



Fosse Green Energy

Preliminary Environmental Information Report

VOLUME

3

**Appendix 3-A: Framework
Construction Environmental
Management Plan**

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Prepared for:

Fosse Green Energy Limited

Prepared by:

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1. Introduction

1.1 Background

- 1.1.1 Fosse Green Energy Limited (hereafter referred to as 'the Applicant') is seeking consent for the construction, operation and decommissioning of Fosse Green Energy (hereafter referred to as the 'Proposed Development'). This will require an application for a Development Consent Order (DCO), which will be submitted to the Planning Inspectorate, with the decision of whether to grant a DCO being made by the Secretary of State pursuant to the Planning Act 2008 (Ref 1).
- 1.1.2 This Framework Construction Environmental Management Plan (CEMP) has been prepared to accompany the Preliminary Environmental Information (PEI) Report and presents a framework for environmental management during the construction phase of the Proposed Development, with the aim to provide a clear and consistent approach to environmental mitigation during construction. Following the statutory consultation, and further design development and completion of the assessments within the Environmental Statement (ES), this Framework CEMP will be updated and submitted with the DCO application.
- 1.1.3 If the DCO application is approved, a detailed CEMP will be produced for the Proposed Development following the appointment of a Principal Contractor in accordance with a Requirement of the DCO and prior to commencement of construction. The detailed CEMP will be required to be in accordance with the measures included in the Framework CEMP.
- 1.1.4 This document does not address operational or decommissioning activities, which would be subject to separate environmental management plans and procedures. A Framework Operational Environmental Management Plan (OEMP) and a Framework Decommissioning Environmental Management Plan (DEMP) will be prepared to accompany the DCO application and secured as necessary through a Requirement of the DCO.

1.2 The Proposed Development

- 1.2.1 The Proposed Development will comprise the construction, operation and maintenance, and decommissioning of a solar photovoltaic (PV) electricity generating facility, with on-site Battery Energy Storage System (BESS) and other associated infrastructure, with a total capacity exceeding 50 megawatts (MW), along with an import and export connection to the national electricity transmission network at the proposed Navenby substation.
- 1.2.2 The Site within which the Proposed Development will be delivered is located approximately 9km to the south and south-west of Lincoln City Centre, in proximity to the villages of Thorpe on the Hill, Witham St Hughes, Haddington, Thurlby, Navenby, and Bassingham.

- 1.2.3 The Proposed Development Site is a total area of 1,426 hectares (ha) and comprises the following distinct elements:
- a. 'the Principal Site', which comprises Solar PV Array Areas and Interconnecting Cable Corridors, and contains ground-mounted solar PV panels, Battery Energy Storage System (BESS), and associated infrastructure; and
 - b. 'the Cable Corridor', which comprises the underground electrical infrastructure required to connect the Principal Site to the national electricity transmission system.

The Principal Site

- 1.2.4 The Principal Site is the area of the Site covered by the ground-mounted solar photovoltaic (PV) panels, Solar Stations, BESS, Onsite Substation, Interconnecting Cables between solar PV areas, associated infrastructure and planting and mitigation areas. The total area of the Principal Site is approximately 1,065ha.

The Cable Corridor

- 1.2.5 The Cable Corridor is the area of the Site in which the 400 kilovolt (kV) Grid Connection Cables will be installed between the Onsite Substation and the proposed Navenby Substation. The proposed Navenby Substation is subject to a separate application and does not form part of the Proposed Development. The Cable Corridor partially overlaps the Principal Site and is approximately 407ha.

Construction Compounds

- 1.2.6 During the construction phase, one main construction compound and several secondary compounds will be created, as well as temporary roadways to facilitate access to all land within the Principal Site. The construction compounds will be 'built-out', being gradually replaced by the solar PV arrays as the construction progresses. In addition to the main compound and the secondary compounds, smaller short-term use construction compounds will be located across the Site including the Cable Corridor.
- 1.2.7 The footprint of the main compound would be approximately 100m x 200m and the secondary compounds will be approximately up to 100m x 100m and will contain a site office, mobile welfare units, canteen facility, a fenced area for storage and waste skips and space for short-term parking, storage, download and a turning area. The compounds will be converted to solar PV or landscaping at the end of their use.

2. Construction Environmental Management

2.1 Roles and Responsibilities

2.1.1 Key roles and responsibilities during the construction phase in managing environmental impacts will likely include, but are not limited to:

- a. **Site Manager** – Overall responsibility for activity onsite and will be based onsite full time.
- b. **Construction Project Manager** – Overall responsibility for ensuring all elements in the DCO, CEMP(s), and all environmental legal and other requirements are implemented, and appropriately resourced, managed, reviewed and reported.
- c. **Environment Manager** – Responsible for the overall management of environmental aspects on site, ensuring environmental legislation and good industry practices are complied with, and environmental mitigation and monitoring measures are implemented. The Environment Manager will oversee environmental monitoring onsite and carry out regular environmental site inspections, reporting and responding to any incidents or non-compliance. The Environment Manager will liaise with relevant environmental bodies and other third parties as appropriate.
- d. **Environmental Clerk of Works (EnvCoW)** – Responsible for overseeing the management of and providing advice about environmental and ecological risks during construction including, for example, management of protected species, surface water management, pollution, air quality and noise.
- e. **Ecological Clerk of Works (ECoW)** – Responsible for the management of the risks to biodiversity on construction sites, advising on the protection of valued biodiversity features and providing practical solutions.
- f. **Flood Warden** – There will be a dedicated responsibility to be prepared for, and manage, the response to flood incidents.
- g. **Health and Safety Manager** – Responsible for the monitoring and controlling of health and safety compliance and related rules and regulations onsite.
- h. **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.

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

2.2 Construction Programme

- 2.2.1 The current expectation is that construction of the Proposed Development will commence in 2031 and will take approximately 24 months or be phased over 30 months, with operation expected to commence in 2033.
- 2.2.2 More details on the construction phasing will be provided within the detailed CEMP(s) to be agreed with the local planning authorities post consent.

2.3 Working Hours

- 2.3.1 Core construction working hours on-site will run from 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturday, year round, although there is the possibility of shorter hours in the months with reduced daylight hours. There will be no works on Sundays and Bank Holidays.
- 2.3.2 Where on-site works are to be conducted outside the core working hours they will comply with the restrictions stated in the CEMP and any other restrictions agreed with the relevant planning authorities.

2.4 Implementation of the CEMP

- 2.4.1 The measures included in this Framework CEMP are based on the potential environmental impacts that have been identified in the PEI Report.
- 2.4.2 The Framework CEMP is designed with the objective of achieving compliance with the relevant environmental legislation and securing the environmental mitigation measures set out within the PEI Report (and ES at the next stage).
- 2.4.3 A range of 'standard' or good industry and best practice mitigation and construction management measures have been accounted for in the environmental assessments presented within the PEI Report and these will be implemented during construction of the Proposed Development. This Framework CEMP demonstrates how these commitments in the PEI Report will be implemented. It also sets out the monitoring and auditing activities designed to demonstrate that such environmental mitigation measures are carried out and that they are effective.
- 2.4.4 The appointed Principal Contractor will be responsible for implementing the environmental mitigation measures documented in this Framework CEMP, subject to grant of the DCO and as a contractual responsibility to the Applicant, as the Applicant will ultimately be responsible for compliance with the requirements of the DCO.
- 2.4.5 It is considered likely that there will be more than one detailed CEMP prepared for the Proposed Development; for example, where different contractors are involved in different aspects of the Proposed Development.

This will be determined by the appointed Principal Contractor once the detailed construction programme is known.

2.5 Control of Noise

- 2.5.1 Consents under Section 61 of the Control of Pollution Act 1974 would be voluntarily obtained for the Proposed Development where noisy works outside of normal working hours are anticipated. This would include agreed construction noise limits for nearby noise sensitive receptors and in accordance with any other restrictions agreed with the relevant planning authorities.
- 2.5.2 Abnormal or emergency construction traffic movements may occur outside of normal working hours. In the event of these occurrences, specific noise mitigation measures will be put in place to reduce potential noise impacts at nearby noise sensitive receptors.

2.6 Control of Light

- 2.6.1 As far as practicable, construction works will be limited to daylight hours, with focussed task specific lighting provided where this is not practicable. In winter months, construction temporary site lighting, in the form of mobile lighting towers with a power output of 8 kilo volt-amperes (kVAs), may be required in areas where natural lighting is unable to reach (e.g. sheltered/confined areas). There will also be lighting at the main construction compounds while construction is underway during core working hours.
- 2.6.2 Artificial lighting would be provided to maintain sufficient security and health and safety for the Site Boundary and construction staff, whilst adopting mitigation principles to avoid excessive glare and minimise spill of light to nearby receptors (including ecology and residents) outside of the Site Boundary as far as reasonably practicable.
- 2.6.3 All construction lighting will be deployed in accordance with the following recommendations to prevent or reduce the impact on human and ecological receptors:
 - a. The use of lighting will be minimised to that required for safe site operations;
 - b. Lighting will utilise directional fittings to minimise outward light spill and glare (e.g. via the use of light hoods/cowls which direct light below the horizontal plane, preferably at an angle greater than 20° from horizontal);
 - c. Lighting will be directed towards the middle of the Site Boundary rather than towards land outside of the boundaries.

2.7 Traffic Management

- 2.7.1 During construction, the Principal Contractor will ensure that the impacts from construction traffic on the local community (including local residents and businesses and users of the surrounding transport network) are minimised,

where reasonably practicable, by implementing the measures set out in **PEI Report Volume 1, Chapter 13: Traffic and Transport**. This will be updated during the production of the ES that will be submitted with the DCO application.

