

**Tillbridge Solar Project
EN010142**

**Volume 6
Environmental Statement**
Environmental Mitigation and Commitments Register
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**Regulation 5(2)(a)
Infrastructure Planning (Applications: Prescribed Forms and
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tillbridgesolar.com

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1. Environmental Mitigation and Commitments Register

1.1 Introduction and Register

- 1.1.1 **Table 1.1** lists the environmental mitigation measures to be adopted and commitments made for the construction, operation and maintenance, and decommissioning phases of the Tillbridge Solar Project (hereafter referred to as 'the Scheme') and identifies how these measures are secured.
- 1.1.2 This document has been updated at Deadline 3 to record any new mitigation or commitments included within the Application documents for environmental impacts. The document references have not been updated from the original submission. For the most up-to-date documents, the reader should access these through the **Guide to the Application [EN010142/APP/1.2(Rev05)]** and Schedule 13 of the **draft DCO [EN010142/APP/3.1(Rev04)]**.

Table 1.1: Summary of Environmental Mitigation and Commitments

ID	Primary Topic (primary driver for mitigation)	Secondary Topic (secondary drivers for mitigation)	Relevant ES Document	Effect	Mitigation Measures (including any monitoring required)	Embedded or Additional Mitigation?	Phase (Construction, Operation or Decommissioning)	Responsibility (e.g. Applicant, Contractor)	Securing Mechanism
AQ-1	Air Quality	Human Health	Chapter 6: Air Quality [EN010142/APP/6.1]	Dust from construction, operation and decommissioning works	Monitoring and Managing Dust Develop and implement a Dust Management Plan (DMP) in accordance with the Framework Construction Environmental Management Plan (CEMP) [EN010142/APP/7.8] and Framework Decommissioning Environmental Management Plan (DEMP) [EN010142/APP/7.10] , to be approved by the Local Authority, setting out measures for a high-risk site in line with the Institute of Air Quality Management (IAQM) 'Guidance on the Assessment of Dust from Demolition and Construction' (Ref. 1). The DMP will set out measures for communications, site management, monitoring, preparing and maintaining the construction site, operating vehicle/machinery and sustainable travel, operations and waste management. In addition, activity specific measures will be set out for earthworks, construction and trackout. Dust emissions from maintenance and replacement works during operation will be managed through measures set out within the Framework Operational Management Plan (OEMP) [EN010142/APP/7.10] .	Embedded	Construction, Operation and Decommissioning	Applicant Contractor	Requirement 12: Construction Environmental Management Plan
		Ecology and Nature Conservation							Requirement 13 : Operational Environmental Management Plan
		Socio-economics and Land Use							Requirement 20: Decommissioning and Restoration
CC-1	Climate Change	Waste and Resources	Chapter 7: Climate Change [EN010142/APP/6.1]	Greenhouse gas emissions from the Scheme	Reducing Greenhouse Gas (GHG) Emissions Implement measures to reduce GHG emissions as set out in the Framework CEMP [EN010142/APP/7.8] and Framework DEMP [EN010142/APP/7.10] , including: <ul style="list-style-type: none">Increasing recyclability by segregating construction/decommissioning waste to be re-used and recycled, where reasonably practicable.Designing, constructing and implementing the Scheme in such a way as to minimise the creation of waste and maximise the use of alternative materials with lower embodied carbon, such as locally sourced products and	Embedded	Construction and Decommissioning	Applicant Contractor	Requirement 12: Construction Environmental Management Plan
		Transport and Access							Requirement 14: Construction Traffic Management Plan
		Air Quality							Requirement 20: Decommissioning and Restoration

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CC-2	Climate Change	Flood Risk	Chapter 7: Climate Change [EN010142/APP/6.1]	Climate change resilience of the Scheme and in-combination climate impacts	<p>materials with a higher recycled content where feasible.</p> <ul style="list-style-type: none">Reusing suitable infrastructure and resources where possible to minimise the use of natural resources and unnecessary materials (e.g. reusing excavated soil for fill requirements).Liaising with construction/decommissioning personnel for the potential to implement staff minibuses and car sharing options.Implementing a Travel Plan in accordance with the Framework Construction Traffic Management Plan (CTMP) [EN010142/APP/7.11] to reduce the volume of construction staff and employee trips to the Scheme, while encouraging the use of lower carbon modes of transport by identifying and communicating local bus connection and pedestrian/cycle access routes to/from the Scheme to all construction staff, and providing appropriate facilities for the safe storage of cycles.Switching vehicles and plant off when not in use and ensuring construction vehicles conform to current emissions standards.Conducting regular planning maintenance of the construction/decommissioning plant and machinery to optimise efficiency.	Embedded	Construction and Decommissioning	Applicant Contractor	
					<p>Climate Change Resilience and In-Combination Climate Impact Mitigation Construction and Decommissioning Measures</p> <p>Implement measures to maximise the climate change resilience of the Scheme and to minimise in-combination climate impacts, as set out in the Framework CEMP [EN010142/APP/7.8] and Framework DEMP [EN010142/APP/7.10], including:</p> <ul style="list-style-type: none">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 or 3 are to be utilised for the storage of construction				Requirement 12: Construction Environmental Management Plan Requirement 20: Decommissioning and Restoration

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					<p>materials, this would be done in accordance with the applicable flood risk activity regulation, if required.</p> <ul style="list-style-type: none">• Connectivity will be maintained between the floodplain and the adjacent watercourses, with no changes in ground levels within the floodplain as far as practicable.• During the construction/decommissioning phase, the contractor will monitor weather forecasts on a monthly, weekly and daily basis, and plan works accordingly. For example, works in the channel of any watercourse will be avoided or halted were there to be a significant risk of high flows or flooding.• The construction laydown area site office and supervisor will be notified of any potential flood occurring by use of the Floodline Warning Direct or equivalent service.				
CC-3	Climate Change		Chapter 7: Climate Change [EN010142/A PP/6.1]	Climate change resilience of the Scheme	<p>Resilience of Landscaping</p> <p>Implement the following measures to maximise the climate change resilience of the Scheme in accordance with the Framework Landscape and Ecological Management Plan (LEMP) [EN010142/APP/7.17]:</p> <ul style="list-style-type: none">• Consider future climate conditions when selecting species for use in green infrastructure.• Protect against increased soil erosion and degradation due to increased precipitation by covering exposed soil with grass, reducing permeability.	Embedded	Operation	Applicant	Requirement 7: Landscape and Ecology Management Plan
CH-1	Cultural Heritage		Chapter 8: Cultural Heritage [EN010142/A PP/6.1]		<p>Preservation of Heritage Assets by Scheme Design</p> <p>The Framework CEMP [EN010142/APP/7.8] summarises measures to be adopted to inform the detailed design of the Scheme and to avoid or minimise impacts on buried archaeological deposits and surface earthworks. These include (but are not limited to) the 26 Sensitive Archaeological Sites within the Principal Site,</p>	Embedded	Construction	Applicant Contractor	Requirement 5: Detailed Design Approval Requirement 12: Construction Environmental Management Plan

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					trenchless crossings along the Cable Route Corridor and a 20m exclusion buffer for the Fleet Plantation Scheduled Monument south of Torksey Ferry Road that have been specified within the Scheme.				
CH-2	Cultural Heritage		Chapter 8: Cultural Heritage [EN010142/A PP/6.1]		Archaeological Mitigation Strategy A programme of archaeological mitigation measures will be implemented in accordance with the Archaeological Mitigation Strategy (AMS) [REP1-025] which would be submitted for approval and secured through a requirement of the draft DCO [EN010142/APP/3.1] . The AMS will comprise an appropriate programme of archaeological fieldwork, followed by assessment and reporting of the results and where appropriate publication.	Embedded	Construction	Applicant Contractor	Requirement 11: Archaeology
EC-1	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Loss and disturbance of ecological habitats	Habitat Avoidance Measures The Scheme design retains habitats of ecological interest, where possible, including standing water, running water, arable field margins, habitats of value to fish, terrestrial invertebrates, great crested newt, reptiles and amphibians, breeding and wintering birds, bats, riparian mammals, badger and other mammals. The following buffers from key habitat features have been applied: <ul style="list-style-type: none">• All woodland – at least 15 m;• All trees within hedgerows and individual trees – protected by clearly defined root protection areas, concordant with the requirements for each individual tree as detailed in Appendix 12-7: Arboricultural Impact Assessment of the ES [EN010142/APP/6.2];• Watercourses (where practicable) – at least 10 m from the bank-top of the watercourse;• Standing water – at least 20 m;• Standing water supporting Great Crested Newt – at least 50 m;• Hedgerows – where practicable, at least 5 m; and	Embedded	Construction and Operation	Applicant	Requirement 5: Detailed Design Approval Requirement 12: Construction Environmental Management Plan Requirement 7: Landscape and Ecological Management Plan

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					<ul style="list-style-type: none">Appropriate buffers (of up to 30 m) around any identified Badger setts, or trees with bat roost potential (a buffer of 15 m) throughout the Scheme will be implemented.				
					Habitat Improvement Measures for Ground-Nesting Birds In line with the Works Plans [EN010142/APP/2.3] , areas of undeveloped land have been embedded within the Scheme to provide a wide range of benefits for biodiversity. These biodiversity zones will provide permanent habitat for ground-nesting birds such as Skylark and Quail. The following habitat improvement measures have been incorporated for these areas within the Framework LEMP [EN010142/APP/7.17] for ground-nesting birds: <ul style="list-style-type: none">Sufficient areas of habitat creation, alongside extensive habitat enhancements have been incorporated to offset the impact of loss of arable farmland for breeding Skylark and other ground nesting birds, as well as provide extensive benefits for other Identified Ecological Features (IEFs) and wider biodiversity.Over 200 ha of undeveloped land, in open 'Biodiversity Zones', along with over 1,000 ha of grassland creation, has been incorporated into the Scheme design. These areas will be subject to grassland creation, with a combination of tussocky grass and floristic diverse seed mixes.In addition to these larger undeveloped areas, wide margins (c.15 m) have been left alongside numerous internal access tracks. A similar treatment to the larger undeveloped areas will be applied to these linear habitats.Wide grassland margins and undeveloped corners of fields, particularly along the periphery of the Scheme, have been incorporated into the design to enhance				
EC-2	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Loss of habitat and disturbance of ground-nesting birds, such as Skylark and Quail		Embedded	Operation	Applicant	Requirement 5: Detailed Design for Approval Requirement 7: Landscape and Ecological Management Plan

