as producer responsibility obligations, or extender producer responsibility). The Act also enables Ministers to create deposit return schemes, to tackle single use items and to improve the segregation – and tracking – of materials.

The Waste (England and Wales) Regulations 2011

3.2.6. The Waste (England and Wales) Regulations 2011 SI 2011 No. 988 (the Waste Regulations) **[Ref. 1]**, implement the WFD in England and Wales. The waste hierarchy is set out in Section 12 of the Waste Regulations and Article 4 of the WFD. The waste hierarchy requires that an undertaking which imports, produces, collects, transports, recovers or disposes of waste, or which as a dealer or broker has control of waste must take all such reasonable measures available to apply the waste hierarchy identified in **Table 1** in a priority order.

Table 1: The Waste Hierarchy **[Ref. 3]**

Waste Hierarchy	Relevant Activity
Prevention	Using less material in design and manufacture, keeping products for longer, re-use, using less hazardous materials.
Preparing for re-use	The waste is capable of being recycled by existing local or regional waste management facilities without requiring adaptation.
Recycling	Turning waste into a new substance or product, includes composting if it meets quality protocols.
Other recovery	Includes anaerobic digestion, incineration with energy recovery, gasification and pyrolysis which produce energy (fuels, heat, and power) and materials from waste, some backfilling.
Disposal	Landfill and incineration without energy recovery.

Hazardous Waste (England and Wales) Regulations 2005

3.2.7. The Hazardous Waste Regulations **[Ref. 4]** provide the rules for assessing if a waste is hazardous or not as set out under the EU List of Wastes Decision 2000/532/EC. As part of the assessment of waste, hazardous wastes are identified in the European Waste Catalogue (EWC) by an asterisk (*). Some types are classed as hazardous outright (known as absolute entries in the EWC), others require separate assessment dependent upon the concentration of dangerous substances present

above threshold concentrations (known as mirror entries in the EWC). The Hazardous Waste Regulations refer to the List of Wastes for the relevant thresholds for some of the hazardous properties; and to assign the formal description and code for the waste. The regulatory framework to do this is contained in:

- Hazardous Waste (England and Wales) Regulations (SI 2005/ 894) **[Ref. 4]**;
- Hazardous Waste (England and Wales) (Amendment) Regulations (2009 /507) **[Ref. 5]**;
- Hazardous Waste (Miscellaneous Amendments) Regulations (SI 2015/1360) **[Ref. 6]**; and
- Hazardous Waste (England and Wales) (Amendment) Regulations 2016 (SI 2016/334) **[Ref. 7]**.

Following the UK withdrawal from the EU, this legislation still applies as assimilated law in accordance with the Retained EU Law (Revocation and Reform Act 2023).

The Waste Batteries and Accumulators Regulations 2009

3.2.8. The Waste Batteries and Accumulators Regulations 2009 **[Ref.8]** implements the EU Waste Batteries and Accumulators Directive 2006/66/EC to minimise potential environmental impacts from waste batteries. The regulations detail the requirements for the collection, treatment, recycling and disposal of waste batteries.

Environmental Permitting (England and Wales) Regulations 2016

3.2.9. In England and Wales, if you wish to carry out a waste treatment activity on a site, you will need to get a permit from the Environment Agency or Local Planning Authority. 'Treatment' is considered to be where waste either has a process applied to it – other than simple storage processes like baling or compaction – or where waste from other sites is stored. Some wastes are classified as non-WFD waste. These can be stored and have basic treatment - such as compaction and baling - without an exemption or permit to facilitate their onward movement. There is a requirement to check that facilities accepting wastes have a permit to operate and accept the wastes.

Landfill Directive (1999/31/EC)

3.2.10. The Landfill Directive requires reductions in the quantity of biodegradable waste that is landfilled and encourages diversion of non-recyclable and non-usable waste to other methods of treatment. The Landfill Directive remains in place within the UK, following the UK's departure from the EU.

3.3. National Policies

Overarching National Policy Statement for Energy

3.3.1. The Overarching National Policy Statement for Energy (NPS EN-1) (2023) sets out the Government's policy for resource and waste management of major energy infrastructure. Section 5.15.1 states that 'The Government's policy intends to protect human health and the environment by producing less waste and by using it as a resource wherever possible. Where this is not possible, waste management regulation ensures that waste is disposed of in a way least damaging to the environment and to human health.' As per section 5.15.2 this principle of sustainable waste management is implemented through the waste hierarchy, which sets out priorities that must be applied when managing waste. This includes the best overall environmental outcome as outlined in 5.15.3.

Waste Management Plan for England 2013

3.3.2. The Waste Management Plan for England (WMPE) provides an analysis of the current waste management situation in England and fulfils the mandatory requirements of Regulation 7 and 8 of the Waste Regulations. The plan does not introduce new policies or change the landscape of how waste is managed in England. Its core aim is to bring current waste management policies under the umbrella of one national plan.

Our waste, Our resources: A strategy for England 2018

3.3.3. This document sets out the UK Government's strategy on how it will preserve the stock of material resources by minimising waste, promoting resource efficiency and moving towards a circular economy, minimise the damage caused to our natural environment by reducing and managing waste safely and carefully, and deal with waste crime. It combines actions to be taken with firm commitments for the coming years and gives a clear longer-term policy direction in line with the UK Government's 25 Year Environment Plan.

3.3.4. The Government's Resources and Waste Strategy sets out plans to improve use of material resources by minimising waste, promoting resource efficiency and moving towards a circular economy. Proposed strategies include:

- *"Improving recycling rates by ensuring a consistent set of dry recyclable materials is collected from all households and businesses"; and*
- *"Work to align the National Planning Policy for Waste and planning practice guidance with the Resources and Waste Strategy and continue to maintain building regulations guidance to support its objectives."*

National Planning Policy Framework, Ministry of Housing, Communities and Local Government 2024

3.3.5. The NPPF sets out the Government's planning policies for England and how these should be applied and should be read in conjunction with the Government's planning policy for waste. Policies and guidance are provided for a variety of areas and advocates that planning policies and decisions should apply a presumption in favour of sustainable development. Achieving sustainable development means that the planning system has three overarching objectives which includes an environment objective that details minimising waste and pollution.

National Planning Policy for Waste 2014

3.3.6. The National Planning Policy for Waste **[Ref. 9]** refers to the Government's ambition to work towards a more sustainable and efficient approach to resource use and management, identifying opportunities for improvements through driving waste management up the waste hierarchy.

Waste Management Plan for England (2021)

3.3.7. The Waste Management Plan for England **[Ref. 10]** is an important part of transforming how waste and resources are managed, processed, recycled, and disposed of in the most sustainable ways. The Plan includes:

- Extended Producer Responsibility for packaging where a producer's responsibility for a product is extended to the post-use stage;
- promotion of high-quality recycling including the use of material segregation;
- Deposit Return Schemes;
- separate food (bio) waste collections; and
- continue the UK commitment to recover at least 70 percent by weight of non-hazardous construction and demolition waste.

3.4. Local policy

Buckinghamshire Minerals and Waste Local Plan 2016-2036 (2019)

3.4.1. The Buckinghamshire Minerals and Waste Local Plan (MWLP) forms the land use planning strategy for minerals and waste development within the administrative area of Buckinghamshire County.

3.5. Guidance

CL:AIRE Code of Practice

3.5.1. The definition of waste and re-use of materials can be complex, CL:AIRE (Contaminated Land: Applications in Real Environments) have produced a Definition of Waste Code of Practice (DoWCoP) **[Ref. 11]** that can be followed when reusing source segregated aggregate on the Site of production. The DoWCoP covers:

- Ground based infrastructure that is capable of reuse within earthworks projects e.g. road base, concrete floors;
- Source segregated aggregate material arising from demolition activities, such as crushed brick and concrete, to be reused on the Site of production within earthworks projects or as sub-base or drainage materials;
- Stockpiled excavated materials that include the above; and
- The reuse of natural soils without the need for exemptions or permits, provided certain conditions are met.

4. Types of Waste and Waste Forecast

4.1.1. Waste is defined in Article 3(1) of the WFD (2008/98/EC) as, *"any substance or object which the holder discards or intends or is required to discard".*

4.1.2. The waste generated within the Order Limits and quantity of anticipated waste arisings from the Proposed Development will be confirmed within the detailed SWMP(s). The waste estimated will be formulated from available data upon detailed design of the Proposed Development along with cost estimates.

4.1.3. All waste arising from the Proposed Development that fall within the scope of the waste definition will be recorded in the detailed SWMP(s).