- 2.7.2 A Framework Construction Traffic Management Plan will also be prepared for the DCO application and will include details of measures that will be employed to ensure the safe vehicular transport of components to and from the Proposed Development. The Framework CTMP will set out the proposals to manage construction traffic during the construction of the Proposed Development and will consider the management of all freight traffic (i.e. heavy goods vehicles (HGVs)), as well as staff traffic.
- 2.7.3 The detailed CTMP will be developed by the Principal Contractor in consultation with the appropriate local planning authorities and will be secured by a Requirement of the DCO.

2.8 Parking Provisions

- 2.8.1 The temporary construction compounds created within the Site Boundary (see Section 1) will include short-term parking provisions.

2.9 Recovery, Recycling and Disposal of Waste

- 2.9.1 In order to control the waste generated on-site during site preparation and construction, solid waste materials generated during construction will be segregated and stored on-site in containers of up to 30m³ capacity prior to transport to approved, licensed third party landfill and recycling facilities for disposal.
- 2.9.2 A Site Waste Management Plan (SWMP) will be prepared by the Principal Contractor, which will specify the waste streams to be estimated and monitored and goals set with regards to the waste produced. The SWMP will be finalised with specific measures to be implemented prior to the start of construction, in accordance with a Requirement of the DCO. If required, a Materials Management Plan (MMP) would be developed by the Principal Contractor to support the reuse of excavated materials, minimise off-site disposal; and to demonstrate the necessary lines of evidence to support the proper reuse/offsite disposal of materials and ensure compliance with regulatory guidance.
- 2.9.3 All waste to be removed from the Site will be undertaken by fully licensed waste carriers and taken to licensed waste facilities.

2.10 Consents, Licences and Permits

- 2.10.1 Any additional construction licences, permits or approvals that are required will be listed in the detailed CEMP(s), including any environmental information submitted in respect of them.

2.11 Good Practice

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

2.12 Security

- 2.12.1 Site security during construction will be managed by the contractor(s). A security perimeter fence will be implemented early in the construction phase to secure the Site. 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 system for accessing the materials storage areas would be implemented by the contractor(s).
- 2.12.2 There will be designated security staff during construction who will manage the Site Boundary and patrol the perimeter.

2.13 Responding to Environmental Incidents and Emergencies

- 2.13.1 Prior to construction, the Contractor will develop an Emergency Response Plan (ERP) 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.
- 2.13.2 The plan will detail the procedures for responding to incidents (such as spills, leaks or generation of silt laden runoff so as to prevent pollution) and emergencies (such as flooding) on site, and any reporting.

3. Mitigation and Monitoring

3.1 Purpose

- 3.1.1 This section of the Framework CEMP sets out the mitigation and management measures to be included as a minimum in the detailed CEMP(s). It also sets out monitoring requirements and the responsible party identified for each mitigation/ enhancement measures or monitoring requirement. This section will be reviewed and updated for the DCO application and then again following consent when the Framework CEMP is updated to the detailed, final version.

3.2 Climate Change

Table 1: Climate Change

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Greenhouse Gas (GHG) emissions from construction traffic and equipment and use of natural resources in construction materials.	Appropriate standard and best practice control measures will be included in the detailed CEMP(s), which may include, but not be limited to: a. Increasing recyclability by segregating construction waste to be re-used and recycled where reasonably practicable; b. Designing, constructing and implementing the Proposed Development in such a way as to minimise the creation of waste and maximise the use of alternative materials with lower embodied carbon, such as locally sourced products and materials with a higher recycled content where feasible; c. Reusing suitable infrastructure and resources where possible to minimise the use of natural resources and unnecessary materials (e.g. reusing excavated soil for fill requirements); d. Liaising with construction personnel for the potential to implement staff minibuses and car sharing options; e. Implementing a Travel Plan within the CTMP to reduce the volume of construction staff and employee trips to the Proposed Development, while encouraging the use of lower carbon modes of transport by identifying and communicating local bus connections and pedestrian/cycle access routes to/ from the Proposed Development to all construction staff, and providing appropriate facilities for the safe storage of cycles; f. Switching vehicles and plant off when not in use and ensuring construction vehicles conform to current EU emissions standards; and g. Conducting regular planned maintenance of the construction plant and machinery to optimise efficiency.	Auditing during construction. To be confirmed in detailed CEMP(s)	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Increase in flood risk during construction as a result of Climate Change	Appropriate standard and best practice control measures will be included in the detailed CEMP(s), which may include, but not be limited to: - Storing topsoil and other construction materials outside of the 1 in 100-year floodplain extent where feasible. If areas located within Flood Zone 2 (or 3) are to be utilised for the storage of construction materials, this would be done in accordance with the applicable flood risk activity regulations, if required; - Conducting regular planned maintenance of the plant and machinery; - Appointing named person (s) to monitor weather forecasts on a monthly, weekly and daily basis, and plan works accordingly. - The construction laydown area site office and supervisor will be notified of any potential flood occurring by use of the Floodline Warnings Direct or equivalent service. - Developing health and safety plans for construction activities to account for potential Climate Change impacts on workers, such as flooding and heatwaves. To include measures such as toolbox talks on training on dangers of extreme weather conditions. - All temporary construction compounds will be located outside of areas of fluvial Flood Zone 2 and 3.	Auditing during construction. To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).
Extreme weather events as a result of climate change	Contractors will be required to monitor weather forecasts and plan works accordingly with internal methodologies to manage workers and resources in extreme weather conditions. For example, works in the channel of any watercourse will be avoided or halted were there to be a significant risk of high flows or flooding. Contractors will be required to sign up to receive the Environment Agency's flood alerts and plan works accordingly to manage extreme weather conditions such as storms and flooding.		

3.3 Cultural Heritage

Table 2: Cultural Heritage

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Potential for impact upon buried archaeological remains	Current measures to minimise impacts on cultural heritage assets during construction of the Proposed Development include: a. Existing hedgerows and woodland will be retained wherever possible; b. Horizontal directional drilling (HDD) is proposed to install the high voltage interconnector cables beneath the A46, avoiding surviving remains of the Fosse Way Roman road (MLI60943).	Site specific Written Schemes of Investigation (WSI) will be submitted and agreed with the local authority.	The overall responsibility will be with the Principal Contractor.
Temporary impacts on the setting of heritage assets during construction	Once the results of ongoing fieldwork surveys are known and the Proposed Development design develops further, additional mitigation measures may include, for example: a. Additional buffer zones around heritage assets to preserve their setting; b. Creation of development-free zones within the Site to achieve preservation of archaeological remains; c. Minimising vegetation clearance, land disturbance and land take to reduce loss of archaeological remains and impacts to the historic landscape; d. Use of concrete blocks rather than ground piles at locations of sensitive heritage assets (and where feasible), to reduce the depth of the infrastructure so the PV panel mounting structures sit on the surface rather than needing to be piled into the ground; and e. The chosen colour palette for above-ground components of the Proposed Development will reflect the prevailing landscape, minimising their visual impact. Additional mitigation measures to manage the archaeological resource may be required which will include (but not be limited to): a. An appropriate programme of archaeological investigation and recording will be undertaken, with the objective of advancing the understanding of the	All archaeological work will be undertaken in line with an Archaeological Mitigation Strategy (AMS) to be submitted with the DCO application.	Specific responsibilities will be confirmed in the detailed CEMP(s)

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	significance of archaeological remains within the Site that may be disturbed or either wholly or partially lost; b. Appropriate archaeological investigation and recording will be undertaken prior to the commencement of construction works wherever possible but may also include monitoring and recording works during construction; c. The requirements for, and scope of, additional archaeological mitigation will be set out in an Archaeological Mitigation Strategy (AMS); and d. The contractor appointed to undertake the construction of the Proposed Development will produce Heritage Management Plans (HMPs) alongside the detailed CEMP that set out how the requirements for archaeological mitigation at each stage will be implemented.		

3.4 Ecology and Nature Conservation

Table 3: Ecology and Nature Conservation

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Potential direct and indirect impacts to designated ecological sites, habitat (including ancient woodland and individual trees, arable field margins, swamp, neutral grassland and coastal and floodplain grazing marsh), notable species (including aquatic macroinvertebrates and macrophytes, terrestrial invertebrates and non-breeding birds)	In addition to the good practice measures that will be implemented during construction of the Proposed Development to mitigate construction-related effects associated with dust deposition, air pollution, pollution incidents (including the safe storage of chemicals / other hazardous materials), water quality, lighting, noise and vibration detailed elsewhere in this Framework CEMP, the following measures to minimise impacts on designated sites, habitat and notable species include: - A security perimeter fence will be implemented early in the construction phase to secure the Site and prevent construction activity from intruding into the LWS. The fence design will include gaps to allow mammals, including small deer, Badger, Brown Hare and Hedgehog, to pass underneath at strategic locations to maintain ecological connectivity. The final locations of these mammal passes will be determined following pre-commencement surveys. - Any access that is required for construction of the Cable Corridor will utilise existing access points, such as those already used by agricultural machinery. Vegetation clearance in these areas will also be minimised as much as is practicable. - The laying of cabling will be undertaken using non-intrusive methods, with launch and exit pits outside of designated sites to protect habitats. The setting back of these works will mitigate for potential hazards such as chemical spills, thus avoiding potential direct impacts to the LWS. - Construction compounds will be setback from the LWS, with security fencing implemented at an early stage to ensure incursion into this LWS does not occur. - Any construction within the vicinity of designated sites and habitat which may require temporary lighting, which has the potential to spill into adjacent watercourses. Artificial lighting of these habitats may disrupt species' movements. Therefore, any lighting that is required for the construction of the	To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP.