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					<p>foraging for Skylark nesting both onsite and offsite.</p> <ul style="list-style-type: none">• In habitat areas targeted for Skylark management, existing hedgerows, where practicable, will be maintained at their current height, to minimise further loss of 'openness' of these areas. Further to this, to reduce predation from ground predators, particularly in areas where existing woodlands and mature hedgerows may provide a sink for predators, the perimeter security fencing will not contain passages for mammals, as is proposed elsewhere throughout the Scheme, which will reduce nest predation.• The Scheme has also allowed for areas to be set aside for overwinter foraging resources. These seed rich areas will increase the chances of overwinter survival of adult and juvenile birds, improving potential recruitment of individuals into the local breeding population.• In areas targeted for ground-nesting birds, the security perimeter fencing will be free from mammal passes at the base. This will reduce the risk of predation of ground-nesting birds from mammal predators.				
EC-3	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Loss and disturbance of ecological habitats	<p>General Construction Management Measures for Ecology</p> <p>Implement appropriate measures to minimise impacts on IEFs as set out in the Framework CEMP [EN010142/APP/7.8]:</p> <ul style="list-style-type: none">• Vegetation clearance will be undertaken in advance of construction and at an appropriate time of year so as to avoid the nesting bird period and incidental injuring or killing of animals, such as Brown Hare or reptiles.• A security perimeter fence will be implemented early in the construction phase to secure the Order limits and prevent construction activity in proximity to peripheral habitats and retained habitats within the	Embedded	Construction	Applicant Contractor	Requirement 12: Construction Environmental Management Plan

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					<p>Order limits. The fence design will include gaps to allow mammals that may use woodland habitats, including small deer, Badger, Brown Hare and Hedgehog, to pass underneath at strategic locations. Equally, in some locations, gaps will be avoided to allow the security fencing to act as an anti-predator fence, particularly in areas targeted at providing habitat for ground-nesting birds.</p> <ul style="list-style-type: none">• Where lighting is required, it will conform to best practice guidelines with respect to minimising light spill into retained habitats. Lighting will be minimised to that required for safe site operations and security and directed towards the middle of the Order limits rather than towards the boundaries.• Measures to avoid animals being injured or killed within construction working areas, through excluding them from such areas (e.g., fencing) will prevent animals from falling into and becoming trapped in excavations. Furthermore, any excavations will be covered, or a means of escape (such as a ramp) will be implemented. No excavations will remain open overnight.• The Scheme will implement standard environmental protection measures required to mitigate any construction related effects on IEFs, including those associated with dust deposition, air pollution, pollution incidents, water quality, light, noise and vibration. Furthermore, measures for the safe storage of chemicals / other hazardous materials (e.g., fuel), to prevent them reaching standing and running waters through flood events during construction will be implemented. Those involved with the construction stages will be committed to agreed best practice and meet all relevant environmental legislation.				
EC-4	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation	Impacts on protected species	Pre-construction Surveys for Ecology To comply with relevant wildlife legislation, pre-construction surveys, such as Phase 1, badger,	Embedded	Construction	Applicant Contractor	Requirement 12: Construction

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			[EN010142/A PP/6.1]		great crested newt, reptiles and other amphibians, breeding birds and bat walkovers (if roost features are impacted), will be undertaken to support the baseline survey findings. The purpose of these preconstruction surveys is to ensure mitigation during the construction phase is based on the latest protected species and invasive species information. Should there have been any changes to the Scheme design which could impact upon protected species, where found within the Order limits, then Natural England licences will be sought (if required) and mitigation measures updated accordingly.				Environmental Management Plan
EC-5	Ecology and Nature Conservation		Framework CEMP [EN010132/A PP/7.8(Rcv02]	Impacts on Roadside Nature Reserves	Roadside Nature Reserves To ensure the long term conservation of Roadside Nature Reserve (RNR) sites, Lincolnshire Wildlife Trust recommends the following mitigation measures be implemented: Pre-work phase steps: <ul style="list-style-type: none">• Ensure a site-specific method statement has been agreed by stakeholders (LCC, LWT and Natural England as relevant);• Brief all contractors before work commences on the extent of RNR and mitigation measures required;• No parking on the designated site or running other vehicles over the site. Use signage, cones, cordon rope;• Minimise the number and size of excavations;• Minimise the size of plant machinery, if used;• Avoid working in soft ground conditions;• Avoid working during frosts in order to minimise damage to plants in disturbed turf;• Reduce ground pressure and disturbance with use of tracking mats; Work phase steps: <ul style="list-style-type: none">• Minimise distance travelled across turf and avoid turning on the turf;• Before excavating deeper, strip turves carefully and store;	Embedded	Construction	Applicant Contractor	Requirement 12: Construction Environmental Management Plan

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					<ul style="list-style-type: none">Strip turves by cutting to a full spade blade’s depth or use a tracked mini excavator to excavate turves to at least 200mm depth to prevent drying out;Store stripped turves on tarpaulins green side up but avoid covering turf beneath for more than 2 weeks. Turves should not be stacked on top of one another to allow access to light;Store excavated soil/stone materials separately preferably in a trailer/ existing hardstanding. All excavated top soil to be stored separately from the excavated sub-soil and replaced in the order in which they were excavated to assist the re-establishment of the natural vegetation;Use tarpaulins to loosely cover the turves so that roots are not exposed to wind; andDo not add fertiliser, use herbicides, or expose this site to any other chemicals.				
EC-6	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Impacts on Willingham to Fillingham Road Verges LWS	Willingham to Fillingham Road Verges Local Wildlife Site (LWS) Whilst the Scheme has to unavoidably cross the LWS to facilitate the Cable Route Corridor, which will require a new temporary construction access track, the design has sought to minimise impacts on the LWS, through the careful positioning of site accesses along the Cable Route Corridor which minimise direct loss of habitats. This has also removed the need for passing places which may directly impact the LWS, as well as minimising the volume of construction traffic which will need to pass alongside the LWS verges. Site accesses are secured through compliance with the Street, Rights of Way and Access plans [EN010142/APP/2.4] .	Embedded	Construction	Applicant Contractor	Requirement 5: Detailed Design Approval Requirement 12: Construction Environmental Management Plan
EC-7	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Impacts on Willingham to Fillingham Road Verges LWS	Willingham to Fillingham Road Verges LWS Implement following measures to minimise impacts on Willingham to Fillingham Road Verges LWS as set out in the Framework CEMP [EN010142/APP/7.8] :	Embedded	Construction	Applicant Contractor	Requirement 12: Construction Environmental Management Plan Requirement 5:

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EC-8	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Impacts on Upton Grange Road Verges LWS	<ul style="list-style-type: none">To limit disturbance to habitat inside the LWS during construction, the working area will be kept to a minimum of 5m inside the LWS and no spoil, materials or vehicles will be stored within the LWS.Once the cable(s) have been installed, the removed soil and turfs from the LWS (stored separately to that of adjacent fields) will be backfilled and replaced promptly, retaining the original topsoil and seed bank.A new temporary construction access track into the fields along Willingham Road will be required. However, reinstatement will be undertaken after construction, with the removed soil and turfs from the LWS, replaced promptly once cable laying has ceased.A security perimeter fence will be implemented early in the construction phase to secure the Order limits and prevent construction activity from intruding into the remainder of the LWS.	Embedded	Construction	Applicant Contractor	Detailed Design Approval
					Upton Grange Road Verges LWS The Scheme has been designed to minimise impacts on the LWS, through careful positioning of site accesses along the Cable Route Corridor which utilise existing field accesses and avoid the need for direct loss of habitat associated with the LWS. Site accesses are secured through compliance with the Streets, Rights of Way and Access plans [EN010142/APP/2.4] .				Requirement 7: Landscape and Ecology Management Plan
									Requirement 12: Construction Environmental Management Plan
EC-9	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Impacts on Cow Pasture Lane Drains LWS	Cow Pasture Lane Drains LWS The Scheme has been designed to minimise impacts on the LWS, through careful positioning of site accesses and crossing points along the Cable Route Corridor. Site accesses are secured	Embedded	Construction	Applicant Contractor	Requirement 5: Detailed Design Approval

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EC-10	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Impacts on Cow Pasture Lane Drains LWS	through compliance with the Street, Rights of Way and Access plans [EN010142/APP/2.4] .	Embedded	Construction	Applicant Contractor	Requirement 12: Construction Environmental Management Plan
					Cow Pasture Lane Drains LWS Implement following measures to minimise impacts on Cow Pasture Lane Drains LWS as set out in the Framework CEMP [EN010142/APP/7.8] : <ul style="list-style-type: none">The laying of cabling through Cow Pasture Lane Drains LWS will be undertaken using non-intrusive methods, with setbacks of at least 10m from the bank-top of the drain to protect riparian habitats and the adjacent hedge. This setback will mitigate for potential hazards such as chemical and soils spills into the watercourse, thus avoiding potential direct impacts to the LWS and riparian habitats.Any access that is required for construction of the Cable Route Corridor will utilise existing access tracks, such as the track that runs alongside Cow Pasture Lane Drains LWS, to the east. Any access to the western side of Cow Pasture Lane Drains LWS will, principally, seek to avoid crossing of this LWS although there is potential for a temporary bailey bridge to be placed over the LWS to facilitate any crossing. Vegetation clearance in these areas will also be minimised as much as is practicable.Construction compounds will be setback from any LWS with a minimum 10m from the bank-top of the watercourse, with security fencing implemented at an early stage to ensure incursion into this LWS does not occur.				Requirement 5: Detailed Design Approval Requirement 7: Landscape and Ecology Management Plan
EC-11	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Impacts on non-statutory designated sites outside the Order limits	Non-statutory sites outside the Order limits Implement following measures to minimise impacts on non-statutory sites outside the Order limits as set out in the Framework CEMP [EN010142/APP/7.8] : <ul style="list-style-type: none">Any access that is required for construction of the Cable Route Corridor will utilise existing access points where practicable. Vegetation	Embedded	Construction	Applicant Contractor	Requirement 12: Construction Environmental Management Plan Requirement 5:

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EC-12	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/APP/6.1]	Impacts on broad-leaved woodland habitat	clearance in these areas will also be minimised as much as is practicable.	Embedded	Construction	Applicant Contractor	Detailed Design Approval
					<ul style="list-style-type: none">Construction compounds will be setback from any LWS with a minimum 10m from the bank-top of the watercourse, with security fencing implemented at an early stage to ensure incursion into this LWS does not occur.				
					Habitat – broad-leaved woodland (semi-natural), including individual trees (including ancient / veteran trees) Implement following measures to minimise impacts on broad-leaved woodland habitat as set out in the Framework CEMP [EN010142/APP/7.8] : <ul style="list-style-type: none">Retained trees and woodland will be protected, in line with British Standard Recommendations (Ref. 2) and undeveloped buffers will be of at least 15m from the boundary of woodlands and tree lines. Within some of these buffers, natural regeneration of woodland will create additional scrub and woodland habitat.Other retained trees, outside of woodland habitats and adjacent to construction 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.				Requirement 12: Construction Environmental Management Plan Requirement 7: Landscape and Ecology Management Plan
EC-13	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/APP/6.1]	Impacts on hedgerows	Hedgerows The Scheme has been designed to minimise hedgerow loss with the majority of hedgerows across the Order limits retained (see the Hedgerow Removal Plan [EN010142/APP/2.9]).	Embedded	Construction	Applicant Contractor	Requirement 5: Detailed Design Approval Schedule 12 of the DCO
EC-14	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation	Impacts on fish	Fish, including Spined Loach and European Eel During activities where there are direct impacts to watercourses or water bodies, for example through drain-down, culverting, or open-	Embedded	Construction	Applicant Contractor	Requirement 12: Construction Environmental Management Plan

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			[EN010142/A PP/6.1]		trenching, the following best practice methods will be followed as set out in the Framework CEMP [EN010142/APP/7.8] : <ul style="list-style-type: none">• Avoidance of key fish migration timings wherever possible e.g., avoiding key fish migration seasons (e.g., April to June for European Eel).• Where practicable, construction will be undertaken during daylight hours to avoid the need for artificial light, noting that non-intrusive (e.g., horizontal directional drilling (HDD)) operations may be 24-hours).• All cables will be installed at a minimum of 3m below the bed of watercourses, excluding the River Trent and River Till where cables will be installed by trenchless methods at a minimum of 5m and maximum of 25m below the lowest surveyed point of the riverbed.• In the case of any construction of watercourse crossings, culverting of water bodies, and the extension of existing culverts, construction will ensure that connectivity is maintained along watercourses to allow Eel passage and connectivity for other aquatic species.• If required, fish rescue and/or translocation during drain-down of watercourses or water bodies, and during the installation of culverts or over-pumping for open trenching through watercourses/ditches will be undertaken.• Open-trenching for cable route crossings will be avoided and trenchless methods undertaken for watercourse crossings where practicable.• The combination of sealed cabling and buried depth of at least 5m below the bed of the River Trent is adequate to mitigate any potential impact of Electromagnetic Fields (EMFs) on fish transiting along the River Trent (in particular European Eel and lamprey species). These inherent design features (cable sealing) and embedded installation				Requirement 5: Detailed Design Approval

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					techniques (buried depth) are sufficient to reduce EMFs to levels that are unlikely to be perceivable to fish species transiting along the River Trent.				
EC-15	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Impacts on Great Crested Newt	Great Crested Newt Implement the following measures to minimise impacts on great crested newt as set out in the Framework CEMP [EN010142/APP/7.8] : <ul style="list-style-type: none">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:	Embedded	Construction	Applicant Contractor	Requirement 12: Construction Environmental Management Plan
					<ul style="list-style-type: none">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.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.Vegetation (including topsoil) will be carefully removed using an excavator				

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					using a toothed bucket. These works will be supervised by an SQE. 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.				
EC-16	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Impacts on reptiles	Reptiles Implement the following measures to minimise impacts on reptiles as set out in the Framework CEMP: [EN010142/APP/7.8] : <ul style="list-style-type: none">Vegetation clearance throughout the Order limits will be undertaken in advance of construction and at an appropriate time of year to avoid incidental injuring or killing of reptiles (and also Common Toad, where present), concordant with the requirements for other species, such as nesting birds and Brown Hare. Vegetation supporting reptiles will be cut in a phased approach, firstly cutting to 30cm, then, following a period of no less than 24 hours, to 15cm and then to ground level, after another 24 hours. In areas where reptiles (and Common Toad) have been identified, any habitat features within such areas which may conceal sheltering reptiles (and Common Toad) such as log piles, rubble mound bunds will not be dismantled during their inactive season	Embedded	Construction	Applicant Contractor	Requirement 12: Construction Environmental Management Plan

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					(November to February inclusive). There will be no need to undertake any relocation of reptiles within the Order limits.				
EC-17	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Impacts on breeding birds	Breeding birds Implement the following measures to minimise impacts on breeding birds as set out in the Framework CEMP [EN010142/APP/7.8] : <ul style="list-style-type: none">Pre-construction vegetation clearance to avoid the nesting bird period, where practicable i.e., March to August (inclusive). Should any vegetation clearance be required within the nesting bird period then this will be checked, prior to vegetation removal, for the presence of nesting birds, by a suitably qualified ornithologist. If active nests are found, then these will be avoided with appropriate buffer zones put in place and the area monitored until the young birds have fledged and/ or the nesting attempt has ceased.	Embedded	Construction	Applicant Contractor	Requirement 12: Construction Environmental Management Plan
EC-18	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Impacts on bats	Bats Implement the following measures to minimise impacts on bats as set out in the Framework CEMP [EN010142/APP/7.8] : <ul style="list-style-type: none">Where any temporary work is required within 15 m of any tree or building with the potential to support roosting bats, such as enabling works or clearance for construction then a precautionary working method statement would be provided to avoid potential impacts. This would include the use of an Ecological Clerk of Works (EcoCoW). Note that all woodland, buildings and trees identified with Roost Suitability (from Low to High), as presented in Appendix 9-9: Baseline Report for Bats of the ES [EN010142/APP/6.2], should be assumed to contain bat roosts unless otherwise scoped out.	Embedded	Construction	Applicant Contractor	Requirement 12: Construction Environmental Management Plan
EC-19	Ecology and Nature Conservation		Chapter 9: Ecology and Nature	Spreading of invasive non-native species	Invasive Non-native species	Embedded	Construction	Applicant Contractor	Requirement 12: Construction

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			Conservation [EN010142/A PP/6.1]		Implement the following measures to minimise the impact of invasive species as set out in the Framework CEMP [EN010142/APP/7.8] : <ul style="list-style-type: none">Pre-construction surveys will be undertaken to 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 (e.g., Wildlife and Countryside Act 1981 (as amended) Schedule 9 species (Ref. 4)). In the event that any future infestations of invasive non-native species are identified prior to and or during the development process, exclusion zones will be established around them, and an EcoCoW contacted for advice as required.				Environmental Management Plan
EC-20	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Impacts on ecological habitats and protected species	Operational Lighting No part of the Scheme will be continuously lit. Manually operated and motion-detection lighting will be utilised for operational and security purposes around electrical infrastructure such as inverters, transformers and switchgear across the Principal Site, and within the compounds and substations. Lighting will be directed downward and away from boundaries. No visible lighting will be utilised at the site perimeter fence, aside from the site entrance points.	Embedded	Operation	Applicant	Requirement 13: Operational Environmental Management Plan Requirement 5: Detailed Design Approval
EC-21	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/A PP/6.1]	Enhancement of ecological habitats	Creation and Management of Habitats As set out in the Framework LEMP [EN010142/APP/7.17] : <ul style="list-style-type: none">The creation and subsequent management of habitats has been determined by the characterisation of the existing baseline. Vegetation would be established through natural regeneration or in the case of grasslands from seed collection from the grasslands identified within the Order limits and through a suitable long-term habitat	Embedded	Operation	Applicant	Requirement 7: Landscape and Ecology Management Plan Requirement 5: Detailed Design Approval

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					<p>management regime. Consideration will be paid to microclimatic conditions when identifying appropriate species. Management will be undertaken in a variety of ways to ensure maximum biodiversity gains, with grassland managed by either low intensity grazing or infrequent hay cutting to allow plant species to flower and seed.</p> <ul style="list-style-type: none">• The Scheme will provide the following landscape planting: woodland planting and native tree belts, new hedgerows, scrub, natural regeneration areas, and species rich grassland.• Where possible, advance planting will be carried out in the first available planting season following the granting of the DCO for the Scheme. In instances where planting cannot be undertaken in this planting season, it would be undertaken at the beginning of the construction phase, or as soon as practicable once areas are no longer required for construction. Advance planting is likely to relate to Biodiversity Zones, woodland and hedgerow planting within the Principal Site.• Existing ponds in poor condition will be restored with the aim of maximising their wildlife value.• Bat roost boxes of varying types to suit different species of birds and bats will be installed in locations to be determined by an ecologist at the time of installation.• Habitat piles and hibernacula will be constructed throughout the Scheme in suitable areas, such as close to ponds or watercourses, using natural materials generated during clearance within the Order limits, such as logs, turf, and grass strimming.• Any required management of vegetation within the Order limits will be undertaken in accordance with legislative requirements associated with breeding birds e.g.,				

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EC-22	Ecology and Nature Conservation				<p>undertaken outside of the bird nesting season (typically March to August inclusive).</p> <ul style="list-style-type: none">A programme of monitoring will be established prior to operation to ensure that biodiversity measures are implemented according to plan with necessary remediation.For the duration of the Scheme, any plants and trees which are found to be dying, damaged or diseased following planting will be replaced with the same species and specification.Condition Assessments following Biodiversity Net Gain methodologies will be undertaken at years 10, 15, 20, 25 and 30. The results of these monitoring surveys will be used to adjust the management regime to maximise biodiversity and achieve the projected Biodiversity Net Gain unit values.				
					<p>General Decommissioning Management Measures for Ecology</p> <p>Implement the following measures to minimise impacts on ecological habitats and species as set out in the Framework DEMP [EN010142/APP/7.10]:</p> <ul style="list-style-type: none">Decommissioning impacts will be mitigated fully in line with relevant legislative and policy requirements at the time of decommissioning.Pre-decommissioning surveys will be required to inform any mitigation and protected species licensing, as required at the time of decommissioning. The monitoring undertaken during the operational phase will help to inform the decommissioning strategy.				
EC-23	Ecology and Nature Conservation		Chapter 9: Ecology and Nature Conservation [EN010142/APP/6.1]	Impacts on ecological habitats	<p>Biodiversity Net Gain</p> <p>The Applicant is committed to delivering Biodiversity Net Gain in accordance with the Framework LEMP [EN010142/APP/7.17] and the Biodiversity Net Gain Report [EN010142/APP/7.14] submitted with the DCO Application.</p>	Embedded	Construction and Operation	Applicant	Requirement 8: Biodiversity Net Gain