4.2. Construction Phase

4.2.1. The electrical infrastructure, including Solar PV modules, will be manufactured offsite and delivered for installation when required. Therefore, Site construction phase waste is anticipated to be minimal.

4.2.2. Any materials that are generated are likely to include inert materials (such as soil, hardcore, rubble), as well as packaging (e.g. wood, metals, composites and plastic) and materials generated during the installation of solar panels (such as wiring, cables, other assorted metals, electrical composites, plastic wrap and mixed wastes).

4.2.3. General waste from Site offices and welfare facilities is likely to include:

- Small quantities of oil/grease wastes from the maintenance of construction vehicles;
- Packaging waste from incoming materials; and
- Other waste from construction of fencing, access roads and other supporting infrastructure.

4.3. Operational Phase

4.3.1. The likely waste to be produced from the operation/maintenance of the Site will be associated with potential equipment/panel replacements and workers carrying out onsite maintenance, which might include packaging, dry recycling, residual waste and potentially food waste.

4.3.2. The anticipated waste streams by activity are summarised in **Table 2**.

Table 2: Anticipated Waste Streams

Activity	Anticipated Waste Stream	EWC Code
Site preparation and excavation	Excavated soil, organic waste	17 05 04 (soil and stones), 20 02 01 (green waste)
Delivery of Solar PV modules, inverters, other equipment and materials	Pallets, plastic wrap, cardboard boxes, protective foam, metal offcuts, glass	15 01 01 (paper and cardboard) 15 01 02 (plastic) 17 02 02 (glass) 17 04 07 (metals)
Foundation and trenching works	Concrete waste, rebar offcuts, aggregates	17 01 01 (concrete) 17 04 05 (iron and steel) 17 05 04 (soil and stones)
Installation of electrical equipment	Cable cuttings, insulation offcuts	17 04 07 (mixed metals) 17 02 03 (plastic) 17 06 04 (insulation material)
Construction of access roads	Asphalt debris, concrete rubble, gravel waste, bitumen scraps, steel reinforcement offcuts	17 03 02 (bituminous mixtures) 17 01 01 (concrete) 17 05 04 (soil and stones) 17 04 05 (metals)
Use of Site offices and welfare facilities	Food packaging, portable toilet effluent, PPE	20 03 01 (mixed municipal waste) 20 01 25 (edible oil and fat) 20 01 08 (biodegradable waste)
Solar PV module installation	Broken photovoltaic (PV) modules, glass fragments, plastic film, cable reels, cardboard	16 02 14 (discarded equipment) 15 01 02 (plastic) 15 01 01 (paper and cardboard)

Activity	Anticipated Waste Stream	EWC Code
		17 02 02 (glass)
Construction machinery maintenance	Used motor oil, hydraulic fluid, oil filters, scrap mechanical parts, used lubricants	13 01 10 (mineral-based non-chlorinated hydraulic oils) 13 02 05 (engine oils) 16 01 07 (oil filters)
Onsite temporary power generation	Diesel, generator oil, Battery packs	13 02 05 (mineral oils) 16 06 01 (lead batteries) 16 01 07 (oil filters)
Routine maintenance of solar panels and equipment and replacement of parts	Damaged Solar PV modules, metal frames, inverters, obsolete cabling, e-waste	16 02 14 (discarded equipment) 17 04 07 (metals) 20 01 36 (electrical equipment) 16 06 01 (lead batteries)
Vegetation management	Organic wastes, herbicide containers	20 02 01 (green waste) 02 01 08 (agrochemical waste)
End-of-life decommissioning	Decommissioned Solar PV modules, steel structures, cabling waste, e-waste	16 02 14 (discarded equipment) 17 04 07 (metals) 20 01 36 (electronic equipment)

5. Minimisation and Management of Waste

5.1. Overview

5.1.1. The following section details how overarching waste management practices would be undertaken during the Site preparation phase and subsequent construction phases of the Proposed Development.

5.2. Prior to construction works commencing

5.2.1. The type and quantity of waste generated by the Proposed Development will be significantly influenced by the detailed design. By making design decisions at detailed design the generation of waste can be prevented and minimised in the first place.

5.2.2. Decisions at this phase can also positively improve the recycled content and future recyclability.

5.2.3. Design teams and Project Managers will be required to:

- Understand the waste streams that are produced onsite;
- Understand how materials will be reused and recycled; and
- Review at key stages how well design and specification is impacting upon waste management and identify any opportunities for improvement.

5.2.4. At detailed design phase, in order to minimise waste, the following will be considered as a minimum:

- Use of prefabricated and standardised materials wherever possible to reduce waste on site. Many materials can be produced to a specification to reduce the quantity of offcuts;
- The types of materials to be used for the Proposed Development should be considered, with priority given to recycled and reclaimed materials wherever feasible; and
- The provision of accurate design specifications to subcontractors and supply chain teams.

Project Management

5.2.5. Efficient project management is key to reducing the quantity of waste produced on a site and ensuring that any waste produced is managed sustainably and appropriately wherever possible. The following are steps that must be considered by the Principal Contractor:

- By undertaking work in the correct order, the need for remedial actions will be reduced and as a result the amount of waste produced will also be reduced;
- By determining how materials and waste will be moved around the Site the Site Manager can ensure that waste is disposed of appropriately and that segregation takes place;
- Ensure that all site staff and sub-contractors gain a suitable site induction that includes awareness of good waste management and the specific measures to be used onsite;
- Regular toolbox talks on good waste management can be used to make sure that everyone who comes to site knows how to reduce, re-use and recycle at the Site;
- 'Just-in-time' delivery strategies can reduce waste created by improper storage and weather damage. Therefore, arrange deliveries of materials to align with project construction stages where practicable. This will help avoid materials being stored on site longer than necessary and reduce the risk of damage;
- Check contracts with suppliers and the supplier's haulier for return of packaging. It is often the case that the supplier contract will include a clause for return of packaging, but this is not included in the contract with their haulier. These issues should be identified and resolved as early as possible to prevent problems on site; and
- Consider suppliers that offer reusable packaging schemes.

5.3. Construction and materials and waste management onsite

Waste management routes

5.3.1. The waste hierarchy sets out the priority order that should be considered when managing wastes. A basic representation of the waste hierarchy is provided in **Figure 1** below.

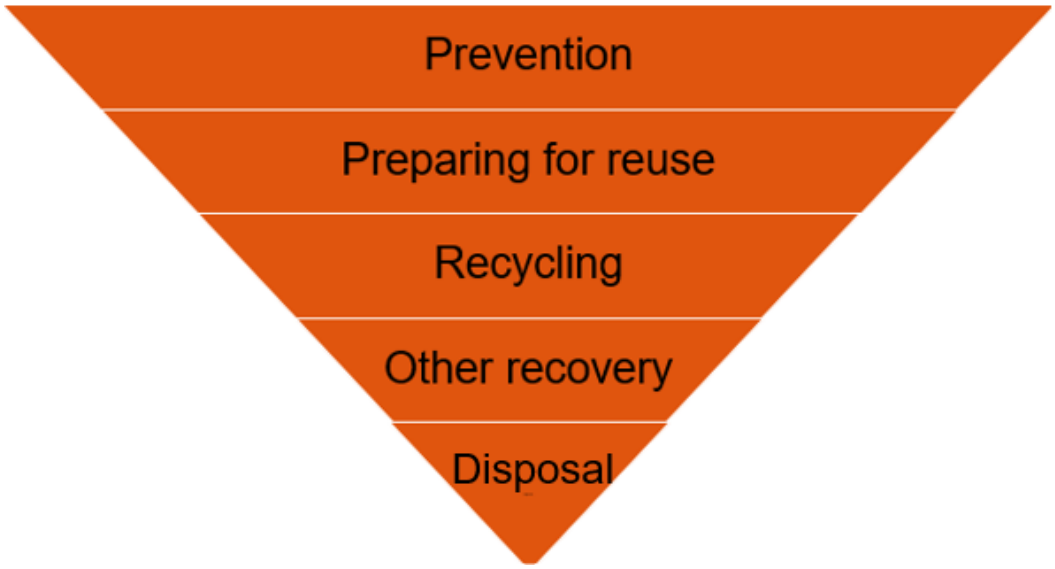


Figure 1: Waste Hierarchy

5.3.2. To reduce the potential impacts from materials and waste and achieve levels of sustainability, the Principal contractor will apply the principles of the Waste Hierarchy and adopt best practice measures which go beyond statutory compliance.

