Gate Burton Energy Park
EN010131

Framework Decommissioning Environmental Management Plan
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Gate Burton Energy Park Limited

Prepared for:

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1. Introduction

1.1 Introduction

1.1.1 This document provides a framework for the Decommissioning Environmental Management Plan (DEMP) for Gate Burton Energy Park (hereafter referred to as 'the Scheme', in relation to an application for a Development Consent Order (DCO) for the construction, operation and maintenance, and decommissioning of the Scheme.

1.1.2 Decommissioning comprises the process of removing all solar PV array infrastructure including modules, mounting structures, cabling inverters and transformers, for recycling or disposal in accordance with good practice and market conditions at that time.

1.1.3 Upon decommissioning, the physical infrastructure to plough depth at the Solar and Energy Storage Park will be removed and the land returned to the landowner. This will include the areas of agricultural land where the agricultural resource has been maintained (and potentially improved) during operation, and the established habitats. Post-decommissioning, the landowner may return the Solar and Energy Storage Park to its original use. It is anticipated that some areas of habitat and biodiversity mitigation and enhancement may be left in-situ for species protection. Any required species licences would be obtained for reinstatement works if necessary.

1.1.4 The aim of this Framework DEMP is to demonstrate how the mitigation measures included within the ES will be implemented. It also sets out the monitoring and auditing activities designed to ensure that such mitigation measures are carried out, and that they are effective. This document does not address the construction or operational activities, which are subject to separate environmental management plans and procedures (**Framework Construction Environmental Management Plan (CEMP) [EN010131/APP/7.3]** and **Framework Operational Environmental Management Plan (OEMP) [EN010131/APP/7.4]**).

1.1.5 An Environmental Impact Assessment (EIA) has been undertaken for the Scheme and an Environmental Statement (ES) has been prepared in accordance with the Infrastructure Planning (EIA) Regulations 2017 (EIA Regulations) (Ref 1). In accordance with the requirements of the EIA regulations, the ES contains the assessment of potential impacts on the environment that may be caused during the decommissioning of the Scheme and describes proposed mitigation measures.

1.1.6 It is envisaged that a DEMP may be prepared, approved, and implemented for individual components of the Scheme (e.g. one DEMP for works in the Grid Connection Corridor and one for works in the Solar and Energy Storage Park Site). As a result, there could be multiple DEMP(s) prepared in accordance with the parts of this Framework DEMP.

1.1.7 This document provides the likely structure of the DEMP(s) and some outline information relevant to the DEMP(s). The detailed DEMP(s) will be produced in line with this Framework DEMP once the DCO is granted and submitted to the appropriate Local Planning Authorities (LPA) for approval.

1.1.8 The nature of the decommissioning activities and potential for likely significant effects would be similar to construction. The DEMP(s) will therefore include similar measures to those included in the **Framework (CEMP) [EN010131/APP/7.3]** submitted within the Application, covering issues such as transportation methods, pollution prevention, and noise management.

1.1.9 The key elements of this Framework DEMP are:

a. An overview of the Scheme, decommissioning activities and programme;

b. Prior assessment of potential environmental impacts (through the EIA);

c. Mitigation measures to prevent or reduce potential adverse impacts;

d. Monitoring of effectiveness of mitigation measures;

e. Corrective action procedure; and

f. Links to other complementary plans and procedures.

1.1.10 In summary, this Framework DEMP will identify how commitments made in the ES will be translated into actions on site during decommissioning and includes a process from implementing the actions through to the allocation of key roles and responsibilities.

1.1.11 The appointed contractor(s) will be responsible for working in accordance with the environmental controls documented in the DEMP(s) which will be prepared in accordance with this Framework DEMP, as a requirement of the DCO. The overall responsibility for implementation of the DEMP(s) will lie with the contractor as a contractual responsibility to the Applicant, as the Applicant is ultimately responsible for compliance with the Requirements of the DCO.

1.1.12 This Framework DEMP has been designed with the objective of compliance with the relevant environmental legislation, and the mitigation measures set out within the ES.

1.1.13 Any additional licences, permits or approvals that are required will be listed in the DEMP(s), including any environmental information submitted in respect of them.

1.2 The Applicant

1.2.1 The Applicant, Gate Burton Energy Park Ltd, has submitted the DCO Application for the construction, operation and decommissioning of the Scheme. The DCO Application is submitted to the Planning Inspectorate, with the decision of whether to grant a DCO to be made by the Secretary of State for Business, Energy and Industrial Strategy (hereafter referred to as the 'Secretary of State') pursuant to the Planning Act 2008 (Ref 2).

1.3 The Scheme

1.3.1 The Site comprises the 'Solar and Energy Storage Park' and the 'Grid Connection Corridor', totalling approximately 824 hectares (ha). The Solar and Energy Storage Park will contain the solar PV panels, Battery Energy Storage System (BESS) and associated development, comprising approximately 652ha. The Grid Connection Corridor comprises approximately 172ha and will connect the Solar and Energy Storage Park and Cottam National Grid Substation.

1.3.2 The Site is located in administrative areas of Bassetlaw District Council and West Lindsey District Council, and at county level within Nottinghamshire County Council and Lincolnshire County Council.

1.3.3 The Scheme comprises the installation of solar photovoltaic (PV) generating panels, on-site battery storage (referred to as the BESS), and associated infrastructure.

1.3.4 The land required for the construction, operation and maintenance, and decommissioning of the Scheme is shown on **ES Volume 2: Figure 1-2 [EN010131/APP/3.2]**, and described in **ES Volume 1, Chapter 2: The Scheme [EN010131/APP/3.1]**. This includes land required for temporary and permanent uses.

1.3.5 The DEMP(s) will include (as relevant depending on the part of the Scheme covered by the DEMP) plans showing the land within each administrative area, plans illustrating the Order limits, the Works Areas and Schedule 1 of the DCO.

2. Decommissioning Environmental Management

2.1 Decommissioning Activities

2.1.1 The design life of the Scheme is expected to be at least 60 years, although the operational life could be longer than this; the condition of equipment will be reviewed at the end of the anticipated design life to determine whether it remains in a viable condition to continue operation after that time.

2.1.2 When the operational phase ends, the Solar and Energy Storage Park will require decommissioning. All PV modules, mounting poles, inverters and transformers would be removed and recycled or disposed of in accordance with good practice and market conditions at the time. Buried medium voltage cables would either be removed or left in situ. The majority of the Solar and Energy Storage Park would be returned to the landowner after decommissioning and will be available for its original use. The future of the substations and associated control buildings would be agreed with the relevant LPA prior to commencement of decommissioning.

2.1.3 The specific method of decommissioning the project at the end of its operational life is uncertain at present as the engineering approaches to decommissioning will evolve over the operational life of the Scheme.

2.1.4 Any modification work to the National Grid Cottam Substation to facilitate the connection would remain under National Grid's control. It is not currently known if the buried 400 kV cables would be left in situ or removed. For the purposes of assessment, both scenarios have been considered within the ES.

2.1.5 It is anticipated that some areas of habitat and biodiversity mitigation and enhancement may be left in-situ for species protection. Any required species licences would be obtained for reinstatement works if necessary.

2.2 Decommissioning Programme

2.2.1 Decommissioning is expected to take between 24 and 48 months and would be undertaken in phases.

2.2.2 More details on the decommissioning phasing will be provided with the DEMP(s), to include timescales and transportation methods which would be agreed in advance with the relevant LPA, as secured through a Requirement in the DCO.

2.3 Working Hours

2.3.1 The core working hours are defined in Table 2-1.

Table 2-1 Core working hours

Works	Working Hours
Summer	07:00 – 19:00 Monday to Friday and Saturday 09:00-13:00 with no Sunday or Bank Holiday working.
Winter	08:00 – 18:00 Monday to Friday and Saturday 09:00-13:00 with no Sunday or Bank Holiday working.

2.3.2 Some works activities may need to occur out of these hours/times due to activities requiring to be undertaken continuously. Where work outside of times is necessary prior notification will be provided to the LPA.

2.4 Control of Noise

2.4.1 For all works that are undertaken outside of core work periods, a Section 61 consent will need to be obtained by the principal contractor. This will be agreed with the local planning authority and contain details on the methodology, mitigation, communication strategy and monitoring. See section 3 for all mitigation measures related to noise.

2.5 Control of Light

2.5.1 During winter months, mobile lighting towers with a power output of 8 kilo volt-amperes (kVAs) may be used during decommissioning in isolated work areas. There will also be lighting at the main compounds while decommissioning is underway.

2.5.2 Temporary site lighting, in the form of mobile lighting towers with a power output of 8 kVAs, will be required in areas where natural lighting is unable to reach (sheltered/confined areas) and during core working hours within winter months. Artificial lighting would be provided to maintain sufficient security and health and safety for the Order limits, whilst adopting the mitigation principles to avoid excessive glare and minimise spill of light to nearby receptors (including ecology and residents) outside of the Order limits as far as reasonably practicable.

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

- The use of lighting will be minimised to that required for safe site operations;
- Lighting will 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); and
- Lighting will be directed towards the interior of the Order limits rather than towards the boundaries.

2.6 Traffic Management and Parking Provision

2.6.1 Traffic management mitigation measures are set out in the Framework Construction Traffic Management Plan (CTMP) **(ES Volume 3: Appendix 13-D [EN010131/APP/3.3]**) which is secured via a DCO requirement.

2.6.2 The final Decommissioning Traffic Management Plan (DTMP) will be developed by contractor prior to decommissioning in consultation with the appropriate Local Planning Authorities (LPAs). This will include a Decommissioning Worker Travel Plan (DWTP) to utilise sustainable modes of transport for journeys to and from the site. Both the DTMP and DWTP will use, as their starting point, the measures detailed in Framework Construction Traffic Management Plan (CTMP) (**ES Volume 3: Appendix 13-D [EN010131/APP/3.3]**) updated to reflect the circumstances prevailing during the period in which decommissioning is to be carried out.