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EC-24	Ecology and Nature Conservation		Framework Operational Management Plan [EN010142/A PP/7.9]	Impacts on fish from EMF.	Monitoring of EMF The Applicant has committed to monitoring the potential for EMF impacts on fish, as set out within Table 3-4 of Framework Operational Environmental Management Plan [EN010142/APP/7.9(Rev02)] .	Additional	Operation	Applicant	Requirement 13: Operational Environmental Management Plan
WE-1	Water Environment	Ecology and Nature Conservation	Chapter 10: Water Environment [EN010142/A PP/6.1]	Pollution of surface water and groundwater receptors	General Construction Management Measures for Reducing Pollution Risk to the Water Environment The Framework CEMP [EN010142/APP/7.8] sets out good practice methods for reducing the risk of pollution to surface waters and the groundwater environment by setting out measures for the management of construction runoff and spillage risk. The final CEMP, to be prepared in accordance with the Framework CEMP, will be supported by a Water Management Plan (WMP) and a Silt Management Plan that will provide greater detail regarding the mitigation to be implemented to protect the water environment from adverse effects during construction. The WMP will include details of pre, during and post-construction water quality monitoring. This will be based on a combination of visual observations and reviews of the Environment Agency's automatic water quality monitoring network.	Embedded	Construction	Contractor	Requirement 12: Construction Environmental Management Plan Requirement 5: Detailed Approved Design
WE-2	Water Environment	Ecology and Nature Conservation	Chapter 10: Water Environment [EN010142/A PP/6.1]	Pollution of surface water and groundwater receptors Impacts on fish, coastal and floodplain grazing marsh, running water habitats and riparian mammals	Watercourse Crossings with Non-Intrusive Techniques The methodology of the trenchless (non-intrusive) techniques of watercourse crossings will include the below measures to minimise the risk to the environment, as set out in the Framework CEMP [EN010142/APP/7.8] : <ul style="list-style-type: none">A minimum headroom of 3 m below the watercourse bed will be maintained for trenchless, nonintrusive, crossings. With regards to the proposed crossing of the River Trent and the River Till, cables will be installed by non-intrusive, underground techniques (e.g. either trenchless or Thrust Bore techniques that will not disturb the	Embedded	Construction	Contractor	Requirement 12: Construction Environmental Management Plan

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					<p>watercourse), with the depth of the cable below the river bed to be a minimum of 5 m beneath the bed, and expected to be a maximum of 25 m, and subject to appropriate consents being obtained.</p> <ul style="list-style-type: none">• A pre-works hydromorphology survey of the channel of each watercourse to be crossed will be undertaken prior to construction (including the River Trent). The pre-works survey is to ensure that there is a formal record of the condition of each watercourse prior to commencement of works to install cables beneath the channel. In addition, a tidal river bed survey will be required prior to the works under the River Trent.• The send and receive pit excavations will be located at least 10 m from the watercourse (measured from the water's/channel edge under normal flows) under which they will be directional drilled. Launch and exit pits for the River Trent crossing will be located outside the floodplain, behind its flood defences, which are at a distance of approximately 250m to the west and 400m to the east of the watercourse edge respectively.• A shoring system appropriate to the ground conditions will be used to minimise water ingress into the pits. This may be timbers, sheet piling, or a modular system and will be chosen based on suitability for the site conditions. The ingress of any groundwater will be carefully managed through design of the send or receive pit, shoring method, and a pumping and treatment system. Once the cable is installed beneath the watercourse the pits and any cable trenches will be backfilled to the original ground level and seeded to reduce the risk of runoff and fine sediments entering the watercourse.• For HDD, the drill fluids used will be water based, mixed with naturally occurring minerals like bentonite clay. The water component of the drilling fluid will be mains				

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					<p>water, obtained from a nearby supply and tankered to site when required. There will be some recycling of drilling fluids by the drilling plant used.</p> <ul style="list-style-type: none">• A bentonite management plan will include measures to deal with a spill as a result of the non-intrusive drilling techniques. Any frack out would be assessed individually to determine the correct course of action. In general, the procedure is;<ul style="list-style-type: none">– Stop drilling, place sand bags and bund;– Dig out and suck out via a gully sucker tanker lorry;– Inject additive through drill rods;– Closely monitor.• HDD, or other trenchless techniques, will be undertaken by a specialist Contractor and the water column above the drill path will be continuously monitored during drilling.• Where any leakage of drilling fluid is observed in the watercourse or there is an increased perceived risk (i.e. lack of drilling fluid returns), the HDD operation will be suspended, remediation action implemented, and subsequently the methodology for that crossing re-evaluated. It may be that the excavation, or boring, in that area must take place at a deeper depth than the minimum 2 m below the bed of the watercourse.• Any wastewater / drilling products which are not recycled must be stored and removed from the Scheme by a suitable waste management Contractor and disposed of at a licenced wastewater facility.• A site-specific hydraulic fracture risk assessment will be produced prior to commencing works to define the mitigation required based on ground conditions.				
WE-3	Water Environment	Ecology and Nature Conservation	Chapter 10: Water Environment	Pollution of surface water	Watercourse Crossings with Trench (intrusive) Techniques	Embedded	Construction	Contractor	Requirement 12: Construction

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			[EN010142/A PP/6.1]	and groundwater receptors	The methodology of the trenched (intrusive) techniques of watercourse crossings will include the below measures to minimise the risk to the environment, as set out in the Framework CEMP [EN010142/APP/7.8] :				Environmental Management Plan
				Impacts on the hydromorphology of watercourses	<ul style="list-style-type: none">Intrusive watercourse crossing techniques will only be used for more minor watercourses/drains, some of which will be dry, ephemeral channels associated with field boundaries.				
				Impacts on fish, coastal and floodplain grazing marsh, running water habitats and riparian mammals	<ul style="list-style-type: none">Where intrusive crossing techniques will be used, a pre-works hydromorphological survey must be undertaken to record channel features and provide the baseline against which reinstatement will be provided.Reinstatement will aim to provide an improved channel form with enhancement works to be carried out (where relevant and appropriate to do so) between 5 and 10 m upstream and downstream of the open trench to ensure the reinstated improved channel form merges into the existing channel form. It is anticipated that enhancements will consist of soft engineering techniques and improvements to the riparian corridor to improve channel diversity and biodiversity. Proposed reinstatement proposals will be set out in a Water Framework Directive (WFD) Mitigation and Enhancement Strategy.Where possible intrusive watercourse crossings will be carried out during drier periods of the year or during a period of dry weather where flows in the watercourse are low (this may be baseflow or where the channels are very small and not as well connected to groundwater, they may even be dry). However, this cannot be guaranteed and so any water flow within the watercourse will need to be over-pumped/flumed through the works area to maintain a dry trench and to reduce pollution risks.Bank and bed sediments must be stored separately and in distinct layers as excavated				

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					on geotextile layers so they can be reinstated as found following completion of the works. The banks and the bed will need to be appropriately reprofiled with the inclusion of suitable geomorphic features with the aim to provide betterment on the original channel. Banks will be replanted with suitable riparian species. A suitable geotextile will need to be pinned in place to provide bank protection while new planting establishes (or other suitable measures to prevent soil erosion and bank instability).				
WE-4	Water Environment	Climate Change	Chapter 10: Water Environment [EN010142/APP/6.1]	Flood risk impacts	<p>Management of Flood Risk during Construction</p> <p>The Framework CEMP [EN010142/APP/7.8] sets out measures for the management of construction activities aimed at preventing an increase in flood risk during the construction works. Works within floodplain areas are to be kept to a minimum, with temporary land take required for construction to be located out of the floodplain as far as reasonably practicable. In addition, the Contractor will be required to produce an Emergency Response Plan following grant of the Development Consent Order (DCO) and prior to construction. This will be relevant mainly for the temporary works within the Cable Route Corridor.</p> <p>The temporary construction compound, east of Willingham by Stow, is close to the Flood Zone 2 and 3 extent associated with Fillingham Beck. It is proposed to locate all staff and operational buildings within this temporary construction compound above 10.7 m AOD. This would provide 300 mm freeboard above the estimated current Flood Zone 3 extent which will ensure the temporary construction compound remains operational and safe during potential periods of flooding.</p> <p>There are also two temporary construction compounds within Flood Zone 3, which benefit from the River Trent flood defences. It is proposed that safe refuge is provided at these</p>	Embedded	Construction	Contractor	Requirement 12: Construction Environmental Management Plan

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WE-5	Water Environment	Climate Change	Chapter 10: Water Environment [EN010142/A PP/6.1]	Flood risk impacts	two temporary construction compounds, by locating a welfare cabin, either raised on a platform or stacked on top of the ground floor unit, set at a minimum of 7.66m AOD, to provide freeboard to a breach level event.	Embedded	Operation	Applicant	
					Management of Flood Risk at the Principal Site There will be no Battery Energy Storage Systems (BESS) or substations located within Flood Zone 3 on the Principal Site. The solar PV panels will be offset from watercourses by 10 m from the edge of wetted channel, or 9 m from the top of the bank of watercourses. The design of the solar panels is for the panels to be raised above ground level at a minimum height of 0.6m above the ground for most of the Principal Site, when the panel is at maximum tilt. Solar panels within Fields 56, 57 and 51 of the Harpswell Lane Interaction Zone will be installed no lower than 20.06 AOD to mitigate the risk of flooding. Regular inspection and maintenance of fencing will be undertaken throughout the operational phase. During these inspection and maintenance visits, debris build up would be identified and removed when necessary. Any fencing will be designed to prevent minor obstructions occurring allowing the continuation of flow routes (if present) unimpeded through the Principal Site.				Requirement 5: Detailed Approved Design Outline Design Principles
WE-6	Water Environment	Ecology and Nature Conservation	Chapter 10: Water Environment [EN010142/A PP/6.1]	Impacts on hydromorphology Impacts on running water habitats and riparian mammals	Permanent Access Track Crossings of Watercourses <ul style="list-style-type: none">Permanent access tracks will be constructed across the Principal Site. These will typically be up to 4 m wide compacted stone tracks with 1:2 gradient slopes on either side. The internal road layout has been designed to avoid drainage ditch and watercourse crossings wherever possible.The majority of the access tracks within the Principal Site will utilise existing farm tracks,	Embedded	Construction and Operation	Applicant	Requirement 5: Detailed Approved Design Requirement 12: Construction Environmental Management Plan