5.3.3. When considering waste management options for the Proposed Development, the Principal contractor will take into consideration the Site's location, natural environment, and available infrastructure. The Principal contractor will consider the following options when determining the preferred waste management option for each waste stream.

6. Prevention and Preparing for Reuse

6.1. Overview

6.1.1. The Principal contractor will engage with the team or individuals tasked with procurement of materials and services to ensure best practice procedures are employed to prevent residual resources at the Site. A range of good practice measures may include the following:

- Select procurement routes to minimise unnecessary packaging – for example applying 'Just-in-Time' delivery processes to minimise material spoilage;
- Use of 'consolidation centres' to support Just-in-Time delivery – these are strategically-located storage and distribution facilities where materials can be stored prior to Just-in-Time delivery to sites;
- Implement ordering procedures and supply chain systems that avoid waste i.e. no over-ordering, use of take-back schemes for packing, material surplus and offcuts;
- Select procurement routes that minimise unnecessary packaging; and
- Plan the work sequence to reduce potential for onsite residual resource generation.

6.1.2. The following approaches will be implemented, where practicable, to further minimise the quantity of waste arising and requiring disposal:

- Reuse of materials on site wherever feasible, e.g., reuse of excavated soil for landscaping, recycling of demolition materials into aggregates;
- Off-site prefabrication, where practical, including the use of prefabricated elements;
- Segregation of waste at source, where practical, to facilitate a high proportion and high-quality recycling; and
- Offsite reuse, recycling and recovery of materials and waste where reuse on site is not practical, e.g., through use of an offsite waste segregation or treatment facility or for direct reuse or reprocessing offsite.

6.2. Recycling

6.2.1. Where site-won generated materials are generated, the aim is to use these materials by recycling them into an alternative form that can be used for construction purposes (for example crushing concrete, brick or other inert wastes to produce aggregate material). By recycling onsite, as far as reasonably practicable, the quantity of waste requiring offsite management is reduced and carbon emissions associated with transport are eliminated.

6.2.2. Recycling may also be achieved by utilising materials with a recycled content, such as recycled aggregates produced off-site.

6.3. Recovery

6.3.1. This generally aims to recover energy from waste which cannot otherwise be reused or recycled. This may include waste materials such as hazardous liquids or solids that can be sent to energy from waste facilities.

6.3.2. Recovery may also include the beneficial use of materials on land for restoration (backfilling operations).

6.4. Disposal

6.4.1. The least preferred option in the Waste Hierarchy is a final disposal route such as landfill. Some waste streams will inevitably end up with disposal.

6.4.2. When placing waste disposal contracts, the Principal contractor will consider the implications of long distance travel in terms of health and safety risk, commercial terms and increased emissions from vehicles.

6.4.3. The Landfill Directive requires that disposal sites are classified into one of three categories dependent on the chemical composition of the material; these are hazardous, non-hazardous or inert. The ability for waste to be deposited at these sites would be dependent on the available space and the conditions imposed on the Proposed Development through the relevant licence/permit.

6.5. Material and waste storage and segregation options

6.5.1. The Principal contractor will store excavated soils and earthworks materials onsite in stockpiles until required for use as detailed further in the **Outline Soil Management Plan [EN010158/APP/7.7].**

6.5.2. Construction materials that are stored onsite must be in designated areas that are flat, accessible and secure in order to avoid damage or loss which could render the materials unusable (waste) and require replacement materials to be purchased. Materials must be stored in appropriate conditions to avoid damage through, for example, water ingress or vermin. Materials must be retained in their original packaging to protect them from damage.

6.5.3. The Principal contractor must ensure that the construction Site incorporates designated waste storage areas for skips or similar suitable waste receptacles.

6.5.4. At the waste storage areas, the Principal contractor must segregate waste into the following types as a minimum: inert; wood; metals; packaging; general waste; hazardous solid wastes; hazardous liquid wastes.

6.5.5. The Principal contractor will implement the following waste management procedures where practicable:

- All waste containers must be secure and ensure that no waste is allowed to escape;
- All waste containers must be clearly labelled using a colour coding system so that users know what wastes can be placed in each container. Waste containers must be appropriately colour coded using generic colour codes, an example is shown in **Figure 2** below;
- Lockable storage will be provided for all hazardous waste;
- All waste containers must be sited at least 10m away from watercourses, ditches, and other areas of environmental sensitivity;
- Liquid wastes must be stored in enclosed/lidded containers and stored within a suitable bunded area, or otherwise provided with secondary containment;
- Separate containers must be provided for each type of hazardous waste;
- Each type of hazardous waste must not be mixed with any other hazardous or non-hazardous waste;
- Sewage from the site offices/compounds will drain to septic tank and be collected by a suitable specialist waste contractor; and
- Portable toilet facilities on site (portaloos, etc.) must be emptied by the facility provider as per their service agreement.

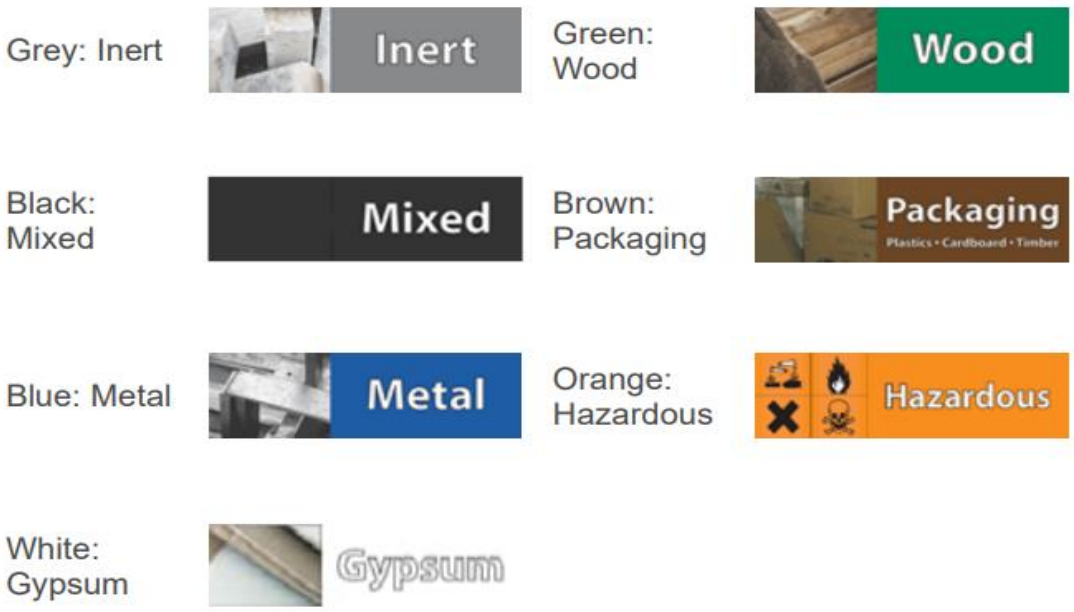


Figure 2: Waste Container Colour Codes **[Ref. 11]**

6.6. Waste carriers and facilities

6.6.1. The Principal contractor will manage all waste generated by the Proposed Development in accordance with legal requirements. The Principal contractor must record details of the proposed waste carrier for each waste stream, with Waste Carriers License details appended to the detailed SWMP(s).

6.6.2. The Principal contractor will ensure that the following information is recorded for all waste facilities used (where required and relevant):

- Contractor's name;
- Date(s) of waste removal;
- Type(s) of waste removed (i.e. non-hazardous waste, hazardous waste, inert (specify);
- Method of treatment, recovery or disposal (i.e. reuse, recycling, incineration, landfill etc.);
- Volume or weight of waste removed;
- Recovery rate achieved; and
- Costs associated with waste removal, transport and treatment, including Landfill Tax charges where applicable.

6.6.3. For excavated materials, other than those reused onsite, suitable treatment, recycling and disposal facilities within a reasonable proximity of the Site would be identified by the Principal contractor. For construction and demolition waste, suitable treatment, recycling and disposal facilities within a reasonable proximity of the Site would also be identified by the Principal contractor.

6.6.4. The Principal contractor would further identify and appoint appropriate Waste Carriers and Waste Management Facilities prior to the construction elements of the works commencing. For the purposes of the Proposed Development, the transportation of material resources and waste arisings would take place by road. Waste Carriers and Waste Management Facilities will be confirmed within the detailed SWMP(s).