2.7 Parking Provision

2.7.1 The Framework CTMP will provide location and size of parking provisions on-site. Wheel cleaning facilities will be used by vehicles prior to exiting the Order limits onto the public highway if there is mud or debris from the

2.8 Recycling and Disposing of Waste

2.8.1 In order to control the waste generated on-site and removal of materials, the applicant will separate the main waste streams on-site, prior to transport to an approved, licensed third party waste facility for recycling or disposal.

2.8.2 Prior to the decommissioning works commencing, a Decommissioning Resource Management Plan (DRMP) will be prepared by the applicant, which will specify the waste streams to be estimated and monitored and goals set with regards to the waste produced.

2.8.3 All waste to be removed from the Order limits will be undertaken by fully licensed waste carriers and taken to licensed waste facilities for recycling or disposal.

2.8.4 Removal of waste is estimated to require approximately 1,300 Heavy Goods Vehicles (HGV) loads over a period of 12 months, which equates to an average of eight loads per day.

2.9 Security

2.9.1 Site security during decommissioning will be managed by the applicant(s). The site security fencing will remain in place throughout the duration of the decommissioning 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 applicant(s).

2.10 Responding to Environmental Incidents and Emergencies

2.10.1 An emergency response plan will be developed in consultation with the relevant local authority emergency planning officer, emergency services including the local fire service, as well as the Environment Agency in relation to responding to flood warnings and events.

2.10.2 The plan will detail the procedures for responding to incidents and emergencies on site, and any reporting.

Good Practice

2.10.3 The Considerate Constructors Scheme (CCS) will be adopted to assist in reducing pollution and nuisance from the decommissioning of the Scheme, by employing best practice measures which go beyond statutory compliance, where relevant to decommissioning.

3. Mitigation and Monitoring

3.1 Purpose

3.1.1 This section of the Framework DEMP sets out the mitigation measures to be included as a minimum in the detailed DEMP(s). It also sets out monitoring requirements and the responsible party identified for each mitigation measure or monitoring requirement. This section will be updated and developed following consent as part of the preparation of the DEMP(s).

3.1.2 It is assumed that all mitigation is in line with the regulations and guidance at the time when decommissioning is undertaken, estimated in 2080. The following tables present likely mitigation based on present baseline information against current legislation. All mitigation will need to be reviewed and updated prior to decommissioning against the baseline environment at that time.

3.1.3 A baseline plan will be included within the detailed DEMP. The baseline plan will identify the baseline environmental conditions that exist within the Solar and Energy Storage Park at the point prior to decommissioning. The baseline plan will be produced using the survey and monitoring data and the condition assessments obtained through the operational phase, as described within the Framework Operational Environmental Management Plan (OEMP).

Table 3-1 Climate Change

Potential Impact	Mitigation Measure	Monitoring
Greenhouse Gas (GHG) emissions from traffic and equipment; and Use of natural resources.	Appropriate standard and good practice control measures will include: a) Increasing recyclability by segregating decommissioning waste to be re-used and recycled where reasonably practicable; b) Adopting the Considerate Constructors Scheme (CCS) to assist in reducing pollution, including GHGs, from the Scheme by employing best practice measures which go beyond the statutory requirements; c) Encouraging the use of lower carbon modes of transport by identifying and communicating local bus connections and pedestrian and cycle access routes to/from the Scheme to all decommissioning staff, and providing appropriate facilities for the safe storage of cycles; d) Liaising with decommissioning personnel for potential to implement staff minibuses and car sharing options;	The Environmental Manager will regularly record compliance in a logbook. Specific responsibilities will be confirmed in the DEMP(s).

Potential Impact	Mitigation Measure	Monitoring
	e) Implementing a Travel Plan to reduce the volume of decommissioning staff and employee trips to the Order limits; f) Switching off vehicles and plant when not in use and ensuring decommissioning vehicles conform to current EU emissions standards; g) Minimising the duration of topsoil and decommissioning material storage within the 1 in 100-year floodplain extent (Flood Zone 3); h) Appointing at least one designated Flood Warden who is familiar with the risks and remains vigilant to news reports, Environment Agency flood warnings, and water levels of the local waterways; and i) Health and safety plans developed for decommissioning activities will be required to account for potential climate change impacts on workers, such as flooding and heatwaves.	

Table 3-2 Cultural Heritage

Potential Impact	Mitigation Measure	Monitoring
Decommissioning will not have any impact beyond the already-disturbed footprint of the Scheme; therefore, it is not anticipated that decommissioning activities will have a direct physical impact upon archaeological remains.	No previously undisturbed land will be disturbed within the Sites to deliver the decommissioning activities.	None

Table 3-3 Ecology and Biodiversity

Potential Impact (Ecological Receptor/Baseline Information) and Scheme Location	Mitigation Measure	Monitoring
Non-statutory sites (15 sites of county importance) within and adjacent to the Order limits.	**Decommissioning Exclusion Zones:** Security fencing will be implemented early in the decommissioning phase. This fence will restrict decommissioning activity in the Decommissioning Exclusion Zone and will protect the Local Wildlife Sites (LWS's) within the vicinity of the Order limits. **Decommissioning Management:** Decommissioning compounds will be setback from this LWS with a minimum 10m from the centre line of the watercourse. Furthermore, measures to ensure incursion into this LWS does not occur will be put in place, *e.g.* security fencing, which will be implemented at an early stage. **Dust prevention and pollution control measures:** The measures described in Table 3-4 Water Environment and Table 3-12 Air Quality will be adopted throughout decommissioning to prevent pollution incidences and minimise habitat degradation within LWS's, *e.g.* through the safe storage of chemicals / other hazardous materials (*e.g.* fuel) reaching watercourses during flood events during decommissioning.	The Environmental Manager will regularly record compliance in a logbook. Specific responsibilities will be confirmed in the DEMP(s). No ECoW required.
Retained Notable Habitats Habitats - Broad-leaved woodland (including ancient / semi-natural woodland) occurring within, or adjacent to, the Order limits and including individual retained trees Habitats - Acid Grassland (semi-improved) within the Grid Connection Corridor	**Decommissioning Exclusion Zone:** A 15m buffer will be implemented from woodland habitats and no decommissioning activities will be permitted. This buffer has been incorporated into the Scheme design to protect trees and woodland. Other retained trees outside of woodland habitats and adjacent to decommissioning working 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. Security fencing will be implemented early in the decommissioning phase to prevent incursion into the Decommissioning Exclusion Zones protecting retained habitats. **Dust prevention and pollution control measures:** The measures described in Table 3-4 Water Environment and Table 3-12 Air Quality will be adopted throughout decommissioning to prevent pollution incidences and minimise habitat degradation to all retained habitats, e.g. through specified requirements for the safe storage of chemicals / other hazardous materials (e.g. fuel) to prevent contaminants reaching retained habitats during decommissioning.	

Potential Impact (Ecological Receptor/Baseline Information) and Scheme Location	Mitigation Measure	Monitoring
Habitats – Marsh / Marshy grassland / Swamp and Standing Water		
Habitats - Coastal and Floodplain Grazing Marsh – within the Grid Connection Corridor	**Decommissioning Exclusion Zone:** Security fencing will be implemented early in the decommissioning phase. This fence will restrict decommissioning activity in the Decommissioning Exclusion Zone and will protect Coastal and Floodplain Grazing Marsh within the Grid Connection Corridor. Security fencing will be implemented early in the decommissioning phase to prevent incursion into the Coastal and Floodplain Grazing Marsh. **Dust prevention and pollution control measures:** The measures described in Table 3-4 Water Environment and Table 3-12 Air Quality will be adopted throughout decommissioning to prevent pollution incidences and minimise habitat degradation to all retained habitats, e.g. through specified requirements for the safe storage of chemicals / other hazardous materials (e.g. fuel) to prevent contaminants reaching retained habitats during decommissioning.	
Habitats - Running Water within and adjacent to the Order limits	**Decommissioning Exclusion Zone:** Riparian habitat along the margins of the banks of watercourses will be outside of 10m undeveloped buffer between watercourses and the developable area of the Scheme. These buffers have been incorporated into the Scheme design to protect watercourses. Security fencing around the Scheme will be implemented early in the decommissioning phase to secure the Order limits and prevent incursion into Decommissioning Exclusion Zones protecting running water. **Dust prevention and pollution control measures:** The measures described in Table 3-4 Water Environment and Table 3-12 Air Quality will be adopted throughout decommissioning to prevent pollution incidences and minimise habitat degradation to all retained habitats, e.g. through specifies requirements for the safe storage of chemicals / other hazardous materials (e.g. fuel) reaching watercourses during flood events during decommissioning	
Habitats – Hedgerows, throughout the Order limits	**Decommissioning Exclusion Zone:** A buffer of at least 5m will be maintained between retained hedgerows without trees and the developable area of the Scheme where no decommissioning activities are permitted. These buffers have been incorporated into the Scheme design to protect hedgerows. Where individual trees are located within hedgerows, the undeveloped buffer will be extended to include provision for the root protection area (see above). Security fencing will be implemented early in the decommissioning phase to prevent incursion into hedgerows.	