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WE-7	Water Environment	Ecology and Nature Conservation	Chapter 10: Water Environment [EN010142/A PP/6.1]	Impacts on hydromorphology	upgrading surfaces as required. The creation of new tracks will be minimised.	Embedded	Construction	Contractor	Requirement 12: Construction Environmental Management Plan
					<ul style="list-style-type: none">For any additional access crossings, culverts will be avoided wherever possible. Where culverts are necessary, the least impacting design that is reasonably practicable is proposed (e.g. arch rather than box culverts, and box culverts in preference to pipes etc.). The crossings will be sized at detailed design stage in order to not impact on flow conveyance, with the culvert inverts will be buried below the natural bed level to allow for natural bed formation and passage of sediments.				
					<ul style="list-style-type: none">Where channel will be lost for an access track crossing, a pre-works hydromorphological survey must be undertaken to record channel features and provide the baseline against which reinstatement will be provided.				
WE-8	Water Environment	Ecology and Nature Conservation	Chapter 10: Water Environment [EN010142/A PP/6.1]	Impacts on running water habitats and riparian mammals	Temporary Access Track Crossings of Watercourses Temporary access tracks will be constructed to cross watercourses along the Cable Route Corridor. These will be temporary bailey bridge type construction. it is assumed that the length of the bridge deck would be sufficient to ensure no works within the 10 m buffer zone from the watercourse. These will only be in place temporarily for a period of up to 36 months.	Embedded	Construction	Contractor	Requirement 12: Construction Environmental Management Plan
					Other Consents, Permits and Licences Where not disapplied through the DCO, there may be the need for several secondary permissions for temporary and potentially some permanent works affecting watercourses or groundwater (e.g. marine license from the Marine Management Organisation, flood risk activity permits, water activity permits, land drainage consents, temporary abstraction / impoundment licences and trade effluent consents). It is assumed that all temporary works will be carried out under the necessary consents/permits and that the Contractor will comply with any				
WE-8	Water Environment	Ecology and Nature Conservation	Chapter 10: Water Environment [EN010142/A PP/6.1]	Impacts on surface and groundwater receptors		Embedded	Construction	Contractor	Compliance with legislative requirements
									Consents deemed through DCO (including deemed marine licence)

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					conditions imposed by any relevant permission. Some of these secondary consents will be sought through the DCO.				
					Outline Drainage Strategy – Surface Water Drainage An Outline Drainage Strategy has been prepared and is included within Appendix 10-4 of the ES [EN010142/APP/6.2] . The drainage design for the Scheme will be in accordance with the Outline Drainage Strategy. The Strategy sets out principles to provide attenuation of surface water runoff from the Scheme and pollution prevention, whilst minimising flood risk to the Principal Site and surrounding areas. These include: <ul style="list-style-type: none">Attenuation in the form of boundary (and some routing) swales have been incorporated to control any increase in the rate of flow towards the receiving watercourses. The rate of runoff from each Principal Site location within the Order limits will ensure nil detriment in terms of no increase in runoff rate from the Order limits to the receiving watercourses.Any new access roads provided by the Scheme will be permeable.The drainage design also allows for fire water containment by providing a penstock arrangement on the lined swales surrounding each BESS. Fire water can be held and tested in the swales before either being released into the surrounding watercourses or taken off site by a tanker for treatment elsewhere.The swale will be underlain with an impermeable liner to prevent any contaminants entering the ground and controlled by a penstock valve that can be closed before a fire is put out.				
WE-9	Water Environment	Ecology and Nature Conservation Climate Change Ground Conditions	Chapter 10: Water Environment [EN010142/APP/6.1]	Flood risk Pollution of surface and groundwater receptors Impacts on running water habitats and riparian mammals		Embedded	Operation	Applicant	Requirement 10: Surface and Foul Water Drainage

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WE-10	Water Environment	Ecology and Nature Conservation	Chapter 10: Water Environment [EN010142/A PP/6.1]	Flood risk	Outline Drainage Strategy - Drainage Outfalls In accordance with the Outline Drainage Strategy (refer to Appendix 10-4 of the ES [EN010142/APP/6.2]), where possible, surface water will drain from the Scheme's swale based drainage system to local receiving watercourses via a new ditch, or the piped section will be shortened and the last 10 m section of the outfall route will be open ditch unless this affects maintenance of the channel by the Internal Drainage Board (IDB). A green ditch outfall would avoid the need to construct an engineered outfall. However, if engineered outfalls are required, the location, position and orientation of them will be carefully determined and informed by a hydromorphological survey to minimise any adverse local impacts on river processes. Appropriate micro-siting of the outfall will minimise loss of bank habitat, the need for bed scour or hard bank protection, and localised flow disturbance or disruption to sediment transport processes (e.g. angled 30-60° downstream to the direction of flow). It will also avoid the creation of 'dead' spaces with sedimentation and vegetation blockage risks and to that effect it is not proposed that outfalls are recessed into the bank. It is assumed that the site survey and micro-siting of outfalls will occur following grant of the DCO in compliance with the Outline Drainage Strategy. The drainage system will be designed in accordance with current guidance to ensure that the potential for siltation and blockages is minimised under normal operation. If there is any evidence of excessive erosion or sedimentation associated with new structures further actions will be considered to remedy that impact as sustainably as possible.	Embedded	Construction and Operation	Applicant Contractor	Requirement 10: Surface and Foul Water Drainage
				Pollution of surface and groundwater receptors Impacts on running water habitats and riparian mammals					
WE-11	Water Environment		Chapter 10: Water Environment [EN010142/A PP/6.1]	Impact on foul drainage and pollution prevention	Outline Drainage Strategy - Foul Drainage <ul style="list-style-type: none">The Equipment Storage and Control Building will include accommodation for between 10 and 12 staff for management and maintenance of the Scheme (i.e. low volumes	Embedded	Operation	Applicant	Requirement 10: Surface Water and Foul Drainage

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WE-12	Water Environment	Ecology and Nature Conservation	Chapter 10: Water Environment [EN010142/A PP/6.1]		of foul drainage will be generated). It is proposed to use a cess pit, fully contained, arrangement to drain the compound areas. Cess Pit tanks will be regularly emptied under contract with a registered recycling and waste management Contractor.				
				Pollution of surface and groundwater receptors Impact on water supply	General Management Measures for Water Environment during Operation In accordance with the Framework OEMP [EN010142/APP/7.9] , a detailed OEMP will be prepared prior to operation. This will include: <ul style="list-style-type: none">• A regular schedule for the management and maintenance of infrastructure, including visual inspection of the panels.• Measures to manage the risk from pollution from small leaks and spillages from proposed infrastructure and maintenance activities, such as correct storage in appropriately bunded areas of any hazardous materials, and appropriate, regular inspection and maintenance of all equipment on-site.• Water for operational cleaning of solar panels will be sourced from local potable water suppliers, not from the main supply.• Rainwater harvesting will be considered for fire suppression tanks, if used, albeit it is noted that rainwater cannot be relied upon to be the only source of firewater.• Regular inspection and maintenance of the drainage systems, proposed sustainable drainage systems (SuDS) and watercourse crossings will be undertaken in accordance with good practice guidance. Regular inspection and maintenance of fencing will be undertaken throughout the operational phase. During these inspection and maintenance visits, debris build up would be identified and removed when necessary.	Embedded	Operation	Applicant	Requirement 13: Operational Environmental Management Plan
WE-13	Water Environment	Ecology and Nature Conservation	Chapter 10: Water Environment	Pollution of surface and	General Management Measures for Water Environment during Decommissioning	Embedded	Decommissioning	Applicant Contractor	Requirement 20: Decommissioning and Restoration

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			[EN010142/A PP/6.1]	groundwater receptors Impacts on running water habitats and riparian mammals	At the decommissioning stage the potential impacts to the water environment would be controlled in accordance with the Framework DEMP [EN010142/APP/7.10] . This would ensure that potential impacts are considered and controlled within the decommissioning process.				
L VIA-1	Landscape and Visual	Cultural Heritage Socio-economics and Land Use	Chapter 12: Landscape and Visual [EN010142/A PP/6.1]	Impacts on landscape character and visual amenity Change to the setting of heritage assets	Design Principles to Reduce Landscape and Visual Effects The following is a summary of design principles that have been incorporated into the Scheme: <ul style="list-style-type: none">• Removal any solar infrastructure from the Area of Great Landscape Value (AGLV) designation along the prominent scarp slope of Lincoln Cliff, with only ecological or landscape mitigation located within the boundary of this local designation.• Withdrawing the boundary to the Principal Site northwards (in combination with landowner negotiations), away from the areas around Ingham and Fillingham, which include sensitive features such as Public Rights of Way (PRoW), Fillingham Lake and potential views from Fillingham Castle.• Avoiding areas of open or slightly undulating topography along the base of Lincoln Cliff, including immediately west of Glentworth.• Identifying relevant Neighbourhood Plan ‘key views’ to highlight potential areas for mitigation, such as west of Harpswell.• Providing buffers around residential properties, with woodland mitigation where appropriate, but also cognisant of residents’ appreciation of open views. These buffers vary from around 30 m (where existing dense screening is in place) or more generally a minimum of 50 m, up to around 300 m.• Withdrawing the Principal Site boundary eastwards, away from Springthorpe, following site surveys that identified more open views	Embedded	Operation	Applicant	Requirement 5: Detailed Approved Design Requirement 7: Landscape and Ecology Management Plan

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					<p>from certain properties and the presence of the temporary voluntary permissive bridleway.</p> <ul style="list-style-type: none">• Creating a buffer between the Principal Site and the Cottam Solar Project to the south and using these fields for ecological and landscape mitigation only.• Use of smaller and/or peripheral fields for mitigation, such as along the south side of the A631.• Identifying areas for woodland belts to the west of Harpswell, to mitigate impacts on views from the Scheduled Monument moated site and historic gardens that are accessible through permissive paths and open space.• Use of existing farm tracks and field openings as the preferred routes for construction access, minimising loss of hedgerows.• Siting of substations and operational site office in locations where existing screening will limit visibility,• Consideration to using the existing barn south of Harpswell Grange as storage, with additional laydown or external storage located immediately to the east, where the barn will limit views from Middle Street.• Provision of woodland screening and an area of biodiversity enhancement south of Springthorpe Grange, to reduce visual impacts on the open views from the south of the property.• Reinstatement and/or improvement of field boundaries, particularly in the more open parts of the Principal Site such as west of Harpswell, to limit visibility of the Scheme and increase landscape condition and habitat connectivity.• Provision of woodland or shelter belt planting along the south side of the Order limits and mitigation area south of Kexby Road (BZ 14); and the removal of proposed trees and hedges along the southern boundary of Kexby Road.				