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	Proposed Development will be directed away from existing retained and sensitive habitats to minimise light disturbance to species associated with these habitats. Any requirements for task-specific lighting during construction will be designed to be downward directional and will only be used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage. f. Woodland and trees will be protected, in line with British Standard Recommendations (Ref 3) with undeveloped buffers of at least 15m from the boundary of woodlands and tree lines. These areas will be protected by clearly defined root protection areas, concordant with the requirements for each individual tree, to prevent damage/compaction of roots by plant and other machinery and prevent direct or indirect impacts to trees.		
Impacts to running water habitat	a. A security perimeter fence will be implemented early in the construction phase to secure the Site and prevent construction activity from intruding into the riparian habitats of running water (a minimum 10m from the bank-top of the watercourse). The fence design will include gaps to allow mammals, including small deer, Badger, Brown Hare and Otter, to pass underneath at strategic locations to maintain ecological connectivity. The final locations of these mammal passes will be determined following pre-commencement surveys. b. Any access that is required for construction of the Cable Corridor, where it crosses running water habitats, will utilise existing access points, such as those already used by agricultural machinery. Vegetation clearance in these areas will also be minimised as much as is practicable. There will be no access over the River Witham or River Brant. c. The laying of cabling will be undertaken using non-intrusive methods, with launch and exit pits outside of main rivers (River Witham and River Brant). This will mitigate for potential hazards such as chemical and soil spills, thus avoiding potential direct impacts to running water.	To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP.

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	d. All cables will be installed at a minimum of 2m below the bed of watercourses, excluding the River Witham and River Brant where cables will be installed by trenchless methods (e.g. HDD) at a minimum of 5m below the bed to prevent disturbance to fish species using running water habitats.. e. Construction compounds will be setback from running water habitats, with a minimum 10m from the bank-top of the watercourse (as described above), with security fencing implemented at an early stage to ensure incursion into the riparian habitats of running water does not occur. f. Any construction within the vicinity of watercourses may require temporary lighting, which has the potential to spill into adjacent watercourses. Artificial lighting of these habitats may disrupt species' movements. Therefore, any lighting that is required for the construction of the Proposed Development will be directed away from existing retained and sensitive habitats to minimise light disturbance to species associated with these habitats. Any requirements for task-specific lighting during construction will be designed to be downward directional and will only be used for the duration of the task. All temporary lighting will need to satisfy health and safety requirements, as well as minimising potential effects on the surrounding areas by minimising sky glow, glare, and light spillage.		
Impacts to hedgerow habitat	a. Hedgerows will be protected, in line with British Standard Recommendations (Ref 3) with undeveloped buffers of at least 5m from the boundary of hedgerows without trees and a wider buffer, concordant with the requirements for each individual tree, for any hedgerows with trees. These areas will prevent damage/compaction of roots by plant and other machinery and prevent direct or indirect impacts to hedgerows. b. A security perimeter fence will be implemented early in the construction phase to secure the Site and prevent construction activity from intruding into retained habitats as described above.	To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP.

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Impacts to fish	a. Where any culverts are proposed, these will be designed to allow continued connectivity and fish passage along the watercourse, with a natural bed and no drop inlet or outlet. For cable crossings, the avoidance of intrusive trenching techniques will minimise impacts on fish species and maintain connectivity of habitats for fish, e.g., Eels. However, fish rescue may be required during construction where de-watering or over-pumping is required. b. During activities where there are direct impacts to watercourses or water bodies, for example through drain-down, culverting, or open-trenching, the following best practice methods will be followed: i. avoidance of key fish migration timings wherever practicable e.g., avoiding key fish migration seasons (e.g., April to June for European Eel); ii. where practicable, construction will be undertaken during daylight hours to avoid the need for artificial light; iii. all cables will be installed at a minimum of 2m below the bed of watercourses, excluding the River Witham and River Brant where cables will be installed by trenchless methods (e.g. HDD) at a minimum of 5m below the bed to prevent disturbance to fish species; and iv. if required, fish rescue and / or translocation during drain-down of watercourses or water bodies, and during the installation of culverts or over-pumping for open trenching through watercourses / ditches.	To be confirmed in detailed CEMP(s).	
Impacts to grass snake and common toad	In addition to the best practice measures listed above, the following measures to minimise impacts to grass snake and common toad include: a. Pre-construction surveys will be undertaken to support the baseline survey findings, the purpose of which is to ensure mitigation during the construction phase is based on the latest protected species information and Proposed Development design. Should there have been any changes to the Proposed Development design which could impact upon Grass Snake and Common Toad, where found within the Site, then mitigation measures will be updated accordingly.	To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP.

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	b. Vegetation clearance throughout the Site will be undertaken in advance of construction and at an appropriate time of year so as to avoid incidental injuring or killing of reptiles (and also Common Toad), concordant with the requirements for other species, such as nesting birds and Brown Hare. Vegetation supporting reptiles will be cut in a phased approach, firstly cutting to 30cm, then, following a period of no less than 24 hours, to 15cm and then to ground level, after another 24 hours. In areas where Grass Snake (and Common Toad) have been identified, any habitat features within such areas which may conceal sheltering Grass Snake (and Common Toad) such as log piles, rubble mound bunds will not be dismantled during their inactive season (November to February inclusive). There will be no need to undertake any relocation of reptiles within the Site.		
Impacts to breeding birds	In addition to the good practice measures listed above, the following measures to minimise impacts to breeding birds during construction will include: a. Pre-construction vegetation clearance will avoid the nesting bird period, where practicable i.e., March to August (inclusive). Should any vegetation clearance be required within the nesting bird period then this will be checked, prior to vegetation removal, for the presence of nesting birds, by a suitably qualified ornithologist. If active nests are found, then these will be avoided with appropriate buffer zones put in place and the area monitored until the young birds have fledged and/ or the nesting attempt has ceased. b. Pre-construction surveys will be undertaken to support the baseline survey findings and identify the locations of specially protected bird species, the purpose of which is to ensure mitigation during the construction phase is based on the latest information. Should there have been any changes to the Proposed Development design which could impact upon nesting Schedule 1 species, then mitigation measures will be updated accordingly.	To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP.

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Impacts to bats (foraging/commuting and roosting)	In addition to the best practice measures listed above, the following additional measures to minimise impacts to roosting and commuting/foraging bats will include: - Pre-construction surveys will be undertaken to support the baseline survey findings, the purpose of which is to ensure mitigation during the construction phase is based on the latest protected species information and Proposed Development design. Should there have been any changes to the design which could impact upon roosting bats, where found within the Site, then Natural England licences will be sought (if required) and mitigation measures updated accordingly. - Where lighting is required, it will be temporary in nature and will conform to best practice guidelines with respect to minimising light spill into retained habitats to prevent or reduce the impact on bats and will be minimised to that required for safe site operations and security and directed towards the middle of the Site rather than towards the boundaries. - Where any temporary work is required within 15m of any tree with the potential to support roosting bats, such as enabling works or clearance for construction, then a precautionary working method statement would be provided to avoid potential impacts. This would include the use of an Ecological Clerk of Works (ECoW).	To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP.
Impacts to riparian mammals (Water Vole and Otter)	In addition to the best practice measures listed above, the following measures to minimise impacts to riparian mammals will include: Pre-construction surveys will be undertaken to support the baseline survey findings (as presented in PEI Report Volume 1 Chapter 8: Ecology and Nature Conservation) where intrusive crossing methods of watercourses are proposed within the Site. The purpose of these pre-construction surveys is to ensure mitigation during the construction phase is based on the latest protected species information. Where there have been any changes to Otter or Water Vole distribution within the Site (or the status of the potential Otter holt),	To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP.

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	mitigation measures (such as non-intrusive crossing for cabling) will be updated accordingly and the relevant Natural England protected species licence application would be applied for if disturbance to breeding Otter was unavoidable. b. The crossing of the River Witham and River Brant will be undertaken using trenchless techniques (e.g. HDD) that would not disturb the watercourse, with the depth of the cable below the bed of these rivers to be a minimum of 5m, to avoid impacts to watercourses and bankside vegetation (riparian habitats) and also including launch and exit pits setback from the banktop of the watercourse to protect riparian habitats. Where the Interconnecting Cable Corridor is proposed to cross the River Witham, this setback will be extended to a minimum of 100m in recognition of the presence of a potential Otter holt. c. Measures to avoid animals being injured or killed within construction working areas, through excluding them from such areas (e.g., fencing) will prevent animals from falling into and becoming trapped in excavations. Furthermore, any excavations will be covered, or a means of escape (such as a ramp) will be implemented. No excavations will remain open overnight. d. Construction in the Interconnecting Cable Corridor within 100m of the River Witham will only be undertaken during daylight hours and will avoid two hours after sunrise and two hours before sunset, reduced to one hour between November and February (inclusive) because of the limited daylight hours. This will prevent disturbance to any resting Otter in the River Witham.		
Impacts to badger	In addition to the best practice measures listed above, the following measures to minimise impacts to badger will include: a. Pre-construction surveys will be undertaken to support the baseline survey findings (as presented in PEI Report Volume 1 Chapter 8: Ecology and Nature Conservation). The purpose of these pre-construction surveys is to ensure mitigation during the construction phase is based on the latest protected species information. Should there have been any changes to Badger	To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Contractor. Specific responsibilities will be

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	distribution within the Site, Natural England licences will be sought (if required) and mitigation measures will be updated accordingly. b. Measures to avoid animals being injured or killed within construction working areas, through excluding them from such areas (e.g., fencing) will prevent animals from falling into and becoming trapped in excavations. Furthermore, any excavations will be covered, or a means of escape (such as a ramp) will be implemented. No excavations will remain open overnight.		confirmed in the detailed CEMP.
Impacts to other mammals (brown hare, hedgehog and harvest mouse)	In addition to the best practice measures listed above, the following additional measures to minimise impacts to other mammals will include: a. Vegetation clearance will be undertaken in advance of construction and at an appropriate time of year to avoid incidental injuring or killing of animals, such as Brown Hare and concordant with the requirements for other species such as nesting birds and reptiles. b. Any excavations will be covered, or a means of escape (such as a ramp) will be implemented. No excavations will remain open overnight.	To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP.
Potential to introduce/spread invasive non-native (INNS) species beyond the Site Boundary during construction of the Proposed Development.	Pre-construction surveys will be undertaken to provide an update on the presence and location of any Invasive Non-Native Species (INNS) plant species, the findings of which will inform the implementation of measures to prevent their spread into the wild. These surveys will inform the production of a Biosecurity Management Plan which will set out procedures to ensure that no INNS plant species are brought onto the Site (e.g., Wildlife and Countryside Act 1981 (as amended) (Ref 4 Schedule 9 species) and will be formalised in the detailed CEMP, secured through the DCO. In the event that any future infestations of INNS are identified prior to and or during the development process, exclusion zones will be established around them, and an ECoW contacted for advice as required.	To be confirmed in detailed CEMP(s).	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP.