6.7. Waste Transfer Notes

6.7.1. The Principal contractor must ensure that all movements of waste from site are accompanied by a waste transfer note (WTN), which will detail specific information. The Principal contractor's Site Materials and Waste Manager or another competent person will check that each WTN contains the following (where required and relevant):

- The name of the person receiving the waste and what they are authorised to do with that waste as a Registered Waste Carrier can only transport waste;
- Type of waste;
- The Standard Industrial Classification (SIC) code;
- The six-digit EWC code;
- Address of the producing site and details of the waste producer;
- Waste carrier's details including registration number;
- Quantity of waste;
- How it is contained (e.g. 8 cubic yard skip);
- Address of the receiving site (e.g. landfill) and the Environmental Permit or Exemption No. associated with the receiving site;
- The date to which the WTN applies;
- If the material is non-hazardous waste and it is destined for disposal directly to landfill, pre-treatment must have been applied and a declaration detailing the treatment applied appended to the WTN; and
- A declaration that the waste has been treated in line with the requirements of the waste hierarchy.

6.7.2. The Site representative signing the WTN must ensure all WTNs are placed in the Site Waste Management File and kept for a minimum period of two years for non-hazardous waste.

6.7.3. By signing a WTN, the site representative is confirming that all the details are correct and that the material is to be sent by a licensed waste carrier to a suitably licensed receiving site, permitted to receive that type of waste. The signature completes the WTN as a legal document.

6.7.4. The Site Materials and Waste Manager or other competent person signing the WTN must additionally ensure that the Waste Carrier is using a suitable vehicle with adequate, covered containment for the waste.

6.8. Waste Consignment Notes (Hazardous Waste)

6.8.1. The Principal contractor must ensure that a Hazardous Waste Consignment Note (HWCN) is completed for every movement of hazardous waste. The HWCN must be prepared before the waste is moved. Prior to signing, the Site Materials and Waste Manager or another competent person must ensure that the HWCN includes:

- Hazardous Waste Premises Code;
- Consignment note code;

- SIC Code;
- Name and address of the site from which the waste is being moved;
- Date of removal;
- Type of waste produced, including the quantity and the EWC code;
- The name of the person who is receiving the waste and what they are authorised to do with that waste (e.g. registered waste carrier can only transport waste);
- The final disposal site that is authorised to accept the waste; and
- Retention period for hazardous waste.

6.8.2. The Principal contractor must retain a copy of the HWCN for a minimum of three years.

6.9. Waste documentation

6.9.1. The Principal contractor must retain all waste documentation at the Primary Construction Compound(s) and, following completion of construction, at the Principal contractor's head office. This includes:

- The detailed SWMP (two years after end of construction);
- Waste transfer documentation (two years for WTNs and three years for HWCNs);
- Copies of any exemptions or permits; and
- Copies of waste carrier and treatment/disposal Site licences or permits.

6.10. Fuels, Oils and Control of Substances Hazardous to Health (COSHH) Materials

6.10.1. The Principal contractor must establish appropriate control and management measures for the storage, dispensing, containment and use of all fuels, oils and COSHH materials and wastes that will be required during construction.

6.10.2. The storage, dispensing, containment and use of fuels, oils and COSHH materials have the potential to cause significant damage to the environment. Causes of environmental incidents linked to fuel, oil and COSHH materials on construction sites include:

- Delivery and use of materials;
- Overfilling of storage containers
- Plant or equipment failure;
- Containment failure;

- Accidents and vandalism; and
- Mixing of inappropriate materials and wastes.

6.10.3. The storage, dispensing, containment and use of all fuels, oils and COSHH materials and wastes shall be undertaken in accordance with regulatory and good practice guidance, the key points of which are set out below.

6.10.4. For COSHH materials and waste, relevant control and management measures may include:

- Storage must be in a secure, bunded and sheltered area;
- Waste must be segregated;
- COSHH liquids must not be stored in areas within Flood Zone 3;
- Areas must be supervised, and records of materials and waste stored and removed from the area recorded; and
- The handling, storage and disposal must be undertaken as described in the COSHH Assessment and any Material Safety Data Sheet (MSDS).

6.10.5. Fuel and oil (including mould oil) shall be stored in accordance with The Control of Pollution (Oil Storage) (England) Regulations 2001 **[Ref. 13]**, with fuels and oil handled in such a way that risk of pollution is minimised.

6.11. Waste management proposals during the operation (including maintenance) phase

6.11.1. The Proposed Development is anticipated to generate Waste Electrical and Electronic Equipment (WEEE) through operation and maintenance. As such, these will be recovered and recycled by an authorised reprocessor as required by the Waste Electrical and Electronic Equipment Regulations 2013 (WEEE Regulations). To ensure that this is done to “Best Available Treatment Recovery and Recycling Techniques”, a list of up-to-date authorised reprocessors should be established prior to the operational phase of the Proposed Development, and kept up to-date throughout the operation phase of the Proposed Development.

6.11.2. Electrical waste will be disposed of per the WEEE Regulations, minimising the environmental impact of replacing any elements of the Proposed Development.

6.11.3. Solar PV modules are covered under the WEEE Regulations 2013 with 99% of their components able to be recycled.

6.11.4. Solar PV modules that are damaged will be removed, stacked and covered, on hard-standing ground at least 10m away from any

watercourse on-site, before being sent to be recycled, in order to ensure that there is no risk to controlled waters.

6.11.5. The handling of waste batteries during the operation (including maintenance) phase will be managed in line with The Waste Batteries and Accumulators Regulations 2009 (or the legislation and industry standards at the time of operation). Batteries will be considered as hazardous waste and will be managed in accordance with the above measures in the **Outline CEMP [EN010158/APP/7.2.2].**

6.11.6. In the event that a battery becomes damaged or requires replacement, the operator will develop a post-incident recovery plan that addresses the potential for reignition of the BESS and de-energising the system. The damaged battery will be risk assessed to ensure that there is a sealed and isolated system in place. This will ensure that the pathway between the damaged battery and a potential receptor (i.e. groundwater) is blocked ensuring that any potentially contaminated water does not infiltrate the ground and move to the surrounding receptors. Generally, a battery that is damaged is contained in its unit until a replacement is brought to site where it is then replaced, and the damaged battery is removed from site. Spare batteries are not stored on-site. Further detail will be set out at a later stage in the Emergency Response Plan (the requirement for which is contained within Section 6.3 of the **Outline BSMP [EN010158/APP/7.9.4]**).

6.11.7. An **Outline Operational Environmental Management Plan (Outline OEMP) [EN010158/APP/7.3]** is submitted as part of the DCO Application. It outlines that a detailed SWMP will be prepared and agreed with the Local Planning Authority prior to commencement of the operation (including maintenance) phase. Any waste generated from operation and maintenance will be managed in accordance with the site management plans, and ultimately, the requirements of the **Outline OEMP [EN010158/APP/7.3]** and detailed SWMP.

6.12. Waste management proposals during the decommissioning phase

6.12.1. As the lifespan of the Proposed Development would be 40 years, it is not possible (at this stage) to identify the waste management routes or specific waste facilities to be utilised during the decommissioning of the Proposed Development.

6.12.2. The handling of waste batteries during the decommissioning phase will be managed in line with The Waste Batteries and Accumulators Regulations 2009 (or the legislation and industry standards at the time of decommissioning). Batteries will be considered as hazardous waste and will be managed in accordance with the above measures in the **Outline CEMP [EN010158/APP/7.2.2]**.

6.12.3. An **Outline Decommissioning Environmental Management Plan (Outline DEMP) [EN010158/APP/7.4]** is submitted as part of the DCO Application. It outlines that a detailed SWMP will be prepared and agreed with the Local Planning Authority prior to commencement of the decommissioning phase, to use the measures in this Outline SWMP as a starting point. Any waste generated from decommissioning at the end of life will be managed in accordance with the site management plans, and ultimately, the requirements of the **Outline DEMP [EN010158/APP/7.4]** and detailed SWMP.

7. Monitoring

7.1. Overview

7.1.1. The following section details how overarching waste management practices would be undertaken during the construction phases of the Proposed Development.

7.2. Roles and responsibilities

7.2.1. Different members of the construction team will have specific roles and responsibilities identified in **Table 3** below. The roles and responsibilities will be confirmed in the detailed SWMP.