Potential Impact (Ecological Receptor/Baseline Information) and Scheme Location	Mitigation Measure	Monitoring
	Dust prevention and pollution control measures: The measures described in Table 3-4 Water Environment and Table 3-12 Air Quality will be adopted throughout decommissioning to prevent pollution incidences and minimise habitat degradation to all retained habitats, e.g. through specified requirements for the safe storage of chemicals / other hazardous materials (e.g. fuel) to prevent contaminants reaching retained habitats during decommissioning.	
Species - Terrestrial Invertebrates	**Decommissioning Avoidance**: The Scheme design retains habitats of greater terrestrial invertebrate interest (such as woodland, watercourses, hedgerows), with measures to ensure incursion into these habitats does not occur to be put in place as presented above, *e.g.* security fencing, which will be implemented at an early stage to protect retained habitats from incursion during decommissioning. **Dust prevention and pollution control measures:** The measures described in Table 3-4 Water Environment and Table 3-12 Air Quality will be adopted throughout decommissioning to prevent pollution incidences and minimise habitat degradation to all retained habitats, e.g. through specified requirements for the safe storage of chemicals / other hazardous materials (e.g. fuel) to prevent contaminants reaching retained habitats during decommissioning.	The Environmental Manager will regularly record compliance in a logbook. Specific responsibilities will be confirmed in the DEMP(s). No ECoW required.
Species - Aquatic invertebrates	During activities where there are direct impacts to watercourses or water bodies, for example through drain-down, culverting, open-trenching, or realignment / diversion, the following mitigation is proposed: • Avoidance of key fish migration timings, e.g., April to October for European eel, April to June for brown/sea trout, October to April for Lamprey; • 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; and • Consideration must be given to invasive non-native species (INNS) known to be present in water bodies, most notably Nuttall's waterweed, with appropriate biosecurity measures implemented. The following pollution prevention measures are recommended during the decommissioning phase: • Prevent erosion and runoff by minimising vegetation and soil disturbance. Ensure the implementation of exclusion buffer zones (10m) for the full length of watercourses within the decommissioning buffer zone. Include further preventative measures, such as runoff/settlement ponds and/or silt fencing if necessary;	Pre-decommissioning surveys will be undertaken in advance of the site clearance and decommissioning phase. The detailed DEMPs will include Reasonable Avoidance Measures (RAMs) for

Potential Impact (Ecological Receptor/Baseline Information) and Scheme Location	Mitigation Measure	Monitoring
	• Where decommissioning vehicles are required to pass over the water bodies, vehicles/plant must be cleaned away from the water in dedicated vehicle washing areas to prevent potential pollutants entering the surface water system, before crossing over the water body; • Control the spread of dust and sediment through fine water spraying of vehicle routes; • Regularly service, monitor and inspect on-site plant for leaks to prevent decommissioning spillages and to ensure pollutants do not enter the waterways. Refuel plant and machinery in dedicated refuelling areas, with drip-trays used routinely and spill kits available; and • Cover and protect all surface water drainage systems from pollution and sediment input.	any protected species required. A monitoring programme will be provided in the **Outline LEMP [EN010131/APP/7.10]**.
Species - Great Crested Newt	**Decommissioning Avoidance:** The Scheme design retains standing water habitats that support Great Crested Newt, measures to ensure incursion into these habitats does not occur will be put in place, *e.g.* security fencing, which will be implemented at an early stage to protect retained habitats from incursion during decommissioning. The pond and a 100m buffer of suitable Great Crested Newt habitat, which includes hedgerows, marginal habitat around the pond, ditches and boundary habitats will be retained and avoided. Habitat immediately surrounding the pond (i.e. non-arable habitat) will be retained and buffered. **Pre-decommissioning surveys:** Surveys will be undertaken to understand species distribution and any mitigation will be updated accordingly. **Dust prevention and pollution control measures:** The measures described in Table 3-4 Water Environment and Table 3-12 Air Quality will be adopted throughout decommissioning to prevent pollution incidences and minimise habitat degradation to all retained habitats, e.g. through specified requirements for the safe storage of chemicals / other hazardous materials (e.g. fuel) to prevent contaminants reaching retained habitats during decommissioning. **Decommissioning of the Grid Connection Corridor:** Decommissioning of the Grid Connection Corridor within 250m of a pond supporting Great Crested Newt will predominantly be within low value habitats (arable farmland) for this species and will avoid all habitat within 100m of this pond. However, semi-improved grassland and scrub habitat (between 100m and 250m from the pond) is of potentially greater value to transient (dispersing / commuting) Great Crested Newt and an area of this habitat may be impacted upon during decommissioning of the Grid Connection Corridor. Works in these areas will be undertaken under RAMs which are presented in **Appendix B.1.**	The Environmental Manager will regularly record compliance in a logbook. Specific responsibilities will be confirmed in the DEMP(s). ECoW required.

Potential Impact (Ecological Receptor/Baseline Information) and Scheme Location	Mitigation Measure	Monitoring
Species - Reptiles	**Vegetation Removal:** Vegetation clearance throughout the Order limits and where reptiles have been identified will be undertaken in advance of decommissioning and at an appropriate time of year to avoid incidental injuring or killing of reptiles, concordant with the requirements for other species, such as nesting birds and Brown Hare. There will be no need to undertake any relocation of reptiles within the Order limits. Outline RAMS for reptiles are presented in **Appendix B.2.** **Decommissioning Exclusion Zone:** Whilst the design of the Solar and Energy Storage Park retains habitats of greatest value to reptiles, measures to ensure incursion into these habitats does not occur will be put in place, *e.g.* security fencing, which will be implemented at an early stage to protect retained habitats from incursion during decommissioning. **Dust prevention and pollution control measures:** The measures described in Table 3-4 Water Environment and Table 3-12 Air Quality will be adopted throughout decommissioning to prevent pollution incidences and minimise habitat degradation to all retained habitats, e.g. through specifies requirements for the safe storage of chemicals / other hazardous materials (e.g. fuel) reaching watercourses during flood events during decommissioning. **Animal welfare provisions:** Precautionary measures will be implemented to prevent trapping wildlife in decommissioning excavations. All excavations deeper than 1m will be covered or fenced overnight, or where this is not practicable, a means of escape will be fitted (e.g. battened soil slope or scaffold plank) to provide an escape route should any animals stray into the decommissioning site and fall into an excavation.	
Species - Birds – throughout the Order limits	**Decommissioning Exclusion Zone:** Security fencing will be implemented early in the decommissioning phase to restrict decommissioning activity in the Decommissioning Exclusion Zone to protect retained habitats. **Pre-decommissioning surveys:** Surveys will be undertaken to understand species distribution and any mitigation will be updated accordingly. **Timing of works:** Where reasonably practicable, vegetation clearance works will be undertaken outside the bird breeding season (typically this is between 1st March and 31st August) and therefore between September and February inclusive. Where this is not reasonably practicable, an ecologist will inspect all areas of vegetation prior to clearance, and clearance will only be undertaken subject to the instruction and requirements of the ecologist to protect any birds and their nests. Specific methods for vegetation clearance, undertaken within the bird breeding season (where required) is provided in **Appendix B.3**.	

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Potential Impact (Ecological Receptor/Baseline Information) and Scheme Location	Mitigation Measure	Monitoring
Species - Bats	**Decommissioning Exclusion Zone:** A 15m buffer will be implemented from woodland habitats where no decommissioning activities will be permitted. Furthermore, individual trees will have suitably protected root protection areas (see above) to ensure no direct or indirect impacts occur to trees. These buffers have been incorporated into the Scheme design to protect trees and woodland and will also protect any bat roosts (if present). **Perimeter security fencing:** Security fencing around the Scheme will be implemented early in the decommissioning phase. This fence will restrict decommissioning activity in the Decommissioning Exclusion Zone protecting woodland habitats and individual trees. **Pre-decommissioning surveys:** Surveys will be undertaken to understand species distribution and any mitigation will be updated accordingly. **Lighting for bats:** Controls on lighting/illumination to minimise visual intrusion and potential adverse effects on sensitive ecological receptors, such as LWS's, woodland and individual trees, will be included to ensure no direct or indirect illumination of such areas and to protect bat roosts (if present). **Dust prevention and pollution control measures:** The measures described in Table 3-4 Water Environment and Table 3-12 Air Quality will be adopted throughout decommissioning to prevent pollution incidences and minimise habitat degradation to all retained habitats, e.g. through specified requirements for the safe storage of chemicals / other hazardous materials (e.g. fuel) to prevent contaminants reaching retained habitats during decommissioning.	
Species - Otter and Water Vole (see also Running Water)	**Decommissioning Exclusion Zone:** The decommissioning of the Scheme will avoid ditches and watercourses where Water Vole and Otter (*i.e.* the River Trent) were recorded, and these will be retained and suitably buffered (see Section 8.9). There will be no loss of habitat used by Water Vole or Otter anywhere within the Site. The decommissioning of the Scheme will be offset (>10 m) from any peripheral watercourses, used by Water Vole and Otter and these offsets will prevent disturbance to riparian habitats and any Water Vole using them. Set-backs of a minimum of 10m from the centreline of the watercourse is considered sufficient to mitigate for potential hazards such as chemical and soils spills into watercourses and avoid potential direct impacts to watercourses and species such as Otter, which use the River for commuting and foraging. Table 3-4 Water Environment specifies requirements for the safe storage of chemicals / other hazardous materials (*e.g.* fuel) reaching watercourses during flood events during decommissioning. **Pre-decommissioning surveys**: Surveys will be undertaken to understand species distribution and any mitigation will be updated accordingly.	