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					<ul style="list-style-type: none">• Identification of locations along the Cable Route Corridor where sensitive receptors may require mitigation, e.g. through amendments to the preferred route such as through Cottam village.• Removal of panels from three fields at the northeastern corner of the Principal Site to mitigate landscape impacts relating to the Scheduled Monument at Harpswell Hall. These include designed views from the former 'prospect mound' and similar views from permissive paths along the historic moat.• Removal of solar infrastructure from the two fields immediately east of the Scheduled Monument (Biodiversity Zone (BZ) 8), to mitigate impacts as described above; and also reduce the presence of solar infrastructure close to a permissive circular walking route around the two fields to the east.• Removal of solar infrastructure from the field north of Kexby Road and west of Northlands Road to mitigate heritage impacts and reduce visibility for users and residents of Kexby Road and from viewpoints around Glentworth. This area is now proposed for biodiversity mitigation and enhancement, as the eastern part of BZ 13.• Avoiding construction access through Glentworth and along Flaxby Lane (where practicable), where sharp bends may require vegetation removal (identified as being of value in the Neighbourhood Plan); or where residents have expressed concerns about loss of tranquillity along quiet rural lanes. The avoidance of such routes informed the location of infrastructure, e.g. the access route from Middle Street to the proposed substation that avoids Glentworth.• Siting of substations and operational site office in locations where existing screening will limit visibility, or where sensitivity is lower				

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LVIA-2	Landscape and Visual	Ecology and Nature Conservation	Chapter 12: Landscape and Visual [EN010142/APP/6.1]	Impacts on landscape character and visual amenity	such as near the existing slurry lagoon at Hemswell Grange.	Embedded	Operation	Applicant	Requirement 7: Landscape and Ecology Management Plan
		Socio-economics and Land Use		Impacts on ecological habitats and species	Provision of Green Infrastructure As set out within the Framework LEMP [EN010142/APP/7.17] , new green infrastructure elements and corridors throughout the Scheme will be provided, to increase habitat connectivity; enhance landscape condition; and improve visual amenity within sometimes degraded agricultural landscapes. This includes: <ul style="list-style-type: none">Provision of semi-improved grassland beneath the solar panel areas and within the wider Principal Site to increase biodiversity relative the current arable monocultures, including biomass crops.Provision of woodland or shelter belt planting.Enhancements to and reinstatement of hedgerows, for example running east-west through the Principal Site, to create more robust and continuous green infrastructure corridors				
NV-1	Noise and Vibration	Human Health	Chapter 13: Noise and Vibration [EN010142/APP/6.1]	Noise and vibration from construction and decommissioning works	General Construction and Decommissioning Mitigation for Noise and Vibration Measures to control noise as defined in Annex B of BS 5228-1 (Ref. 5) and measures to control vibration as defined in Section 8 of BS 5228-2 (Ref. 6) will be adopted where reasonably practicable. These embedded measures represent Best Practicable Means (BPM) and will be secured within the Framework CEMP [EN010142/APP/7.8] for the construction phase and the Framework DEMP [EN010142/APP/7.10] for the decommissioning phase.	Embedded	Construction and Decommissioning	Contractor	Requirement 12: Construction Environmental Management Plan
		Ecology and Nature Conservation			Core working hours will be limited to 7am-7pm Monday to Friday, 7am – 1pm Saturdays and no works on Sundays and bank holidays. Some work activities may need to occur out of these hours/times due to activities requiring to be undertaken continuously, if it is not safe or practical to end it at 7pm on a particular day. Where work outside of core working hours is				
		Cultural Heritage							Requirement 20: Decommissioning and Restoration
		Socio-economics and Land Use							

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NV-2	Noise and Vibration	Human Health	Chapter 13: Noise and Vibration [EN010142/APP/6.1]	Noise and vibration from trenchless crossings	necessary, prior notification will be provided to the Local Planning Authority, in the form of a Control of Pollution Act (CoPA) (Ref. 7) Section 61 consent application where necessary. The Contractor's CEMP and DEMP will also set out a noise monitoring scheme, a communication strategy and a noise complaint system. Prior to works being undertaken, liaison will be undertaken with occupiers of sensitive receptors that may be adversely affected by construction noise and vibration. Furthermore, the construction of the Cable Route Corridor will be undertaken in four concurrent phases. It is anticipated that each phase would have a dedicated team for the trenched cable element and there would be an additional two teams dedicated to construction of the trenchless crossings. The detailed sequencing will be determined by the Contractor, once appointed, however, it is anticipated that one team would start at National Grid Cottam Substation and one at Substation B within the Principal Site with the other two starting at separate points along the cable corridor. The individual cable route teams will travel to construction compounds within their dedicated works area and therefore, there will be limited overlap of construction traffic along the local highway network by the construction teams. The only overlap of teams along the local highway network would be where two work areas join.	Embedded	Construction	Contractor	Requirement 12: Construction Environmental Management Plan
					Noise Mitigation for Trenchless Crossings A hierarchy of mitigation measures for trenchless activities is contained in the Framework CEMP [EN010142/APP/7.8] to ensure that significant noise effects do not occur due to potential night-time works. These include the below measures:				
					<ul style="list-style-type: none">Where trenchless activities may occur within 500 m of sensitive receptors at night, the option for open cut cable laying will be explored as an alternative to trenchless methods.				

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		Socio-economics and Land Use			<ul style="list-style-type: none">The potential for the use of quieter equipment than listed in Appendix 13-4: Noise Modelling of the ES [EN010142/APP/6.2] will be explored by the Contractor.Depending on the location, plant and timing of works, temporary acoustic fencing will be installed around the Order limits to screen receptors from noise emission if trenchless works are required within 500 m of a sensitive receptor.				
NV-3	Noise and Vibration	Human Health Cultural Heritage Ecology and Nature Conservation Socio-economics and Land Use	Chapter 13: Noise and Vibration [EN010142/APP/6.1]	Noise and vibration from construction and decommissioning works	Section 61 Consent Where necessary, the Applicant will submit an application for prior consent to carry out noisy work under Section 61 of the CoPA 1974 (Ref. 7) to demonstrate that noise and vibration has been minimised as far as reasonably practicable. The Section 61 application will set out the specific method of working, calculations of noise levels at nearby receptors, the actual working hours required, noise monitoring locations, details of communication measures and the mitigation measures implemented to minimise noise and vibration impacts.	Embedded	Construction and Decommissioning	Contractor	Requirement 12: Construction Environmental Management Plan Requirement 20: Decommissioning and Restoration
NV-4	Noise and Vibration	Human Health Socio-economics and Land Use	Chapter 13: Noise and Vibration [EN010142/APP/6.1]	Impact of operational noise emissions	Controlling Operational Plant Noise Emissions at Source Noise emissions will be one of the criteria evaluated when procuring equipment for use on the Principal Site. Transformers at the Principal Site may be standalone units or pre-assembled with inverters and switchgear to form a single contained unit (i.e. enclosed). The issue of low frequency noise will be considered throughout the detailed design for the substation and eliminated through design, or appropriately mitigated (isolation and attenuation measures) where appropriate.	Embedded	Operation	Applicant	Requirement 5: Detailed Approved Design Requirement 17: Operational Noise
NV-5	Noise and Vibration	Human Health	Chapter 13: Noise and Vibration	Impact of operational noise emissions	Minimising Operational Noise Impacts through Scheme Layout The Scheme layout has been optimised to locate inverters, where the highest levels of noise were	Embedded	Operation	Applicant	Requirement 5: Detailed Approved Design

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		Socio-economics and Land Use	[EN010142/A PP/6.1]		predicted, as far as practically possible from sensitive receptors. There is a commitment to locate Solar and BESS Stations at least 250 m from residential properties.				Outline Design Principles
NV-6	Noise and Vibration	Human Health Socio-economics and Land Use	Chapter 13: Noise and Vibration [EN010142/A PP/6.1]	Impact of operational noise emissions	Managing Operational Plant Noise Emissions If there is a decision in the future to move noise generating infrastructure closer to sensitive receptors than shown in Figure 13-1: Noise Sensitive Receptors and Noise Monitoring Locations of the ES [EN010142/APP/6.3], the Applicant commits that noise at sensitive receptors will be no higher than the levels presented in Section 13.8 of Chapter 13: Noise and Vibration of the ES [EN010142/APP/6.1].	Embedded	Operation	Applicant	Requirement 17: Operational Noise
SE-1	Socio-economics and Land Use	Landscape and Visual Transport and Access	Chapter 14: Socio-economics and Land Use [EN010142/A PP/6.1]	Improved accessibility of the Principal Site	Provision of Permissive Paths through Principal Site Provision of two permissive paths connecting Common Lane and Kexby Road, offering recreational access in an area where PRow are limited and also improving north-south off-road links. The paths will be located within 25 m wide corridors that will allow sufficient space for planting such as hedgerows to screen solar infrastructure and offer biodiversity and visual interest to users.	Embedded	Operation	Applicant	Requirement 15: Permissive Paths
SE-2	Socio-economics and Land Use		Chapter 14: Socio-economics and Land Use [EN010142/A PP/6.1]	Enhance local economic benefits of the Scheme	Framework Skills, Supply Chain and Employment Plan A Framework Skills, Supply Chain and Employment Plan (FSSCEP) [EN010142/APP/7.18] has been prepared to maximise and pro-actively expand the economic benefits of the Scheme for the local community. There will be a requirement in the DCO for the FSSCEP to be developed into a full detailed SSCEP plan once the DCO is granted. The detailed SSCEP will identify a range of potential opportunities or work areas, across the broad areas of skills, supply chain employment, that the Applicant could take forward.	Embedded	Operation	Applicant	Requirement 19: Skills, Supply Chain and Employment