Table 3 : Roles and responsibilities

Position	Roles	Responsibilities
The Applicant	• Promote waste minimisation • Drive good practice within the team • Ensure hazardous waste identified prior to construction	• Duty of Care • Best Practice • Identification of waste reduction opportunities
Project Manager/Director (Principal contractor)	• Overall responsibility for legal compliance. Responsible for providing appropriate resources in the team including competent staff, training and resources	• Health and Safety • Duty of Care
Site manager (Principal contractor)	• Develop, implement and communicate a detailed site specific detailed SWMP for each phase • Review the detailed SWMP for each phase and manage and monitor its implementation • Work with design team • Ensure segregation of waste materials • Designate and facilitate on site storage compounds / treatment areas • Ensure appropriate waste storage • Keep proper records of all waste produced/re-used/sent off-site	• Health and Safety • Development of a site-specific detailed SWMP for each phase • Management of onsite processes and programme • Hazardous waste identification and management • Duty of Care record keeping

Position	Roles	Responsibilities
	• Ensure appropriate off-site transport of waste and confirm destination of all waste leaving site. • Reduce waste being brought on to site (packaging)	
Sub-Contractors	• Develop method statements for works onsite • Liaise with Principal contractor to ensure they understand and comply with the Site waste plan/strategy	• Duty of Care • Production of method statements • Appropriate management of activities under direct control • Ensure that wastes are segregated

7.3. Records

7.3.1. Records of all waste movements offsite will be retained by Site management for the required time and these records will outline how waste was managed and demonstrate compliance with Duty of Care with respect to construction waste.

7.3.2. Opportunities for the illegal disposal of waste will be significantly reduced by ensuring compliance with existing legal controls and providing a full audit trail of waste removed from the construction Site.

7.4. Site inspections

7.4.1. Regular inspection and audit of all waste management records and activities on site will be undertaken to ensure that the relevant legislation and any good practice measures outlined within this Outline SWMP are complied with. Inspections and audits will be arranged by management teams at appropriate intervals and records of these inspections and audits will be retained. Frequency of inspections and audits will be secured within the detailed SWMP(s).

7.5. Review of detailed SWMP

7.5.1. The Principal contractor must review the detailed SWMP(s) frequently during the construction of the Proposed Development to ensure that targets are being achieved and that realistic solutions are provided for unplanned events of abnormal wastes. The Principal contractor must also review the detailed SWMP if there is any significant change to the

Proposed Development. This review will involve the completion and submission of a monitoring report to the Applicant (or its representative) in an agreed format.

7.6. Training

7.6.1. The Principal contractor will incorporate the detailed SWMP requirements into the site induction and training procedures and must provide onsite instruction of appropriate construction materials and waste separation, handling, recycling, reuse and return methods to be used by all parties at all appropriate stages during the construction of the Proposed Development. The Principal contractor must ensure that all personnel working on the Site, including sub-contractors, are inducted and appropriately trained.

7.7. Review and update

7.7.1. The detailed SWMP will remain a live document and will be used to describe the progress onsite against waste management forecasts also to be developed alongside this plan. This will also allow for any changes to the works or to accommodate new legislative requirements. An overall internal compliance audit will be undertaken routinely, and a report generated for management record. The detailed SWMP will be reviewed and updated as appropriate to record details of the different types and quantities of wasted resulting from the works.

8. Implementation

8.1.1. The detailed SWMP(s) will set out all roles, responsibilities and actions required in respect of implementation of the measures described within this Outline SWMP, including:

- An organogram showing team roles, names and responsibilities;
- Training requirements for relevant personnel on environmental topics;
- Information of onsite briefings and Toolbox Talks that will be used to equip relevant staff with the necessary level of knowledge of appropriate construction materials and waste separation, handling, recycling, reuse and return methods to be used by all parties;
- Procedures for monitoring, Site inspections and audits, and key performance indicators;
- Document control, including any waste transfer documentation, permits, or and exemptions, and waste carrier and treatment/disposal site licences or permits;
- Design decisions made in order to reduce materials consumption and/or waste generation during construction of the Proposed Development;
- The types and amounts (volume or weight) of waste to be generated, and how this is measured;
- How the waste generated will be managed and opportunities for waste minimisation, reuse, recycling and recovery in line with the requirements of the waste hierarchy;
- Details of Waste Carriers and Waste Management Facilities to ensure waste is managed legally and responsibly in accordance with the requirements of this document.

9. References

- **Ref. 1:** Her Majesty's Stationery Office, (2011); The Waste (England and Wales) Regulations 2011. Available online: The Waste (England and Wales) Regulations 2011 (legislation.gov.uk)
- **Ref. 2:** Her Majesty's Stationery Office, (1991); The Environmental Protection (Duty of Care) Regulations 1991. Available online: The Environmental Protection (Duty of Care) Regulations 1991 (legislation.gov.uk)
- **Ref. 3:** Department for Environment, Food & Rural Affairs (DEFRA), (2011); Guidance on applying the Waste Hierarchy. Available online: https://assets.publishing.service.gov.uk/media/5a795abde5274a2acd18c223/pb13530-waste-hierarchy-guidance.pdf.
- **Ref. 4:** Her Majesty's Stationery Office, (2005); The Hazardous Waste (England and Wales) Regulations 2005. Available online: The Hazardous Waste (England and Wales)Regulations 2005 (legislation.gov.uk)
- **Ref. 5:** Her Majesty's Stationery Office, (2009); The Hazardous Waste (England and Wales) (Amendment) Regulations 2009. Available online: The Hazardous Waste (England and Wales) (Amendment) Regulations 2009 (legislation.gov.uk)
- **Ref. 6:** Her Majesty's Stationery Office, (2015); The Hazardous Waste (Miscellaneous Amendments) Regulations 2015. Available online: The Hazardous Waste (Miscellaneous Amendments) Regulations 2015 (legislation.gov.uk)
- **Ref. 7:** Her Majesty's Stationery Office, (2016); The Hazardous Waste (Amendment) Regulations 2015. Available online: The Hazardous Waste (England and Wales) (Amendment) Regulations 2016 (legislation.gov.uk)
- **Ref. 8:** Her Majesty's Stationery Office, (2010); Waste Batteries and Accumulators Regulations 2009. Available online: The Waste Batteries and Accumulators Regulations 2009 (legislation.gov.uk)
- **Ref: 9:** Department for Communities and Local Government, (2014); National Planning Policy for Waste. Available online: https://assets.publishing.service.gov.uk/media/5a7ef594e5274a2e8ab4946c/141015_National_Planning_Policy_for_Waste.pdf.
- **Ref. 10:** DEFRA, (2021); Waste Management Plan for England. Available online: https://www.gov.uk/government/publications/waste-management-plan-for-england
- **Ref. 11:** Contaminated Land: Applications in Real Environments, (2011); The Definition of Waste: Development Industry Code of Practice.

- **Ref. 12:** Mohamed Youssef, (Undated); Tool Box Talk Waste Segregation. Available online. https://www.scribd.com/document/692855017/4
- **Ref. 13:** UK Government (2001), The Control of Pollution (Oil Storage) (England) Regulations 2001. Available online: https://www.legislation.gov.uk/uksi/2001/2954/contents.

Appendix 2 - Cabling and Grid Connection Method Statement

Rosefield Solar Farm

Appendix 2: Cabling and Grid Connection Method Statement

EN010158/APP/7.2
September 2025
Rosefield Solar Farm Ltd

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

Table of Contents

1. Introduction

1.1. Purpose of this document

1.1.1. National Policy Statement for Renewable Energy Infrastructure (EN-3) states that in the case of underground cabling, applicants are expected to provide a method statement describing cable trench design, installation methodology, as well as details of the operation and maintenance regime.

1.1.2. This method statement provides this by describing how the Grid Connection Corridor and internal cable corridors for Rosefield Solar Farm are proposed to be constructed, operated and maintained.

1.1.3. The components described, as set out in Schedule 1 of the **Draft Development Consent Order (DCO) [EN010158/APP/3.1]** comprise:

- Grid Connection Cabling Corridor (Work No. 6);
- Interconnecting Cabling Corridor(s) (Work No. 7); and
- Construction Compounds, access points, and haul routes (Work No. 8, Work No. 9, and further associated development within the Order Limits).

1.2. The Order Limits

1.2.1. The extent of the Order Limits are shown in **Location, Order Limits and Grid Coordinate Plans [EN010158/APP/2.1]** and the Proposed Development is described in full in **ES Volume 1, Chapter 3: Proposed Development Description [EN010158/APP/6.1]** and shown spatially on the **Works Plans [EN010158/APP/2.3].**

1.3. The Proposed Development

1.3.1. The Proposed Development comprises the construction, operation (including maintenance), and decommissioning of solar photovoltaic ('PV') development and energy storage, together with associated infrastructure and an underground cable connection to the National Grid East Claydon Substation.

1.3.2. The Proposed Development would include a generating station with a total exporting capacity exceeding 50 megawatts ('MW').