Potential Impact (Ecological Receptor/Baseline Information) and Scheme Location	Mitigation Measure	Monitoring
	Decommissioning Access: Where any access crosses watercourses used by Water Vole, non-intrusive methods to avoid physical disturbance to the watercourse will be utilised, avoiding disturbance to species, habitat loss and direct mortality for Water Vole.	
Species - Badger	**Decommissioning Exclusion Zone:** Decommissioning will be undertaken with appropriate buffers of up to 30m to protect the setts. RAMS, including appropriate buffers (of up to 30m) around any identified Badger setts are outlined in **Appendix B.4.** **Pre-decommissioning surveys**: Surveys will be undertaken to understand species distribution and any mitigation will be updated accordingly. **Animal welfare provisions:** Implementation of measures to avoid animals being injured or killed within decommissioning working areas, through excluding them from such areas and preventing them from falling into and becoming trapped in excavations. No excavations will remain open overnight and if excavations are required to be left open, ramps will be provided to allow animals a means of escape.	
Species - Other mammals (including Brown Hare and Hedgehog)	**Vegetation clearance:** Vegetation clearance will be undertaken in advance of decommissioning and at an appropriate time of year to avoid incidental injuring or killing of animals, including Brown Hare and concordant with the requirements for other species such as nesting birds and reptiles. **Animal welfare provisions:** Implementation of measures to avoid animals being injured or killed within decommissioning working areas, through excluding them from such areas and preventing them from falling into and becoming trapped in excavations. No excavations will remain open overnight and if excavations are required to be left open, ramps will be provided to allow animals a means of escape.	
Invasive Species	**Pre-decommissioning survey:** A pre-decommissioning survey will provide an update on the presence and location of any invasive 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 invasive species are brought onto the Order limits.	
Potential for obtrusive glare and light spill to impact on ecology.	Mitigation of lighting to minimise the amount of light spill: a) The use of lighting will be minimised to that requited for safe site operations and security; b) Lighting will be controlled by infrared settings;	The Environmental Manager will regularly record compliance in a logbook. Specific responsibilities will be

Potential Impact (Ecological Receptor/Baseline Information) and Scheme Location	Mitigation Measure	Monitoring
	c) 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); and d) Lighting will be directed towards the middle of the Order limits rather than towards the boundaries.	confirmed in the DEMP(s).

Table 3-4 Water Environment

Potential Impact	Mitigation Measure	Monitoring
Pollution of surface or groundwater due to deposition or spillage of soils, sediment, oils, fuels, or other decommissioning chemicals, or through uncontrolled site run-off and foul waste water. Temporary changes in flood risk from changes in surface water runoff and exacerbation of localised flooding, due to deposition of silt, sediment in drains and ditches;	**Appropriate standard and Good Practice Guidance (Guidance for Pollution Prevention (GPP)) (Ref 3) methods will include:** • GPP 1: Understanding your environmental responsibilities – good environmental practices; • GPP 2: Above ground oil storage; • GPP 3: Use and design of oil separators in surface water drainage systems; • GPP 4: Treatment and disposal of wastewater where there is no connection to the public foul sewer; • GPP 5: Works and maintenance in or near water; • GPP 8: Safe storage and disposal of used oils; • GPP 13: Vehicle washing and cleaning; • GPP 19: Vehicles: Service and Repair;	Temporary drainage will be monitored throughout decommissioning. Specific details will be confirmed in detailed DEMP. The Water Management Plan (WMP) will include details of water quality monitoring. This will be based on a combination of visual observations and reviews of the Environment

Potential Impact	Mitigation Measure	Monitoring
Temporary changes in flood risk due to the removal of solar PV panels, site compound and storage facilities, which alter the surface water runoff from the Scheme; and Potential impacts on local water supplies.	• GPP 20: Dewatering underground ducts and chambers; • GPP 21: Pollution Incident Response Plans; • GPP22: Dealing with spills; and • GPP26: Safe storage – drums and intermediate bulk containers. **Pollution Prevention Guidance (PPGs)** Decommissioning phase operations would be carried out in accordance with guidance contained within the following PPGs: • PPG6: Working at decommissioning and demolition sites; • PPG7: Safe storage – the safe operation of refuelling facilities; and • PPG18: Managing fire water and major spillages. **CIRIA documents and British Standards** Good practice guidance will be followed using key CIRIA documents and British Standards Institute documents: • British Standards Institute (2009) BS6031:2009 Code of Practice for Earth Works; • British Standards Institute (2013) BS8582 Code of Practice for Surface Water Management of Development Sites; • C753 (2015) The SuDS Manual (second edition); • C741 (2015) Environmental good practice on site guide (fourth edition); • C648 (2006) Control of water pollution from linear construction projects, technical guidance; • C609 (2004) Sustainable Drainage Systems, hydraulic, structural and water quality advice; • C532 (2001) Control of water pollution from construction sites – Guidance for consultants and contractors; and • C736F Containment systems for prevention of pollution. **Surface water management during decommissioning:**	Agency's automatic water quality monitoring network

Potential Impact	Mitigation Measure	Monitoring
	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 decommissioning activities; 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 waterbodies in the Order limits and ensuring that they are adequately protected using drain covers, sand bags, earth bunds, geotextile silt fences, straw bales, or proprietary treatment (e.g. lamella clarifiers); c) Site drainage, including surface runoff and dewatering effluents, will be discharged to sewers where possible and relevant permissions will be obtained from the sewerage or statutory undertaker. Discharge to watercourses will only be permitted where discharge consent or other relevant approval has been obtained (where necessary); d) The relevant sections of BS 6031: Code of Practice for Earthworks will be followed for the general control of site drainage; e) 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. f) 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; g) Appropriately sized runoff storage areas for the settlement of excessive fine particulates in runoff will be provided. 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	

Potential Impact	Mitigation Measure	Monitoring

discussions with Anglian Water, or removed from site for disposal at an appropriate and licensed waste facility;

h) Equipment and plant are to be washed out and cleaned in designated areas within the Scheme compound where runoff can be isolated for treatment before disposal as outlined above;

i) 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;

j) 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

k) The Water Management Plan (WMP) will include details of water quality monitoring required.

Accidental spillage within the Order limits:

a) Fuel will be stored and used in accordance with the Control of Substances Hazardous to Health Regulations 2002 (Ref 3), and the Control of Pollution (Oil Storage) (England) Regulations 2001 (Ref 4).

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);

c) Any plant, machinery or vehicles will be regularly inspected 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 possible or only at designated areas within the Scheme compound. Only decommissioning equipment and vehicles free of all oil/fuel leaks will be permitted on the Order limits. 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 will take place above drip trays or on an impermeable surface which provides protection to underground strata and watercourses, and away from drains as far as reasonably practicable. Vehicles will not be left unattended during refuelling;

Potential Impact	Mitigation Measure	Monitoring
	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 within the Order limits will be self-bunded; h) Mobile plant is to be in good working order, kept clean and fitted with plant 'nappies' at all times; i) The WMP will include details for pollution prevention; j) Spill kits and oil absorbent material will be carried by mobile plant and located at high risk locations across the Order limits and regularly topped up. All decommissioning workers will receive spill response training and tool box talks; k) The Order limits will be secure to prevent any vandalism that could lead to a pollution incident; l) Decommissioning waste/debris are to be prevented from entering any surface water drainage or water body; m) Surface water drains on public roads trafficked by plant or within the decommissioning 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 sand bags) or the road regularly cleaned by road sweeper; n) Suitable facilities for concrete wash water (e.g. geotextile wrapped sealed skip, container or earth bunded area) will be adequately contained, prevented from entering any drain, and removed from the Site for appropriate disposal at a suitably licenced waste facility; and o) 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. **Increase of flood risk:** a) Topsoil and other decommissioning 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 decommissioning materials, this would be done in accordance with the applicable flood risk activity regulations, if required;	

Potential Impact	Mitigation Measure	Monitoring
	b) Connectivity will be maintained between the floodplain and the adjacent watercourses, with no changes in ground levels within the floodplain as far as practicable; c) the applicant 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 d) The laydown area site office and supervisor will be notified of any potential flood occurring by use of the Floodline Warnings Direct or equivalent service. **Details of the response to an impending flood will include:** a. A 24-hour availability and ability to mobilise staff in the event of a flood warning; b. 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; c. Details of the evacuation and site close down procedures; d. Arrangements for removing any potentially hazardous material and anything capable of becoming entrained in floodwaters, from the temporary works areas; e. The applicant 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 applicant will implement more stringent protection measures; f. If water is encountered during below ground decommissioning, 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	

Potential Impact	Mitigation Measure	Monitoring
	1991 as amended)[1] and the Environmental Permitting Regulations (2016)[2]; and g. Safe egress routes 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.	

Table 3-5 Landscape and Visual Amenity

Potential Impact	Mitigation Measure	Monitoring
Visual Impacts on receptors	The site will be restored in accordance with the **Outline LEMP [EN010131/APP/7.10].**	Monitoring of screening is detailed in the **Outline LEMP [EN010131/APP/7.10].**
Visual Impacts on receptors	**Lighting** Lighting would be in the form of mobile lighting towers used where natural light is unable to reach (sheltered or confined areas) and during core working hours (Monday – Friday: 08:00-18:00 and Saturday: 09:00-13:00) during winter months. Lights would be fitted with downward directional fittings to minimise light spill and glare. Lights would be directed into the Order limits, not towards the boundary.	Monitoring will be provided in the detailed DEMP(s)
Visual Impacts on receptors	**Site Management** Ensuring a tidy and neat working area, covering stockpiles and storing topsoil in accordance with good practice measures as detailed in Table 3-4: Water Environment.	

[1] Water Resources Act 1991. https://www.legislation.gov.uk/ukpga/1991/57/contents

[2] Environmental Permitting Regulations (England and Wales) 2016. https://www.legislation.gov.uk/uksi/2016/1154/contents/made

Table 3-6 Noise and Vibration

Potential Impact	Mitigation Measure	Monitoring
Vibration due to decommissioning activities potentially causing annoyance at Noise Sensitive Receptors and damage to building structures	**Effects can be minimised through a good communication strategy:** h. Noise complaints will be monitored and reported to the Applicant for immediate investigation and action; i. 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 nuisances or complaints can be lodged; and j. A logbook of complaints will be prepared and managed by the Site Manager.	A decommissioning noise monitoring scheme will be developed in the DEMP(s). The Environmental Manager will regularly record compliance in a logbook. The detailed DEMP(s) will set out a scheme for the provision of monthly reporting information to and local residents to 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.
Impacts to nearby residents	**Standard Working Hours** **Summer:** 07:00 – 19:00 Monday to Friday and Saturday 09:00-13:00 with no Sunday or Bank Holiday working. **Winter:** 08:00 – 18:00 Monday to Friday and Saturday 09:00-13:00 with no Sunday or Bank Holiday working. Some works activities may need to occur out of these hours/times due to activities requiring to be undertaken continuously. Where work outside of times is necessary prior notification will be provided to the LPA.	Contractor to implement.