3.5 Water Environment

Table 4: Water Environment

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Leakage or accidental spillage of construction materials and potential pollutants used onsite, migrating to nearby surface watercourses or infiltrating to groundwater. Any flooding during construction could flood construction equipment and/materials, causing release of pollutants to nearby surface watercourses or infiltrating to groundwater.	General No construction works will be undertaken within at least 10m of all watercourses and ponds (with the exception of watercourse cable crossings and access track crossings (and potentially drainage outfalls)), which is considered sufficient to mitigate for potential hazards such as chemical and soils spills into watercourses and avoid potential direct impacts to the watercourse and protected species. Good Practice Guidance The contractor will comply with the following Guidance for Pollution Prevention (GPP) (Ref 5): a. GPP 1: Understanding your environmental responsibilities – good environmental practices; b. GPP 2: Above ground oil storage; c. GPP 3: Use and design of oil separators in surface water drainage systems; d. GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer; e. GPP 5: Works and maintenance in or near water; f. GPP 6: Working on construction and demolition sites; g. GPP 8: Safe storage and disposal of used oils; h. GPP 13: Vehicle washing and cleaning; i. GPP 19: Vehicles: Service and Repair; j. GPP 20: Dewatering underground ducts and chambers; k. GPP 21: Pollution Incident Response Plans; l. GPP 22: Dealing with spills; and	Temporary drainage will be monitored throughout construction. Specific details will be confirmed in detailed CEMP(s)	Specific Responsibilities to be confirmed in detailed CEMP(s).

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	m. GPP 26: Safe storage – drums and intermediate bulk containers. Requirements in these guidance documents will be listed in or appended to the detailed CEMP(s). Where new GPPs are yet to be published, the contractor will comply with the following Pollution Prevention Guidance (PPGs), unless they are published during the production of the ES: a. PPG7: Safe storage – the safe operation of refuelling facilities (Ref 6); and b. PPG18: Managing fire water and major spillages (Ref 7). Additional good practice guidance to protect the water environment is detailed in the following key documents: a. British Standards Institute (2009) BS6031:2009 Code of Practice for Earth Works (Ref 8) b. British Standards Institute (2013) BS8582 Code of Practice for Surface Water Management of Development Sites (Ref 8); c. CIRIA C753 (2015) The SuDS Manual (second edition) (Ref 9); d. CIRIA C811d (2023) Environmental good practice on site guide (fifth edition) (Ref 10); e. C648 (2006) Control of water pollution from linear construction projects, technical guidance (Ref 11); f. C609 (2004) Sustainable Drainage Systems, hydraulic, structural and water quality advice (Ref 12); g. C532 (2001) Control of water pollution from construction sites – Guidance for consultants and contractors (Ref 13); and h. C736F Containment systems for prevention of pollution (Ref 14).		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
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The above documents provide guidance for the following measures:

Management of Construction Site Runoff

- a. All reasonably practicable measures will be taken to prevent the deposition of fine sediment or other material in, and the pollution by sediment of, any existing watercourse, arising from construction activities. The measures will accord with the principles set out in industry guidelines including the CIRIA report 'C532: Control of water pollution from construction sites' (Ref 13) and CIRIA report 'C648 Control of water pollution from linear construction sites' (Ref 11). Measures may include use and maintenance of temporary lagoons, tanks, bunds and fabric silt fences or silt screens as well as consideration of the type of plant used;
- b. A temporary drainage system will be developed to prevent runoff contaminated with fine particulates from entering surface water drains without treatment. This will include identifying all land drains and water features in the Site Boundary and ensuring that they are adequately protected using drain covers, sand bags, earth bunds, geotextile silt fences, straw bales, or proprietary treatment (e.g. lamella clarifiers). Any land drains damaged during the works would be reinstated as required;
- c. Where practical, earthworks will be undertaken during the drier months of the year. When undertaking earth moving works periods of very wet weather will be avoided, where practical, to minimise the risk of generating runoff contaminated with fine particulates. However, it is likely that some working during wet weather periods will be unavoidable, in which case other mitigation measures (see below) will be implemented to control fine sediment laden runoff. Water may also be required to dampen earthworks during dry weather to reduce dust impacts, and any runoff generated will need to be appropriately managed by the Contractor in accordance with the pollution prevention principles described in this **PEI Report Volume 1, Chapter 9: Water Environment**;