1.3.3. The location of the Proposed Development is shown on **ES Volume 3, Figure 1.1: Location Plan [EN010158/APP/6.3]**. The Proposed Development would be located within the Order Limits (the land shown on the **Works Plans [EN010158/APP/2.3]** within which the Proposed Development can be carried out). The Order Limits plan is provided as **ES**

Volume 3, Figure 1.2: Order Limits [EN010158/APP/6.3]. Land within the Order Limits is known as the 'Site'.

2. Grid Connection and Internal Cable Corridor Description

2.1. Grid Connection Corridor

2.1.1. The electricity generated by the Proposed Development will be exported to the National Grid via up to two 400kV cable circuits each comprised of three buried cables from the Rosefield Substation to the proposed National Grid East Claydon Substation. The total length of the Grid Connection Corridor is approximately 800m. The Grid Connection Corridor is within the Order Limits.

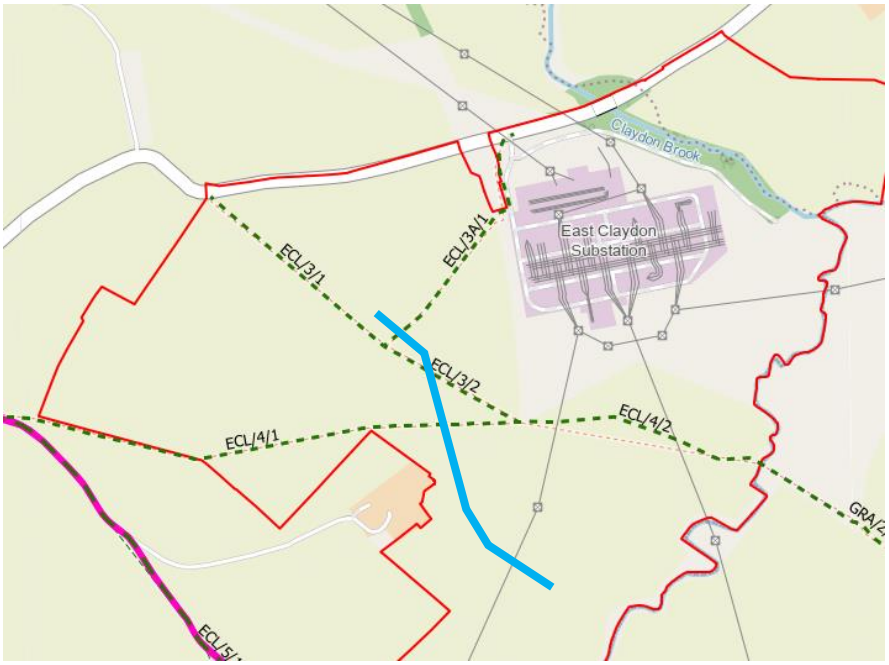
2.1.2. The Grid Connection Corridor crosses Public Rights of Way as described in Table 2.1 and **Figure 2.1** below and detailed in **Schedule 4 of the Draft DCO [EN010158/APP/3.1]** and **ES Volume 3, Figure 3.10 - Existing and Proposed PRoW and Permissive Footpaths [EN010158/APP/6.3].**

Table 2.1: Grid Connection Corridor Crossings

Crossing	Approximate distance from Rosefield Substation (km)
ECL/4/1, south west of existing National Grid East Claydon substation	0.35
ECL/3/2, west of existing National Grid East Claydon substation	0.4
ECL/3A/1, west of existing National Grid East Claydon substation	0.5

Figure 2.1: Indicative Grid Connection Corridor Crossings

(indicative Grid Connection Corridor in blue)



2.2. Internal Cable Corridors

2.2.1. The Proposed Development also includes internal cable corridors (at 33kV or 66kV) to transfer electricity from areas within the Parcels to the Rosefield Substation. The number of cables within each corridor will vary depending on how much electricity is being transferred in each corridor.

2.2.2. The internal cable corridors cross roads as described in **Table 2.2** and detailed in **Schedule 4 of the Draft DCO [EN010158/APP/3.1]** and **ES Volume 3, Figure 3.10 - Existing and Proposed PRoW and Permissive Footpaths [EN010158/APP/6.3].** Road crossing points are also shown on **ES Volume 3, Figure 3.7: Indicative Cable Crossings and Cable Corridors [EN010158/APP/6.3].**

Table 2.2: Internal Cable Corridor Crossings

Crossing	Location
Three Points Lane	North of Knowl Hill Farm
Splash Lane	South of junction with Orchard Way
Claydon Road	South of junction with Granborough Road
Granborough Road	East of junction with Claydon Road, near existing overhead line crossing
Access road to Pond Farm	South of junction with Calvert Road

Access road to Muxwell Hill Farm	South of junction with Orchard Way

2.2.3. Internal cable corridors will also cross buried utilities and PRoWs at locations that will be determined at the detailed design stage once consent has been granted. The detailed design of the Proposed Development will be approved by the relevant planning authority pursuant to Requirement 5 of the **Draft Development Consent Order [EN010158/APP/3.1].** Discussions and agreements have been made with Statutory Undertakers relevant to the known utilities within the Order Limits as per the Statements of Common Ground and the Protective Provisions that will be included in the draft DCO. Further discussions and agreements will be made in advance of any work starting on the relevant areas of Site.

3. Methodology

3.1.1. The Grid Connection Corridor and the internal cable corridors are expected to use both open trench and horizontal directional drilling (HDD) installation techniques. Open trench is expected to be used for the majority of the corridor installation, e.g. through open fields. Either open trench or HDD will be used for corridor crossings of roads, environmental receptors (including water courses and ditches) and other existing below-ground utilities infrastructure.

3.1.2. The technique for road crossings will be agreed with the local highway authority as described in the **Outline Construction Traffic Management Plan [EN010158/APP/7.5]**

3.1.3. The technique for crossing other infrastructure such as buried utilities will be agreed at the detailed design stage with the relevant infrastructure operator, in accordance with the schedule of protective provisions to be in the **Draft Development Consent Order (DCO) [EN010158/APP/3.1].**

3.1.4. The technique for crossing environmental receptors will be determined at the detailed design stage, based on the latest environmental survey data available at the time, in order to minimise environmental impact while installing the crossing in a safe and practicable manner. The technique will be in accordance with the agreed Construction Environmental Management Plan.

3.1.5. The Applicant recognises that there are multiple stakeholders for each crossing, and will engage with these stakeholders to ensure their requirements are incorporated at the right time to inform design and site works.

3.2. Open Cut Trenching

3.2.1. Open cut trenches will be excavated by a mechanical excavator or by manual means in areas where mechanical excavation is not possible or existing utilities are identified. The trench width and depth will be dictated by the number of cables at that location, separation distances, ground conditions, cable jointing pits and detailed design specifications, ensuring safe excavation within the maximum assumptions defined in **ES Chapter 3: Proposed Development Description [EN010158/APP/6.1]**. Excavated soil will be temporarily stored to form separate bunds of top and sub soil, parallel to and at a safe distance from the length of the excavated trench.

3.2.2. The Grid Connection Corridor trench will require approximately 2 jointing pits along the length of the corridor, in areas where open cut trenches are used. The number of jointing pits will be determined at the detailed design stage. The jointing pits will be constructed of formed concrete, to allow operational maintenance access for the Proposed Development. Internal

cable corridors are not expected to require permanent jointing pits, with joints for these cables being directly buried in the ground.

3.2.3. Open cut trenches will have a suitable bedding material or cable duct installed prior to the cable being pulled into position. Once the cable or ducts are in position and jointing has been completed and tested, the trench will be backfilled with the excavated materials and warning tapes, protection tapes or protection tiles installed as detailed design specifies above the cables or ducting.

3.2.4. Indicative cross-sections for open cut cable trenches are shown in **ES Volume 3, Figure 3.6: Indicative Cable Trench Sections [EN010158/APP/6.3].**

3.3. Horizontal Directional Drilling (HDD)

3.3.1. The HDD locations will require the establishment of launch and receptor temporary compounds as well as launch and receptor pits. The HDD temporary compounds will be enclosed with suitable fencing or acoustic screening for the duration of the drilling activity, if located next to sensitive receptors.

3.3.2. The size of the temporary HDD compound and drilling rig will be dictated by several factors including the length, diameter, number of the drills and the soil conditions.

3.3.3. Excavated soil from the launch and receptor pits will be temporarily stored to form separate bunds of top and sub soil near to or in the compound area, for use in backfilling following the duct and cable installation and to reinstate the HDD temporary compound areas.