Potential Impact	Mitigation Measure	Monitoring
Impacts from increase in traffic	Consideration has been given to traffic routing, timing and access points to the Scheme to minimise noise impacts at existing receptors. Management of HGV on the highway network will be managed through a DTMP.	The detailed DTMP(s) will provide any monitoring required.
Volumes of noise that may cause public disturbance during decommissioning operations	Practises used to minimise volume of noise produced: a) Ensuring that all appropriate processes, procedures and measures are in place to minimise noise before works begin and throughout the decommissioning programme; b) 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; c) Where reasonably practicable, noise and vibration are controlled at source, review of the decommissioning programme and methodology to consider quieter methods, consideration of the location of equipment on-site and control of working hours; d) Use of modern plant, complying with applicable UK noise emission requirements; e) Hydraulic techniques for breaking concrete or rocks to be used in preference to percussive techniques, where reasonably practicable; f) Drop height of materials will be minimised; g) Plants and vehicles will be sequentially started up rather than all together; h) Off-site pre-fabrication where reasonably practicable; i) Use of screening locally around significant noise producing plant and activities; j) Regular and effective maintenance by trained personnel will be undertaken to keep plant and equipment working to manufacturer's specifications; k) All decommissioning plant and equipment must be properly maintained, silenced where appropriate, operated to prevent excessive noise and switched on when not in use; l) Loading and unloading of vehicles, dismantling of site equipment, or moving equipment or materials around the Order limits to be conducted in such a manner as to minimise noise generation as far as reasonably practicable; m) All vehicles used on-site shall incorporate reversing warning devices as opposed to the typical tonal reversing alarms to minimise noise disturbance where reasonably practicable; n) Provision of information to the relevant local authority and local residents to advise of potential noisy works that are due to take place;	The detailed DEMP(s) will provide any monitoring required.

Potential Impact	Mitigation Measure	Monitoring
	o) Unnecessary revving of engines will be avoided, and equipment will be switched off when not in use; and 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.	

Table 3-7 Socio-Economics and Land-Use

Potential Impact	Mitigation Measure	Monitoring
Potential for damage to soil. Causing soil compaction by carrying out works in inappropriate (wet) conditions could reduce infiltration potentially enhancing any run-off and/or erosion issues. If compacted the land maybe of lower quality on decommissioning.	The Soil Resource Management Plan (SRMP) will be prepared in accordance with the Outline SRMP setting out measures to manage the reinstatement of any stored soils and minimise soil disturbance and compaction when extracting supports for the solar PV panels.	Soil assessments and monitoring will be undertaken as detailed in the Outline Soil Resource Management Plan (SRMP)

Table 3-8 Transport and Access

Potential Impact	Mitigation Measure	Monitoring
Increased traffic flows, including HGVs on the roads leading to the Order limits. Severance and intimidation associated with increased decommissioning traffic and abnormal loads.	The DTMP will set out measures to manage decommissioning traffic within the vicinity of the Order limits along the local highway network during the decommissioning period of the works, in order to limit any potential disruptions and implications on the wider transport network, as well as for the existing road users. It identifies the management of freight traffic i.e. HGVs, as well as staff vehicles. Full details will be provided in the final DTMP. An **Outline Public Rights of Way Management Plan [EN010131/APP/7.8]** details how Public Rights of Way (PRoW) will be managed to ensure they are safe and accessible during decommissioning. A detailed PRoW Management Plan will be secured by a DCO Requirement.	There will be monitoring of HGVs, staff vehicles travelling to and from the Order limits, together with safety monitoring at specific locations, which will be detailed in the DTMP.

Potential Impact	Mitigation Measure	Monitoring

Table 3-9 Telecommunications, Television Reception and Utilities

Potential Impact	Mitigation Measure	Monitoring
Potential to affect existing utility infrastructure above and below ground	The risk of damage to utilities during decommissioning will be minimised through mitigation, which will involve: a) Locating the Scheme outside of utilities' protected zones; b) The use of ground penetrating radar or other appropriate techniques will be employed before excavation to identify any unknown utilities. c) Consultation and agreement of decommissioning/demobilisation methods will be undertaken prior to works commencing (this would be covered by the protective provisions included in the DCO). d) Infrastructure that crosses the Scheme will be mapped and avoided through the design.	No monitoring required.

Table 3-10 Waste

Potential Impact	Mitigation Measure	Monitoring
Potential to impact on sensitive receptors (humans, wildlife and controlled waters) if not stored and managed appropriately.	The applicant(s) will consider the objectives of sustainable resource and waste management and seek to use material resources efficiently, reduce waste at source, reduce waste that requires final disposal to landfill and apply the principles of the waste hierarchy. This would include, where reasonably practical, working towards a cut and fill balance for excavations; segregation of decommissioning materials on-site for appropriate re-use, recycling and recovery, with landfill as a last resort.	The types, quantities and destination of waste generated during the decommissioning phase would be identified, measured and recorded through the Site Waste Management Plan (SWMP). A register of all waste loads leaving the Order limits would be maintained
Impacts of waste on the surrounding environment	Burning of waste or unwanted materials will not be permitted on-site. All hazardous materials including chemicals, cleaning agents and solvent containing products to be properly sealed in sealed containers at the end of each day prior to storage in appropriately protected and bunded storage areas.	

Potential Impact	Mitigation Measure	Monitoring
	Materials requiring removal from the Order limits would be transported using licensed carriers and records kept, detailing the types and quantities of waste moved and the destinations of this waste, in accordance with the relevant regulations.	to provide a suitable audit trail for compliance purposes and to facilitate monitoring and reporting of waste types, quantities and management methods.

Table 3-11 Major Accidents and Disasters

Potential Impact	Mitigation Measure	Monitoring
All works will be undertaken in accordance with relevant Health and Safety legislation and guidance. Details of fire, police, emergency services and hospitals will be publicised and included in the site induction. The relevant risk assessments for safety during decommissioning will be required and produced by the contactor prior to decommissioning, which will be implemented to minimise the risk of accidents and disasters on site.		

Table 3-12 Air Quality

Potential Impact	Mitigation Measure	Monitoring
Increased nitrogen dioxide (NO_2) and particulate matter (PM_{10}) from on-site and off-site decommissioning vehicle/plant emissions. Increased particulates and deposited dust from Site activities, materials transportation, storage and handling, including use of haul roads.	Appropriate mitigation and control measures will be included in the detailed DEMP(s), which would include: **Communications:** a) Develop and implement a stakeholder communications plan that includes community engagement before work commences on-site; b) Display the name and contact details of person(s) accountable for air quality and dust issues on the Site. This may be the environment manager/engineer or site manager; c) Display the head or regional office contact information; and d) Develop and implement a Dust Management Plan, 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 the detailed DEMP(s) will include the implementation of: - Inspection procedures at the Order limits boundary to periodically visually assess any dust and air pollution which may be generated - Inspection of maintenance schedules for decommissioning vehicles,

Potential Impact	Mitigation Measure	Monitoring
	measures. The desirable measures should be included as appropriate for the site. The DMP will need to include monitoring of dust deposition, dust flux, real time PM continuous monitoring and/or visual inspection.	plant and machinery; and - Inspection and recording procedures relating to the level of traffic movements, use and condition of haul routes.
	Site Management: a) Record all dust and air quality complaints, identify cause(s), take appropriate measures to reduce emissions in a timely manner, and record the measure taken; b) Make the complaints log available to the local authority when asked; c) Record any exceptional incidents that cause dust and/or air emissions, either on-site or offsite, and the action taken to resolve the situation in the logbook; d) Hold regular liaison meetings with other high-risk construction sites within 500m of the Site (if applicable), to ensure plans are co-ordinated and dust and 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; e) Carry out regular site inspections to monitor compliance with the DMP, record inspection results, and make an inspection local available to the local authority when asked; f) Increase the frequency of site inspections by the person accountable for air quality and dust issues when activities with a high potential to produce dust are being carried out and during prolonged dry or windy conditions; g) Agree dust deposition, dust flux, or real-time PM continuous monitoring locations with the Local Authority. Where possible commence baseline monitoring at least three months before work commences on-site or, if it a large site, before work on a phase commence; and h) Plan site layout so that machinery and dust causing activities are located away from receptors, as far as is possible.	
	Preparing and Maintaining the Site: a) Erect solid screens or barriers around dusty activities that are at least as high as any stockpiles on-site where stockpiles (if required) are within 100m of receptors; b) Fully enclose site or 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;	

Potential Impact	Mitigation Measure	Monitoring
	c) Avoid site runoff of water or mud; d) Keep site fencing, barriers and scaffolding clean using wet methods; e) Remove materials that have a potential to produce dust from the Site as soon as possible, unless being re-used on-site. If they are being re-used on-site cover them; and f) Cover, seed or fence stockpiles to prevent wind whipping.	
	Operating Vehicles / Machinery and Sustainable Travel: a) Ensure all vehicles switch off engines when stationary - no idling vehicles; b) Ensure all diesel- or petrol-powered generators are fully maintained and used for the minimum periods only. Transition to mains electricity or battery powered equipment where practicable; c) 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); d) Produce a Constructive Logistics Plan as part of the CTMP to manage the sustainable delivery of goods and materials; and e) Implement a Travel Plan that supports and encourages sustainable travel.	
	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; and c) 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.	
	Waste Management: a) Avoid bonfires and burning of waste materials.	

Potential Impact	Mitigation Measure	Monitoring
	Earthworks: a) Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable; b) Use Hessian, mulches or tackifiers where it is not possible to re-vegetate or cover with topsoil, as soon as practicable; and c) Only remove the cover in small areas during work and not all at once.	
	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 site 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 site logbook; f) Install hard surfaced haul routes, which are regularly damped down with fixed or mobile sprinkler systems, or mobile water bowsers and regularly cleaned; g) Implement a wheel washing system (with rumble grids to dislodge accumulated dust and mud prior to leaving the site where reasonably practicable); h) Ensure there is an adequate area of hard surfaced road between the wheel wash facility and the site exit, wherever site size and layout permits; and i) Access gates to be located at least 10m from receptors where possible.	