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	d. To protect watercourses from fine sediment runoff, topsoil/subsoil will be stored a minimum of 20m from watercourses on flat lying land. Where this is not practicable, and it is to be stockpiled for longer than a two-week period, the material will either be covered with geotextile mats, seeded to promote vegetation growth, or runoff prevented from draining to a watercourse without prior treatment; e. Appropriately sized runoff storage areas for the settlement of excessive fine particulates in runoff will be provided; f. Construction site runoff will either be treated on site and 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; g. Equipment and plant are to be washed out and cleaned in designated areas within the Proposed Development construction compound where runoff can be isolated for treatment before disposal as outlined above; h. Mud deposits will be controlled at entry and exit points to the Site using wheel washing facilities and/or road sweepers operating during earthworks activities or other times as required; i. Debris and other material will be prevented from entering surface water drainage, through maintenance of a clean and tidy site, provision of clearly labelled waste receptacles, grid covers and the presence of site security fencing; and j. Should the use of herbicide or other spray chemical be required, a method statement, operating procedure or similar will be prepared prior to the work commencing. This will include measures to protect ground and surface water, including that such work would not be undertaken during or before rainfall and high winds where practicable. Such work will only be carried out		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	by competent personnel using products approved for UK use with adherence to manufacturer's instructions; and k. The Water Management Plan (WMP) (which will be produced post consent as part of the detailed CEMP) will include details of pre, during and post-construction water quality monitoring. This will be based on a combination of visual observations and sampling, and reviews of the Environment Agency's automatic water quality monitoring network. Management of Spillage risk: a. Fuel will be stored and used in accordance with the Control of Substances Hazardous to Health Regulations 2002 (Ref 18), and the Control of Pollution (Oil Storage) (England) Regulations 2001 (Ref 17). Particular care will be taken with the delivery and use of concrete and cement as it is highly corrosive and alkaline; b. Fuel and other potentially polluting chemicals will either be in self-bunded leak proof containers or stored in a secure impermeable and bunded area (minimum capacity of 110% of the capacity of the containers, which includes 10% more capacity than is needed); c. Any plant, machinery or vehicles will be inspected before every use and maintained to ensure they are in good working order and clean for use in a sensitive environment. This maintenance is to take place off site if practicable or, if on site, only at designated areas within the Proposed Development site compound. Only construction equipment and vehicles free of all oil/fuel leaks will be permitted on the Site. Drip trays will be placed below static mechanical plant; d. All washing down of vehicles and equipment will take place in designated areas and wash water will be prevented from passing untreated into watercourses; e. All refuelling, oiling and greasing of plant will take place above drip trays or plant nappies, or on an impermeable surface which provides protection to		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	underground strata and watercourses, and away from drains as far as reasonably practicable. Vehicles will not be left unattended during refuelling; f. As far as reasonably practicable, only biodegradable hydraulic oils will be used in equipment working in or over watercourses; g. All fixed plant used on the Site will be self-bunded; h. Mobile plant is to be in good working order, kept clean, fitted with plant 'nappies' at all times and are to carry spill kits; i. The WMP (which will be produced post consent as part of the detailed CEMP) will include details for pollution prevention and will be prepared and included alongside the detailed CEMP. Spill kits and oil absorbent material will be carried by mobile plant and located at high-risk locations across the Site and regularly monitored and topped up. All construction workers will receive spill response training and tool-box talks; j. The Site will be secure to prevent any vandalism that could lead to a pollution incident; k. Construction waste/debris are to be prevented from entering any surface water drainage or water body; l. Surface water drains on public roads trafficked by plant or within the construction compound will be identified and, where there is a risk that fine particulates or spillages could enter them, the drains will be protected (e.g. using covers or sandbags) or the road regularly cleaned by road sweeper; m. Where practicable, concrete mixing and washing down of mixing plant is to be carried out by the suppliers and away from the Site. Should on-site concrete washout be required, suitable facilities (e.g. geotextile wrapped sealed skip placed within a bunded area or specialist mobile concrete washout facility) will be provided to ensure that the high alkalinity wash water is adequately contained and prevented from entering surface or groundwater. Wash water will be removed from the Site for appropriate disposal at a suitably licenced waste facility. Concrete washout is prohibited within a minimum of 20m of any body of water, including ditches and ponds, or		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	surface water drains, and within 5m of a foul drain. Where practical, this will increase to 50m; and n. Water quality monitoring of potentially impacted watercourses will be undertaken to ensure that pollution events can be detected against baseline conditions and can be dealt with effectively. Full monitoring details would be outlined in the detailed CEMP. Management of Flood Risk: a. Construction works undertaken adjacent to, beneath and within watercourses will comply with relevant guidance, including Environment Agency and Defra guidance documents; b. Topsoil and other construction materials will be stored outside of the 1 in 100 year floodplain extent where feasible. If areas located within Flood Zone 2/3 are to be utilised for the storage of construction materials, this would be done in accordance with the applicable flood risk activity regulations, if required; c. Connectivity will be maintained between the floodplain and the adjacent watercourses, with no changes in ground levels within the floodplain as far as practicable; d. During the construction phase, the contractor will monitor weather forecasts on a monthly, weekly and daily basis, and plan works accordingly. For example, works in the channel of any watercourse will be avoided or halted were there to be a significant risk of high flows or flooding; and e. The construction laydown area site office and supervisor will be notified of any potential flood occurring by use of the Floodline Warnings Direct or equivalent service. f. Edge swales to capture excess runoff from neighbouring PV areas will be provided. These edge swales will capture the peak runoff from Solar Station Compounds and runoff from the solar PV areas.		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	The contractor will be required to produce an Emergency Response Plan prior to construction, which will provide details of the response to an impending flood and will include: - A 24-hour availability and ability to mobilise staff in the event of a flood warning; - The removal of all plant, machinery and material capable of being mobilised in a flood for the duration of any holiday close down period where there is a forecast risk that the site may be flooded; - Details of the evacuation and site close down procedures; - Arrangements for removing any potentially hazardous material and anything capable of becoming entrained in floodwaters, from the temporary works areas; - The contractor will sign up to Environment Agency flood warning alerts and describe in the Emergency Response Plan the actions it will take in the event of a flood event occurring. These actions will be hierarchical meaning that as the risk increases the contractor will implement more stringent protection measures; - If water is encountered during below ground construction, suitable de-watering methods will be used. Any groundwater dewatering required in excess of the exemption thresholds will be undertaken in line with the requirements of the Environment Agency (under the Water Resources Act 1991 as amended) (Ref 15) and the Environmental Permitting Regulations (2016) (Ref 16); and - Safe egress and exits are to be maintained at all times when working in excavations. When working in excavations, a banksman is to be present at all times. Trenchless Crossings of the River Witham and River Brand (Horizontal Directional Drill) The section of the Cable Corridor passing beneath the River Brant and a section of the Interconnecting Cabling beneath the River Witham will be installed using underground techniques such as horizontal directional drilling		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	beneath the bed of the channel to avoid impacting the channel or bed. Mitigation measures would include: - A site-specific hydraulic fracture risk assessment would be developed prior to construction following further investigation of specific ground conditions at the crossing locations, and appropriate mitigation developed in line with best construction practice. There is also a need to manage drilling muds and wastewater so that this would not be spilt into the channel when working close to the banks of a watercourse; - Directional drilling, or other trenchless techniques, would be undertaken by a specialist contractor and the water column above the drill path would be continuously monitored during drilling. where there is an increased perceived risk of drill fluid leakage into a watercourse (i.e. lack of drilling mud returns) the drilling/boring operation would be suspended, remediation action implemented, and subsequently the methodology for that crossing re-evaluated. - The drill fluids used within the drilling machine would be water based, such as naturally occurring bentonite clay. The fluid component of the drilling mud would be mains water, obtained from a nearby supply and tankered to site when required. There would be some recycling of drilling muds by the drilling plant used. - The drilling fluid that returns to the drilling rig would be recycled within that drilling rig. - Any wastewater/drilling products that are not recycled will be stored and removed from the Site by a suitable waste management contractor and disposed of at a licenced wastewater facility; - The send and receive pit excavations for drilling/boring will be located at least 10m from the watercourse edge, as measured from the top of bank (or 16m from the landward toe of flood defences) or 100m for the River Witham where the potential otterholt is located).		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	g. The exact dimensions of the send and receive pits would be determined by site and ground conditions but will be kept to a safe minimum in terms of length, width and depth. h. A shoring system appropriate to the ground conditions will be used as appropriate to minimise water ingress into the pits. i. The ingress of any groundwater will be carefully managed through design of the send or receive pit, shoring method, and a pumping and treatment system. Excessive ingress of water would make the pit unsafe and thus it is important that ingress is minimised and that a suitable system of managing that water is implemented. j. Once the cable is installed beneath the watercourse the pits and any cable trenches will be backfilled to the original ground level and seeded to reduce the risk of runoff and fine sediments entering the watercourse. Watercourse crossings: Open cut installation Where trenchless techniques are not feasible, watercourses would be crossed using open-cut trenching. Mitigation measures would include: a. A pre-works morphology survey of the channel of the watercourse to be crossed will be undertaken prior to construction. The pre-works survey is to ensure that there is a formal record of the condition of each watercourse prior to commencement of works to install cables beneath the channel; b. At this stage it is assumed that where open-cut crossings are required, water flow would be maintained by damming and over-pumping or fluming. Works will be carried out in the drier months where practicable as this would reduce the risk of pollution propagating downstream, particularly in the case of ephemeral watercourses; c. Once the watercourses are reinstated, silt fences, geotextile matting, or straw bales will be used initially to capture mobilised sediments until the watercourse has returned to a settled state;		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	d. Watercourses will be reinstated as found and water quality monitoring will be undertaken prior to, during, and following on from the construction activity; and e. Regular observations of the watercourses will also be required post-works during vegetation re-establishment of the banks, especially following wet weather, to ensure that no adverse impacts have occurred. Access Track Crossings of Watercourses Access tracks will be constructed across the Proposed Development Site. The access tracks will adhere to the appropriate 10m buffer from water features, except where crossings are required. At this stage the structures proposed to be used across the Site for watercourse crossings is yet to be confirmed. As such, as a worst case it is assumed that crossings would require new culverts. More detail on the watercourse crossings by access tracks will be known, and assessed fully, at the ES stage. Mitigation measures include: a. The Proposed Development layout has been designed to avoid new drainage ditch and watercourse crossings where practicable; b. Where new culvert structures are required (assumed as a worst case), this will follow environmentally sensitive design features (e.g. arch rather than box culverts, and box culverts in preference to pipes). The maximum width would be 6m to allow sufficient width for the access tracks. The crossings will be sized at detailed design in order to not impact on flow conveyance and be sized to ensure capacity for the peak flow rate. The culvert inverts will be buried below the natural bed level to allow for natural bed formation and passage of sediments, typically at least 0.3m. Where arch culverts are not provided, it has been assumed that the design of the structure will allow for a naturalised bed to be formed through the structure. There is varying guidance as to what minimum depth is required, but there are also design considerations. Therefore, this will be considered at detailed design stage (post consent). Also to be considered at detailed design stage is to ensure		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	the crossing is perpendicular to the flow, and connectivity is maintained for aquatic species and riparian mammals, with a mammal ledge if there is sufficient room. Perched invert that create a drop from the structure to the downstream bed level will be avoided. c. . Where new culverts are required, length-for-length watercourse enhancements are required in each case to mitigate the impacts, and to ensure compliance against WFD objectives; and d. Depending on the design of any watercourse crossings, floodplain compensation may be required on a 'like for like' and 'level for level' basis. Alterations to surface water flow pathways will also need to be considered and, if necessary, mitigated. This will include consideration of the culvert capacity, or span and soffit height of any open span bridge works to ensure no increase in flood risk. The Water Management Plan (to be produced post-consent) will set out details of water quality monitoring to be undertaken during construction. Due to the low level of risk posed by the construction works, this monitoring will consist of visual and olfactory observations as well as in-situ testing using hand-held water quality meters only.		

3.6 Landscape and Visual

Table 5: Landscape and Visual

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Loss of existing landscape features, e.g. vegetation Visibility of construction activities	The Framework Landscape and Ecology Management Plan (LEMP) (to be submitted with the DCO application) will set out the measures proposed to mitigate the potential impacts and effects on landscape (and biodiversity) features, and to enhance the landscape and biodiversity value of land within the Site Boundary (i.e. the green infrastructure). A detailed LEMP, which takes into account and is prepared in accordance with the principles of the Framework LEMP, will be submitted to and approved by the relevant planning authority (secured through DCO Requirement). Conserving existing vegetation patterns Offsets from trees and woodlands have been incorporated to ensure the health and longevity of vegetation, retaining the existing structure of the landscape. This includes minimum offsets of: 10m from individual trees (or greater if required by the root protection area); 20m from woodland; 5m from hedgerows; and 10m from watercourses. The design uses existing tracks and lanes that cross the Principal Site, wherever practicable, in order to minimise the disturbance of existing vegetation. Creating new green infrastructure - Hedgerows will generally be improved through ‘gapping up’ where they are currently fragmented, improving landscape structure and ecological connectivity.	To be included in the detailed CEMP(s)	The Framework LEMP (to be submitted with the DCO application) will set out roles and responsibilities for implementation.

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	a. A substantial offset has been integrated along the eastern edge of Witham St. Hughs, which continues the green corridor along the drain to the north. Mitigation planting will include an orchard and hedgerows with trees. Sensitive design in relation to form and materials Fencing around the Principal Site will be wooden posts with stock proof fencing, measuring up to 2m high, allowing visual permeability, thereby minimising its visual impact. Lighting The proposed lighting has been designed to avoid and minimise the potential for adverse landscape and visual effects, as described in Section 2.6. Management Measures The grassland and new planting that has been embedded into the Proposed Development to provide landscape and visual mitigation will require management and maintenance in order to provide the intended effect. This will be outlined in the Framework LEMP to be submitted with the DCO application.		