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SA-1	Soils and Agriculture		Chapter 15: Soils and Agriculture [EN010142/A PP/6.1]	Impact on Best and Most Versatile (BMV) agricultural land	Avoidance of BMV Land through Scheme Design Order limits have been modified to remove some BMV land from the Scheme. In addition, the following infrastructure on the Principal Site will not be located on Grade 3a or Grade 2 ALC land: <ul style="list-style-type: none">BESS and Solar Stations;Solar Farm Control Centre; andOn-site Substations.	Embedded	Operation	Applicant	Requirement 5: Detailed Design Approval Requirement 18: Soils Management
SA-2	Soils and Agriculture		Chapter 15: Soils and Agriculture [EN010142/A PP/6.1]	Impact on soil resource	Management of Soil Resource during Construction, Operation and Decommissioning <ul style="list-style-type: none">A Framework Soil Management Plan (SMP) [EN010142/APP/7.12] has been developed as part of the DCO application. The aim of this document is to indicate measures for the preservation of the soil resource within the Order limits, avoiding both the loss of soil material from the Order limits and the loss of soil functional capacity for soil retained at the Order limits.The Framework SMP [EN010142/APP/7.12] provides guidance to achieve this aim through the construction, operational and decommissioning phases of the development, covering the appropriate selection of plant, physical characteristics of the soil and safe removal of all below ground features (including piles and cables) at decommissioning that could interfere with subsequent cultivation.	Embedded	Construction, Operation, Decommissioning	Applicant Contractor	Requirement 18: Soils Management
TA-1	Transport and Access	Noise and Vibration Ecology and Nature Conservation Landscape and Visual	Chapter 16: Transport and Access [EN010142/A PP/6.1]	Impact of construction traffic	Construction Traffic Management Plan Construction traffic on the highway network will be managed through the Framework Construction Traffic Management Plan (CTMP) [EN010142/APP/7.11] . This sets out management measures for traffic routing, timing and access points to the Scheme. In addition, the Framework CTMP includes but is not limited to the following measures:	Embedded	Construction	Contractor	Requirement 14: Construction Traffic Management Plan Requirement 5: Detailed Design Approval

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		Socio-economics and Land Use			<ul style="list-style-type: none">• In accordance with the Framework CTMP, an internal shuttle service which utilises internal routes through the Principal Site and an external shuttle service to transfer staff to/ from nearby catchment areas to reduce vehicle trips on the surrounding highway network will be provided.• A Car Share Scheme will be implemented to match potential sharers and to help staff identify any colleagues who could potentially be collected along their route to/ from the Scheme.• Weekday working hours of 07:00-19:00 have been specified resulting in construction staff travelling to/ from the Scheme outside of the network peak hours.• Heavy Goods Vehicles (HGVs) and Light Goods Vehicles (LGV) movements will be restricted to an eight-hour window between 08:30-16:30, to avoid increasing traffic levels on the surrounding highway network during the peak hours. This will be managed in accordance with a Delivery Management System (DMS) and monitored accordingly.• A communications strategy will be implemented, including regular meetings with sub-contractors to review and address any issues associated with travel to/ from the Scheme, as well as to relay information including any restrictions and requirements which should be followed.• Road condition surveys pre-construction will be undertaken, during construction and post-construction, to identify any defects on highway assets/ verges that have arisen during the construction phase of the Scheme for re-instatement.• Temporary Traffic Management (TTM) where required during the period when the Cables are installed crossing the highway to connect National Grid Cottam Substation with the Principal Site will be implemented.				

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TA-2	Transport and Access	Noise and Vibration	Chapter 16: Transport and Access [EN010142/APP/6.1]	Impact of decommissioning traffic	Traffic Management during Decommissioning Measures for the management of decommissioning traffic, similar to those set out above for construction, have been set out within the Framework DEMP [EN010142/APP/7.10] during the decommissioning phase.	Embedded	Decommissioning	Applicant	Requirement 20: Decommissioning and Restoration
TA-3	Transport and Access	Socio-economics and Land Use	Chapter 16: Transport and Access [EN010142/APP/6.1]	Impact on Public Rights of Way (PRoW)	Management of Public Rights of Way The Framework PRoW Management Plan [EN010142/APP/7.16] sets out measures for minimising impacts on PRoW (including existing and Claimed PRoW) during construction. These include but are not limited to: <ul style="list-style-type: none">Maintaining access to/ along PRoW, or otherwise providing temporary PRoW diversion routes where necessary to avoid any PRoW closures or potential conflicts with the Scheme (i.e. for the two PRoWs within the Principal Site and those PRoW impacted throughout the Cable Route Corridor), where	Embedded	Construction	Contractor	Requirement 16: Public Rights of Way

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TA-4	Transport and Access		Chapter 16: Transport and Access [EN010142/APP/6.1]	Impact of Abnormal Indivisible Loads (AIL) on local highway network and users	<p>possible. Any diversion routes would be agreed with the Local Highway Authorities (LHAs) prior to construction. Existing PRow will be reinstated once construction access is no longer required. Providing sufficient protection/ separation between existing PRow and construction routes where necessary;</p> <ul style="list-style-type: none">Managing areas where the proposed construction route crosses any existing PRow (where these are unable to be diverted) or local access roads, by maximising visibility between construction vehicles and other users (e.g. pedestrians and other vulnerable road users), implementing traffic management (e.g. advanced signage to advise other users of the works) and providing manned controls at each crossing point (i.e. marshals/banksmen). The default priority will be for construction traffic to give-way to other road users. This includes several PRow crossing points as detailed within the Framework PRow Management Plan [EN010142/APP/7.16].	Embedded	Construction	Contractor	
					<p>Abnormal Indivisible Loads (AIL) Management</p> <p>An AIL Management Plan (refer to Appendix C of the Framework CTMP [EN010142/APP/7.11]) has been prepared to manage the impact of AIL deliveries on the local highway network. The following measures will be implemented:</p> <ul style="list-style-type: none">Overseeing the management of AILs travelling to and from the Scheme. A specialised haulage service is anticipated to be employed to allow AILs to transport components with the necessary escort, permits and traffic management, with the Contractor consulting with the relevant highway authorities to ensure the correct permits are obtained. The police will also be given advanced notification under the Road Vehicle Authorisation of Special Types Order				Requirement 14: Construction Traffic Management Plan Requirement 5: Detailed Design Approval

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TA-5	Transport and Access	Socio-economics and Land Use	Chapter 16: Transport and Access [EN010142/APP/6.1]	Impact on local highway network and road users	<p>2003 (Ref. 8). AILs are expected to be required to transport the transformers to the Principal Site for the two on-site substations and to transport cable drums to/ from the Cable Route Corridor via seven different accesses;</p> <ul style="list-style-type: none">• AIL manoeuvres will be monitored by a suitably qualified banksman to ensure potential adverse impacts are avoided, where the swept path analysis presented within Appendix C (AIL Management Plan) of the Framework CTMP [EN010142/APP/7.11] identifies that the body of a vehicle may oversail the edge of the carriageway, or where a risk of impact on existing structures is agreed with the Local Highway Authority through approval of the AIL delivery procedures; and• Implementing local off-site highway improvements to accommodate AILs travelling to the Principal Site and Cable Route Corridor (e.g. pavement protection, temporary removal of street furniture and vegetation clearance including overhanging trees and lifting overheard cables), if required. Such improvements are outlined in Appendix C of the Framework CTMP AIL Management Plan [EN010142/APP/7.11].	Embedded	Operation	Applicant	Requirement 5: Detailed Design Approval Requirement 13: Operational Environmental Management Plan
					<p>Operational Transport and Access Management Measures</p> <p>The Scheme minimises operational impacts through the following measures set out in the Framework OEMP [EN010142/APP/7.9]:</p> <ul style="list-style-type: none">• Providing suitable access points for operational vehicles as set out in Chapter 3: Scheme Description of the ES [EN010142/APP/6.1];• Allowing operational vehicles to access all areas of the Principal Site via the proposed access points during the operational phase;				

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GG-1	Glint and Glare	Landscape and Visual	Chapter 17 : Other Environmental topics [EN010142/A PP/6.1]	Glint and glare impacts	<ul style="list-style-type: none">• Maintaining access to all existing PRow within the Scheme, with no diversions or closures; and• Controlling areas where the internal maintenance routes cross any existing PRow or local access roads (such as providing gates), permitting only operational traffic to utilise these internal routes within the Principal Site. Operational traffic should give-way to other users (pedestrians and vulnerable road users) when utilising the crossing points. Visibility will be maximised between operational vehicles and other users, with warning signage provided if required.	Embedded	Operation		
					Avoidance of Glint and Glare through Scheme Design The following measures have been incorporated within the Scheme design to avoid glint and glare impacts:				Requirement 5: Detailed Design Approval
					<ul style="list-style-type: none">• Careful siting of the Scheme in the landscape with offsets from existing residential areas, vegetation patterns and road networks;• Conserving existing vegetation patterns;• Creating new Green Infrastructure (i.e., vegetation planting) within the Principal Site with extensive planting proposals; and• Specification of anti-reflective coating (ARC), an industry standard for solar PV panels, to reduce the reflective properties of the panels.				Requirement 7: Landscape and Ecology Management Plan Outline Design Principles
GC-1	Ground Conditions	Water Environment	Chapter 17: Other Environmental topics [EN010142/A PP/6.1]	Contact with and mobilisation of existing ground contamination	Management of pollution risks associated with existing ground conditions As set out in the Framework CEMP [EN010142/APP/7.8] , the following measures will be implemented during construction: <ul style="list-style-type: none">• Intrusive site investigation is proposed by the Applicant at the post-consent stage to provide geo-environmental data to evaluate soil and groundwater quality and verify the conceptual site model. The geo-environmental investigation will be designed with due	Embedded	Construction	Contractor	Requirement 12: Construction Environmental Management Plan