Table 3-13 Arboriculture

Potential Impact	Mitigation Measure	Monitoring
Tree Protection	a) The default position is that the RPA and canopy spread of trees to be retained will form an effective Decommissioning Exclusion Zone, secured with robust fencing where no access will be permitted. Where access is necessary within this area special measures such as the use of ground protection and arboricultural supervision are generally required; and	

Potential Impact	Mitigation Measure	Monitoring
	b) Tree protection method will be adhered to as set out in **Appendix CA.**	
Site Organisation, Storage and Use of Materials, Plant and Machinery	a) The storage of materials and any washing, mixing or refuelling will take place in agreed allocated areas at least 5m from the edge of the RPA of retained trees; b) Any slope effect must be taken into account and where there is a potential for run off, heavy duty polythene sheeting and sandbags must be in place as bunding to prevent toxic materials reaching RPAs; and c) Particular care is required where high sided vehicles, long reach machinery and plant with jibs, booms and counterweights are to operate with in proximity to retained trees. A banksman will be used where the movement of plant or long reach machinery occurs within 5m of any part of a retained tree to ensure no damage is sustained.	

4. Complementary Plans and Procedures

4.1.1 A suite of complementary environmental plans and procedures for the decommissioning phase will be developed alongside the DEMP. These plans and procedures will build on the principles and procedures set out in this Framework DEMP and described in the ES. These supporting and supplementary plans and procedures will be clearly outlined in the DEMP(s) and cross referenced.

5. Implementation and Operation

5.1.1 The DEMP(s) will set out all roles, responsibilities and actions required in respect of implementation of the measures described in this Framework DEMP, including:

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 and Reporting

6.1.1 To meet the requirement of the DEMP(s), environmental monitoring of the Scheme and its impacts will be undertaken throughout the decommissioning phase. Monitoring requirements will be detailed in the DEMP(s).

6.1.2 As part of the monitoring process, the applicant will allocate a designated Environmental Site Officer(s), who will be present on Site throughout the decommissioning phase and when are activities are commencing. The Environmental Site Officer will observe site activities and report any deviations

from the DEMP(s), along with the action taken and general conditions at the time. The Applicant will be informed of any deviations from the DEMP(s) as soon as possible following identification of such issues. The Environmental Site Officer will also act as day-to-day contact with relevant local authorities and other regulatory agencies, such as the Environment Agency.

6.1.3 The Environmental Manager will arrange regular formal inspections to ensure the requirements of the DEMP(s). After completion of the works, the Environmental Site Officer will conduct a final review.

6.2 Records

6.2.1 The Environmental Manager / Project Manager will retain records of environmental monitoring and implementation of the DEMP(s). This will allow provision of evidence that the DEMP(s) is being implemented effectively. These records will include:

a. Environmental Action Schedule;

b. Licences and Approvals;

c. Results of inspections by Environmental Manager / Project Manager;

d. Other environmental surveys and investigations; and

e. Environmental equipment test records.

6.2.2 The DEMP(s) will be updated as necessary, with a full review as required (at least quarterly) throughout the decommissioning period.

6.2.3 A brief report will be produced and submitted to the relevant local authorities on a quarterly basis and following completion of decommissioning. This will summarise the monitoring process, observed deviations from the DEMP(s) and the corrective actions taken.

6.3 Management Review

6.3.1 The DEMP(s) will be signed off on completion of the decommissioning works by an appropriately qualified person(s).

7. References

Ref 1. The Infrastructure Planning (Environmental Impact Assessment) Regulations 2017).

Ref 2. HMSO (2008) The Planning Act 2008.

Ref 3. NetRegs. Environmental Guidance for your Business in Northern Ireland and Scotland [Online].

Ref 4. Control of Substances Hazardous to Health Regulations 2002. https://www.hse.gov.uk/nanotechnology/coshh.htm#:~:text=COSHH%20is%20the%20law%20that,to%20health%20(risk%20assessment)%3B

Ref 5. Control of Pollution (Oil Storage) (England) Regulations 2001. https://www.legislation.gov.uk/uksi/2001/2954/contents

Appendix A. Soil Resource Management Plan

Outline Soil Management Plan

JSM Group			
Project name:	Gate Burton, Gainsborough 400kV Feasibility Study		
Project No.:	P1237		
Client:	Low Carbon		
Location:	Gate Burton, Gainsborough		
Author	Claire Parsons (Environmental Manager)		
Reviewed and approved by	Riaz Cadersaib (Pre-Construction Civils Manager)		
Revision no.:	003	**Date:**	October 2023

Contents

This document has been updated following an Order limit change request.

Introduction

This report provides recommendations on soil management for the Gate Burton Solar and Energy Storage Park and installation of the 400 kV cable from the Solar and Energy Storage Park to the point of connection at National Grid sub-station.

Prior to construction, a Soil Management Plan (SMP) will be produced as part of the development of the Construction Environmental Management Plan (CEMP). The SMP will be based on this Outline SMP.

Soil types

Soils within the Order limits were found to be mainly heavy types with drainage restrictions formed in mudstone. Smaller areas of lighter permeable soils were identified in the north-west of the site where land is formed in sand and gravel deposits. A full soil description is provided within ES Chapter 12 Socio-Economics and Land Use **[EN010131/APP/3.1]** and in the Agricultural Land Classification Report Appendix 12-C **[EN010131/APP/3.3**].

Construction

Specific soil management practices:

a) Trial hole and bore hole testing has been completed.
b) Ground testing / soil sampling will be required, to confirm contamination levels.
c) Regular Waste Acceptance Criteria (WAC) testing will be undertaken to confirm presence of contaminants.
d) Granular haul roads to be applied where feasible to avoid tracking heavy machinery through agricultural land, track matting will be applied where this is not feasible and monitored during regular environmental audits.
e) During high rainfall seasons work will be planned and managed to minimise impact on soils
f) Feasibility to be determined of wider tracked vehicles to distribute the weight more evenly and minimise impact.
g) Access onto undisturbed soils will be avoided, as far as possible, via use of a haul road where feasible
h) Confine traffic movements to designated routes wherever possible
i) Where vehicles come off the running track, track matting will be used if the ground conditions are suitable
j) Sensitive areas will be fenced off with no access
k) Guidance from Defra, Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. September 2009 to be applied at all times; Construction Code of Practice for the Sustainable Use of Soils on Construction Sites (publishing.service.gov.uk)
l) Soil to be protected from construction activities (e.g. retained trees, protected habitats, archaeology, invasive weeds) should be demarcated.
m) Stockpile heights of 3 to 4 m (maximum) for topsoil
n) Storage periods will be dependant upon the soil moisture and consistency. Once measured a timeframe will be determined.
o) Soil stockpiling will be positioned in a site area where it will remain undisturbed and will not interfere with site operations.
p) Stockpiles should not be positioned within the root or crown spread of trees, or adjacent to ditches, watercourses or existing or future excavations.
q) Stockpile slope angles will need to be less than 40° to ensure stability
r) Wind-blown dust, generated from dry, exposed ground or soil and wastes stockpiles, will be prevented generally with the use of water suppression. Surfaces and stockpiles will be damped down to minimise dust as necessary.

s) In wetter conditions, deposits of mud on roads, pavements and areas of hard-standing may need to be cleared. Installation of wheel washing devices may be required, preferably with water recycling equipment. Small occurrences will be cleared manually with a broom and shovel; elsewhere road sweepers will be called upon. The need to control mud and dust is covered in relevant task risk assessments, method statements.

t) Storage of soils, for water quality purposes:
To protect waterbodies from fine sediment runoff, topsoil/subsoil will be stored a minimum of 20 m from any water body on flat lying land (and further if the ground is sloping, subject to on site risk assessment and observational monitoring) and not within the fluvial floodplain. Where this is not possible, 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. In all situations, runoff from the stockpile will be prevented from draining to a watercourse without prior treatment. If located where there is a risk of tidal flooding or within fluvial Flood Zone 2, additional measures will be provided to reduce the risk of erosion (e.g. by protecting the base using spaced out concrete blocks, pegged in geotextile sheets, etc.).

u) All excavated material not re-used on the site of the works must be removed from the floodplain. Environment Agency have insisted on floodplain compensation even for temporary storage of soils on the floodplain on other schemes.

v) Ground Investigation survey locations avoid the flood plain, works must ensure no soil is placed there.

w) Measures included within Method Statements and Environmental Management Plan to be followed at all times and will be briefed to the site team during the induction process.

x) A map of Topsoil units will be included within the detailed SMP and retained to ensure topsoil units are restored to their original location. The stockpiled soils must be labelled and protected from trafficking and damage. Any soil stockpiles in place for more than 6 months will be seeded.

y) After decommissioning, agricultural land will be restored to its former ALC grade (unless the ALC grade has improved). Good practice measures will be implemented to assure restoration of the land to the baseline ALC grade, minimising the potential loss of soil functions.

z) Handling and storage of the identified soil materials will be in accordance with measures from the Code of Practice for the Sustainable Use of Soils on Construction Sites and the British Society of Soil Science Guidance Note 'Benefitting from Soil Management in Development and Construction' in order to protect soil functions during site working.

aa) The results of the soil resource survey contained within the Appendix 12C: Agricultural Land Classification Report [EN010131/APP/3.3] will be presented in a detailed Soil Management Plan that includes maps showing the location and extent of soil contrasting in any of the following parameters – texture, stoniness, organic matter content, compaction or permeability. The report will: include a description of the characteristics of each soil resource; discuss the suitability of the different soil materials for reuse; and, make recommendations for the handling and storage of the identified soil materials in order to protect soil functions during site working.