3.7 Noise and Vibration

Table 6: Noise and Vibration

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Vibration due to construction activities causing annoyance at Noise Sensitive Receptors (NSR) and damage to building structures. Construction traffic, plant and machinery noise at nearby NSR.	Best Practice Measures Best Practicable Means that would be implemented during construction works to minimise noise and vibration at NSRs, including, neighbouring residential properties and other sensitive receptors arising from construction activities, including, as appropriate: - Ensuring that all appropriate processes, procedures and measures are in place to minimise noise before works begin and throughout the construction programme. - All contractors to be made familiar with current legislation and the guidance in BS 5228 (Parts 1 and 2) which should form a prerequisite of their appointment. - Ensuring that, where reasonably practicable, noise and vibration are controlled at source (e.g., the selection of inherently quiet plant and low vibration equipment), review of the construction programme and methodology to consider quieter methods, consideration of the location of equipment on-site and control of working hours. - Use of modern plant, complying with applicable UK noise emission requirements. - Hydraulic techniques for breaking concrete or rocks to be used in preference to percussive techniques, where reasonably practicable. - When piling, use of lower noise piling where reasonably practicable. - Off-site pre-fabrication where reasonably practicable. - Regular and effective maintenance by trained personnel will be undertaken to keep plant and equipment working to manufacturer's specifications.	Section 61 consents would be obtained where noise works are anticipated by the appointed contractor or work outside of core hours is required. The Section 61 would form the basis of noise limits and monitoring requirements including monitoring locations, noise monitoring methods and frequency, and the noise control measures to be employed. The detailed CEMP would also set out a scheme for the provision of monthly reporting information during construction to and local residents to	The overall responsibility will be with the Principal Contractor. Specific responsibilities will be confirmed in the detailed CEMP(s).

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	i. All construction plant and equipment to be properly maintained, silenced where appropriate, operated to prevent excessive noise, and switched off when not in use. j. Loading and unloading of vehicles, dismantling of site equipment or moving equipment or materials around the Site to be conducted in such a manner as to minimise noise generation, as far as reasonably practicable. k. All vehicles used on-site shall incorporate broadband reversing warning devices as opposed to the typical tonal reversing alarms to minimise noise disturbance where reasonably practicable. l. Appropriate routing of construction traffic on public roads and along access tracks to avoid sensitive areas where practicable (see PEI Report Volume 1, Chapter 3: The Proposed Development and PEI Report Volume 1, Chapter 13: Traffic and Transport). m. Unnecessary revving of engines will be avoided, and equipment will be switched off when not in use. n. Drop heights of materials will be minimised. o. Plant and vehicles will be sequentially started up rather than all together. p. Plant will always be used in accordance with manufacturers' instructions. Care will be taken to site equipment away from noise-sensitive areas. Where possible, loading and unloading will also be carried out away from such areas. q. Noise generating activities near residential properties, such as use of power tools or piling, would be limited to the hours between 08:00 and 18:00 from Monday to Friday and between 08:00 and 13:00 on Saturday. r. Core working hours onsite will be 07:00 to 19:00 Monday to Friday and 07:00 to 13:00 on Saturday but will be shortened if working would necessitate artificial lighting and therefore the working day may be shorter in the winter months (with the exception of activities such as HDD which may require continuous working). There will be no work on a Sunday or Bank Holiday	advise of potential noisy works that are due to take place and for monitoring of noise complaints and reporting to the Applicant for immediate investigation and action.	

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	unless crucial to construction (e.g., HDD may require continuous activity etc.) or in an emergency. Communication strategy a. Prior to construction works being undertaken, liaison will be undertaken with occupiers of sensitive receptors that may be adversely affected by construction noise and vibration. b. Noise complaints will be monitored and reported to the Applicant for immediate investigation and action. A display board will be installed on-site, and a website will be set up. These will include contact details for the Community Liaison Officer or alternative with whom nuisance or complaints can be lodged. A logbook of complaints will be prepared and managed by the Site Manager. Horizontal Directional Drilling (HDD) Activity To ensure that significant noise effects do not occur due to potential night-time works, and as requirements for HDD activity will not be finalised until a Principal Contractor is appointed, a hierarchy of mitigation measures for HDD activities is listed below: a. Where practicable, HDD works will be avoided within 200m (the distance at which significant effects are predicted at night) of residential receptors (although this will depend on the results of the ground investigation survey); b. Where HDD activities may occur within 200m of sensitive receptors, the option for open cut cable laying will be explored as an alternative to HDD. (This is not viable if HDD is a commitment in specific locations due to stakeholder requests or other environmental issues); c. The potential for the use of quieter equipment than listed in PEI Report Volume 3, Appendix 11-D: Construction and Operational Noise Modelling will be explored by the principal contractor; and		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	d. Depending on the location, plant and timing of works, temporary acoustic fencing will be installed around the HDD site boundary to screen receptors from noise emission if HDD works are required within 200 m of a sensitive receptor. This mitigation could provide 10 dB of attenuation when the noise screen completely hides the sources from the receptor. Noise mitigation in relation to traffic and transport is outlined in Table 8.		

3.8 Socio-Economics and Land Use

Table 7: Socio-Economics and Land Use

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Disruption to local residents, businesses and community facilities	Primary mitigation measures are embedded within the Proposed Development to reduce construction effects (such as noise, air quality, transport, and landscape and visual) which in turn will mitigate the effects on the local community and existing facilities from a socio-economic and land use perspective. This includes: Measures to mitigate the effects of construction dust are outlined in Table 9. Measures to mitigate the effects of construction noise are outlined Table 6. Measures to mitigate the effects of visual impacts from construction are outlined in Table 5. Measures to mitigate the effects of construction traffic are outlined in Table 8.	To be included in the detailed CEMP(s)	To be included in the detailed CEMP(s)
Disruption to users of Public Rights of Way (diversions, changes to journey times, local travel patterns and certainty of routes)	The siting of solar PV panels and associated infrastructure seeks to minimise instances of development on both sides of PRow. Where development is proposed adjacent to a PRow, an offset of a minimum of 10m from the centre line has been incorporated. Where development is proposed on both sides of a PRow, sections of wider offsets have also been integrated to vary the extent of views experienced across the Principal Site where practicable. A Framework Public Rights of Way Management Plan (PRowWMP) will be submitted as part of the DCO application which will set out how PRow would be managed during the Proposed Development construction phase to ensure the safety of users and Site staff.	None	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed Public Rights of Way Management Plan.

3.9 Traffic and Transport

Table 8: Traffic and Transport

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Increased traffic flows, including HGVs on the roads leading to the Site.	A Framework Construction Traffic Management Plan (CTMP) will be prepared for the ES and form the framework for a detailed CTMP produced prior to construction (secured through DCO Requirement). Details to mitigate impacts from increased construction traffic will be included in these. A list of measures likely to be implemented are provided below:	None	Named person as Travel Plan Co-ordinator (To be confirmed in detailed CEMP) to oversee management, monitoring and implementation of the individual measures within the detailed CTMP.
Severance and intimidation associated with increased construction traffic and abnormal loads.	a. Providing suitable points of access for construction vehicles with adequate visibility, with any supporting improvements (e.g. vegetation clearance) to take place within the highway boundary and the Site Boundary if required; b. Delivering internal construction routes through the Principal Site, to allow vehicles to access all areas via the site access points; c. Maintaining access to and along PRoW and the existing permissive paths, or otherwise providing temporary or permanent PRoW and permissive path diversion routes where necessary to avoid any closures or potential conflicts with the Proposed Development where possible. The diversion routes will be agreed with the local authorities prior to construction, and a Framework PRoWMP will be prepared as part of the DCO application and will contain further measures for PRoW and permissive path management; d. Managing areas where the proposed construction route crosses any existing local access roads, including by maximising visibility between construction vehicles and other users (including pedestrians and road users), implementing traffic management e.g. advanced signage to advise other users of the works, as well as manned controls at each crossing point (marshals/ banksmen), with a default priority that construction traffic will give-way to other users; e. Restricting HGV movements to certain routes (see HGV routing plan in PEI Report Volume 2, Figure 13-4);		Other responsibilities are to be confirmed in the detailed CEMP.