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					<p>consideration of the requirements of BS 10175:2011: +A2 2017: Investigation of Potentially Contaminated Sites – Codes of Practice (BSI) (Ref. 9). The Environment Agency is to be consulted on the findings of the Site Investigation and any proposed remedial works related to the protection of controlled waters and the regimes that the Environment Agency regulate.</p> <ul style="list-style-type: none">Onsite ground investigation works to take place during detailed design will investigate the use of potential infiltration. Groundwater monitoring will also take place alongside the infiltration testing to confirm the viability of an infiltration drainage scheme.The construction works will be undertaken in compliance with Construction Design and Management (CDM) 2015 Regulations (Ref. 10).Prior to work commencing, a health and safety risk assessment will be carried out in accordance with current health and safety regulations and based on ground investigation findings. measures will be implemented during the course of any works, including:<ul style="list-style-type: none">Use of appropriate Personal Protective Equipment (PPE) for construction workers - including gloves and, where appropriate, dust masks, use of ground gas monitoring equipment and hygiene facilities; andUse of appropriate site control measures to minimise the migration of contaminated dusts and soils from the Site to adjacent areas.				
GC-2	Ground Conditions	Water Environment	Chapter 17: Other Environmental topics [EN010142/APP/6.1]	Risk of pollution from operational plant	Pollution Prevention from Operational Plant All plant (i.e. inverters, transformers and switchgear) will be installed on concrete bases with suitable bunding, where appropriate.	Embedded	Operation	Applicant	Requirement 5: Detailed Design Approval

ID	Primary Topic (primary driver for mitigation)	Secondary Topic (secondary drivers for mitigation)	Relevant ES Document	Effect	Mitigation Measures (including any monitoring required)	Embedded or Additional Mitigation?	Phase (Construction, Operation or Decommissioning)	Responsibility (e.g. Applicant, Contractor)	Securing Mechanism
MA&D-1	Major Accidents and Disasters		Chapter 17: Other Environmental topics [EN010142/APP/6.1]	Risk of major accidents and disasters	Minimising the Risk of Major Accidents and Disasters Minimising the risk of major accidents during construction, operation and decommissioning will be addressed through appropriate risk assessments and measures as required in the Framework CEMP [EN010142/APP/7.8] , Framework OEMP [EN010142/APP/7.9] and Framework DEMP [EN010142/APP/7.10] , submitted alongside the Application.	Embedded	Construction, Operation and Decommissioning	Applicant Contractor	Requirement 12: Construction Environmental Management Plan
									Requirement 13: Operational Environmental Management Plan
									Requirement 20: Decommissioning and Restoration
MA&D-2	Major Accidents and Disasters	Water Environment	Chapter 17: Other Environmental topics [EN010142/APP/6.1]	Risk of major accidents and disasters	Framework Battery Safety Management Plan The management strategy for battery fire safety is provided in the Framework Battery Safety Management Plan (FBSMP) submitted alongside the DCO application [EN010142/APP/7.13]. The BESS containers will include an internal fire suppression system. As stated in the FBSMP [EN010142/APP/7.13] , internal BESS water based fixed suppression systems will have a separate water containment system because water runoff is likely to contain higher levels of pollution. In accordance with the FBSMP, a fire water management plan will be prepared, including the containment, monitoring and correct disposal of any contained fire water.	Embedded	Operation	Applicant	Requirement 6: Battery Safety Management
									Requirement 5: Detailed Approved Design
MA&D-3	Major Accidents and Disasters	Air Quality	Framework OEMP [EN010142/APP/7.9(Rv02)]	Risk of major accidents and disasters	Substation Fire Action Plan A Substation Fire Action Plan will be prepared ahead of the commissioning of the Scheme to include the following good practice safety measures. The site manager/fire safety representative will need to assess the fire location(s), wind directions and surrounding receptors. The site manager/fire safety representative will take appropriate actions accordingly. The actions to be taken include:	Embedded	Operation	Applicant	Requirement 13: Operational Environmental Management Plan

ID	Primary Topic (primary driver for mitigation)	Secondary Topic (secondary drivers for mitigation)	Relevant ES Document	Effect	Mitigation Measures (including any monitoring required)	Embedded or Additional Mitigation?	Phase (Construction, Operation or Decommissioning)	Responsibility (e.g. Applicant, Contractor)	Securing Mechanism
TTRU-1	Telecommunications, Television Reception and Utilities		Chapter 17: Other Environmental topics [EN010142/A PP/6.1]	Risk of damage to utilities	<ul style="list-style-type: none">(1) To inform any potentially affected residents, especially those that are located at downwind locations to the substation fire;(2) To cancel outdoor events and keep windows closed for any potentially affected residents, especially those that are located at downwind locations to the substation fire; and(3) To stop any farming activities and to move any farmers/workers within 300 m of the substation fire to a cleaner air location. A cleaner air location would preferably not be downwind and be at a distance greater than 300 m from the substation fire.	Embedded	Construction, Decommissioning	Contractor	Requirement 12: Construction Environmental Management Plan
					Minimising risk to utilities The following embedded mitigation has been included within the Scheme to prevent damage to utilities from occurring:				Requirement 20: Decommissioning and Restoration
					<ul style="list-style-type: none">Locating the Scheme infrastructure outside of utilities protected zones;The use of ground penetrating radar before excavation to identify any unknown utilities; andConsultation and agreement with relevant utility operators regarding construction/demobilisation methods prior to works commencing				
MW-1	Materials and Waste	Climate Change	Chapter 17: Other Environmental topics [EN010142/A PP/6.1]	Impact of waste from the Scheme on local waste management facilities	Waste Management <ul style="list-style-type: none">During construction, operation and decommissioning, the Scheme will prioritise waste prevention, followed by preparing for reuse, recycling and recovery and lastly disposal to landfill as per the waste hierarchy.	Embedded	Construction, Operation and Decommissioning	Applicant Contractor	Requirement 12: Construction Environmental Management Plan
				Use of material resource	<ul style="list-style-type: none">All management of waste will be in accordance with the relevant regulations (as outlined Appendix 17-1: Other Environmental Topics Legislation, Policy and Guidance of this ES [EN10142/APP/6.2]) and waste will be transported by licensed waste hauliers to waste management sites which hold the				Requirement 13: Operational Environmental Management Plan
									Requirement 20: Decommissioning and Restoration

ID	Primary Topic (primary driver for mitigation)	Secondary Topic (secondary drivers for mitigation)	Relevant ES Document	Effect	Mitigation Measures (including any monitoring required)	Embedded or Additional Mitigation?	Phase (Construction, Operation or Decommissioning)	Responsibility (e.g. Applicant, Contractor)	Securing Mechanism
					<p>necessary regulatory authorisation and/or permits for those wastes consigned to them.</p> <ul style="list-style-type: none">During operation and decommissioning, achieve 70% (by weight) for recovery (diversion from landfill) of non-hazardous construction and demolition waste. The target specifically excludes naturally occurring materials in accordance with EWC Code 17 05 04 (soil and stones other than those mentioned in 17 05 03* (soils and stones containing dangerous substances)). Recovery is deemed to include reuse, recycling and other recovery e.g. energy recovery.A waste management plan at each phase will be prepared and the requirements for construction, operation and decommissioning for managing materials and waste are set out within the Framework CEMP [EN010142/APP/7.8], Framework OEMP [EN010142/APP/7.9] and Framework DEMP [EN010142/APP/7.10].				
ARB-1	Arboricultural Impact Assessment		Appendix 12-7: Arboricultural Impact Assessment [EN010142/APP/6.2]	Impact of the Scheme on trees and hedgerows	Tree Protection Where works in close proximity to retained trees are required, these will be undertaken in accordance with the tree protection measures set out within the Framework CEMP [EN010142/APP/7.8] and Framework DEMP [EN010142/APP/7.10] . This includes the preparation of an Arboricultural Method Statement.	Embedded	Construction, Decommissioning	Contractor	Requirement 12: Construction Environmental Management Plan Requirement 20: Decommissioning and Restoration

1.2 References

- Ref. 1. Institute of Air Quality Management (IAQM) (2024). Guidance on the assessment of dust from demolition and construction. Institute of Air Quality Management. Available at: <https://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf> [Accessed 25 January 2024]
- Ref. 2. British Standards Institute (2012). BS 5837:2012 Trees in relation to design, demolition and construction. Recommendations
- Ref. 3. His Majesty's Stationery Office (HMSO). (1997). Hedgerows Regulations 1997. <http://www.legislation.gov.uk/uksi/1997/1160/contents/made> [Accessed 5 March 2024]
- Ref. 4. HMSO. (1981). Wildlife & Countryside Act 1981 (as amended). <https://www.legislation.gov.uk/ukpga/1981/69> [Accessed 5 March 2024]
- Ref. 5. British Standards Institute (2014) BS 5228:2009+A1:2014 – Code of practice for noise and vibration control on construction and open sites.– Part 1: Noise. London: BSI.
- Ref. 6. British Standards Institute (2014) BS 5228:2009+A1:2014 – Code of practice for noise and vibration control on construction and open sites.– Part 2: Vibration. London: BSI.
- Ref. 7. HMSO (1974); Control of Pollution Act. Available at <https://www.legislation.gov.uk/ukpga/1974/40> [Accessed 16 January 2024]
- Ref. 8. HMSO (2003). The Road Vehicle Authorisation of Special Types Order 2003
- Ref. 9. British Standards Institute (2017). BS 10175:2011: +A2 2017: Investigation of Potentially Contaminated Sites – Codes of Practice (BSI)
- Ref. 10. HMSO (2015) Construction Design and Management (CDM) 2015 Regulations. Available at: <https://www.legislation.gov.uk/uksi/2015/51/contents> [Accessed 27 March 2024]