bb) A detailed audit trail will be kept of all soil materials required for land being eventually reinstated and soil being retained for reuse in the restoration process must be stored separately from those identified for reuse elsewhere or removal off site.

cc) The use of sustainable drainage systems on site is included within the drainage strategy for the Scheme as these can provide more long term protection of soils beyond the construction phase, by facilitating the infiltration and attenuation of surface water. Features such as permeable surfaces reduce soil sealing and help to increase water infiltration and can increase groundwater recharge, while swales and retention basins can temporarily collect surface water and reduce soil erosion from surface water runoff.

dd) Restoration will be informed by Appendix 12C: Agricultural Land Classification Report [EN010131/APP/3.3] to ensure the soil condition within the cable route is restored to its current ALC grade after construction.

ee) Tall vegetation / crops will be cleared prior to topsoil stripping.

ff) Areas of the site which are not to be stripped or used for stockpiling, haul routes or compounds will be clearly marked by signs and barrier tape and protected from trafficking and construction.

gg) Soil management of the land under any proposed areas for Biodiversity Net Gain, and aftercare will be in accordance with this OSMP. Although there is no soil movement proposed in these areas, soil trafficking

may occur and therefore mitigation measures need to be in place to minimise the potential impact on the soil resource.

hh) All areas proposed to benefit from Biodiversity Net Gain (70.95% for area-based habitats, 37.24% for hedgerows and a net gain of 14.22% for rivers) will also be subject to the soil management conditions within this report.

ii) Whilst the method proposed for the installation of the solar PV arrays does not involve any digging or soil mixing, there is the risk of soil damage due to trafficking, especially when the soils are wet. The physical loosening of compacted soils may only provide temporary alleviation, while actively damaging the soil's biological capability to recover and maintain its structure in the long-term, with frequent cultivation often a factor associated with poorly structured soils. Therefore, compaction will be avoided as far as possible in the first instance. Any decompaction or remediation activities will be done when the soils are in a suitably dry condition.

jj) The impact of construction activities on the soil resource will be minimised by ensuring that the grass sward is fully established (i.e., no bare ground), prior to the installation of the panels and associated infrastructure.

kk) Given the proximity to Cottam Power Station and associated landfill within, a soils monitoring watching brief will be carried out during the Torksey Ferry Road upgrade works. A Method Statement will be included within the Soils Management Plan detailing how soils will be managed if found to be or suspected to be contaminated.

Soil Handling

a) Soil handling to be kept to a minimum
b) Likely use of Plant 13T excavators, trucks
c) Excavated soil to be stored in close proximity and same field as dig location, to avoid cross-contamination between fields
d) For biosecurity, a wheel wash and boot wash will be required at access and egress of sites to highways.
e) Stockpiles to be stored separately to subsoils. During excavation each stockpile type will be placed on opposing sides of the trench

Soil Restoration

a) On completion of the works backfilling shall be done as per the specification with the utmost of care and shall be done in compacted layers.
b) Conventional excavation will proceed in accordance with the provisions as stated in the HAUC Code of Practice Specification
c) In the event that soils become compacted, improvement will be made via soil bursting. All soils will be returned to landowner in like for like condition (as per pre-construction condition survey).

Topsoil strip

a) Topsoil strip to be conducted to approximately 300mm depth or at change of ground conditions / strata
b) Prior to excavation the bucket will be cleaned of any previous subsoil, as a biosecurity measure.
c) Topsoil will be transported within clean plant body

Use of stripped soil (max time stored; backfilling)

a) Trench excavations are anticipated to be backfilled on the day of the works, where possible. If any excavations are left overnight, they must be covered to prevent mammals and other animals falling in and being harmed, with a means of escape provided.

Prior to commencement of works, a Soil Management Plan (SMP) will be prepared in accordance with this Outline Soil Management Plan (Outline SMP). The SMP will detail the management of soil on areas such as temporary working compounds, temporary and permanent tracks and sites of temporary and permanent buildings. The SMP will include details of topsoil and subsoil stripping depths, how and where soils will be

stored, conditions under which soil stripping and reinstatement will be carried out and how the reinstatement will be carried out.

The Outline SMP and SMP will follow the principles of best practice including the Defra (2009) Construction Code of Practice for the Sustainable Use of Soils on Construction Sites. and The Institute of Quarrying (2021) Good Practice Guide for Handling Soils in Mineral Workings.

Earthworks:

a) Re-vegetate earthworks and exposed areas/soil stockpiles to stabilise surfaces as soon as practicable;
b) Use Hessian, mulches or tackifiers where it is not practicable 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.

Surface water management during construction:

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;
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 waterbodies in the Order limits and where necessary, 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);
c) Site drainage, including surface runoff and dewatering effluents, will be discharged to sewers where practicable and relevant permissions will be obtained from the sewerage or statutory undertaker. Discharge to watercourses will only be permitted where discharge consent or other relevant approval has been obtained (where necessary);
d) Scheme drainage during construction will receive appropriate pollution control measures as agreed with the sewerage undertaker or the Environment Agency as appropriate. Holding or settling tanks, separators and other measures may be required, will be provided and maintained;
e) The relevant sections of BS 6031: Code of Practice for Earthworks will be followed for the general control of site drainage;
f) 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;
g) 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.

Accidental spillage within the Order limits:

a) Fuel will be stored and used in accordance with the Control of Substances Hazardous to Health Regulations 2002, and the Control of Pollution (Oil Storage) (England) Regulations 2001.
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);
c) Any plant, machinery or vehicles will be regularly inspected 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 only at designated areas within the Scheme compound. Only construction equipment and vehicles free of all oil/fuel leaks will be permitted on the Order limits. 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 will take place above drip trays or on an impermeable surface which provides protection to 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) Construction waste/debris are to be prevented from entering any surface water drainage or water body;
h) 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 sand bags) or the road regularly cleaned by road sweeper;

Management of flood risk:

a) 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;
b) Connectivity will be maintained between the floodplain and the adjacent watercourses, with no changes in ground levels within the floodplain as far as practicable;
c) 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
d) 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.

Security of sites:

a) Security will be in place at all sites with an office compound, with patrols where plant would be stored overnight if left on-site.
b) Security fencing will surround open excavations and will potentially guard machinery, if left in situ around excavations. These measures will help prevent any vandalism that could lead to a pollution incident.

Decommissioning

a) On completion of the works backfilling shall be done as per the specification with the utmost of care and shall be done in compacted layers.
b) On completion of all works the site shall be left in a clean and tidy condition.
c) On completion of works and only following reinstatement, all barriers, plant and materials will be removed and cleared from site
d) Cable inspection and final environmental audit upon site completion to be carried out.

Appendix B. Risk Assessment Methods (RAMs)

B1. Great Crested Newt

To mitigate against harm to any amphibians present, the following precautionary methods of working are deemed appropriate for the works within 250m of the pond supporting Great Crested Newt.

A finger-tip search for Great Crested Newt will be undertaken within areas of suitable Great Crested Newt habitat, within 250m of a pond supporting this species. Following this, habitat manipulation will be overseen by a suitably qualified ecologist (SQE) acting as an Ecological Clerk of Works (ECoW) and will comprise the following general principles:

a) The on-site vegetation within the areas of habitat suitable for Great Crested Newt will be cut short during winter, between November and February (when amphibians are hibernating). If this is not possible (i.e. vegetation clearance during the Great Crested Newt active season), the vegetation will be cut in a phased approach, firstly cutting to 30cm, then, following a period of no less than 24 hours, can be cut to 15cm and then to ground level, after another 24 hours.

b) The vegetation will then be kept short to displace any amphibians, which may be present, away from the works when they emerge in the early spring and discourage amphibians from moving into the Order limits from the surrounding habitat.

c) Vegetation (including topsoil) will be carefully removed using an excavator using a toothed bucket. These works will be supervised by an SQE.

d) Any habitat features which may conceal hibernating amphibians (log piles, rubble mound bunds, any other debris etc.) will not be dismantled during winter months (between November and February) and will be conducted during the amphibian active season (i.e. March (dependent on weather) to October) during warm weather conditions (i.e. above 5°C) to avoid killing or injuring potential hibernating amphibians.

In the unlikely event that any Great Crested Newt are discovered during these works, then such works must cease immediately and a SQE must be consulted to determine how to proceed. If other amphibians are discovered during vegetation clearance it is proposed that these are relocated to suitable habitat nearby in suitable weather conditions.

B.2 Reptiles and Other Amphibians

To mitigate for potential incidental killing or injury of animals and for the loss of reptile and other amphibian habitat (excluding Great Crested Newt, see measures above), the following outline mitigation is proposed:

a) Retention of the majority of habitats (such as grassland and water bodies) supporting reptiles and other amphibians, within the Solar and Energy Storage Park, with limited intrusion into these areas during decommissioning;

b) Clearance of grassland vegetation from areas where reptiles and other amphibians were identified, under ecological supervision to reduce the suitability of habitat for reptiles and amphibians; and

c) Avoidance of decommissioning through potential hibernation areas within the Site.

Retention of habitat

Where practicable, the majority of grassland in the Site will be retained. Where any such habitat supporting reptiles and other amphibians (as identified through baseline ecological surveys) will be removed, due to decommissioning of the Scheme, then appropriate mitigation will be required (see below) to avoid unintentional killing or injury to reptiles. All water bodies in the Site will be retained.

Vegetation clearance to minimise potential for incidental injury or mortality to reptiles and amphibians

The decommissioning of the Scheme will potentially lead to temporary loss of grassland habitat, supporting very low numbers of reptiles and other amphibians, although these will be retained and avoided as much as is practicable. Therefore, any habitat loss in areas where reptiles and other amphibians were identified will be managed, through vegetation clearance, to temporarily reduce the suitability of the habitat and encourage reptile dispersal away from the decommissioning areas.

The exact prescription of works will be dependent on the time of year within which the decommissioning works will be undertaken and in consideration of how reptiles and amphibians will be affected during their life cycle.