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	f. Reducing HGV deliveries during certain times of the day (e.g. between 07:00 and 09:00, as well as between 17:00 and 19:00), to avoid increasing traffic levels on the surrounding highway network during the traditional weekday peak hours; g. Implementing a Delivery Management System to control the bookings of HGV deliveries from the start of the construction period. This will be used to regulate the arrival times of HGVs via timed delivery slots, as well as to monitor compliance of HGV routing; h. Implementing a monitoring system to record the route of all HGVs travelling to and from the Proposed Development, to record any non-compliance with the agreed routing plan/ delivery hours and to communicate any issues to the relevant suppliers to ensure the correct routes are followed; i. Developing a communications strategy including regular meetings with contractors to review and address any issues associated with travel to/ from the Proposed Development, as well as to relay information including any restrictions and requirements which should be followed; j. Implementing Temporary Traffic Management (TTM) where required during the period when the Grid Connection Cables are installed to connect the Proposed Navenby Substation with the Principal Site. Further details with respect to any TTM arrangements and timeframes for installing the cables will be set out within the Framework CTMP and the ES; k. Encouraging local construction staff to car share to reduce single occupancy car trips, by promoting the benefits of car sharing such as reduced fuel costs and by providing dedicated parking spaces within the compounds for those car sharing. A Car Share scheme will be implemented to match potential sharers and to help staff identify any colleagues who could potentially be collected along their route to/ from site; l. Implementing a shuttle service to transfer staff to/ from nearby catchment areas to reduce vehicle trips on the surrounding highway network. At this stage it is expected that the majority of shuttle services would travel to/ from Lincoln		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	(northeast), with the remainder travelling to/ from Newark on Trent (southwest), Grantham and Sleaford (south) and Retford and Worksop (northwest) to collect/ drop off construction staff from 'hubs' at each of these six locations. Up to eight shuttle buses will be provided, each with a capacity of 50 staff, to transfer the expected peak demand (330 construction workers) to the site compounds. m. Implementing minibuses to transfer staff internally within the Principal Site as required e.g. between/across the different land parcels (where possible) to minimise external trips on the surrounding highway network, where utilising trips on the surround highway network, consolidating the trips to minimise the number of trips undertaken by construction workers; n. Providing sufficient on-site car parking within the construction compounds across the site to accommodate the expected peak parking demand of construction staff within the Principal Site; o. Providing limited on-site car parking within the smaller compounds to accommodate the required parking demand of construction staff within the Principal Site and Cable Corridor, but to encourage use of the main compound on the western side of Haddington Lane, to the south of the A46 to minimise vehicle trips on the local highway network. Construction workers will also be able to access other areas of the Site using the internal minibus service if required; p. Positioning of suitably qualified banksmen at the proposed accesses for the Principal Site and Cable Corridor, to allow all vehicle arrivals and departures to be safely controlled during the construction period; q. Vegetation clearance at the proposed access points where required to achieve appropriate levels of visibility at these locations; r. Providing sufficient cycle parking spaces within the Principal Site to encourage construction staff to travel by bicycle where viable; and s. A specialised haulage service will be employed to allow abnormal loads to transport components with the necessary escort, permits and traffic management, with the contractor consulting with the relevant highways		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	authorities to ensure the correct permits are obtained. The police will also be given advanced notification under the Road Vehicle Authorisation of Special Types Order 2003. t. A Stage 1 Road Safety Audit (RSA) will be carried out on the preliminary design of access points. This will most likely take place post-submission to support the detailed design. A Designer's Response will then be prepared so that any road safety concerns are addressed as part of the final design. The approach for the Stage 1 RSA will be reviewed at ES stage to determine whether this will form part of the DCO submission or will be conducted post-submission.		

3.10 Air Quality

Table 9: Air Quality

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Increased nitrogen dioxide (NO ₂) and particulate matter (PM ₁₀) from on-site and off-site construction vehicle/plant emissions.	Communications - Develop and implement a stakeholder communications plan that includes community engagement before work commences on site. - Display the name and contact details of person(s) accountable for air quality and dust issues on the site boundary. This may be the environment manager/engineer or the site manager. - Display the head or regional office contact information. - Develop and implement a Dust Management Plan (DMP) as part of the detailed CEMP, which may include measures to control other emissions, approved by the Local Authority. The level of detail will depend on the risk, and should include as a minimum the highly recommended measures in this document. The desirable measures should be included as appropriate for the Site. The DMP may include monitoring of dust deposition, dust flux, real-time PM10 continuous monitoring and/or visual inspections.	Measures in the detailed CEMP will include the implementation of: Daily on-site and off-site inspection, where receptors (including roads) are nearby, to monitor dust, record inspection results, and make the log available to the local authority when asked. This should include regular dust soiling checks of surfaces such as street furniture, cars and windowsills within 100m of site boundary, with cleaning to be provided if necessary. Regular site inspections to	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP
Increased particulates and deposited dust from Site activities, materials transportation, storage and handling, including use of haul roads.	Site Management - 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 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 log book. - Hold regular liaison meetings with other high risk construction sites within 500m of the site boundary, to ensure plans are co-ordinated and dust and		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	particulate matter emissions are minimised. It is important to understand the interactions of the off-site transport/deliveries which might be using the same strategic road network routes. Preparing and Maintaining the Site - Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is practicable. - Fully enclose specific operations where there is a high potential for dust production and the site is active for an extensive period where operations are within 100m of receptors. - Fully enclose site or specific operations where there is a high potential for dust production and the site is active for an extensive period. - Avoid site runoff of water or mud. - Keep site fencing, barriers and scaffolding clean using wet methods. - 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. - Cover, seed or fence stockpiles to prevent wind whipping. - Ensure all vehicles switch off engines when stationary - no idling vehicles - Avoid the use of diesel- or petrol-powered generators and use mains electricity or battery powered equipment where practicable. - Impose and signpost a maximum-speed-limit of 15mph on surfaced and 10mph on unsurfaced haul roads and work areas (if long haul routes are required these speeds may be increased with suitable additional control measures provided, subject to the approval of the nominated undertaker and with the agreement of the local authority, where appropriate). - Produce a Construction Logistics Plan to manage the sustainable delivery of goods and materials.	monitor compliance with the DMP, record inspection results, and make an inspection log available to the local 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 Agree dust deposition, dust flux, or real-time PM₁₀ continuous monitoring locations with the Local Authority.	

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	i. Implement a Travel Plan that supports and encourages sustainable travel (public transport, cycling, walking, and car-sharing). Operations a. 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. b. Ensure an adequate water supply on the site for effective dust/particulate matter suppression/ mitigation, using non-potable water where possible and appropriate. c. Use enclosed chutes and conveyors and covered skips. d. Minimise drop heights from conveyors, loading shovels, hoppers and other loading or handling equipment and use fine water sprays on such equipment wherever appropriate. e. 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. f. Avoid bonfires and burning of waste materials. Earthworks a. Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable. b. Use Hessian, mulches or trackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable. c. Only remove the cover in small areas during work and not all at once. Construction		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	a. 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. b. For smaller supplies of fine power materials ensure bags are sealed after use and stored appropriately to prevent dust. Trackout a. Use water-assisted dust sweeper(s) on the access and local roads, to remove, as necessary, any material tracked out of the site. This may require the sweeper being continuously in use. b. Avoid dry sweeping of large areas. c. Ensure vehicles entering and leaving sites are covered to prevent escape of materials during transport d. Inspect on-site haul routes for integrity and instigate necessary repairs to the surface as soon as reasonably practicable. e. Record all inspections of haul routes and any subsequent action in a site log book. f. Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowzers and regularly cleaned. g. Access gates to be located at least 10m from receptors where possible.		

3.11 Ground Conditions

Table 10: Ground Conditions

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Potential for risks to human health associated with waste generation, land contamination, airborne contamination, and groundwater contamination. The discovery of ground contamination during groundworks. Levelling of the Site including the possible introduction of new fill materials..	Ground investigation works will be undertaken prior to commencing construction. Results would be reviewed by the appointed Contractor, including any additional investigation or mitigation measures beyond the impact avoidance measures stated here. Best practice avoidance and mitigation measures proposed include: - All workers would be required to wear Personal Protective Equipment (PPE) such as dust masks as applicable; - Containment measures would be implemented, including drip trays, bunding or double-skinned tanks of fuels and oils; all chemicals would be stored in accordance with their COSHH guidelines, whilst spill kits would be provided in areas of fuel/oil storage; - All plant and machinery would be kept away from surface water bodies wherever possible, checked regularly and, where necessary, the use of drip trays would be employed. Refuelling and delivery areas would be located away from surface water drains; - An emergency spillage action plan (or similar title) will be produced, which staff would have read and understood, and provisions made to contain any leak/spill; - Should any potentially contaminated ground, including isolated 'hotspots' of contamination and/or potential deposits of asbestos containing materials (ACM), be encountered, the contractor would be required to investigate the areas and assess the need for containment or disposal of the material. The contractor would also be required to assess whether any additional health and safety measures are required; - To further minimise the risks of contaminants being transferred and contaminating other soils or water, construction workers would be briefed as to the possibility of the presence of such materials;	To be included in the detailed CEMP.	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP.

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	g. In the event that contamination is identified, appropriate remediation measures would be agreed with the appropriate authorities and undertaken to protect construction workers, future site users, water resources, structures, and services; h. The contractor would be required to place arisings and temporary stockpiles away from watercourses and drainage systems, whilst surface water would be directed away from stockpiles to prevent erosion; i. The risk to surface water and groundwater from run-off from any contaminated stockpiles during construction works would be reduced by implementing suitable measures to minimise rainwater infiltration and/or capture runoff and leachates, through use of bunding and/or temporary drainage systems. These mitigation measures would be designed in line with current good practice, follow appropriate guidelines and all relevant licences/permits; j. The contractor would ensure that all material is suitable for its proposed use and would not result in an increase in contamination-related risks on identified receptors, including any landscaped areas and underlying groundwater; k. Any waters removed from excavations by dewatering would be discharged appropriately, subject to the relevant permits being obtained from the Environment Agency; l. The contractor will implement a dust suppression/management system in order to control the potential risk from airborne contamination migrating off-site to adjacent sites; and m. Piling design and construction works will be completed following the preparation of a piling risk assessment. Limited intrusive ground investigation and Generic Quantitative Risk Assessment (GQRA) is proposed to be undertaken prior to construction in the areas of potential contamination, as indicated in the Phase 1 Preliminary Risk Assessment report (PEI Report Volume 3, Appendix 14-B: Phase 1 PRA).		

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
	An Unexploded Ordnance (UXO) Assessment recommended prior to the commencement of any intrusive works to assess and potentially zone the UXO hazard level at the Site. During construction, work will be undertaken in accordance with Construction Design and Management (CDM) 2015 Regulations.		