3.3.4. An indicative cross-section for a typical HDD crossing under a road is shown in **Annex 1.**

3.3.5. An indicative layout for HDD launch pit and reception pit compounds is shown in **Annex 2.**

3.4. Access Points and Haul Route

3.4.1. During construction, access points off Granborough Road will be used for access/egress to all areas of the Grid Connection Corridor. Multiple access points will be used for construction of the internal cable corridors. Access points are shown on **Streets, Rights of Way and Access Plans [EN010158/APP/2.4].**

3.4.2. For construction of the Grid Connection Corridor, temporary access tracks will be installed within the corridor. These tracks will be built either using a hard core base topped with crushed stone or where possible using temporary trackway to minimise ground disturbance.

3.4.3. Construction of the internal cable corridors will use either the internal access tracks that will be built for other elements of the Proposed Development, or temporary tracks in areas where there are no other elements of the Proposed Development. Temporary tracks will be built either using a hard core base topped with crushed stone or where possible using temporary trackway to minimise ground disturbance.

3.4.4. Access tracks will be installed as described in **ES Chapter 3: Proposed Development Description [EN010158/APP/6.1]** and the **Design Commitments [EN010158/APP/5.9].**

3.5. Crossings

3.5.1. Where cable corridors cross roads using open trenching or HDD, the crossing installation will adopt appropriate traffic management measures as described in the **Outline Construction Traffic Management Plan [EN010158/APP/7.5].**

3.5.2. Where cable corridors cross public rights of way, crossing points will be managed to ensure user safety and minimise disruption, as described in the **Outline Rights of Way and Access Strategy [EN010158/APP/7.8].**

3.5.3. Where cable corridors cross existing hedgerows / vegetation (including water courses and ditches), the crossing installation will either be by open cut or HDD methodology. Locations of proposed vegetation removal to facilitate cable corridors (as well as access tracks) are shown indicatively in **Appendix 3** within **ES Volume 4, Outline Landscape and Ecological Management Plan [EN010158/APP/7.6].**

3.6. Connection to National Grid East Claydon Substation

3.6.1. The Grid Connection Corridor will connect to the allocated generator bays within the National Grid East Claydon Substation. It is expected that some works will be needed within the boundary of National Grid East Claydon Substation, as described in the **Grid Connection Statement [EN010158/APP/7.1].**

4. Equipment

4.1. Open trench equipment

4.1.1. Equipment expected to be used for open cut trenching includes:

- Articulated HGVs for delivery of plant, cable, and other materials;
- Beavertail lorries;
- Excavators;
- 8-wheeler tipper trucks;
- Dumper trucks;
- Telehandlers;
- Concrete mixer trucks, for 400kV jointing pits;
- Cable drums and winches;
- Tractors;
- Staff vans or minibuses.

4.2. HDD equipment

4.2.1. Equipment expected to be used for HDD cable installation includes:

- Articulated HGVs for delivery of plant, cable, and other materials;
- Beavertail lorries;
- Excavators;
- 8-wheeler tipper trucks;
- Dumper trucks;
- Telehandlers;
- HDD rig;
- Water tanks;
- Mud mixing tank;
- Cable drums and winches;
- Tractors;
- Staff vans or minibuses.

5. Construction

5.1. Construction activities

5.1.1. Expected construction activities for both open trenching and HDD include:

- Establishment of accesses and temporary access tracks;
- Stripping of topsoil in sections;
- Trenching in sections;
- Appropriate storage and capping of soil;
- Laying of bedding material;
- Sectionalised approach of cable and duct installation;
- Backfilling of trenches with retained soil;
- Excavation and installation of jointing pits (for the Grid Connection Corridor);
- Cable joint installation;
- Cable pulling;
- Testing and commissioning;
- Reinstatement including removal of temporary access tracks.

5.1.2. Additional activities for HDD include:

- Installation of HDD launch and reception compounds;
- Drilling of HDD crossings;
- Reinstatement including removal of temporary access tracks and HDD compounds.

5.2. Management of spoil

5.2.1. During construction of the Grid Connection Corridor and the internal cable corridors, spoil will be managed as described in the **Outline Soil Management Plan [EN010158/APP/7.7].**

5.3. Construction compounds

5.3.1. The Grid Connection Corridor will be constructed using the Primary Construction Compound located in E21, E22 or E23, north of Granborough Road. The internal cable corridors will be constructed using this compound and the other Primary and Secondary Construction Compounds that form part of the Proposed Development. Construction Compound locations are indicated on **ES Volume 3, Figure 3.8: Indicative Location of Primary and Secondary Construction**

Compounds [EN010158/APP/6.3] and in the **Works Plans [EN010158/APP/2.3].**

5.4. Construction programme

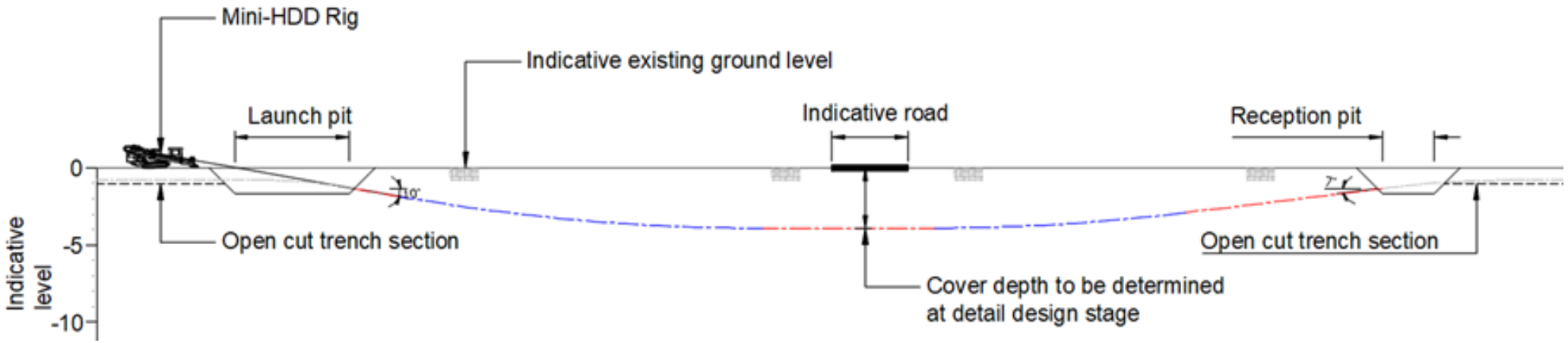
5.4.1. The construction of the Proposed Development is expected to take place in two phases. The construction of the Grid Connection Corridor will take place during the second phase of construction, while the construction of the internal cable corridors will take place across both phases. Indicative construction phasing is outlined in **ES Volume 1, Chapter 3: Proposed Development Description [EN010158/APP/6.1].**

6. Operation

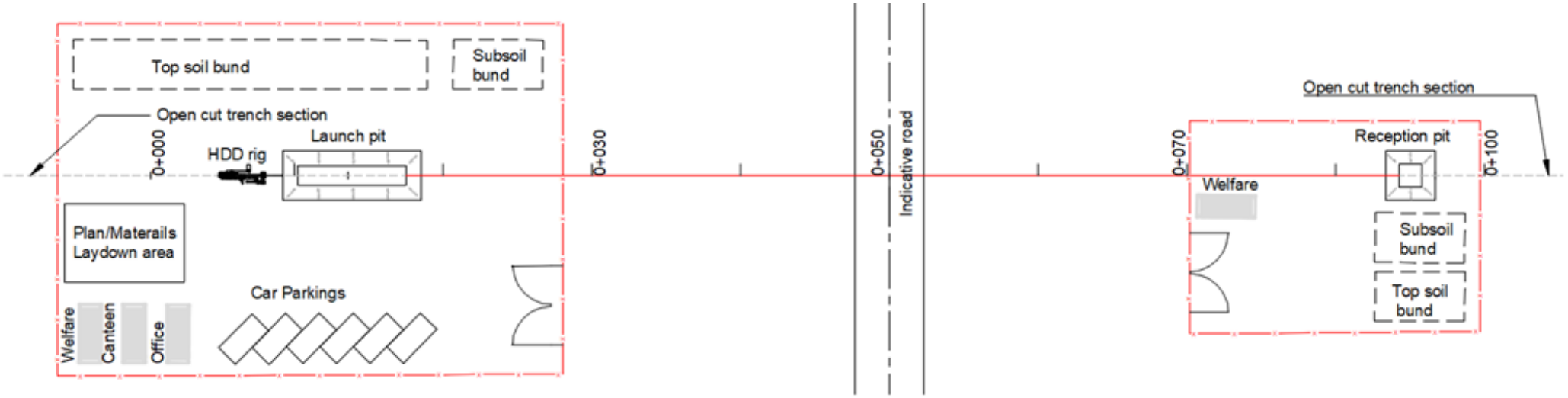
6.1.1. The cables in the Grid Connection Corridor and internal cable corridors will be subject to ongoing monitoring during operation. This would include periodic access to the jointing pits on the Grid Connection Corridor for inspection purposes and to carry out any work required to maintain the bays in good condition.