Broadly, the vegetation management will comprise:

a) Strimming grassland vegetation within the Grid Connection Corridor and the Solar and Energy Storage Park; and

b) Removal of arisings from these areas.

The vegetation will be cleared to ground level, using hand strimmers, under the supervision of an Ecological Clerk of Work (ECoW). The vegetation will be cut in two passes, with the first cut of the vegetation cutting to no less than 0.3m (1 foot) from above ground level. After a period of no less than 24 hours, a second cut of the vegetation will be made to ground level.

Vegetation strimming will be undertaken during suitable weather conditions, when the weather conditions are dry, with little to no wind and the temperature is between 9°C and 20°C.

All arisings will be raked by hand and removed from Site to prevent potential usage by reptiles.

Where practicable, the vegetation clearance should be undertaken during September and October. This clearance is inside the active reptile season (March to October), but outside of the breeding bird season, which is typically March to August inclusive.

Avoidance of hibernating reptiles and amphibians

If decommissioning works, including ground clearance works, are undertaken between November and early March, then these works are likely to affect reptiles during their hibernation period, when reptiles are typically below ground. Reptiles usually hibernate between October/November and March, although this can vary as reptile activity is highly influenced by weather conditions and hibernation is triggered by a response to temperature fluctuations above ground. Hibernation spots for reptiles includes rubble piles, log piles and under large rocks.

Therefore, supervision by an ECoW of intrusive ground works on the Solar and Energy Storage Park and Grid Connection Corridor will be undertaken to locate any areas of hibernacula, or potential hibernacula. Any such areas of hibernacula, or potential hibernacula, will be avoided, where decommissioning occurs during winter months and when reptiles are hibernating. Reptile activity is highly influenced by weather conditions and hibernation is triggered by a response to decreasing temperatures above ground. Typically, the hibernation period for reptiles is October / November to March, although this can vary depending on the weather.

Alternatively, potential hibernation spots could be removed in advance of decommissioning, within the reptile active period and replaced outside of the Scheme area (but within a suitable distance so that reptiles can find it). Removal would be under the supervision by an ECoW.

Any habitat features which may conceal hibernating amphibians (log piles, rubble mound bunds, any other debris etc.) will not be dismantled during winter months (between November and February) and will be conducted during the amphibian active season (i.e. March (dependent on weather) to October) during warm weather conditions (i.e. above 5°C) to avoid killing or injuring potential hibernating amphibians.

B.3 Breeding Birds

Where vegetation clearance is undertaken within the bird nesting season (i.e. between 1st March and 31st August), then a detailed inspection for nesting birds within all scrub and trees will be carried out by a suitably qualified ecologist no more than 24 hours prior to any vegetation clearance being undertaken. If an active nest is identified, a suitable exclusion zone, the extent of which will be determined by the species nesting and stage of nesting (e.g. eggs, chicks) will be established around the nest. Typically, this buffer will be between 10m and 200m (dependent on the species). No works will take place within the exclusion zone until a suitably qualified ecologist confirms (through regular monitoring) that chicks have fledged, and the nest is no longer active.

If, during the decommissioning phase, any parts of the worksite are left dormant for one week or more between February and mid-August inclusive, a suitably qualified ecologist will check for the presence of nesting birds before works recommence. If any active nests are found, decommissioning will cease, and an appropriate buffer zone will be established (as above).

B.4 Badger

Pre-decommissioning

As Badgers are nomadic and can use disused setts (making them active again), a pre-decommissioning survey will be undertaken to appraise activity levels of all the setts identified as requiring closure (or possible closure) as detailed in **ES Volume 3: Annex 8-A of Appendix 8-L [EN010131/APP/3.3].**

Sett closure can only be undertaken between 1st July and 30th November and therefore, it is recommended that a pre-decommissioning survey is undertaken in the spring e.g. March, prior to the application of the mitigation licence.

If the pre-decommissioning survey identifies any changes to sett activity or new active setts, or if an existing disused sett has become active (and is within the developable area), then these will be avoided and any update to these mitigation measures made accordingly.

Lighting will be kept to a minimum during decommissioning works and this will ensure there are no indirect impacts on Badger. Construction working hours will be 7am until 7pm Monday to Saturday and during decommissioning in the winter months, mobile lighting towers with a power output 8kVAs will be used. Any lighting required during the decommissioning phase will be directed away from retained habitats and include hoods or cowls to direct light forwards into the decommissioning areas.

Any excavation works during decommissioning will be covered overnight or will include a means of escape (such as a plank or ladder) to ensure Badger are not trapped in open excavations.

Appendix C. Outline Tree Protection Measures

The default position as set out by BS 5837:2012 is that retained trees must be protected from decommissioning operations with the erection of robust protective fencing positioned on the outer edge of the RPA or crown spread (whichever is greatest). All site operations will be restricted to the area outside of tree protection fencing and this area will form a Decommissioning Exclusion Zone (CEZ) unless agreed otherwise. Protection measures will be installed as set out in the Tree Protection Plan.

The area inside the fence and any additional tree protection measures will be sacrosanct and must not be removed or altered without the prior approval of the LPA Tree Officer. Any damage to tree protection measures must be reported immediately.

Fencing shall be constructed with robust vertical and horizontal scaffold framework with weldmesh panels firmly attached as per BS 5837:2012 Figure C.1 below. Vertical support poles and bracing poles must be located with care to avoid underground utility services and will be sited to avoid the structural roots of retained trees.

Alternative equivalent robust and immovable fencing specification including site hoarding will also be appropriate.

Suitable all-weather signage will be fixed to fencing to notify site staff and visitors of the decommissioning exclusion zone and its purpose.

When entering and exiting the site the fencing contractor must avoid the production of ruts on the unprotected surface of the ground.

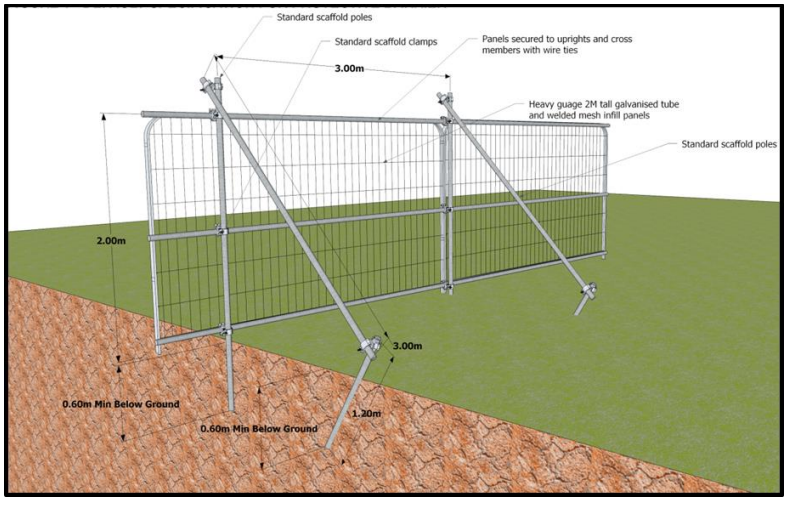

Figure C.1 Default specification for protective barrier

Ground Protection

Should access be unavoidable within the RPA of a retained tree, fit for purpose ground protection must be in place which is sufficient to protect the structure of the soil from damage based on the heaviest anticipated load.

As set out in section 6.2.3.3 of BS5837:2012 the following ground protection measures will be appropriate:

- Suitable ground protection for pedestrian only access will comprise a single thickness of scaffold boards set on a compressible layer of 100mm of woodchip on a geotextile separation layer.
- Pedestrian operated plant up to two tonnes in weight would require the use of a proprietary ground protection system (such as Ground Guards or Eve Trakway or equivalent) set on a minimum depth of 150mm woodchip or sharp sand.
- Heavier loads will require ground protection to an engineering specification in conjunction with arboricultural advice.

As a guide the threshold beyond which root development is significantly affected is a bulk density ranging from 1.4g per cm^3 for clay soils, to 1.75g per cm^3 for sandy soils. Tree protective measures shall stay in place until all decommissioning operations are completed and removal is agreed with the Site arboriculturist and/or the Local Authority Tree Officer as appropriate.

General guidance for the management of exposed roots

Excavation must only take place within the RPA of a retained tree with the prior agreement of an arboriculturist and the Local Authority Tree Officer. All excavation must be undertaken using hand tools or compressed air (such as an air spade).

The following general principles will apply:

- Individual or small groups of roots less than 25mm in diameter will be retained where possible but can be severed with a sharp tool such as secateurs or pruning saws to leave a clean cut end (ideally 100mm back from the face of the excavation to account for future regrowth) where they pose an obstruction.
- Where roots are encountered which are larger than 25mm in diameter or where significant groups of smaller roots are found, the advice of an arboriculturist must be sought to decide an appropriate course of action (following consultation with the Local Authority Tree Officer where appropriate).
- Roots must only be exposed for the minimum period possible. In the interim period any exposed roots must be completely covered with dampened hessian sacking (which may require ongoing re wetting) to avoid drying out and exposure to light (which can result in the death of roots). Backfill for excavations should utilise the parent material and must not be significantly compacted.

Storage, use and mixing of materials

The use, mixing and washing of materials can lead to run off or inadvertent spillage into tree root zones. Many substances often used on decommissioning sites can be toxic to tree roots (such as concrete, fuels, salts, builders sand and herbicides), can result in the death of tree roots and beneficial soil organisms; and have a significant impact on the future health and appearance of trees.

The storage of materials can result in an effective raised soil level. This buries tree roots at depths where air and water are less available and can lead to the decline or death of the tree.

For these reasons the storage of materials and any washing, mixing or refuelling must take place in agreed allocated areas at least 10m from the edge of the RPA of retained trees.

Any slope effect must be taken into account and where there is a potential for run off, heavy duty polythene sheeting and sandbags must be in place as bunding to prevent toxic materials reaching RPAs.