3.12 Materials and Waste

Table 11: Materials and Waste

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Potential to impact on sensitive receptors (humans, wildlife and controlled waters) if waste not stored and managed appropriately.	The Proposed Development will aim to prioritise waste prevention, followed by preparing for reuse, recycling and recovery and lastly disposal to landfill as per the waste hierarchy. This would be achieved by a combination of measures, including: a. A Site Waste Management Plan (SWMP) will be produced by the Contractor post consent, which will set out: i. The waste streams that will be generated; ii. How the waste hierarchy will be applied to these wastes; iii. Good practice measures for managing waste; and iv. Roles and responsibilities for waste management. b. All management of waste will be in accordance with the relevant regulations and waste will be transported by licensed waste carriers to waste management sites which hold the necessary regulatory authorisation and/or permits for those wastes consigned to them. c. If required, a Materials Management Plan (MMP) would be developed under the CL:AIRE Definition of Waste: Development Industry Code of Practice (Ref 19) by the appointed construction Contractor to support the reuse of excavated materials, minimise off-site disposal; and to demonstrate the necessary lines of evidence to support the proper reuse/offsite disposal of materials and ensure compliance with regulatory guidance.	The types, quantities and final destination of waste generated during the construction phase would be identified, measured and recorded through the SWMP to be produced by the Contractor post consent. A register of all waste loads leaving the Site would be maintained to provide a suitable audit trail for compliance purposes and to facilitate monitoring and reporting of waste types, quantities and management methods.	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP.

3.13 Glint and Glare

Table 12: Glint and Glare

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Potential to impact on residential receptors	Native hedgerows will be planted/infilled and maintained to a height of at least 3.5m along panel boundaries, field boundaries and bridleway boundaries where the glint and glare assessment identifies mitigation as required. The preliminary glint and glare assessment is presented in PEI Report Volume 3, Appendix 14-C: Glint and Glare Assessment and will be updated following design development. A final glint and glare assessment will be submitted as part of the DCO application.	Monitoring of hedgerows will be described in the Framework LEMP	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP.

3.14 Major Accidents and Disasters

Table 13: Major Accidents and Disasters

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
All works will be undertaken in accordance with relevant Health and Safety legislation and guidance and plans will be put in place. Details of fire, police, emergency services and hospitals will be publicised and included in the site induction. A Biosecurity Plan will be prepared prior to construction, which will include measures such as appropriate cleaning and or/ disinfection of machinery and equipment in areas considered to be at high risk. Measures to mitigate the risks of major accidents and disasters are covered in the following tables: Table 1: Climate; Table 3: Ecology and Nature Conservation; Table 4: Water Environment; Table 8: Traffic and Transport; Table 11: Materials and Waste, Table 14: Telecommunications, Television Reception and Utilities. A Framework Battery Safety Management Plan will be included with the DCO application and a detailed Battery Safety Management Plan prepared prior to construction (secured through DCO Requirement).			

3.15 Telecommunications, Television Reception and Utilities

Table 14: Telecommunications, Television Reception and Utilities

Potential Impact	Mitigation / Enhancement Measure	Monitoring Requirements	Responsibility
Potential to affect existing utility infrastructure above and below ground as a result of excavation and engineering operations.	Precautionary measures will be included as part of the embedded mitigation for the Proposed Development, including: - Locating the Proposed Development outside of utilities protected zones; - The use of ground penetrating radar before excavation to identify any unknown utilities; and - Consultation and agreement with relevant utility operators regarding construction/demobilising methods prior to works commencing Additionally, measures in relation to safe working beneath overhead lines will be in place at all stages of the Proposed Development, for example ensuring adequate clearances are in place when plant and equipment is being moved beneath the overhead lines. It is anticipated that the draft DCO will include protective provisions for the protection of electronic communication networks and utilities.	To be included in the detailed CEMP.	The overall responsibility will be with the Contractor. Specific responsibilities will be confirmed in the detailed CEMP.

4. Complementary Plans and Procedures

4.1.1 A suite of complementary environmental plans and procedures will be included as part of the DCO application. These plans and procedures will build on the principles and procedures set out in this Framework CEMP and described in the PEI Report and subsequent ES. These set out proposed mitigation for the construction phase, and in some cases the operation and maintenance phase, and include the following:

- a. Framework Landscape and Ecology Management Plan (LEMP);
- b. Framework Site Waste Management Plan;
- c. Framework Construction Traffic Management Plan (CTMP);
- d. Framework Battery Safety Management Plan;
- e. Framework Public Right of Way Management Plan (PRoWMP);
- f. Framework Soil Management Plan; and
- g. Framework Drainage Strategy.

5. Implementation and Operation

5.1.1 The detailed CEMP will set out:

- a. An organogram showing team roles, names and responsibilities;
- b. Training requirements for relevant personnel on environmental topics;
- c. Information on-site briefings and toolbox talks that will be used to equip relevant staff with the necessary level of knowledge to follow environmental control procedures;
- d. Measures to advise employees of changing circumstances as work progresses;
- e. Communication methods;
- f. Document control;
- g. Monitoring, inspections and audits of site operations; and
- h. Environmental emergency procedures.

6. Checking and Corrective Action

6.1 Monitoring

- 6.1.1 To meet the requirement of the detailed CEMP(s), environmental monitoring of the Proposed Development and its impacts will be undertaken throughout the construction phase. This will be undertaken to demonstrate the effectiveness of the measures set out in the detailed CEMP and related construction controls and allow for corrective action to be taken where necessary.
- 6.1.2 As part of the monitoring process the Contractor will allocate a designated Environment Manager, who will be present on Site throughout the construction process and when new activities are commencing. The Environment Manager will observe site activities and report any deviations from the detailed CEMP(s) at the earliest opportunity following identification of such deviations. The Applicant will be informed of any deviations from the detailed CEMP as soon as possible following identification of such issues. The Environment Manager would also act as day-to-day contact with relevant local authorities and other regulatory agencies, such as the Environment Agency.
- 6.1.3 During construction, the Environment Manager will conduct regular walkover surveys to ensure all requirements of the detailed CEMP are being met. Action from these surveys will be documented on an Environmental Action Schedule (or similar), discussed with the Construction Project Manager for programming requirements and issued weekly for actioning.
- 6.1.4 The Environment Manager and/or Construction Project Manager will arrange regular formal inspections to ensure the requirements of the detailed CEMP are being met. Details of monitoring, inspection, and audits to be undertaken will be provided in the detailed CEMP. A final review will be undertaken following completion of the works.

6.2 Records

- 6.2.1 The Environment Manager or Site Manager will retain records of environmental monitoring and implementation of the detailed CEMP. This will allow provision of evidence that the detailed CEMP is being implemented effectively. These records will include:
 - a. Environmental Action Schedule;
 - b. Licences and approvals;
 - c. Results of inspections by Environment Manager/ Construction Project Manager;
 - d. Other environmental surveys and investigations;
 - e. Environmental equipment test records; and

- f. Corrective actions taken in response to incidents, breaches of the detailed CEMP or complaints received from a third party.
- 6.2.2 The detailed CEMP will be a live document and be updated as and when required, such as when there are changes to the team or when additional information becomes available (for example through detailed civil design or additional data supply or surveys such as pre-construction ecological surveys).
- 6.2.3 A full review of the CEMP will be undertaken as required (at least quarterly) throughout the construction phase and submitted to the relevant local authorities.

6.3 Management Review

- 6.3.1 The detailed CEMP(s) will be signed off on completion of the construction works and will form the basis of the Operational Environmental Management Plan, which will be used to manage the environmental performance of the project through operation.

7. References

- Ref 1 The Planning Act 2008, Available at:
https://www.legislation.gov.uk/ukpga/2008/29/pdfs/ukpga_20080029_en.pdf
- Ref 2 Control of Pollution Act 1974. Available at
<https://www.legislation.gov.uk/ukpga/1974/40>
- Ref 3 British Standards Institute (BSI) (2012). BS 5837:2012 Trees in relation to design, demolition and construction – recommendations
- Ref 4 Wildlife & Countryside Act 1981 (as amended). Available at:
<https://www.legislation.gov.uk/ukpga/1981/6>
- Ref 5 NetRegs. NetRegs – Environmental guidance for your business in Northern Ireland and Scotland.
- Ref 6 Environment Agency (2011). Pollution Prevention Guidance. Safe storage – the safe operation of refuelling: PPG7. Available at:
<https://www.netregs.org.uk/media/1673/ppg-7.pdf>
- Ref 7 Environment Agency. Pollution Prevention Guidance. Managing fire water and major spillages: PPG18. Available at:
<https://www.netregs.org.uk/media/1674/ppg-18.pdf>
- Ref 8 British Standards Institute (2009) BS6031:2009 Code of Practice for Earth Works
- Ref 9 CIRIA (2015) The SuDS Manual (C753F).
- Ref 10 CIRIA C741. (2023). Environmental good practice on site guide (fifth edition).
- Ref 11 CIRIA C648. (2006). Control of water pollution from linear construction projects, technical guidance.
- Ref 12 CIRIA C609. (2004). Sustainable Drainage Systems, hydraulic, structural and water quality advice.
- Ref 13 CIRIA C532. (2001). Control of water pollution from construction sites – Guidance for consultants and contractors.
- Ref 14 CIRIA C736F. (2014). Containment systems for prevention of pollution.
- Ref 15 Water Resources Act 1991. Available at:
<https://www.legislation.gov.uk/ukpga/1991/57>
- Ref 16 The Environmental Permitting (England and Wales) Regulations 2016
Available at: <https://www.legislation.gov.uk/uksi/2016/1154/contents>
- Ref 17 Control of Pollution (Oil Storage) (England) Regulations 2001.
<https://www.legislation.gov.uk/uksi/2001/2954/contents>



- Ref 18 The Control of Substances Hazardous to Health (Amendment) Regulations 2004. <https://www.legislation.gov.uk/ukxi/2004/3386/contents>
- Ref 19 Contaminated Land: Applications in Real Environments (CL:AIRE) (2011).
Definition of Waste: Development Industry Code of Practice.