6.1.2. If cable faults develop, temporary access tracks will be re-established to allow the necessary vehicles and equipment to access to the relevant locations. Temporary excavations and pits will be put in place to access the affected cables and allow repair or replacement. Once works are completed, excavations will be backfilled and temporary tracks removed.

Annex 1 – Indicative HDD cross-section



Annex 2 – Indicative HDD layout



Appendix 3 - HDD Fluid Breakout Plan

Rosefield Solar Farm

Outline Construction Environmental Management Plan

Appendix 3: HDD Fluid Breakout Plan (Clean)

EN010158/APP/7.2.5
Revision 2
Deadline 4
June 2026
Rosefield Energyfarm Limited

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

Table of Contents

1. Introduction

1.1. Purpose of this document

1.1.1. The Proposed Development may make use of Horizontal Directional Drilling (HDD) techniques for cable crossings of roads or other features.

1.1.2. This document has been updated at Deadline 4 to take into account further discussions with the Environment Agency and the addition of further controls around the use of PFAS containing materials within HDD methodology.

1.1.3. This document describes the approach that will be taken to manage the risk of HDD fluid breakout where HDD techniques are used, in addition to general measures described elsewhere in this **Outline Construction Environmental Management Plan (CEMP) [EN010158/APP/7.2]**.

1.1.4. A detailed site-specific breakout plan for each crossing will be developed by the HDD contractor prior to any HDD works being undertaken.

1.2. Use of drilling fluid

1.2.1. Horizontal Directional Drilling (HDD) uses a drilling fluid to perform the following functions:

- To remove cuttings from in front of the drill bit;
- Power the mud motor;
- To transport cuttings from the drill face towards the surface;
- Lubricate the drill string;
- Cooling the cutting tools;
- Borehole stabilization; and
- Creation of a filter cake against the wall of the hole to minimize the risk of loss of drilling fluid or influx of groundwater penetration into the borehole.

1.2.2. HDD drilling fluid primarily comprises bentonite (clay) mixed with water, with additives to control its rheological properties. The bentonite is typically delivered to Site as a dried powder and is mixed on-site in a temporary mix tank with water and additives.

1.2.3. The Applicant shall prioritise the procurement and installation of cables and construction materials that are free of PFAS. The use of PFAS-containing materials (including fluoropolymers such as PTFE, PFA, and PVDF) will be considered where PFAS-free alternatives are not technically

feasible, do not meet required safety and performance standards, or are not commercially available at a reasonable cost.

1.2.4. The Applicant will request from contractors a justification for any necessary use of PFAS-containing components.

1.2.5. Fluid breakout refers to drilling fluid escaping from the borehole, either to the surface or under the surface (e.g. into voids or high permeability ground). When breakout occurs, the fluid is not fully circulating back to the surface and will not be performing one of its major functions i.e. removal of cuttings from the borehole, which can result in stuck or lost drilling equipment.

2. Fluid Breakout Risk

2.1. Breakout to surface

2.1.1. Drilling fluid can sometimes break out of the borehole as a result of the nature of the ground e.g., in the presence of highly fissured clay, gravels or where there are large interconnected fissures in the ground. Breakouts may also occur where manmade features are present (e.g., old boreholes). Surface breakout most commonly occurs close to the entry point due to the drill being shallow and not yet at the optimum drill depth (i.e. the intended depth for the borehole in question).

2.1.2. Breakout of drilling fluid from the borehole is only likely to reach ground level where there is a continuous path available to the surface.

2.1.3. Monitoring of the surface above the borehole and of the volume of fluid returning to the entry pit can be used to identify a loss of fluid as result of breakout. Mitigation measures are discussed in **Section 3.**

2.2. Breakout to voids

2.2.1. During drilling in ground with high permeability (e.g., peat) or voids (e.g., chalk) drilling fluid can be lost to the ground without reaching the surface.

2.2.2. If fluid is lost to the ground, the volume of fluid returning to the surface will reduce and will be identified by monitoring levels in the mud (fluid) tanks. Mitigation measures are identified in **Section 3.**

3. Fluid Breakout Mitigation

3.1.1. Mitigation to reduce the risk and impacts of fluid breakout are described below.

3.2. Design

3.2.1. A specific design of each HDD crossing will be carried out, including:

- Appropriate ground investigation (GI) of the location;
- Intended drill path in relation to the identified ground conditions and proposed drilling methodology;
- Hydro fracture analysis and calculation; and
- Drilling fluid viscosity and properties selection suitable for the identified ground conditions.

3.2.2. A risk assessment and contingency plan will be developed to identify site-specific breakout risks and actions to be taken to minimise the impact of any breakout that occurs.

3.2.3. Drilling fluids will be specified to be biodegradable and non-toxic.

3.3. Monitoring

3.3.1. Monitoring activities to reduce the risk of breakout during drilling will be defined in the detailed CEMP, which will be produced in line with the Outline CEMP. Monitoring activities are expected to include:

- Monitoring of the volume of fluid returning to the entry pit – a decrease in volume may indicate a loss of fluid i.e., breakout;
- Downhole annular pressure monitoring to monitor actual pressure against the theoretical pressure identified in the hydro fracture analysis – elevated pressure may indicate a blocked borehole and an increased risk of breakout; and
- Regular inspections of the surface above the drill route to check for any signs of surface breakout.

3.3.2. If monitoring indicates a risk of breakout occurring, operators will take action accordingly e.g., cleaning the borehole, reducing the fluid pressure, reducing the drill penetration rate.

3.3.3. If surface or void breakout occurs, drilling will be stopped. Fluid from any surface breakout will be cleaned up as described in **Section 4.** Any surface breakout will be reported to Buckinghamshire Council and the Environment Agency within 24 hours.

3.4. Recording

3.4.1. The HDD contractor will keep records of the drilling process. Details will be determined based on the detailed design of each HDD crossing but these records are expected to include data on drill direction and position, rate of penetration, downhole annular pressure and records of equipment used and activities carried out.

3.4.2. As well as being good practice, recording and reporting of key data as described above is expected to help identify whether actual results are in line with design expectations and allow adjustments to be made as work progresses to minimise the risk of fluid breakout.

4. Breakout Clean Up

In the event of surface or void breakout of the drilling fluid, drilling operations will be stopped which will reduce fluid pressure and stop further fluid from reaching the surface or further loss of fluid into the ground.

4.1.1. The contingency plan developed at detailed design will define the activities to be carried out to deal with the breakout. This is expected to comprise:

- Confirm whether surface breakout has occurred;
- If surface breakout has occurred;
- Confirm surface location(s) of breakout;
- Confirm scale of breakout in terms of area affected and approximate volume of fluid;
- Containment of the fluid with appropriate materials (e.g. silt fences, straw bales, sand bags, temporary bunds) to minimise the affected area;
- Removal of the fluid by hand or pumping, with return of the recovered fluid to the drilling compound for reuse or subsequent disposal;
- Removal of any remaining deposits by hand;
- Removal of temporary containment materials or bunds;
- Appropriate restoration of surface areas affected by breakout or the containment works.

4.1.2. Disposal of waste material would be in accordance with the other provisions of the **Outline Construction Environmental Management Plan (Outline CEMP) [EN010158/APP/7.2]**, including the **Outline Site Waste Management Plan** which forms Appendix 1 of the **Outline CEMP.**

4.1.3. The HDD contractor will have necessary equipment on-site (e.g., silt fencing, sand bags, pumps) to allow the defined containment and clean-up methodology to be implemented rapidly if needed.

4.1.4. For either surface or void breakout, and prior to drilling restarting, the causes of the breakout will be reviewed and the drilling methodology adjusted (if appropriate) to minimise the risk of reoccurrence.

Rosefield
Solar Farm

rosefieldsolarfarm.co.uk

Application Document Ref: EN010158/APP/7.2.5
Planning Inspectorate Scheme Ref: EN010158